The London School of Economics and Political Science

In search of tax progressivity in developing countries: Analysing Chile´s tax system as a case study

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Declaration

I certify that the thesis I have presented for examination for the PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

I declare that my thesis consists of 115,673 words.

Abstract

The thesis analyses tax systems in developing countries from a distributional perspective, by using the Chilean tax system as a case study.

The motivation for this study is the concerning co-existence in developing countries of very high levels of inequality with tax systems that show very low (or no) progressivity. From that motivation, the main objective of the thesis is to identify available progressive tax reforms that could be implemented at a limited efficiency cost.

The thesis is divided in three parts. Part I deals with general preliminary issues before embarking an in-depth analysis of the tax code of the case study. The first chapter identifies the pattern present in developing countries, where high levels of inequality coexist with low (or no) tax progressivity (the 'inequality/progressivity paradox'). A theory is offered to explain the emergence of this paradox.

The second chapter tests the theory proposed for the emergence of the paradox against the historical evolution of the Chilean tax code, while the third chapter explores political obstacles to progressive tax reforms.

Part II analyses the indirect tax system to identify available reforms that meet the criteria of being both progressive but entailing reduced efficiency costs. Chapters 5 analyses the VAT and Chapter 6 analyses excise taxation.

Part III analyses the direct tax system with a similar objective. Chapter 6 deals with the personal income tax system while Chapter 7 examines the taxation of wealth.

The thesis identifies available reforms throughout the tax system that could deliver substantial distributional gains at a limited efficiency cost.

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Introduction

There is a very intriguing pattern arising from analysing taxation in developing countries. On the one hand, it is well known that inequality is a crucial problem in these jurisdictions. This in itself is not particularly intriguing from a tax perspective. However, coexisting with high levels of inequality we observe tax systems that score poorly on any measure of progressivity. These two facts make fiscal systems in developing countries hard to reconcile with most theories informing the design of tax systems. Both from the perspective of the economic theory of optimal taxation and from theories of social justice, this pattern is, at least, puzzling, as both theories would place a higher value on redistribution when inequality is high.[1]

The literature on taxation has long explored the challenges for fiscal systems in developing countries.[2] However, the analysis has been mainly focused on the issue of insufficient tax capacity in these countries. Developing countries usually raise substantially less tax revenue (around half in proportion to GDP) than developed countries.[3] Many explanations have been identified for this, such as a large informal economy and agriculture sector, weak state institutions, heavy reliance on natural resources and foreign aid, etc. While acknowledging that their low tax capacity is a crucial problem for developing countries and that these factors may indirectly affect the low progressivity of their tax systems, the thesis will argue that there are separate elements at play that might have been overlooked by analyses focused on increasing tax capacity.

As a result of the literature's main focus on tax capacity, not enough attention has been paid to issues of tax equity in developing countries. Indeed, very valuable works swiftly dismiss the issue of progressivity by stating that redistribution in developing countries can be better served through the expenditure side.[4] My starting point is that such statements, although correct to varying extents, are insufficient. Not only is there plenty of evidence of how inefficient and poorly targeted expenditure policies in these countries can be,[5] but there is also evidence showing that inequality is hardly changed despite increasing revenue capacity in some developing countries.[6] From this background, it seems that developing countries cannot afford to limit their tools to tackle inequality; it must be a central concern for the design of both the tax and the expenditure system. This thesis is an attempt to advance the literature regarding the former.

The motivation for the thesis is the abovementioned concerning pattern that we found in (most) developing countries: high inequality levels coexisting with low levels of tax progressivity. The goal is to contribute to the tax literature dealing with the role that the tax system can play in reducing inequality. This literature has made a very strong case in developed countries, where it is now

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[1] The issue of taxation and inequality is certainly also a concern for developed countries, particularly with the rising levels of inequality that have been observed in many of these countries since the 1980s (see Atkinson, 2015; and Piketty, 2017). However, the phenomenon seems different as these countries have experienced periods of considerable inequality reduction and the different set of tools they have available to tackle it.

[2] See for example, Gillis (1989); Burgess and Stern (1993); Brautigam, Fjeldstad and Moore (2008); Besley and Persson (2013); Bird and Martinez-Vazquez (2014); and Bird and Zolt (2014).

[3] For a good analysis of revenue capacity in developing countries see Bahl (2014).

[4] The same thing I highlight has been remarked by Bird (2014).

[5] For instance, it has been shown how public spending in pensions and tertiary education actually increases inequality in Latin America. Similarly, public spending on health and unemployment also worsens inequality in half the countries surveyed in the study (Ferranti, 2004).

[6] See Lindert, Skoufias and Shapiro (2006); and Goñi, López and Servén (2011).

undisputable that the tax system has a crucial role to play in reducing inequality. However, the tax design lessons that emerge from this literature have been largely unable to bring tax progressivity in developing countries, which is arguably where tools for curbing inequality are needed the most.

Consequently, this thesis takes an exclusive focus on tax systems in developing countries. The ultimate aim of the thesis is to identify available tax reforms that could enhance the progressiveness of these systems. But the work imposes a critical restriction on this search: the tax reforms that I look for need to have limited efficiency costs. This seems to be required both for political feasibility and in order to ensure that, once implemented, they can be sustainable and not susceptible to be reversed at the first economic downturn.

The thesis is also an explicit departure from a usual policy advice to designing progressive tax systems: that distributional goals should only be pursued through the income tax system (and the taxation of wealth). I will argue that this policy advice has not worked in developing countries, given that building a progressive and revenue-significant income tax system has been an extremely elusive policy for developing countries. And nothing suggests that this elusiveness will be overcome in the near future. As a consequence, this work takes a comprehensive view of the tax system, trying to identify at least marginal distributional gains in all areas of taxation, but always mindful of the efficiency costs that they may entail.

Methodology

In terms of methodology, this is a single case study work using a mixed methods approach. The thesis consists of three parts and the research design is slightly different in the first part than in the second and third.

The first part uses an exploratory research design to analyse three preliminary aspects of the main research question which is answered in the second part. This seemed suitable as the scope of the research questions of this first part are fairly broad (especially in the first and third chapter). The first chapter tries to identify and describe a pattern applicable to all (or most) developing countries and to offer a theory to explain the emergence of this pattern. The third chapter's research question is similarly broad as it tries to identify political challenges for adopting progressive tax reforms in developing countries and offer some possibilities to overcome them. As exploratory research, the first and third chapter invite future confirmatory research to test the proposed findings.

In the second and third parts I more directly engage with the main research question: are there available tax reforms that can enhance the progressivity of these tax systems at a reduced efficiency cost? To answer this question, I use a single case study research design. The choice of a single case study was the result of analysing the trade-off between having a single or a multiple case study. A multiple case study would have given a higher potential for generalisability to the findings of the thesis to other developing countries. However, for making the project feasible it would have required a more superficial analysis of each case study's tax code and fiscal history. On the other hand, having a single case study allowed to conduct a detailed and in-depth analysis of the tax code and fiscal history of the selected country, and to more accurately estimate the possible distributional outcomes of any proposals for tax reforms. In this trade off, I decided to prioritise depth over breadth. I strongly think (and the thesis has further confirmed) that tax policy is in the details, so less depth seemed to entail a strong risk of inaccuracy. This obviously means that generalisability of the findings of this thesis should be done cautiously and not before properly assessing that the issues identified here are also present in other jurisdictions.

My case study is Chile, and it was selected because it presents (relative to most developing countries) excellent data on its population's consumption patterns (broken-down by income level), income distribution, sources of income, revenue from different taxes, etc., which are essential for the analysis required to answer the research question.

The analysis of the case study in the second part combines theoretical research with quantitative empirical evidence to identify tax reforms with a positive redistributive impact in the different areas of the tax system. The theoretical analysis started from the tax literature and with the current tax design in developed countries to develop a benchmark against which to compare the current status of the different taxes in Chile (and in developing countries). This comparison identifies the shortfalls of the current tax design in our case study, and reforms are proposed on that basis. The proposed reforms are then evaluated in terms of potential redistributive impact and revenue by using empirical quantitative data. The quantitative data used for the analysis is from various sources. The main two sources are survey data on consumption pattern within the population (separated by income level) and on household income, and statistics published by the Chilean tax authority on tax revenues. I also use complimentary empirical data to fill gaps in the data required for the analysis, such as information on wealth inequality and composition, and various other sources of data required to estimate value of current tax exemptions, etc.

Structure of the thesis

The thesis is divided in three parts. The first part deals with preliminary issues that inform the work done on the main research question, which is addressed in the second and third parts by doing a comprehensive analysis of the Chilean tax code and identifying reforms that answer our research question.

Part I has three chapters, each dealing with a different preliminary issue. Chapter 1 identifies the puzzling pattern of high inequality and low tax progressivity in developing countries (what I label the 'Inequality/Progressivity paradox') and proposes a theory to explain its emergence. This seemed like an important first step in a work aiming to reverse this paradox as understanding the origins can help guide the efforts to overcome it. Chapter 2 brings the case study into the research to test the theory developed in Chapter 1 and links Chile's tax system and its inequality level. Chapter 3 explores what are some of the political challenges that progressive tax reforms need to overcome to be adopted. Even though this is not a political science work, this exploratory chapter seemed necessary to inform the design of tax policies that are politically feasible.

The second and third part of the thesis are the more extensive and more directly dealing with the central question of the research. Part II deals with the indirect tax system and is divided in two chapters. Chapter 4 analyses the Value Added Tax (VAT), identifying three possible reforms to increase (reduce) its progressivity (regressivity). Chapter 5 examines excise taxation in Chile, focusing on tobacco, alcohol and fuel taxation, identifying a clear regressive bias in these taxes.

Part III analyses the direct tax system. Chapter 6 is the longest chapter in the thesis and analyses the personal income tax (PIT), identifying four reforms proposals that would substantially expand the revenues of the PIT. Chapter 7 deals with taxes on wealth, specifically property taxation, inheritance (estate) taxation and wealth taxes. It proposes reforms to property and inheritance taxes that massively increase their revenue potential, but it does not go as far as suggesting the introduction of a wealth tax (yet).

The thesis closes with a brief concluding section that summarises three lessons from the thesis, while providing an overall view of the substantial distributional gains that could be obtained by adopting the reform package presented in Chapter 4 to 7.

What is beyond the scope of the thesis

There are two main areas which relate to the research of this thesis, but which lay beyond its scope. I highlight them here to more precisely define the scope of the thesis (and its limitations). I also offer some brief comments in connection to these areas and refer to some relevant literature to readers that might be interested in those areas. Importantly, the policy proposals that are put forward in the thesis should be complemented with a more in-depth analysis of these areas to ensure their interactions are properly addressed.

a. On the concept of 'inequality'

The first of these areas is regarding the concept of 'inequality'. This is inherently a wide and multifaceted concept, yet throughout the thesis I am mostly concerned about economic inequality (e.g. income and wealth inequality). I recognise that there are other types of inequalities that should also be a concern for academic and policymakers. A focus on non-economic inequalities is crucial in many areas of our legal and social system, including for tax policy. These non-economic inequalities include gender inequalities, racial and ethnic inequalities, health inequalities, environmental inequalities, age-based inequalities.[7] The focus of the thesis on economic inequalities responds to three reasons. First, the link between the tax system and economic inequalities is probably the clearest, which arguably means that the biggest role the tax system can play in addressing inequalities is in the area of economic inequalities. This not to minimise the relevance of tax literature looking beyond economic inequality. Indeed, it is precisely because the impact of the tax system on non-economic inequalities is *not obvious* that those works are so important, as they bring to the attention of policymakers the impact of the tax system on non-economic inequalities, which would otherwise go unnoticed.[8]

In various instances tax policy will have to trade-off different types of inequalities,[9] and the answer to such trade-off exercise will depend on the size of the impact on each type of inequality and on the weigh that is given to tackling different types of inequalities. This thesis cannot guide or solve these trade-offs, but it can inform one side of these balancing exercises by highlighting the (potential or actual) effect of the tax system on economic inequalities.

The second reason for the exclusive focus on economic inequalities has to do with the contrasting effect that tax systems have on this type of inequality in developed and developing countries. Indeed, much of the motivation for the thesis is the stylised fact that tax systems in advanced economies substantially reduce income inequality, while it has no (or even a negative) effect on income inequality in developing countries. There is not a similarly identified contrast between

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[7] For a work reviewing non-economic inequalities and the role of the tax system, see de la Feria (2025).
[8] There is distinguished tradition of tax scholars looking at the interaction between the tax system and non-economic inequalities. For example, see on racial inequality Brown (2022), Dean (2022) and (Bearer-Friend, 2022), and see on gender inequality Infanti (2005) and (Alesina, Ichino and Karabarbounis, 2011).
[9] De la Feria (2025) provides a detailed explanation and review of these trade-offs. For instance, tax incentives to accelerate the transition to cleaner energies can tackle environmental costs that have an unequal impact on the population, but they might be regressive when looked from an income inequality perspective (e.g. tax incentives to acquire electric vehicles might benefit mostly by well-off taxpayers).

developed and developing countries on the interaction of the tax system with other types of inequalities.

The last is a simply practical reason. The interaction of the tax systems with non-economic inequalities is a fascinating topic. But, as the rich academic field of critical tax theory is clear evidence,[10] it is also a wide topic that merits a separate doctoral thesis in itself. Time and space constraints means that the scope of the thesis has been almost exclusively restricted to the analysis the tax system's impact on economic inequality,[11] but this in no way implies that a proper consideration of its impact on non-economic inequalities should not be part of the policy-making process.

b. The international dimension

The second area which relates to the research topic but on which an in-depth analysis exceeds its scope is international taxation. The thesis has a clear focus on domestic tax policy, and it does not engage (other than superficially) with some important issues in connection to the international dimension of tax policy. The limitation on the scope of the thesis to domestic tax policy responds to the same practical consideration previously mentioned: international taxation issues are complex and varied, and a proper analysis of those issues from a developing countries' perspective is also a topic wide enough to cover a separate (possibly multiple) doctoral thesis (theses).

However, the international dimension of tax policy has not been ignored in the analysis, and I will highlight the main ways in which its consideration has shaped the findings of the thesis. Firstly, and maybe most importantly, I have taken the current context of an open global economy[12] and international competition for capital and (skilled) labour as an implicit constraint to the policy proposals I put forward. In the context of tax, this means treating tax competition as a real limitation to the available policy options. It is for this reason that the progressive tax policies that the thesis proposes in Chapters 4 to 7 are in no case radical. They are purposely non-politically salient and can therefore be portrayed as 'modest' or as aiming at tax simplification or tax rationalisation. Indeed, under the proposals the most prominent features of the case study's tax system are not modified: top tax rates of personal income tax and inheritance tax are unchanged, I have refrained from proposing an annual wealth tax, nor have I proposed introducing higher taxes on luxury consumption. Indeed, in some cases the proposals can be seen as enhancing the tax competitiveness of the case study (i.e. introduction of flat 16% tax rate on capital income as suggested in Chapter 6). The key contribution of the thesis is to show that even with these 'unradical' reforms, if properly designed they can substantially increase the tax progressivity of the system and significantly decrease inequality.

Despite this focus on 'unradical' progressive tax reforms some may argue that *any* progressive tax reforms are unadvisable in the current context of tax competition. So, the second way in which I take tax competition into account is by briefly engaging and rejecting this argument here. My response to this type of argument is that tax competition is a real phenomenon, but its implications

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[10] For an introduction to the field of critical tax theory see Infanti and Crawford (2009).
[11] Some consideration is given to the impact of the tax system on health and environmental inequalities in chapter 5 which examines excise taxation, as this is an area where non-economic inequalities more clearly interact with the tax policy given the Pigouvian nature of excise taxation.
[12] Recent wide-ranging tariffs imposed by the US (and retaliatory tariffs imposed by other countries) are viewed by the author as a temporary departure from the open global economy that has emerged since the 1980s, not as a permanent shift in the global economic paradigm.

should not be overstated. Tax competition constrains the policy options but only in certain areas or under certain economic and social contexts that the empirical literature has identified, none of which seem to affect the policy proposals I put forward. In particular, the empirical evidence shows that migration responses to tax are close to zero for domestic taxpayers[13] (Akcigit, Baslandze and Stantcheva, 2016; Kleven *et al.*, 2020; Advani, Poux and Summers, 2025) and are concentrated mainly at the top (Kleven, Landais and Saez, 2013; Kleven *et al.*, 2020). This is important to inform the thesis as the case study (and many developing countries) does not have a large share of foreign taxpayers, and (unlike some developed countries, such as the UK) migrants seem to be underrepresented at the top of the income distribution (Banco Central de Chile, 2018). In addition, as migration responses are mainly at the top, the top marginal tax rate is the essential policy parameter affecting it, which remains unchanged under our policy proposals.

The empirical evidence also shows that capital is likely to be more mobile than people, which means that tax rates on capital income and taxation of wealth are likely to be more subject to tax competition (Griffith, Hines and Sørensen, 2010; Alstadsæter, Johannesen and Zucman, 2019). This mobility is acknowledged by the thesis by refraining from proposing a wealth tax, despite the clear progressive implication of such a policy tool. It is also a key factor in suggesting the introduction of a dual income tax system, which would subject capital income to a flat and low tax rate of 16%.

It is, however, crucial to emphasise that tax mobility is not a structural parameter. Instead, it is fundamentally affected by tax policies, tax enforcement and (maybe mostly) by non-tax factors. So, my reluctance to support some of the more ambitious policy proposals (e.g. introducing a wealth tax) should be understood as conditional to the current level of capital tax mobility (which is, in turn, conditional to the current tax enforcement environment). In line with that, developing countries should place high efforts to shape their tax policies (e.g. introducing anti-avoidance policies targeting international tax avoidance, supporting coordinated policy proposals such as a global wealth tax, tightening their tax residency rules, introducing exit taxes, etc.) and their tax enforcement environment (e.g. exploit the benefits of automatic exchanges of information, leaked data, etc.) so as to modify such parameter to avail themselves with wider tax policy choices in the future. This is a particular area where work focused on the international dimension could be a valuable complement to this thesis, which is mostly focused on the domestic side.

[13] The exception to this is migration within a country in the context of state or regional taxes where in-country migration responses can be large (Martinez, 2017; Agrawal and Foremny, 2019). But this can be avoided if the tax rates are set up centrally within a country.

PART I - PRELIMINARIES

Chapter 1: The paradox of tax systems in developing countries

Tax systems in developing countries exhibit a surprising pattern for tax scholars. On the one hand, it is well known that inequality is a crucial problem in these jurisdictions. This in itself is not particularly intriguing from a tax perspective. However, coexisting with high levels of inequality we observe tax systems that score poorly on any measure of progressivity. These two facts make these tax systems hard to reconcile with most theories informing the design of tax systems. Both from the perspective of the economic theory of optimal taxation and from theories of social justice, this pattern is, at least, puzzling. Understanding this uncomfortable co-existence of high inequality and low tax progressivity, and the reasons for its emergence, is a crucial first step in rethinking their fiscal systems from an equity perspective.

This first chapter identifies what I will refer to as the 'inequality/progressivity paradox', defined as the coexistence in most developing countries of high inequality with low tax progressivity. It also explores possible explanations for this puzzling pattern. It then presents a theory that may, at least partially, explain the emergence of the paradox. Based on this theory, I argue that tax systems in most developing countries seem at odds with their inequality level due to the influence of three factors: (1) their lack of experience of total wars, (2) the untimely emergence of a globalized economy, and (3) the way in which a value added tax (VAT) was introduced in these countries. To understand the influence of these factors, I use the bellicist theory to explain the relation between war and tax progressivity and the dependency approach to understand the interaction between the emergence of a globalized economy and the VAT and the current state of tax systems in developing countries. The research discussed here, however, is only exploratory and therefore unsuitable to make any definitive causal claims. As in any exploratory design, further confirmatory research could test the theory on specific developing countries to have a deeper understanding of the causal mechanisms in place.

This chapter is organised in five sections. Section I describes the inequality/progressivity paradox. Section II argues that plausible reasons that would reconcile these two characteristics (high inequality and low tax progressivity) do not seem to have good explanatory power, and thus the paradox withstands them. Section III submits the theory of three factors that might explain the emergence of the paradox, while section IV brings the different arguments together to suggest that many developing countries might be lacking what the political science literature has called a fiscal contract (or at least a meaningful one). Section V offers some concluding remarks to guide the rest of the thesis.

I. Describing the Paradox

It has been long recognized that Latin America and the Caribbean (LAC) is the most unequal region in the world.[14] At the same time, Africa seems to experience a different, but equally concerning, type of inequality: while poverty levels in Sub-Saharan Africa (SSA) are the highest worldwide, overall inequality levels are slightly lower than in LAC.[15] On the other hand, inequality is not such a pressing matter for Asian countries, as the region rates better than LAC and African countries, although still trails behind the levels of developed countries. For these reasons, I find that the paradox is particularly present in LAC and SSA.

Although inequality is not a unidimensional concept that can be easily measured with a single indicator, LAC and SSA score considerably worse than other regions in all the most common measures as shown in Table 1.

Table 1: Inequality in different world regions[16]

Region	Gini coefficient	Top 1% share	Top 10% share	Mid 40% share	Bottom 50% share
OECD*	0.31	11.7%	35.1%	43.7%	21.3%
LAC	0.46	20.3%	48.8%	38.9%	12.3%
SSA	0.43	20.2%	55.1%	35%	9.8%
Asia**	0.35	16.5%	44.8%	37.9%	17.3%
Chile	0.50	27.8%	60.2%	29.8%	10.1%

*Excluding LAC countries; **Excluding Middle Eastern countries and Japan. Source: own preparation based on data from OECD (2020) and World Bank Open Data (2020) for Gini index and World inequality database (2024) for income shares. Income shares are market shares (pre-tax and transfers).

Starting from the high levels of inequality in LAC and SSA, one would expect to find highly progressive tax systems in these regions. Indeed, optimal taxation theory states that levels of income taxation depend on the elasticity of labour supply and the taste for redistribution in a particular society (Diamond, 1998; and Diamond and Saez, 2011). Therefore, with a fixed taste for redistribution and labour supply elasticity, we should find more progressive tax systems in countries where inequality is higher since social welfare gain from redistribution increases as inequality rises.

[14] See Goñi, López and Servén (2011), and Blofield (2015).
[15] Although gradually decreasing, poverty levels in SSA in 2019 were the highest in the world, at around 35%, while they have been relatively stable, around 4-5%, for LAC in the last decade (World Bank Open Data, 2024).
[16] The Gini coefficient is the most commonly used measure of inequality. It measures the difference between perfect equality (i.e., everyone having exactly the same income) and the actual distribution. Thus, the measurement goes from zero (total equality) to one (total inequality, that is, a single individual having all the income). The shares of income represent the portion of national income that is appropriated by each part of the population (e.g., in OECD countries, the richest 1% of the population appropriates 11.7% of total national income).

Moreover, most theories of social justice also place a higher value on redistribution when initial inequality is higher. A typical requirement for tax policy is that a fiscal system achieves a balance between efficiency and equity. While efficiency requires taxes that distort economic choices as little as possible (except in the case of externalities), equity requires tax burdens to be distributed fairly. Most of the literature agrees that this fairness requirement responds to the idea of 'ability to pay.'[17] Notwithstanding that there is little agreement on how to precisely define this concept,[18] it is clear that it will always require more (or, at the very least, as much) progressivity from the fiscal system as initial inequality increases. Hence, if we follow (almost) any account of social justice, we would predict higher tax progressivity in LAC and SSA.[19]

In addition, from a political economy perspective we should also expect to see more redistribution as inequality increases. As countries experience higher inequality, the median income will tend to be increasingly lower than the mean income (Meltzer and Richard, 1981).[20] Hence, we would expect voters to favour progressive taxation more strongly as inequality rises (Barro, 1999). Of course, there are arguments that point in a different direction, most notably that powerful economic elites may exert substantial political power to prevent more progressive taxation; but the question then turns on why economic elites have been so efficient in preventing progressive taxation in developing countries and not so successful in industrialized nations.[21]

In summary, theories of optimal taxation, social justice, and political economy suggest that we should find highly progressive tax systems in LAC and SSA given their very high levels of inequality. However, the empirical evidence shows exactly the opposite: as depicted in Figure 1 below, fiscal systems in these highly unequal regions tend to score very poorly in any measure of tax progressivity.[22] This is what I call the inequality/progressivity paradox.

Although a world tax incidence study is clearly outside the scope of this thesis, a good (though rough and imperfect) measure of tax progressivity relates to two indicators: directly to the level of revenue from personal income taxes (PIT), and inversely to the level of revenue from consumption taxes (VAT). The logic is simply that under a PIT levied under a progressive schedule, tax liability (as a proportion of income) rises with income while VAT disproportionally burdens low-income individuals who spend larger amounts of their income on consumption. The following chart shows

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[17] Murphy and Nagel explicitly recognize that this is the most commonly invoked principle of tax equity, even achieving recognition at the constitutional level in various countries (Murphy and Nagel, 2002).
[18] For a great description of the discussion around the concept of ability to pay see Murphy and Nagel (2002, p.20-30).
[19] Except maybe some utilitarian view of social justice that strongly downplays the role of the decreasing marginal utility of income, or a social justice theory with extreme libertarian views as pointed out by Murphy and Nagel (2002, p.18-19)
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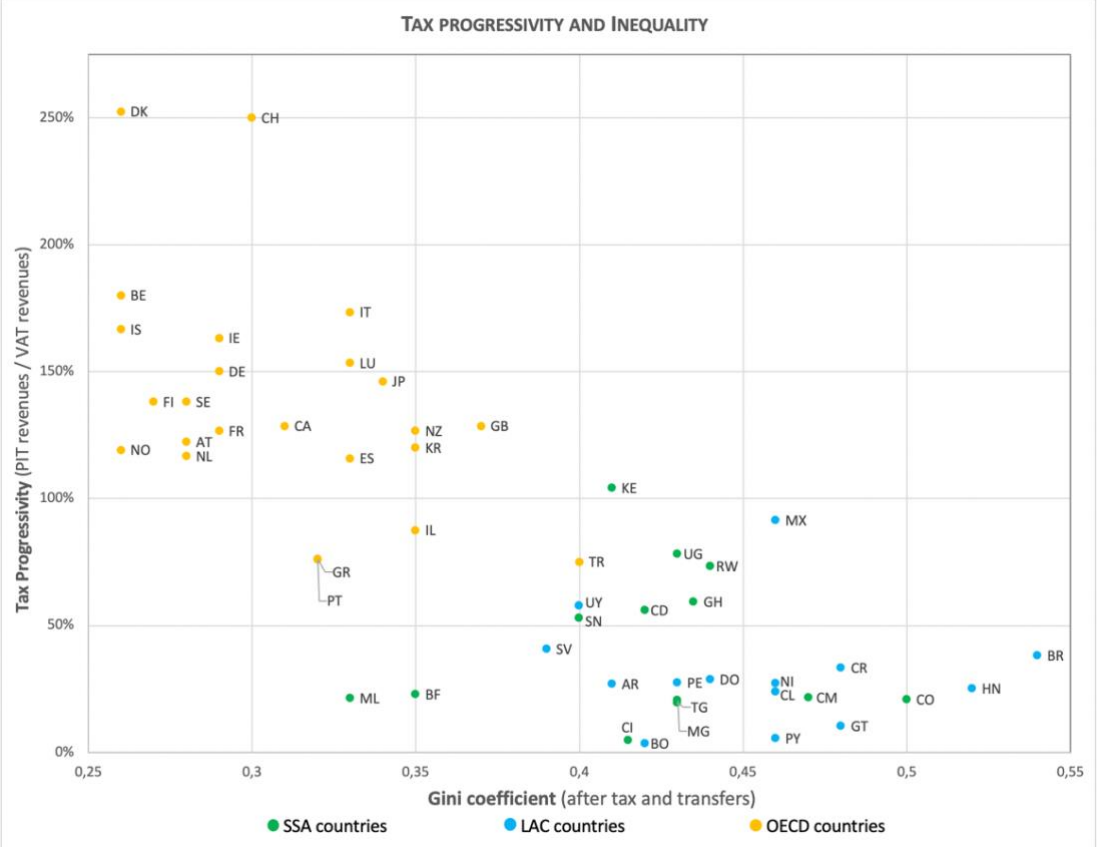
[20] Median income refers to the level of income of the individual located precisely in the middle of the income distribution. Mean or average income is the total national income divided by the population. There could be scenarios where increasing inequality does not lead to an increase in the distance between the median and the mean, but should be very rare (e.g. if we transfer income from the poorest in the population to the richest, inequality increases by the mean and median remain the same).
[21] Williamson (2015) shows evidence that inequality in Latin America was not different from industrialized countries up to the 1920s (and was even lower during the nineteenth century).
[22] Tax incidence studies confirm that developing countries have low (or no) tax progressivity (see Ferranti (2004); and Goñi, López and Servén (2011).

progressivity measured as PIT revenues as a proportion of VAT revenues against inequality levels.[23] The overall picture of the inequality/progressivity paradox is clearly shown, with most LAC and SSA countries clustering on the bottom right corner where inequality is high and tax progressivity is low.

Figure 1: PIT revenues/VAT revenues and Gini in LAC, SSA and OECD countries



Own preparation based on data from OECD (2020b); OECD, AUC and ATAF (2020) and World Bank Open Data (2020).[24]

[23] The accuracy of this measure is dependent on many particularities of each tax system and can therefore give an inaccurate measurement for certain countries, but it seems to provide a fairly correct general picture of progressivity in these regions. Among others, the accuracy of the measurement may be affected by:

(i) Economic incidence of taxes. Shift of economic burden depends on the elasticity of demand and supply of the commodity and on the competitiveness of the market. However, regressivity of consumption taxes seems to hold since they do not allow for differentiated rates based on income/consumption levels, and evidence suggests that taxes on necessities are shifted the most to consumers. (Besley and Rosen, 1999; Gaarder, 2019)

(ii) Exemptions/reduced rates of consumption taxes. However, it is likely these are, at least to some extent, indirectly captured in the form of lower VAT revenues.

(iii) Consumption being a better measurement of ability to pay than income. However, recent evidence shows that people tend to die near their wealth peak, (Jakobsen *et al.*, 2020), or that most people in the top of the income distribution remain there long after, (Auten and Gee, 2009)casts serious doubts on the pure life cycle model.

Thus, the chart should be taken only as a reference of the overall pattern. An accurate measure of progressivity would integrate all taxes in each fiscal system with their incidence assumptions. However, as a general picture it seems to have good overall facial validity: its results have been compared with tax incidence studies in eighteen countries (Goñi, López and Servén, 2011) — both measurements are strongly correlated, with fifteen out of the eighteen countries lying very close to the line of best fit.

[24] OECD transition countries not included due to particularly high levels of social security taxes making the measurement particularly inaccurate. Gini coefficients are based on disposable income (that is, market income plus cash transfers less direct taxes).

Our case study seats well in the paradox (country code 'CL') with very low tax progressivity and high inequality. This confirms that Chile seems like a good case study to analyse the phenomenon of tax regressivity in developing countries, as it seems a particularly representative case. The fact that its economic level is on the higher end of developing countries does not seem to reflect whatsoever on the strength of the paradox in its tax system.

II. Is this a Paradox?

Of course, this inequality/progressivity paradox could be simply explained by a lower taste for redistribution in LAC and SSA (i.e., social preferences for redistribution being lower in developing countries). This would reconcile the low levels of progressivity with the optimal taxation theory — in fact, we could even think of the low progressivity *as an indicator* of a low taste for redistribution.

However, this does not seem to be the case. Public perceptions surveys show that the vast majority of people in LAC believe poverty and inequality levels to be unfair or very unfair.[25] They also show that views of justice and equity are similar to those held by Europeans, and perceptions of unfairness are substantially higher than in the United States: more than two-thirds (68%) of the population in LAC claim that the government's response to poverty is inadequate, higher than in Europe (65%) and substantially higher than in the US (42%).[26] On poverty, most people in LAC (66%) attribute it to lack of justice in society, contrasting with the US's perceptions where most people (61%) attribute it to laziness.[27] Public surveys also show that the vast majority of people in LAC strongly support progressive taxation, with an average of 76% of the population supporting progressive taxation (Berens and von Schiller, 2017).

Alternatively, it could be the case that this paradox is explained by the same factors behind the reduced fiscal capacity of developing nations, and therefore does not merit a separate study. It is possible that the low revenues from PIT merely reflect unsophisticated tax administrations, large informal economies, and low tax morale. And although I agree that these factors come into play, they seem insufficient to fully explain the paradox. Firstly, although administrative capacity in LAC and SSA is undoubtedly considerably lower than in developed countries, it is also true that the high levels of inequality make it relatively easier to tax a higher portion of national income. For instance, if the Chilean tax administration would effectively enforce income taxes on the richest 1% of the population, it would tax almost 30% of national income. Targeting the same population in the average OECD country would only tax 12% of national income (see Table 1 above).

Additionally, if evasion, avoidance, and poor administrations were sufficient explanations for the low levels of revenues from PIT, we would expect to find similar *statutory* tax rates and income thresholds as those found in developed countries. However, the evidence shows exactly the opposite: both tax rates (Table 2) and income thresholds (Table 3) significantly differ from those

[25] Lindert et al., *supra* note 6, at 2
[26] *Id.*
[27] *Id.*

found in developed countries, the combined effect being to levy substantially lower effective tax rates at similar income levels in developing countries when compared with industrial economies.[28]

Table 2: Top PIT rates

Top personal income tax rates*	
Guatemala	7%
Paraguay	10%
Bolivia	13%
Costa Rica	25%
Dominican Republic	25%
Honduras	25%
Panama	25%
Brazil	27.5%
El Salvador	30%
Nicaragua	30%
Peru	30%
Trinidad and Tobago	30%
Venezuela	34%
Argentina	35%
Ecuador	35%
Mexico	35%
Uruguay	36%
Colombia	39%
Chile	40%
Average LAC	**28%**
Average OECD**	**44%**

Own preparation based on EY (2021).
* Rates as of 2020
**OECD average without LAC countries.[29]

Table 3: Income tax thresholds

Income thresholds (2010)		
Country	Initial threshold	Top threshold
	In average income per capita	
Argentina	0.3	3.66
Bolivia	0.23	0.23
Brazil	1.1	2.74
Chile	1.0	11.16
Colombia	2.83	10.65
Costa Rica	1.9	2.86
Dominican Republic	1.82	3.80
Ecuador	2.19	22.30
El Salvador	0.38	3.42
Guatemala	1.56	14.35
Honduras	2.87	13.06
Mexico	0.49	3.39
Nicaragua	2.07	20.68
Peru	1.69	14.69
Uruguay	0.72	10.28
Venezuela	1.45	12.66
Average LAC	**1.41**	**9.06**
Average OECD	**0.24**	**2.38**

Own preparation based on Corbacho, Cibils and Lora (2013)

It may also be argued that the high levels of inequality are simply a consequence of the regressive tax systems, and that it therefore could hardly be the case that this is a paradox. This contention would make sense if the analysis were limited to a narrow timeframe: after the enactment of a regressive tax system, we would expect to find higher levels of inequality. However, the interaction between tax policy and income inequality is dynamic, and it would be reasonable to expect (in the medium and long run) a policy shift towards tax progressiveness in a social context of high inequality. The absence of a noticeable shift towards tax progressiveness in these countries is precisely what seems to be paradoxical.

Finally, the apparent dichotomy between taste for redistribution as reflected in the tax system and the general perceptions on inequality and poverty may very well be a symptom of a more general

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[28] Even at *absolute* income values, some developing countries levy much lower personal taxes than developed countries (even if statutory rates may be similar): for instance, although the UK's GDP per capita is almost three times Chile's, the 40% income tax rate in the UK is triggered at around £50,000, while in Chile the same rate is triggered at around £185,000 (exchange rate on November 26th, 2021). These figures show an even starker contrast when converted to PPP USD: in the case of the UK, it translates into c. $71,000 and for Chile, it translates into c. $482,000 (using OECD PPP rates for 2020).
For a more detailed comparison of statutory tax rates of income taxes in developed and developing countries see Chapter 6.

[29] (*OECD Statistics*, no date)EY Worldwide Personal Tax and Immigration Guide, 2021. Accessible through Worldwide Personal Tax and Immigration Guide 2021-22, https://www.ey.com/engl/tax-guides/worldwide-personal-tax-and-immigration-guide (last visited Mar 7, 2023).

issue of weak democratic institutions (see generally Acemoglu and Robinson, 2012). This may certainly be true, but the research question of this chapter has to do with understanding the more immediate factors that could explain the emergence of the paradox within the context of arguably weak democratic institutions.[30]

Within the scope of this chapter, we can at least say two things relating to arguments that there might be a political unwillingness or an incapacity to address inequality in developing countries. Firstly, we can say that government in developing countries have shown (at some points) an interest and capacity in reducing inequality through progressive taxation. For example, in our case study this trend towards reducing inequality through the tax system was particularly evident in the 1960s. In this decade Chile managed to both substantially increase personal income tax rates and introduce a wealth tax, while it also introduced preferential indirect tax rates on basic food. These reforms managed to make the tax systems slightly progressive and to double the overall tax revenues, which clearly positively impacted inequality levels (Arellano and Marfán, 1987).[31] The theory presented in the next section can be used to understand why these past efforts to increase tax progressivity did not persist over time, as two of the reasons for the emergence of the paradox occur after the 1960s (the globalized economy and the introduction of VAT). The bellicist approach, on the other hand, can explain why this commitment to progressive taxation did not withstand the test of time, as it was not grounded on the elites' voluntary acceptance of a higher taxes that arises in the context of total wars, or supported by justice argument arising in times of conscription, or by the sense of social solidarity that follows great war efforts.

Secondly, we can address a claim frequently made to support arguments of incapacity or political unwillingness to address inequality. This is the vague idea that developing countries have always shown higher levels of inequality than developed countries, and therefore there must be something inherent to these countries that explain them. This idea is simply not factually accurate. Indeed, empirical studies have shown that levels of inequality in Latin America were not higher than the rest of the world up to the late 19th and early 20th century. The huge difference in inequality is not something inherent to these countries, but simply the result of these countries not experiencing the 'Great Egalitarian Levelling' (see Lindert and Williamson, 2016, chapter 8) that occurred in advanced economies between the 1920s and 1970s (Williamson, 2015). Of course, this 'Egalitarian Levelling' had several causes, but one of the main ones was the progressive tax policies introduced in that period. This also fits well with the theory for the emergence of the paradox presented below.

III. A Theory for the Emergence of the Paradox

In this part I explore some possible explanations for the emergence of the paradox and I propose a theory resting on three explanatory variables. The theory emerges from a historical analysis of the evolution of tax systems in developing countries in comparison with the experience of developed

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[30] Some of the political obstacles to progressive tax reforms are addressed in Chapter 3.

[31] This experience is of limited use to guide Part II and III of the thesis for two reasons. First, these progressive reforms proved unsustainable, and one of the reasons was that these reforms seemed to have neglected the efficiency costs of such reforms (e.g. reforms to the indirect tax system results in a very complex tax schedule with multiple rates ranging from 0% to 70%, levied at different stages of the production process). A lesson from this experience that guides Part II and III is that progressive reforms should try to minimise its efficiency costs. The second reason is that the social and economic context in the 1960s were very different from our modern and globalised context, so current reforms need to deal with risks that were largely inexistent then (e.g. capital flight, tax competition, tax-motivated migration, etc.).

countries. By applying the bellicist theory of state-building and the dependency theory of international relations to the analysis, three potential explanations arise for the emergence of the paradox: (1) the lack of experience of 'total wars,'[32] (2) the untimely emergence of a globalized economy, and (3) the creation of VAT (and the role that the IMF played in its introduction in developing countries).

A. The Bellicist Theory: War and Progressive Taxation

The bellicist theory has long established that war is a crucial element for the emergence of powerful states in Europe (Tilly, 1975).[33] The theory has been extended beyond Europe, and it is widely accepted that there is a strong connection between military efforts and the building of modern states (Herbst, 2000).

At the same time, political economy and political science theories on taxation suggest that the design of tax systems is a bargain between the state and the taxpayers (Levi, 1988; Moore, 2008). Taxpayers need to perceive that taxes will fund the provision of essential public goods, resulting in an environment of tolerance for taxes (Moore, 2008). However, different taxes need different levels of taxpayers' tolerance to be effectively imposed, and PIT is arguably where the highest level of tolerance is required.[34] This results from the very nature of the tax: a self-reporting tax, levied on an abstract concept that lends itself to manipulation, and usually levied at increasing rates so gains from avoidance increase with income. In addition, it lacks the self-enforcing nature of VAT (where the invoice represents both a tax credit and liability) or the convenient "tax handle" of trade tariffs (easily observed at customs). It is for this reason that a government is unlikely to effectively impose a PIT without some form of consent from the targeted taxpayers,[35] especially in its early stages.[36] Without such quasi-voluntary compliance, the transaction costs of PIT are simply too high (Levi, 1988, p.144).

In addition, income taxes target the economic elites and will therefore encounter higher political opposition since economic power usually translates into political influence (Burgess and Stern, 1993; Fairfield, 2015). Furthermore, economic elites will arguably see little benefit from the emergence of a welfare state. Any social program will likely not directly benefit them, and social reforms will therefore usually be unable to provide sufficient incentives to tolerate increased income taxes. In the model proposed by Levi (1988), this translates into weak power of governments when bargaining income taxes.[37]

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[32] The concept of "total wars" is opposed to "limited wars." The former is defined by Centeno (2002) as characterized by, among other aspects, (i) expansion of a killing zone to hundreds of miles of frontlines and including civilian targets, (ii) association with a moral/ideological battle that demonizes the enemy, and (iii) involvement of a significant part of the population and the militarization of society.

[33] "The very act of building [an effective military machine]…produced arrangements which could deliver resources to the government for other purposes... War made the state, and the made war." (Tilly, 1975).

[34] This is highlighted by Levi when analysing the early stages of PIT in Britain, when claiming that "quasi-voluntary compliance . . . was necessary to make the income tax cost-effective." (Levi, 1988, p.144).

[35] As mentioned by von Schiller (2012) governments' threat to act coercively against economic elites in developing countries seems not to be credible.

[36] Bergman (2015) convincingly shows that the crucial moment for tax compliance is immediately after the enactment of the tax. If the tax is perceived as legitimate and effectively enforced, a stable compliance equilibrium is likely to emerge. If not, a noncompliance equilibrium will emerge which is very challenging to reverse.

[37] The classification of Wilson (1984) also predicts strong political opposition to PIT in contexts of high inequality: it is a policy where general benefits are diffused, and costs are imposed on a narrow group.

However, from the accounts of the bellicist theory in connection with taxation, we can see that war drastically changes the bargaining power in favor of governments and results in the acceptance (imposition) of effective PIT. This argument is consistent with the emergence of PIT in developed countries, which did not usually result from the need to fund public goods, social programs, or to redistribute income. The only incentive strong enough to mobilize the economic elites into accepting increased and progressive income taxes seemed to have been the threat of losing a war and the consequent risk of implosion of the elites' status quo.

Although the link between war efforts and increased taxation has long been recognized (Thies, 2004; Sokoloff and Zolt, 2005; Besley and Persson, 2014), what I suggest here is that it was not only general taxation that was made possible by war but indeed the most progressive revenue tool in the fiscal system: the PIT. Steinmo clearly shows how the very modest income tax of the early twentieth century abruptly increased its marginal rates from 1910 to 1920 to meet the war expenditures arising from the First World War (Steinmo, 1993). And the reforms were not only politically significant but extremely efficient in raising revenues. In the UK, revenue from income taxes increased seventeen-fold from 1906 to 1918 (Steinmo, 1993, p.52). This shows that the political will was flanked by quasi-voluntary compliance from an economic elite that recognized the need for increased revenues. Framed differently, no other tax is met with such resistance as the PIT. Thus, other taxes may be effectively imposed absent such a strong incentive as war, but a PIT is unlikely. Referring again to Wilson (1984) other tax policies may be classified as majoritarian politics (where both costs and benefits are widely distributed) and are therefore easier to legislate.

The crucial influence of war in the emergence of progressive taxation is also evidenced when comparing the evolution of income taxes in participant and nonparticipant *developed* countries in the First World War: Scheve and Stasavage find that during the war, participant countries' top income tax rates rose massively from an average of 5% to 60%, while the rate hardly changed for nonparticipants (Scheve and Stasavage, 2010). Moreover, they also show that this reflects not only the increased revenue required by the military efforts, but also a move towards more progressive tax systems. During the war years, participant countries' reliance on income tax (as a percentage of total revenues) increased 7 percentage points on average, and the tax burden became more progressive throughout the entire income distribution, especially within the top decile. In England, a pre-war tax system that was slightly regressive became extremely progressive after the war.(Samuel, 1919) Not surprisingly, this move towards progressive taxation was not observed in nonparticipant countries, such as Sweden, the Netherlands, or Spain (Scheve and Stasavage, 2010, p.539-40).

It is also interesting to see how developing countries responded to revenue requirements around the same time. For instance, Chile's public revenues were strongly hit by the First World War since international trade dropped significantly (when trade taxes represented around 75% of its revenues). However, to cope with the budgetary deficit, Chile mainly resorted to internal and external loans and the imposition of a new import tariff.(McQueen, 1924)

The next milestone in the history of the PIT was when it transformed from a class tax on elites to a mass tax on income earners, which was also linked to the bellicist theory as it came to fund the military efforts of the Second World War. In the US, while income tax was paid by 6% of workers in 1939, by 1945 the income tax was levied on 70% of workers, and similar trends can be seen in the UK and other European countries (Steinmo, 1993). Of course, this transformation can be seen as a regressive tax policy, shifting an important fiscal burden onto low- and middle-income workers. But if we consider the broader historical context, the conclusion may well be the opposite. The transformation of the income tax into a mass tax was not to make it flatter, but instead imposed by

the increased revenue demands from the war. In fact, the expansion of the tax base was done simultaneously with drastic increases to the top marginal rates,[38] so the overall tax schedule did not become any flatter, but instead became progressive throughout the entire income distribution. Additionally, the alternative ways of financing the war discussed at the time were the issuance of debt or increasing consumption taxes, both of which would have been clearly regressive. Indeed, governments in the US tried and failed to introduce a consumption tax during the war years (Mehrotra, 2013), and in the UK indirect taxation was also raised to meet the war efforts (Daunton, 2002).

In addition, wars not only provided the political incentive to legislate the PIT, but also provided the perfect scenario to gradually develop the administrative capacity which is essential to effectively enforce and create a compliance environment to make the PIT a significant revenue tool (Bergman, 2015). At its inception, income tax was levied on a small group of very wealthy landowners (who consented to the tax to avoid losing a war that could dismantle their wealth) which made enforcement relatively simple. Developed countries had the interwar years to gradually develop a more sophisticated and effective tax administration (aided by the information collected during twenty years of personal tax returns) that was then able to effectively enforce the PIT when it became a mass tax during the Second World War.[39] Additionally, the compliance environment at the inception of the mass income tax was ideal, since it was during a context of national sacrifice towards winning the war (essential for a tax compliance culture, according to Bergman (2015)). This staggered development of what we now know as PIT allowed developed countries to achieve the compliance environment that is essential for having a progressive tax relevant in revenue terms, in contrast to the insignificant PIT we find in developing countries.

Furthermore, mass conscription also seems to have contributed to the move towards progressive taxation in developed countries, since it acted as a tax-in-kind imposed upon the population which, in turn, demanded highly progressive taxation to ensure that the war sacrifices were shared fairly among the population (Scheve and Stasavage, 2010, p.530). This proved to be a very strong justice claim that effectively trumped any other arguments against highly progressive income taxes.[40]

Finally, from a state building view of taxation, we can see additional consequences of experiencing massive wars which help to further understand the different taxation patterns in industrialized nations and developing countries. The experience of great wars provides a strong emotional link among the population and increased social solidarity, which Atkinson argues contributed to the reduction in inequality after the Second World War (Atkinson, 2015, p.57). In addition, it produces a shift in the way people relate to the state and contribute to the emergence of citizens rather than mere subjects (Centeno, 2002, p.22). If we link this to the fiscal system in developing countries, the lack of a sense of social solidarity may contribute to explaining the low levels of compliance with progressive taxes. Conversely, the lack of citizen-state relations in developing countries negatively affects accountability and political participation, which translates into governments less receptive to

[38] During WWII top rates for PIT increased to 94% and 97.5% in the US and UK, respectively (see Steinmo (1993), p.39).
[39] In fact, many developed countries had many decades (even centuries, in the case of the UK) to gradually develop the income tax system. UK first introduced a *progressive* income tax in 1799 to fund the Napoleonic wars, although earlier forms of income tax can be traced back several centuries (Sabine, 1966). Sweden also was an early adopter of the income tax, which was introduced in 1861 (Steinmo, 1993).
[40] However, it was not strong enough to achieve the enactment of the wealth tax that was discussed in the United Kingdom during World War I (Daunton, 2002).

the demands from their population, which would further prevent the emergence of tax progressivity.

It seems, therefore, that the positive effect of total wars on tax progressivity responds to three distinct (but related) mechanisms: firstly, war acted as a strong threat to economic elites' status, eliciting their tolerance for higher taxes; secondly, mass conscription acted as a tax-in-kind paid by the wider population, further advancing the justice argument for highly progressive taxes; lastly, the military experience created a sense of social solidarity within participant nations, which contributed to progressive policies several years after the war. The timing of these wars also seems relevant: wars were decades (or even centuries) apart, which allowed tax authorities to develop and gradually transform a very narrow class tax in its origin to a mass tax by the mid-twentieth century.

In developing countries, on the other hand, military conflicts have tended to be of a different kind. Indeed, developing countries have mainly engaged in either civil wars or local conflict in which the disputes have been limited (e.g. conflicting claims to border regions or natural resources). These "limited wars" are different from the much wider and all-encompassing threats that characterized the World Wars (what Centeno (2002) calls "total wars," including the Napoleonic and Crimean Wars, among others). For the purposes of building tax systems, limited wars do not represent the same threat required for the emergence of progressive income taxes. Moreover, civil wars by their very essence will fail to provide the sense of social solidarity mentioned earlier.[41] Finally, "limited wars" waged by developing countries have almost never imposed conscription on a significant population to make demands for progressive taxation powerful enough to overcome opposition from economic elites.[42] Thus, it is not surprising that developing countries have usually funded these limited wars mainly through external debt or by modestly increasing existing taxes (Centeno, 2002, p.131-132 and 134).

To sum up, progressive PIT that achieve significant revenue require two conditions. Firstly, there needs to be a very strong incentive for governments to impose and for economic elites to tolerate such a tax since quasi-voluntary compliance is essential. Secondly, the PIT that we see today in developed countries requires a staggered and gradual development of the administrative capacity that is required to enforce it. A mass PIT imposed overnight is doomed to fall well short of its theoretical potential since enforcement will be ineffective and a compliance environment is unlikely to arise. The bellicist approach suggests that these conditions were effectively met for developed countries by the experience of total wars.[43]

Latin American and African countries have not experienced anything similar to such total wars. As pointed by Centeno (2002), the limited wars waged in Latin America have been insufficient to trigger the emergence of effective PIT, and their revenue requirements have been met largely with external debt (Centeno, 2002, p.134). In the case of Africa, the pattern of war and the emergence of PIT has been very similar to Latin America. Since independence, the continent has experienced an impressive international peace, mainly due to the decision to maintain the boundaries of the colonial map. Although domestic conflict has not been rare, it has also failed to provide the same

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41 Civil wars and internal conflict are actually associated with *lower* tax capacity (Besley and Persson, 2011)

42 Indeed, in the extreme case these limited wars result in the opposite fiscal outcome: reduction or even elimination of direct taxes. This was the fiscal outcome for Chile as further explained in Chapter 2.

43 However, the causal relationship between total wars and the ability to impose higher taxation might not always be one sided. Without a previous minimum political organization, wars will not lead to stronger states or higher taxation. *See* Centeno (2002, p.11, 15–16). Hence, the inability to extract resources could also, to some extent, explain the unwillingness of developing states to engage in total wars.

incentives as total wars, since internal conflicts usually entail fragmentation and hostility among the population that are unlikely to foster public acceptance for increased taxation (Herbst, 2000).

B. The Dependency Approach: Emergence of a Globalized Economy and the VAT

The second perspective employed to understand the emergence of the inequality/progressivity paradox is the dependency approach in the field of international development (Prebisch, 1949; Santos, 1970; Cardoso and Faletto, 1979). In its origin, the dependency perspective came to challenge the modernisation theories that viewed poor nations as being merely at an earlier stage of development, which would eventually rise to industrial levels. Instead, it argued that nations from the Global South would not be able to follow the same developmental path previously undertaken by developed countries. At its core lie the ideas of unequal exchange between developed and developing countries and their relative positions in the core-periphery structure of the international economy (Evans, 1979).

Although there are several strands within the dependency approach, this analysis follows the strand that understands it as a "theory frame" based on which to analyse historical paths of development, which is only valuable insofar as it is useful to understand different development patterns (Mahoney and Rodríguez-Franco, 2018).[44] On that basis, I argue that the dependency approach provides a very rich lens to understand the emergence of the inequality/progressivity paradox. The theory highlights certain variables which are important for understanding development processes, such as the international economy, the relationships between poor and rich countries, etc., the core idea being that poor countries are conditioned in their development by their relationship with industrial nations and their position in the global capitalist economy (Santos, 1970, p.231-32). From this perspective, I argue that there seem to be two events that greatly contributed to the emergence of the inequality/ progressivity paradox, and the impact of these events in developing countries was heavily influenced by the interference of industrialized nations. These events are the emergence of a globalized economy since the 1970s and the creation of VAT in the 1960s, which I explain below.

B.1. The Untimely Emergence of a Globalized Economy

Since the 1970s, the world economy adjusted to the increased demands of world trade.[45] In that context, developed countries (many adjusting to a post-colonial economy highly relying on increased world trade) influenced tax policy in developing countries to make their fiscal systems more suitable to international trade. There was a clear narrative established around what tax policy should look like: eliminate trade tariffs, introduce a broad-based tax on consumption, and lower corporate tax rates (Stewart, 2006). This tax policy advice was part of the "Washington consensus," giving it an appearance of a universal and technical truth that made it very hard to contest it for developing countries (Bird, 2014, p.107-15).

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[44] As Mahoney and Rodríguez-Franco (2018) survey clearly explains, on the opposite extreme of dependency as a "theory frame" we have the strand seeing it as a completely worked out formal theory of underdevelopment with empirically testable hypotheses, such as that development of the core countries requires the underdevelopment of the periphery and unequal terms of trade (see Frank, 1969). Although this strand had a great deal of influence in the 1950s and 1960s, it has since been widely discredited for being fundamentally flawed in several of its hypotheses.

[45] It is not evident when the current globalized economy emerged. Protectionism made a strong comeback in the interwar years and it was not until the 1960s that European countries liberalized again (Bordo, Taylor and Williamson, 2007). Many developing countries engaged in import substitution industrialization starting in the 1950s (Edwards, 1993)

The effectiveness of developed countries imposing particular tax systems on other nations has been widely reported, and many scholars have explained the different channels through which they shape tax policy in developing countries. Firstly, international capitalism was imposed in a period of high hegemonic power by the United States, in which defection from the model was potentially very costly for developing countries (Keohane, 1984). Secondly, colonial influences remained strong and contributed to the imposition of the Washington consensus (Stewart, 2006, p.348), and aid from former colonial powers was made conditional to the adoption of tax reforms in line with the consensus. Finally, international financial institutions (IFIs) and tax missions (e.g., Gillis mission in Indonesia) also played a crucial role in exporting the Washington consensus (Mahon, 2004; Emran and Stiglitz, 2005).

What is relevant for this work is the radically different distributional effects this shift away from trade taxes had in developing countries when compared with the experience of developed countries (note that I will not refer to the efficiency gains resulting from a reduction of trade taxes, since they exceed the scope of the research. These gains have been widely recognized in the literature).[46] In developed countries, we can see a pattern where the lost revenue from international trade was gradually replaced with increased revenue from PIT and payroll taxes (Sokoloff and Zolt, 2005, p.231; Seelkopf, Lierse and Schmitt, 2016). For example, the UK gradually replaced trade taxes with income taxes from 1840 to 1975. At the start of this period, trade accounted for almost 50% of revenues while income taxes were non-existent.[47] Reliance on trade gradually declined as income tax revenues increased, and they were equally relevant at the turn of the century. By 1975, the picture had reversed entirely: income tax accounted for more than 50% while trade revenues were negligible (less than 5%) (Alber *et al.*, 1983). On the other hand, developing countries (lacking an effective income tax) replaced the lost revenue by increasingly relying on consumption taxes, mainly VAT and excises (Seelkopf, Lierse and Schmitt, 2016). Even more concerning, more than a third of low- and middle-income countries were not able to recover the lost revenue from trade liberalization, and they experienced devastating effects from reduced revenues. In stark contrast, no developed country has experienced a reduction in total revenues as a consequence of trade liberalization (Baunsgaard and Keen, 2010; Cagé and Gadenne, 2018).

If we also take into account the core idea of the dependency approach that highlights the unequal trade between industrialized nations and less developed countries, it is very likely that the distributional effects of removing tariffs would be more progressive in industrialized economies than in developing countries given their different patterns of imports/exports: from a consumption perspective, advanced economies import basic foodstuff and mainly export manufactures, while developing countries exports mainly consisted of primary products. Thus, removing tariffs in developed countries was more likely to result in reduced taxation of imported basic food more heavily consumed by low-income households.[48]

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[46] But see Emran & Stiglitz (2005) arguing that under certain conditions the move from trade taxes to domestic consumption taxes may be welfare reducing.

[47] The UK first introduced income tax in 1799 on a temporary basis to fund the Napoleonic wars. It was then reintroduced as a permanent tax in 1842 (Daunton, 2001).

[48] This is tellingly represented by the memory of Richard Cobden in the United Kingdom: being the main advocate of removing trade taxes in the twenty-first century, he is honored with statues in London and Manchester and remembered as a middle class hero that removed trade taxes that protected the interests of the "bread-taxing oligarchy" (Briggs, 2014). The egalitarian effect of this trade liberalization experience has also been recognized by economic studies (Lindert and Williamson, 2003).

From the production side, the distributional effects of trade liberalization were also likely very different. In industrialized countries liberalization benefitted labour-intensive industries, while in developing countries it benefitted land-intensive agriculture and capital-intensive extractive sectors. Thus, liberalization was more likely to increase the returns of landowners and capital owners in developing countries and the returns to labour in advanced economies (labour earnings which could, in turn, be progressively taxed under mass income tax systems developed in WWII). This intuition is suggested by the correlation shown by Wood (1997, p.47) of countries' natural resources endowment and the increase in wage inequality after trade openness. It is also suggested by the contrasting effect on inequality of trade openness in East Asia and Latin America also shown by Wood (1997, p. 48): unlike Latin America, the four Asian tiger opened trade by increasing incentives for exporters but keeping high levels of protection for labour-intensive manufacturing sector which seems to explain the different outcomes of trade openness on wage inequality.

Thus, the net result of this liberalization process seems to have very different in advanced economies and developing countries. While economic globalization advanced progressivity in developed economies, it maintained (or even worsen) the lack of progressivity in developing countries and, in some cases, reduced the already scant tax revenues they had.

These divergent paths can be explained by the economic development account of the evolution of tax systems, according to which fiscal systems usually go through the following evolutionary path (Bahl, 2014, p.416-17):[49] early on (stage one), taxes are levied on any easily available tax bases, usually land, trade, and large corporations (as they are relatively few and easy to identify, although they can be involved in sophisticated tax planning to reduce their bill). The next step (stage two) is to move towards general turnover taxes. Stage three for developed countries has been the development and effective enforcement of PIT and payroll taxes covering a substantial part of the population and generating considerable revenues. The fourth stage was the introduction of a modern and less distortive consumption taxes (general sales taxes and VAT). The problem is that, at a given moment in history, different countries find their tax systems in different stages of evolution. Consequently, we can see that developed countries had several decades (even centuries) to gradually move from stage one to stage four. As they set the pace on which their own tax systems would evolve, they were capable of moving to the next stage as their administrative and economic conditions were fit for the purpose. Empirical evidence supports this: developed countries moved away from trade taxes largely due to increased revenues from other taxes, gradually reducing their reliance on trade taxes. Only since the 1980s, when developed countries had already reduced the relevance of trade taxes was already low and had fully developed PIT systems, did they purposely decrease the importance of trade taxes as a proportion of GDP (instead of their relevance as a share of total revenues that had been steadily dropping as other revenues increased) (Cagé and Gadenne, 2018).

In stark contrast, developing countries were pressured to hastily move from one stage to the other, disregarding whether they had the administrative or economic conditions to deal with more complex taxes. In such a rushed evolution, I argue that developing countries seem to have been pressured to move away from trade taxes before they had effective PIT systems in place, resulting

[49] As Bahl mentions, the usual argument from development economics was that after the introduction of VAT developing countries would achieve higher income and would be able to increase their revenues from PIT. But the evolutionary path in developed countries has followed a different order (the one I present here: strong PIT systems were developed before the VAT), and I argue that the order is very relevant for the outcome of the evolutionary process.

in them effectively leapfrogging the third stage (imposing and effective enforcing strong PIT) which is where tax progressivity arises. Unlike industrialized nations, at the time of trade liberalization less developed countries were extremely reliant on trade taxes: for mid- and low-income countries, they represented on average 25% and 39% of total revenues, respectively, compared with a mere 13% in high-income countries (Cagé and Gadenne, 2018). Moreover, developing countries' only available tax handle to replace revenue forgone due to trade liberalization were consumption taxes as their PIT systems were either inexistent or insignificant as a source of revenues. Not only have developing countries not been able to effectively impose PIT, but it is arguably more difficult to achieve that today than it was forty years ago, when tax competition, labour mobility, and capital flight were not such pressing matters as they are today (Slemrod and Bakija, 2001).

In short, the globalized economy was structured at a time when developed countries had strong and competent tax authorities that could deal with more complex (and progressive) taxes to replace those incompatible with the global capitalist economy. From the perspective of developing countries, however, this move toward a globalized economy placed them in a very difficult position by removing one of their most important tax handles. Not surprisingly, the outcome was to further rely on the next available tax base, which was domestic consumption, since neither the administrative capacities, tax culture, or economic conditions were those required to effectively enforce a PIT. Thus, trade liberalization seems to have occurred (or imposed) too early in the fiscal evolution of developing countries, and that might have prevented them from enhancing tax progressivity or maintaining their tax revenues in the transition.

B.2. The Creation of VAT and the Role of IFIs

There seems to be an interesting timing coincidence between the emergence of the VAT and a decline in efforts to achieve tax progressivity in developing countries. An analysis of the evolution of tax systems suggests that developing countries concentrated their efforts to develop progressive tax systems from the post-war years until the early 1970s (Ascher, 1989; Gillis, 1989; Bird, 2014). However, by the 1970s the emphasis on progressivity seemed to greatly decline in most of Latin America. At the same time, the VAT began to quickly spread in the region, starting with its adoption by Brazil in 1967. By 1975, the VAT had been introduced in 80% of South American countries, and by the end of that decade it had been adopted in more than half of LAC countries (Ebrill et al., 2001).[50]

This rapid adoption of the VAT is particularly striking when compared with the adoption of it in developed countries. In OECD countries, less than 50% of the countries had adopted the tax by the end of the 1970s.[51] Interestingly, when it comes to the VAT many developing countries (more noticeably in LAC) did not hesitate to leapfrog developed countries in the fiscal evolutionary path described above. The fiscal path of SSA seems to be very similar to that of LAC, only that it was undertaken twenty years later.[52] During the 1990s, VAT implementation in Africa went from two to thirty countries, and its introduction has been embedded in the same neoliberal tax reforms earlier implemented in LAC, characterized by a reduction in trade taxes, flattening and income taxes, coupled with the introduction of consumption taxes (Mabugu and Simbanegavi, 2015).

[50] I am not including in the calculations small island countries given the different fiscal systems, structure, and incentives in those countries.
[51] Own calculations based on dates of introduction of VAT provided in Ebrill et al. (2001).
[52] This is not surprising since decolonization was still underway in the 1970s.

The argument advanced in this section is that there seem to be two factors contributing to this surprising outcome. First, the VAT was the perfect revenue tool for the interests of economic elites in developing countries. These countries were in an increasingly tight fiscal situation as they reduced trade taxes (on which they were extremely reliant) to join the globalized economy. In addition, PIT was very ineffective in a context of inexperienced tax administrations and low compliance equilibriums, and therefore it was easy to discredit them (on the basis that they produced labor disincentives and no substantial revenues). Given the revenue gap to be filled, VAT offered the perfect solution. Not only is VAT very efficient in economic terms (investment decisions are undistorted and the distortion of consumption choices is limited), but it is also relatively easy to administer, has self-enforcing features and, most importantly from a political perspective, it is not levied at progressive rates, so it does not affect the income or wealth of economic elites. Not surprisingly, scholars have highlighted that VAT usually entails considerably less political opposition than other taxes, especially in developing countries (Burgess and Stern, 1993, p.801; and Fairfield, 2015, p.57).

However, the simple fact that VAT fits the agenda of economic elites does not seem to be a sufficient explanation for this swift adoption by developing countries. After all, developing countries had tried to tackle inequality through highly progressive income taxes and land reforms in the preceding decades, so there seemed to be at least some political will towards redistribution (Bird, 2014).

The second factor that may explain this phenomenon is the role played by IFIs, particularly the International Monetary Fund (IMF) and the World Bank, in the promotion of VAT. The IMF exerted substantial power to direct policies in developing countries from the 1960s onward. Even though the role of the IMF was initially to maintain stable exchange rates in a globalized economy, it gradually shifted towards (softly) imposing and monitoring stabilization programs in developing countries (Pahuja, 2000; Stiglitz, 2002). This gradual shift started from the inclusion of an "IMF clause" in sovereign loans in the context of decolonization (former colonial powers continued to influence former colonies through loans and aid) which conditioned the loans on the fulfilment of stabilization programs. Thus, it seems likely that leading world economies used these stabilization programs to promote (impose) fiscal systems that benefit their position as capital exporters in a globalized economy. Hence, they would pressure for the elimination of trade taxes and for the resulting revenue gap to be filled via a nondistortive and foreign investor-friendly tax. The VAT perfectly fit that purpose.

The influence of the IMF became more noticeable when it began to directly provide loans to developing countries subject to "IMF conditionality," through which borrowers committed to "adjust [their] economic policies to overcome the problems that led it to seek financial aid . . . [and] ensure that the country will be able to repay the IMF" (IMF, 2024). As we can see, IMF conditionality is only concerned with overcoming fiscal deficits and ensuring future revenues to repay the loans. Moreover, given the disproportionate funding of developed countries by the IMF, it is arguably likely that the IMF advanced those tax policies that better served the globalized economy structured by developed countries. Hence, the focus of IMF conditionality seems twofold: (1) to ensure revenues for repayment, and (2) to advance economic policies promoting openness and international capitalism. Both goals were served by the imposition of VAT, which would raise revenues and remove the fiscal pressure to introduce (or enforce) high-rate income taxes. In addition, the design of VAT under a credit-invoice method makes it ideal for applying it on a destination basis that avoids distorting international trade (goods and services bear no tax in their country of production, therefore leaving importers indifferent to the country of origin).

Empirical evidence supports this argument, showing that IMF involvement in developing countries is strongly correlated with a higher reliance on VAT (Reinsberg, Stubbs and Kentikelenis, 2020). Indeed, IMF conditionality has been found to be a significant determinant of neoliberal tax reforms in Latin America (Mahon, 2004, p.4). Even more telling is the matching of LAC countries swiftly adopting a VAT during the 1970s and their increasing indebtedness towards the IMF; not only had their external debt increased more than eightfold from the 1970s to the 1980s (Sokoloff and Zolt, 2005, p.218) but from the twelve countries adopting a VAT in the 1970s, eight were borrowing from the IMF at the moment of adoption of VAT and four started borrowing soon after (Mahon, 2011).

I do not claim that there is anything inherently negative on the involvement of IMF in tax policy issues in developing countries. Quite the opposite: the institution has monitored and researched tax reforms since its inception, and therefore has experience that translates into valuable policy recommendations, *especially* for developing countries. Its support for VAT was also due to its economic efficiency and would therefore promote economic growth. However, the IMF's role needs to be assessed having in mind its goals and the disproportionate influence that developed countries have on its decisions (as mentioned by Stiglitz (2002) the US has effective veto power within the IMF). Thus, IMF recommendations should be considered as technical advice to increase revenue capacity in line with overarching aims of promoting economic growth and a globalized economy. From this view, it is clear that redistribution was unlikely to feature as a relevant consideration for the IMF when providing advice on tax reforms since tax progressivity and redistribution are generally viewed as trade-offs of efficiency in taxation.[53] Developing countries should therefore consider IMF advice as informing the efficiency side of the discussion but deciding the equity considerations in a democratic context, which should also play an important role in fiscal policy (particularly when inequality is high).

However, the political debate that should have dealt with distributional concerns was seriously undermined by the very same involvement of IFIs. It has been argued that economic elites and IFIs can effectively undercut democratically selected redistributive policies that may damage the interest of dominant market actors (Thomas, 1999). This constraint on the political process seemed particularly relevant in the 1970s and 1980s, which fits perfectly with the swift adoption of VAT in LAC. By making fiscal decisions the object of quasi-contractual obligations, they were sidelined from democratic debate, and the resulting tax system is more the fulfilment of contractual obligations than the outcome of a political agreement. Moreover, commitments with IFIs can further curtail democratic processes since they limit the options of future governments to pursue different fiscal alternatives without breaching obligations toward IFIs. As noted by several scholars (Thomas, 1999; Stiglitz, 2002), IFIs seemed (mainly in the 1970s and 1980s) more committed to advancing fiscal policies promoting international trade and economic growth than promoting a democratic discussion over the same issues.[54]

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[53] Some scholars note (and I agree) that since the 2000s there has been some shift in policy advice from IFIs, where development ideas have started to incorporate certain social concerns (Rittich, 2004).

[54] Similar neoliberal reforms were also implemented in some developed countries (notably under Reagan and Thatcher in the US and UK). However, the context is markedly different: in developed countries inequality was relatively low in the post-war years and it had only just started to raise in the mid-1980s (see Atkinson, 2015, p. 20). In addition, the reforms were decided by democratically elected governments with no international interference. Indeed, the IMF and the World Bank have been seen as "missionary institutions" through which these governments exported these ideas (Stiglitz, 2002, p.15).

The undermined democratic process is also evidenced by the structure of the VAT adopted in LAC when compared with the OECD countries. If we compare the South American and OECD experience in adopting the VAT in the late 1960s and 1970s, it is clear that the legislative process was considerably constrained in the former: among eight countries adopting the VAT, only two (Argentina and Colombia) included reduced rates or exemptions for basic commodities,[55] which is how regressivity concerns are usually addressed. In clear contrast, in twelve OECD countries, ten included reduced rates to deal with equity concerns.[56] This is also in stark contrast to the 'types' of VAT adopted in different time-periods. Indeed, value added taxes adopted before the mid 1980s followed what has been labelled a 'traditional VAT' model, typically including multiple rates and multiple exemptions to address regressivity concerns. In contrast, after the mid 1980s a 'modern VAT' model was developed,[57] typically with only a single rate and very limited exemptions (Krever, 2008). South American countries seemed to have adopted value added taxes in clear contrast with the 'traditional' model predominant in the 1970s, which further suggest that their adoption was not the outcome of unconstrained democratic debate, as I argue below.

One of the causes that has led to low progressivity in developing countries seems to arise from the combination of the role of IFIs and economic elites strategically using their involvement. While any tax proposal coming from economic elites will be suspect of downplaying the need for redistribution, such a suspicion is less clear when the policy recommendations come from what is seen as a technical and unbiased institution such as the IMF. Thus, it is likely that economic elites used the policy recommendations from the IFIs to vest their interest with a technical nature, removing it from political debate.[58] Moreover, IMF conditionality has made the issue less prone to open political discussion and instead have made these fiscal decisions seem somewhat inevitable. Even more, the legal structure used by the IMF to impose its conditionality in a "soft way" has further removed these policies from the political debate: IMF loans are usually structured as a unilateral declaration by the borrowing country to pursue a set of fiscal policies, which is made at the same time as the IMF unilaterally agrees to provide a line of credit. This structure may avoid being considered as an international legal agreement (in a very strict and narrow sense) and therefore provides governments with the flexibility to enter into these agreements without legislative approval (Pahuja, 2000, p.773; Stiglitz, 2002).

What is more problematic for the emergence of progressive tax systems in developing countries is the very strong performance of VAT as a revenue tool. When governments have this very efficient revenue tool in place, it seems very hard to increase revenue collection from other, more progressive, taxes. Indeed, it has been widely reported that the VAT is less visible than direct taxes,

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[55] Own calculations based on data on Ebrill et al. (2001), complemented with local data from Guerard (1973) and Valdes (1996).
Chile exempted some food items from VAT but only on a temporary basis to ease the transition from the former sales tax (which exempted these items) to VAT (Marcel, 1985)

[56] Even more tellingly, the OECD countries not including reduced rates in their VATs were Denmark and Norway, very egalitarian social democracies which had several options to offset the regressivity of VAT. Indeed, Denmark introduced VAT together with adjustment to the income tax and introduction of additional transfers and subsidies which made the entire policy package neutral from a distributive perspective (Shoup, 1969).

[57] The 'modern VAT' was first developed by Japan (1984) and New Zealand (1986) and since then the type of value added taxes has shifted from a 'traditional' to a 'modern' model. To see empirical evidence of this shift see Ebrill *et al.* (2001, chapter 7).

[58] Mahon (2004, p. 24) reports that IMF agreements have even been used by governments to obtain legislative approval of otherwise controversial reforms: IMF Staff Reports provide evidence of governments requesting to the IMF the inclusion of additional tax reforms (not initially requested by the IMF) as IMF conditionality in order to enhance the prospect of legislative approval.

and it is also easier to enforce.[59] Consequently, when additional revenues are required, raising VAT is a temptation that seems difficult for governments to resist. At the same time, increasing revenues from other sources is comparatively costlier: direct taxes usually result in considerable political opposition and are administratively challenging. For a given amount of additional resources, governments need to invest considerably more on tax administration and political efforts if collection is intended via income taxes instead of consumption taxes (although social welfare loss from additional VAT collection is likely to be higher than from income tax collection, given the diminishing marginal utility of income).[60] This is particularly true in developing countries that do not have either the legal or administrative technology required for an effective income tax in the first place. As a result, once a VAT system is in place governments will likely turn to it when additional revenues are needed (Bird and Zolt, 2014).

Empirical evidence supports this argument: for LAC, Lora (2012) showed in the period from 1986 to 2009, 89% of countries considerably reduced their top PIT rates (average top rate decreasing from 45 to 28%) while 68% increased their main VAT rate (average rate increasing from 12 to 16%). This also translates in revenue from different taxes: from 15 LAC countries, Mahon shows that from 1972 to 1995, revenue from income and capital gains taxes decreased from about 22 to 19% while revenue from indirect taxes increased from around 25% to almost 45% (Mahon, 2004, p.7). This, in turn, makes that any social spending program will have a worst distributional impact than it would if resources to fund were raised via progressive taxes.

It is worth mentioning that I am in no way arguing against the VAT. The VAT is a remarkable tax: one of the most effective and efficient ever developed, and that partly explains why it has been so widely implemented. However, VAT must be understood with its limitations and with the effects it might have on the implementation of other taxes. Indeed, it has significant shortfalls from an equity perspective that should be addressed through the rest of the fiscal system.[61] Ultimately, I argue that the chronological order in which taxes are adopted seems crucial for the resulting overall tax system. If VAT is established in a fiscal system that *already has* a functioning and effective PIT, the outcome can be very positive: an increased ability to raise revenue in a nondistortive way while offsetting any regressivity through the PIT or expenditure side. But if VAT is adopted *before* having an effective PIT in place, the outcome can be a "regressivity trap": the availability of VAT will remove fiscal pressures to develop an efficient income tax system. Governments will be faced with a very difficult decision which will often lead to regressive tax policies.

In a nutshell, the fast spread of VAT in developing countries can be explained by the combination of two factors: firstly, VAT perfectly fit the interests of the economic elites, and they strongly advanced its introduction to fill the revenue gap generated by trade liberalization; secondly, the IMF also pushed for the imposition of VAT, and their advice provided the economic elites' preference

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[59] On the "invisibility" of consumption taxes see Wilensky (1976). For an empirical study of this "invisibility," see Biehl, Labarca and Vela (2019). On the effectiveness of VAT in raising revenues see Ebrill et al. (2001).

[60] If we take the case of Chile as a representative developing country, median income is around US$6,700 while average income in the top decile is more than six times that (around US$42,000). Elasticity of marginal utility to income has been estimated at around 1.3. Consequently, a pound levied from the median earner in Chile roughly entails around eight times the private utility loss of a pound taken from the top decile. Of course, the full social welfare costs would be much more complex to calculate, as it would at least include behavioral responses, administrative costs, and dynamic effects of the taxes. For elasticity of marginal utility estimations see (Layard, Mayraz and Nickell, 2008).

[61] Even if we consider VAT as a tax on wages and (cash flow) profits, the fact that it cannot be imposed with progressive rates necessarily renders it less redistributive than PIT. In addition, its invisibility makes those burdened with it less likely to hold governments accountable and demand public services to reduce inequality. See following footnote on invisibility of VAT.

with a technical and unbiased appearance. Even more, since the introduction of VAT was usually part of IMF conditionality, the policy took the appearance of a technical fiscal issue and the fulfilment of a quasi-legal obligation that was subtracted from the democratic debate that ought to precede tax policies. What is more problematic from an equity perspective is that the timing of the appearance of VAT seems to have led to a regressivity trap: once the VAT was introduced, it offered a very easy source of revenue with little political and administrative costs. With such a tax available, the incentives for improving the deficient income tax systems were considerably reduced.

IV. Bringing It Together

A. Lack of a fiscal contract

As theories of fiscal contractualism contend, stable tax systems are not the result of unilateral imposition by governments but instead arise as an equilibrium from a bargaining process between governments and taxpayers (von Schiller, 2016). However, the combined effect of most developing countries (i) not having experienced strong incentives that could elicit acceptance for progressive taxes, (ii) being forced to move away from trade taxes "too early," and (iii) adopting VAT as a result of the interaction of economic elites' interest and IFIs' involvement, seems to strongly suggest that the conditions for the emergence of a fiscal contract between governments and citizens have been largely non-existent (Bird and Zolt, 2014).

Alternatively, we can think of these tax systems as resulting from a narrower bargaining process. Indeed, the invisibility of VAT — both due to its structure[62] and to the way in which it was introduced — may result in a narrow concept of taxpayers for the purposes of this bargaining process (i.e., excluding those taxpayers burdened with VAT but not PIT, which in most developing countries are those in the bottom three or four quintiles of the income distribution). In this way, I suggest that tax systems in developing countries feature very low progressivity *precisely because* they are the result of a narrow bargaining process between the economic elites (strategically using the intervention of IFIs) and governments. In such bargaining, the absence of total wars explains the governments' weak bargaining position that has prevented the emergence of an effective PIT and its subsequent egalitarian effect. At the same time, the VAT, which largely funds these states, has usually been introduced not as a consequence of unconstrained democratic debate, but as an imposition from IFIs (strategically used by economic elites) that provided loans to overcome deficits partly resulting from the revenue gap arising from the international pressure to liberalize trade to join a globalized economy.

Understanding the emergence of tax systems in this way might reconcile the inequality/progressivity paradox with the predictions of optimal taxation, which states that tax progressivity depends on the elasticity of labor supply and the taste for redistribution in a particular society (Diamond, 1998; Diamond and Saez, 2011). The low progressivity of developing countries' tax systems might be the result of a low taste for redistribution of the interest groups involved in the fiscal debate. If the tax system results from a bargaining process where the interests of the wider population are largely absent, it is likely that the taste for redistribution represented in such a

[62] The VAT is an indirect tax withheld by sellers that are (usually) not burdened with economic incidence of the tax. This is supported by a study in Chile showing that only a third of participants recognized paying VAT, and recognition was positively related to the level of income of participants (Biehl, Labarca and Vela, 2019). These not only confirm that the tax is largely invisible, but that those burdened the most (as a proportion of income) are the least likely to perceive it

bargaining is indeed very low (understating the redistribution preferences of the wider population). In this sense, I argue that existing fiscal contracts in many developing countries might not be a fully democratic answer to the question of how to finance the state, as it fails to represent the interest of a large part of the population.

The consequences of a lack of a fiscal contract are wide ranging and not limited to regressive taxation. Indeed, political scientists have long established that the notion of paying taxes contributes to the ability to hold governments accountable (Moore, 2008), which translates into state legitimacy and governments more receptive to public needs. In this way, it is not surprising that developing countries also exhibit higher levels of corruption and tax evasion — without a fiscal contract, there is reduced accountability, but there is also no sense of a moral duty to pay taxes. From a state-building approach to taxation, taxation is more than a way of funding government: it is the main relation between the state and its citizens, and a proper development of this relationship could lead to enhancing tax morale and the emergence of quasi-voluntary compliance (Brautigam, Fjeldstad and Moore, 2008, p. 6 and 27; Everest-Phillips, 2010).

Finally, it is possible that the inequality/progressivity paradox may have become a more stable equilibrium due to the presence of increasing tax competition among world economies that we have witnessed since the 1980s.[63] Escaping the "regressivity trap" mentioned above seems ever more difficult in the presence of new challenges for the enforcement of progressive taxes that were largely absent forty years ago (Slemrod and Bakija, 2001, p.192). The risks classically associated with highly progressive income and wealth taxes are now met by ever more credible risks of capital flight and brain drains.[64] Against this background, it becomes harder for developing countries to enhance the progressivity of their tax systems, and this might explain why the inequality/progressivity paradox has been so stable in the past decades. [65]

B. Policy implications

It is not straightforward to draw policy implication from the theory outlined for the emergence of the inequality/progressivity paradox. This is particularly the case for the insights from the bellicist theory, as the factor in the theory (participation in total wars) are historical events beyond the control of policymakers. But we can look beyond this to understand alternative mechanisms that can play analogous roles.

The first policy implication is that developing countries need to find mechanisms to increase the economic elites' acceptance for paying higher taxes. Absent total wars, this is challenging. Three ideas might be useful in thinking of alternative mechanisms. The first one is to seize 'crises windows' to convince economic elites that paying more taxes will benefit them.[66] These crises can be anything from social protests, natural disasters, security threats (from criminal organisations, paramilitary groups, etc.),[67] health crises (Covid), etc. In practice, however, progressive tax reforms are sometime overlooked in these situations *precisely* because they currently do not offer a strong revenue potential, so they are seen as ill-suited to provide the financial resources required to tackle

[63] Tax competition became a much more serious issue with the U.S. abolition of its interest portfolio withholding tax in 1984 and with the relaxation of exchange controls since the early 1980s (Avi-Yonah, 2000).
[64] Though recent developments in cross-border exchange of information could partially offset some of these risks.
[65] Absent tax competition, it is possible that these tax systems would be very unstable precisely because, as mentioned, they result from a narrow bargaining process in which the wider population was largely unrepresented.
[66] The relevance of crises in the acceptance of progressive taxes is highlighted by Flores-Macías (2014)
[67] Colombia is a good example of introducing progressive taxes in a context of security threats (ibid).

the crisis.[68] But this rationale misses the point by flipping the role of crises from tools to end. The argument here is that crises can serve (as tools) to introduce progressive tax reforms (end). Thus, it is not relevant that progressive tax reforms cannot provide the required funds to tackle the crises, as the aim is not to fund the response to crises, but to enact progressive reforms.

The second key concept relating to the acceptance of higher taxes is the concept of trust. This can be divided in trust in government's institutions and trust in fellow citizens. It seems clear that trusts in the public institutions will make taxpayers more willing to pay taxes, as they would perceive that these are being put to good use. This intuition is empirically confirmed by Berens and von Schiller (2017). The implications of this are that government's should be particularly intolerant to corruption and inefficiencies that would undermine the taxpayers' trust. It should also indicate that public information campaigns about the achievements of public services should be undertaken, to ensure that improvements in the use of resources translates into perceptions of trust. But trust *among* citizens is also important to foster acceptance for taxation, as it would increase the sense that everyone is paying their taxes, reducing perceptions of free riding that could undermine the willingness to pay taxes. In that regard, there is double dividend to be reaped from tackling tax avoidance and evasion, as it would lead to supporting tax revenues and trust.

The last idea that can play an analogous role to war is the concept of loyalty. In the famous framework of Hirschman (1970) members (taxpayers) of an organisation (country) can react in two ways to dissatisfaction. The first one, typical of commercial relations, is to simply exit. The second one, typical of political organisations, is to express its dissatisfaction in the hope of triggering change (voice). In the context of progressive taxation, we could understand exit as migrating to another country whenever the tax burden becomes unacceptable for a particular taxpayer (or simply start engaging in tax evasion). The 'voice' option, on the other hand, will be represented by the multiple political actions a taxpayer can engage in to influence tax policy, from voting for the opposition party to lobbying for tax reforms. Loyalty comes into play in this framework to shift the point at which the 'exit' option is exercised.[69] This is particularly relevant in many contexts, but also in the context of taxation. In particular, loyalty would make taxpayers remain tax residents (tax compliant) in a country for longer than they would otherwise when faced with a subjectively unacceptable tax burden.[70] And this can be extremely useful, as the benefits of increased taxation (social stability, reduced crime, better education/health services) are likely to be much longer term than the costs (which will be felt even in anticipation of the tax increase taking effect).

The policy question, then, is how loyalty (or something equivalent) can be fostered in the context of taxation, and Hirschman's work suggest two mechanisms that can be relevant from a tax policymaking context. First, he claims that loyalty is influenced by the member's perception of their ability to influence the organisation. Translating this into tax policy, would suggest that when tax policy is the outcome of broad political consensus arising from discussions where a wide range of stakeholders were able to participate should increase the members' perception that they can

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[68] Chile has a history of tax reforms to finance reconstruction efforts after earthquakes, and it shows that the personal income tax is frequently neglected as it is seen as weak source of revenues. For the last major earthquake (2010), for instance, the subsequent tax reform introduced a temporary increase in the corporate tax rate and an increase in indirect taxes (including on tobacco), but nothing on the personal income tax side.

[69] Hirschman (1970, p. 77).

[70] This seems to tie well with the empirical evidence showing that tax-induced migration is close to zero amongst nationals, but higher among foreigners (see Introduction, p. 6 above, for references to this empirical evidence).

influence tax policy, and this should translate in higher loyalty. I return to this point (from another angle) about the benefits of tax policy as an outcome of broad political consensus in Chapter 3.[71]

Hirschman also mentions that a role similar to that of loyalty can be played by 'specific institutional barriers'[72] to exit. These barriers to exit make it more costly to exercise the exit option, and push members to use their 'voice' instead. In the context of tax policy, there are several tools available to discourage 'exit', and this should be considered as a mechanism to achieve the same that loyalty: delay the exit of taxpayer that would migrate (or engage in tax evasion) in the absence of it. It escapes the scope of this thesis to fully explore these options,[73] so I will limit to simply mentioning some. The most radical of these barriers would be to change the nexus rule for taxing worldwide income from residence to citizenship, as it is currently done by the US. This increases the cost of exit as it would now require both leaving the country and renouncing their citizenship.[74] Less radical would be to adopt an exit tax where unrealised gains are taxed on departure by deeming a disposal of the taxpayers' assets,[75] or alternatively to impose a tax liability 'tail' for a certain number of years after departure.[76] A more modest way of imposing these barriers is to follow the solution adopted by the UK in its 'temporary non-resident rules' that force taxpayers to leave for more than 5 tax years if they want to avoid UK taxes on gains realised while resident in the UK.[77]

Moving beyond total wars in the theory outlined in section III, there is a clearer policy lesson that emerges from the factors highlighted by the dependency approach. Indeed, both the untimely emergence of a globalised economy and the adoption of VAT under IFIs pressures suggest that revisiting VAT systems adopted under these circumstances is a good starting point to identify progressive tax reforms. This is precisely the aim of Chapter 4 of the thesis.

V. Conclusion

This chapter has identified the inequality/progressivity paradox in tax systems in developing countries and has offered a theory that may explain its emergence of the paradox which arises from a historical analysis of the evolution of those fiscal systems. This seems like a necessary first step to address the central research question of the thesis.

The theory presented rests on the influence of three factors in shaping tax systems: (1) the lack of experience of total wars, (2) the untimely emergence of a globalized economy, and (3) the way in which VAT was introduced in developing countries. Analysing these factors through the lenses of the bellicist theory and the dependency approach provides valuable insights.

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[71] Page 72 below.
[72] Hirschman (1970, p. 79).
[73] The barriers to migration are part of the international dimension of tax policy, which as mentioned in the Introduction is beyond the scope of the thesis. The barriers to tax evasion are part of improving tax administration and enforcement, a topic which also lays beyond the scope of the thesis.
[74] For a discussion on the convenience of citizenship taxation see Dagan and Mason (2024).
[75] On exit taxes see Zimmer (2009) and Peeters (2017).
[76] Many European countries implement a 'tail' system to tax capital gains of former residents, including Finland (3-year tail), Ireland (3-year tail), Luxembourg (5-year tail) and Sweden (10-year tail). The problem of these regimes is that they are frequently disapplied by double tax conventions that grant exclusive taxing rights to residence countries.
[77] Section 1M, TCGA 1992.

The bellicist theory provides a plausible explanation for economic elites' reluctance to accept progressive taxes in less developed countries. The analysis suggests that the positive effect of total wars on tax progressivity responds to three mechanisms: (1) war acting as a strong threat to economic elites' status, eliciting tolerance for progressive taxes, (2) mass conscription acting as a tax-in-kind paid by the wider population reinforcing the justice claim for progressive taxes, and (3) the military experience creating social solidarity, which contributes to progressive policies in the future. It also highlights that achieving a modern and effective PIT requires a staggered and gradual development of the administrative capacity to enforce it. If imposed overnight, it is doomed to fall well short of its theoretical potential, as enforcement and compliance are likely to be inadequate.

The dependency of developing countries on their economic relationship with industrial nations plausibly explains why they joined a globalized economy at a time when their tax systems were not prepared for moving away from trade taxes. It also suggests that the resulting revenue gap was filled (in many cases, only partially) by the VAT, which was strongly favoured by IFIs (strategically used by economic elites), upon which developing countries were extremely dependent for financial assistance. The fact that the introduction of VAT was not the outcome of unconstrained democratic debate might also explain why the equity shortfalls were not addressed in developing countries as they were in developed nations.

It is clearly challenging to identify particular causal mechanisms connecting the abovementioned explanations to the emergence of the inequality/progressivity paradox, and the research design has not been intended to do so. Moreover, it is likely that there are no clear chains of causality in play, but the paradox instead rests on a "complex web of interdependent causality" (Besley and Persson, 2011, p.5). It seems possible that all these phenomena are intertwined and mutually reinforcing, simultaneously shaping the fiscal systems in developing countries.

For example, the revenue gap resulting from trade liberalization may be both a cause and a consequence of the predominance of VAT in developing countries: "too early" trade liberalization placed developing countries in a difficult fiscal position that led them to introduce VAT, notwithstanding the equity concerns. At the same time, it seems possible that trade liberalization would not have been so steep if developing countries had not found the stable source of revenue that VAT proved to be.

In summary, all these factors seem complexly interacting to produce the concerning distributional outcome of the inequality/progressivity paradox. Of course, it is likely that there are additional explanations that have not been discussed here or more remote causes that may also play a part in explaining the paradox.[78] Further confirmatory research in particular countries could test the explanatory power of the factors identified here and provide a more accurate description of the causal relations.

Based on the theory submitted for the emergence of the inequality/progressivity paradox, policymakers in developing countries should be acutely aware of threats or shocks that could help drive acceptance from elites to progressive taxes. Social shocks, such as pandemics or social unrest, could offer similar incentives to war and could prove a good opportunity to move towards more

[78] Sokoloff and Zolt (2005) provide a very interesting historical analysis of tax patterns in the Americas, arguing that different types of colonies produced different levels of inequality which, in turn, explain diverse levels of tax progressivity in the region today.

progressive taxation.[79] In addition, acknowledging that developing countries might have moved away from trade taxes "too early" and that the fiscal pressure led to tax systems being shaped without a proper democratic debate might make it advisable to revisit the equity shortcoming of the current tax systems. It might also provide a valuable lesson: technical advice from foreign countries or institutions should be taken keeping in mind the goals of the advisor. Any unaddressed equity concerns arising from those advisors should be identified and addressed through a political debate representing the broader interests of the population.

Several further questions arise from this chapter, a welcomed outcome for the exploratory design followed in the research: do these factors have a similar effect in all developing countries? Are there any particular characteristics in some developing countries that explain a higher (or lower) influence of these factors? How can we explain tax systems that do not fit well in the paradox? Can we extract any lessons from those outliers? I only engage in further research into the findings of this chapter to analyse what explanatory power the theory has in relation to our case study (Chapter 2). This is the only further research that seemed required for analysing the central research question of the thesis: what available tax reforms could contribute to increase tax progressivity (reverse the paradox) of the tax system of our case study at a reduced efficiency cost? The other questions that arise for further research are certainly interesting but they simply exceed the scope of this research.

[79] Purely economic crises do not seem to provide sufficient incentive to increase tax progressivity: during the Great Depression changes to income tax were only modest and the major source of funds came from sales tax (Fishback, 2017). Similarly, during the Great Recession there were some reforms towards higher income taxation, but they were usually reversed in the following years (Bargain *et al.*, 2017). Slemrod (2009) makes a good point that might explain this, noting that during economic crises traditional criteria to assess tax policy (of which equity is a key one) are replaced by "Keynesian yardstick" (i.e., marginal propensity to spend/ invest from tax cuts).

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Chapter 2

Is this a tale of Chile?

A brief analysis of the evolution of the tax code and inequality in Chile

Introduction

In the previous chapter I proposed a theory of three factors that could explain the emergence of the inequality/progressivity paradox in developing countries (defined as the coexistence of very high level of inequality with low tax progressivity in a country). In this chapter, I will focus on the evolution of the tax system in Chile to assess whether this theory has explanatory power in the development of the Chilean tax system. I will also try to draw some connections between the evolution of the tax code and the level of inequality in Chile, in order to shed some light on the potential role that the fiscal system has (or may have) in the distribution of income in Chile.

The chapter will present two arguments. Firstly, I will argue that the theory proposed in Chapter 1 seems consistent with Chilean tax history: not only has the lack of 'total wars' prevented the emergence of progressive taxes, but also the experience of 'limited wars' waged by a country whose finances relied heavily on trade taxes led to the opposite outcome: war allowed the government to shift its tax systems entirely on to trade taxes and away from direct taxes. When it comes to dependency, this also provides a good lens to analyse the development of Chile's tax code, as its colonial heritage explains an economy extremely 'export-led' which (i) explains the negative outcome (in terms of tax progressivity) of engaging in limited wars, and (ii) explains the swift adoption of VAT and the strong shift from direct taxes towards the newly-introduced VAT.

Secondly, when it comes to analysing Chile's inequality the research led to two findings that are encouraging for this research. There have been two periods (60s and 90s) in which inequality has been reduced in Chile, and in the first one progressive tax policy played a relevant role, substantially

increasing revenues from direct taxes. In between these two equalising periods, Chile experienced two decades where inequality soared. Interestingly, tax policy also seemed to play a role in this regressive period as direct taxes where made substantially flatter and the tax mix was shifted into VAT.

The chapter is structured as follows. The first part will present the historical development of the Chilean tax code. Section two will apply the theory presented in Chapter 1 for the emergence of the paradox to Chile, to test its explanatory power. Section 3 analyses Chile's inequality, to understand its shape and the role that the tax system can (and has in the past) play(ed) to reduce it.

I. The Chilean tax system

A. Brief description of the current tax code

When looking at a general description of the tax system in Chile, it might appear that it resembles significantly to the tax codes in many developed countries with only small particularities. From the perspective of direct taxes, it has a comprehensive definition of taxable income for the purpose of personal income tax (PIT), where capital gains (when taxed) are treated as general income, and it applies a progressive income tax rate of up to 40%. Corporate income tax (CIT) is levied on income from legal entities at a rate of 27%. Chile also has an inheritance tax (IHT) with progressive rates ranging from 0% to 35%.[1] There is also a tax on the value of real estate which applies very low (and barely progressive) tax rates.

On the other hand, the indirect tax system features as a main tool the value added tax (VAT) applied to most items of consumption with a general rate of 19%. There are no reduced VAT rates or broad categories of exempt items (although usual structural exemptions also apply in Chile – i.e. financial services, zero-rating exports, etc.). There are specific taxes resembling excise systems in developed countries, such as on alcohol, tobacco and gasoline. There is also a surtax (15% on top of the general VAT rate) applicable to the import or sale of luxury goods.

International trade has remarkably low taxation, mainly due to a low import tariffs and no tax on exports. Trade taxes raise less than 1% of total revenues.

Social security contributions amount to 17% of wages (10% to finance pensions and 7% to fund health insurance). However, most social security contributions are not part of the tax revenues since pension contributions are held by private pension institutions through personal capitalisation accounts (so this 10% is in essence an individual mandatory pension saving). Likewise, health insurance can also be personally acquired from private providers, and therefore those contributions (7% of wages) do not enter the funding of the public health system and are therefore not categorised as taxes.[2]

Finally, Chile historically has had a very strong mining sector which represent a significant portion of its GDP (currently mainly due to copper export) and its taxation has heavily contributed to fiscal revenues. Since the 2000s, revenues from the mining industry have averaged almost 13% of total public revenues. However, the importance of mining has been decreasing lately, barely contributing

[1] The statutory rates are 0-25% but are increased by up to 40% (leading to a 35% rate) when the inheritor is not the spouse or a descendant of the deceased.
[2] Broadly speaking, roughly the top 20% wage earners opt-out of the public health system and instead acquire a private health insurance with their mandatory 7% health contribution, therefore not contributing to the funding of (or using) public health.

around 6% of tax revenues since 2015. The revenues from the mining industry arise both from State-owned mines (CODELCO) which between 2001 and 2014 contributed an average of 63% of total revenues from mining, and from privately owned mines. The revenues from privately owned mines, in turn, come mainly (90%) channelled through the general income tax system (CIT and a withholding tax applicable on dividends of international investors) and a minor part through a specific mining tax (10%).[3]

The main particularities of the Chilean system, however, arise when one digs a little deeper into the composition of the tax mix. What might seem like a relatively progressive tax code, immediately changes when the revenues from each source are analysed and it becomes clear that the Chilean case fits perfectly with the inequality/progressivity paradox.

Table 4. Chile's Tax mix by revenue (2019)[4]

Tax Source	**% of Total Tax Revenues**
Personal Income Tax	7%
Corporate Tax	23%
VAT	40%
Excises on tobacco and gasoline	7%
Other taxes on goods and services	6%
Tax on luxury goods	0.005%
Real Estate tax	4%
Inheritance tax	0.15%
Trade taxes	1%
Other taxes[5]	12%

Indeed, the main redistributive aspect of tax systems around the world (PIT) contributes a meagre 7% of total tax revenues. Other elements which theoretically enhance the progressivity of the system are absolutely irrelevant in terms of revenue (IHT and surtax on luxury goods). On the other hand, indirect taxes account for more than 50% of total tax revenues and they are structured in a way that do not address their regressivity: VAT has no reduced rate or exemptions on basic consumption items,[6] and excises (besides the irrelevant tax on luxury) are focused on items more heavily consumed by low-income people (alcohol and tobacco) or are neutral in terms of distribution (gasoline).[7] Moreover, the few categories of exempt items included in the Chilean VAT focus on 'merit goods' which are more heavily consumed by the top-income groups: sport and cultural events and education.

Based on the above, it is not surprising that Chile is a perfect example of what I called the inequality/progressivity paradox: even though it has extremely high levels of inequality[8] its tax system features very low (if any) progressivity. Indeed, not only Chile appears clearly on the bottom right corner of the chart plotting inequality against tax progressivity (see Figure 1 in Chapter 1, p.8) but studies on the incidence of the Chilean tax system show that it is actually regressive(Engel, Galetovic and Raddatz, 1999).

[3] The mining tax is applied on the "operational profits" of mines, on a progressive scale that goes from 0% to 34.5% depending on the volume of sales and the "operational profit margin". Hence, small mines are exempt from this specific tax, while larger and more profitable mines are subject to increasing rates.
[4] Own preparation based on data from OECD and Chilean tax authority (*Servicio de Impuestos Internos*).
[5] This include minor taxes on financial transactions, on specific services and on certain activities.
[6] Chapter 4 analyses in detail the current VAT system.
[7] Chapter 5 analyses in detail the current excise system.
[8] See section III below for details of Chile's inequality.

Of course, the Chilean case could escape the inequality/progressivity paradox if the lack of tax progressivity reflects a low taste for redistribution. However, evidence suggest that the opposite (strong taste for redistribution) is more accurate regarding social preferences in Chile: an analysis of Latinobarómetro survey[9] on public opinions in Latin America provides good evidence on the taste for redistribution in a country, as there are at least 6 questions which directly relate to perceptions about the tax system and the income distribution, and they all suggest a strong taste for redistribution in Chile. For instance, when asked whether the income distribution is fair, 95% answers that they think is unfair (43%) or very unfair (52%).[10] When asked whether citizens should all pay the same proportion of their income in taxes or if those earning more should pay a higher proportion, more than 80% of respondents answered the latter.[11] Similarly, when asked from which decile of income should taxes be paid, more than 50% of respondents answered that taxes should only be paid by those in the top 2 deciles, while 70% of respondents agreed that only those in the top 4 deciles should pay taxes.[12] Moreover, when asked how much of the national income should the different quintiles get, the average response was to assign 3.3 times more income to the poorest quintile (than they thought these quintiles actually received), while at the same assigning less than a third to the richest quintile (of what they thought they actually received).[13] In the same line, 70% agreed that the poor receive less than they deserve, while almost two thirds of respondents thought the rich receive more than they deserve.[14]

These answers clearly show that the tax system is at odds with the taste for redistribution in Chile, and therefore confirms that Chile is a good example of the paradox.[15] Not surprisingly, when asked for the benefit of whom is the country governed, 93% answered that it was governed by a powerful few in their own interest.[16]

B. How did we get here?

Although a detailed account of the history of the Chilean tax system exceeds the scope of this work, a review of the most relevant milestones is required to assess the explanatory power of the theory presented in Chapter 1 to explain the emergence of the inequality/progressivity paradox. For such a purpose, I have divided Chilean fiscal history in 5 stages.

The **first stage** (and the longest) goes from the Chilean independence until 1925, when the first income tax laws were enacted. During those over 100 years (first tax laws were enacted in 1817 to fund the independence war against Spain) Chile had a very basic tax system, mostly relying on trade taxes. Export taxes over mining commodities were the main source of revenues, with some minor taxes on some forms of income and property and a modest tax on the production of some businesses and farms. Indeed, from 1890 until World War I, trade taxes represented between 80% and 90% of total tax revenues in Chile(Direccion General de Contabilidad de Chile, 1915), and when additional

[9] Latinobarómetro (2020).
[10] Question 19.
[11] Sociodemographic question 9.
[12] Sociodemographic question 8B.
[13] Questions 73 and 74.
[14] Question 16.
[15] Interestingly, the survey also suggests that the taste for redistribution is stronger in Chile than in the rest of Latin America: when asked whether the tax system should be proportional or progressive, in the rest of Latin America only 64% answered progressive (80% in Chile). Similarly, when asked about the fairness of the income distribution, in the rest of Latin America only 81% answered it was either "Unfair" or "Very Unfair" (95% in Chile), and when asked which deciles should pay taxes, only 28% answered only the top 2 deciles (51% in Chile).
[16] Question 12.

revenues were urgently needed it was usually funded through debt (or "mandatory loans").[17] These mandatory loans are early signs of a surprisingly resilient characteristic of Chilean tax history: extracting revenues from direct taxes (either from income or from wealth) has proven to be extremely difficult, getting to the extreme were governments have had to promise repayment of the 'taxes' to obtain their approval. Moreover, after the Pacific War[18] Chile enjoyed a monopolistic position in the world's nitrate industry which produced a huge bonanza due to mining export duties. In such a context, all direct taxes were abolished for a 25-year period (1891-1916) (Marshall, 1939, p.5).

World War I marked (as in many other countries) a drastic change in the funding of the Chilean state and it marks the start of the **second stage** of Chilean tax history, characterised by modernisation of the tax code and by the imposition of the first (modestly) progressive income tax. Chilean international trade dropped massively as a consequence of the war, resulting in a massive fiscal deficit (McQueen, 1924). To cope with this fiscal crisis, specific indirect (alcohol and wooden matches) and property taxes were introduced. However, it was not until 1925 that a more sustainable solution was reached when the first income tax law was introduced, creating a schedular income tax system with flat rates between 2% and 9%, plus a comprehensive progressive income tax with rates from 1% to 10%. In addition, it incorporated a 3% tax on remittance of profits by foreign investors. Export taxes dropped to a 10% of total revenues by 1930 (Arellano and Marfán, 1987). The 1925 tax reform brought the Chilean tax system more in line with those in advanced economies, although the progressiveness of the system remained fairly low, due to low effective rates and high evasion (Arellano and Marfán, 1987). The introduction of a progressive income tax also shows the resistance to direct taxation mentioned earlier:it was firstly proposed in 1919 but after a heated legislative discussion it was deemed to be unconstitutional.[19] Hence, in its first stage it was enacted as a flat tax on income. Only later (in 1925) was it reformed into a progressive tax, but not as a result of a legislative debate in Parliament but through a Presidential decree issued after a coup d'etat had dissolved Parliament.[20]

A **third stage** in Chilean tax history is marked by a modernisation of its indirect taxation with the introduction of a general sales tax in 1954. Indirect taxes had been introduced chaotically since alcohol taxation was enacted in 1903, and the general sales tax brought order and consistency, and it had a clear progressive intent.[21] Between the second and third stage the Chilean tax system also shifted its approach to trade taxes: Chile had low import and exports duties in the first decades of the 20th

[17] The tax on wages of civil employees of 1817 was structured as a loan: it was to be repaid once independence process was completed. The same strategy was used in 1867 when a tax on wages was introduced, which would be repaid once the financial emergency was overcome (Boada, 2017).
[18] War between Chile, on the one hand, and Peru and Bolivia, on the other, for the geographical area which is currently the northern part of Chile, rich in mineral resources, especially nitrate.
[19] The constitutional argument against the progressive tax was based on a very narrow interpretation of the constitutional norm, which guaranteed "*the equal distribution of all taxes and contributions in proportion to the possessions, and the equal distribution of all other charges*" (Article 12, No. 3 of the 1833 Chilean Constitution). A literal construction of the norm resulted in the argument that it only permitted the levy of fixed-amount or proportional taxes, but not progressive. To avoid any future constitutional challenges to progressive taxation, the 1925 Chilean Constitution had a very similar norm but adding the phrase "*or in the progression or conditions established by the law*" (Art. 10 No. 9).
[20] After the coup d'états of 1924 and 1925 the Parliament had been dissolved and the President -who had resigned- was called by the military junta to govern without Parliament until a new constitution had been drafted. The progressive tax was introduced in this interim period.
[21] It was originally introduced as a multiple-stage sales tax at a general rate of 3% and a 10% rate for luxury commodities. However, by 1969 it had been amended multiple times to increase its revenue and enhance its progressiveness: it had multiple rates ranging from 1% to 70%, with a general rate of 8% (which accounted for 76% of its revenue) (Foxley et al., 1980).

century, mainly focused on raising revenues from the export of mining products. However, with the Great Depression Chile started to follow a different trade policy, mainly focused on import-substitution industrialization: import duties were considerably increased to protect the development of domestic industrialization (together with strong devaluations of the currency)(Ffrench-Davis, 1973). This meant that from 1929 onwards import duties started to play a more relevant role in terms of revenue: they averaged around 20% of total tax revenues for the period 1950-1960 (Arellano and Marfán, 1987, p. 140).

The period from the 1960s until Pinochet dictatorship (1973-1990) can be identified as the **fourth stage** in the development of the Chilean tax system, and it was marked by its emphasis on enhancing revenues and progressivity. PIT rates were increased considerably, and evasion was strongly targeted and reduced. In addition, a wealth tax was introduced with rates of 1.2% to 2.1%.[22] On the other hand, indirect and trade taxes were adjusted to address their impact on lower-income group: import tariffs were low for basic food, and the general sales tax was repeatedly reformed to try to make it progressive (it resulted on basic consumption being exempt and the tax having a very complicated rate structure ranging from 1% to 70%). The result of the period was a tax system slightly progressive which managed to raise twice as much revenues as it had in the past (Arellano and Marfán, 1987).

The **final stage** in the Chilean tax history I consider it to start in 1975 with the introduction of value added tax (VAT) and includes the reforms during the Pinochet dictatorship. The tax system has not suffered further radical changes and its structure remains fairly stable. This final stage is marked by an emphasis on neutrality and a disregard for redistributive goals. Indeed, in 1975 the Chilean tax system was subject to a general overhaul to implement a fiscal policy in line with the Washington Consensus which made the system increasingly reliant on indirect taxation. The 1975 reform included the introduction of a broad base VAT (no general exemption categories) at a single rate of 20% to replace most indirect taxes, together with the repeal of the wealth tax and the exemption of most capital gains from income taxation. On a second reform in 1981 PITs were significantly reduced by lowering the rates, increasing exempt amount and widening the different tax brackets, resulting in high incomes being subject to considerably reduced effective tax rates (Arellano and Marfán, 1987). Efforts to tackle evasion were almost exclusively focused on VAT, resulting in effectively reducing evasion of indirect taxes while evasion of income taxes increased. The third major reform of this final stage took place in 1984, when the income tax system was amended to move towards an expense tax: several tax benefits were introduced to encourage savings, such as tax credit for income invested in securities and term deposits. At the same time, the policy of reducing income tax rates and widening tax brackets continued, further reducing its progressivity. As a result of the 1984 reform the after-tax income of those on the higher tax brackets was increased by 40%, while those on modest income saw no increase at all (Palma and Marcel, 1989).

At the same time, throughout this final stage there was an aggressive reduction in trade taxes, leaving behind the policy of import substitution industrialization. This liberalisation process was undertaken at a pace and to a level then unprecedented: while in 1973 Chile had selective tariffs on imports (with a simple mean of 94%) and several nontariff restrictions, by 1979 it only had a uniform 10% import duty and all nontariff restrictions had been repealed (Ffrench-Davis, 2010). This aggressive liberalisation led to an inevitable loss in revenues.

[22] The legislative debate regarding the wealth tax is another example of the challenges of increasing direct taxation in Chile. The tax was initially proposed with higher rates and as a completely separate tax from the income tax. However, legislative discussion resulted not only in reduced rates but also on the tax being creditable against the personal income tax, therefore massively reducing its revenue and redistributive potential (Ffrench-Davis, 1973).

As a result of this final stage, the Chilean tax system is currently shaped (as previously shown) by an extreme reliance on indirect taxation, low personal income taxation (or any other direct taxes) and negligible revenues from international trade.

II. Applying the bellicist theory and the dependency approach

Based on the above, it remains to be answered whether the theory presented for the inequality/progressivity paradox in Chapter 1 has (good) explanatory power in the case of Chile. To recap, the argument in Chapter 1 was that to understand the emergence of the paradox it is useful to analyse the evolution of tax systems in developing countries through the lenses of the bellicist theory and the dependency approach. Through these lenses three factors emerged as a possible explanations: the lack of experience of total wars, the untimely emergence of a globalised economy and the introduction of VAT (influenced by international financial institutions). I test those explanations against the evolution of the tax system in Chile to understand whether they provide useful insights into the development of its tax system to the current state.

A. The bellicist theory: war and taxation in Chile

Chilean history has been marked mainly by four international wars: the independence war (1812-1826) the war against the Peru-Bolivian Confederation (1836-1839), the Spanish invasion (1865-1866) and the war of the Pacific (1879-1883). However, unlike the fiscal transformation that wars had on many developed countries, Chilean fiscal system did not change as a result of these wars. In what is perceived as a common trend in Latin America, Chilean wars were mainly financed by debt (and to a lesser extent by printing money) since countries were not able to increase their fiscal capacity to meet the resources demanded by military efforts (Centeno).[23]

National accounts show both that Chile: (a) incurred in (mostly) international debt to fund these wars, and (b) its tax system did not go through any major changes or reforms either before, within or after the conflicts. Indeed, during the independence war Chile contracted a one million pounds loan to buy a navy with London merchant bankers Hullett Brothers & Co. (Marichal, 1989, p. 28). Similarly, during the Spanish invasion the Chilean government took out loans for an amount equivalent to almost 2.5 times its total annual revenues. Regarding the Pacific war, in the preceding six years (characterized by increased tension and hostilities) the government took out loans for an amount equivalent to twice its total annual revenues, while in the first years of the war it printed huge amounts of money to finance the conflict (Direccion General de Contabilidad de Chile, 1915).

Of course, incurring in debt during war periods is not unlike the experience of developed countries when financing wars. What is radically different in the Chilean case is that there were no additional tax efforts to deal with the repayment of the loans in the following years: Chilean tax system remained almost exclusively reliant on trade taxes throughout the entire XIX century. From 1833 until 1900 trade taxes fluctuated between 75% to 98% of total tax revenues, averaging 84% (Resumen de la Hacienda…), and the low-yielding domestic taxes were mainly excises and tithes, with a land tax that remained very low throughout the period. As Centeno (2002) highlights, in this case "the fiscal reckoning never came" (p.133).

The little effect of these wars on the Chilean fiscal system has been explained in several ways. Firstly, as in many other events in developing countries' fiscal history, it is possible that they produce hardly

[23] In other Latin American countries printing money was another common response to the fiscal demands of war, thus financing the war with a regressive 'inflation tax' (Centeno, 2002).

any effect on the tax systems because they "came too soon" (Centeno, 2002, p.137): all international wars waged by Chile took place within 60 years of its independence from Spain. As mentioned in the previous chapter, extracting resources through direct taxes requires well-organised state institutions such as a treasury, a tax agency, along with available information on the tax bases (distribution of income and wealth throughout the population), none of which were in place in Chile in the nineteenth century.[24]

Secondly, these wars were very different in their intensity and threat to the population than the 'total' wars experienced by developed countries (Napoleonic wars, World War wars, etc). In fact, Chilean wars were largely conflicts over borders areas and for access to natural resources, and therefore radically different to total wars in which intense ideological and nationalistic rivalries were at stake. As such, they did not represent the same level of threat to domestic elites to elicit their acceptance to increased direct taxation. Similarly, they did not entail massive conscription that would give a strong justice argument to the claim that the economic burden of the war should be borne by the economic elites (Centeno, 2002). This is exemplified by the fact that, in the rare occasions where the government was able to persuade economic elites to pay additional taxes to fund war efforts, it was only able to do so by committing to repay those taxes after the complex financial situation.[25]

Interestingly, the low revenue capacity of the Chilean government is not only explained by the nature of these wars, but it is also arguably the case that Chile (and its rival countries) was involved in some of these wars *precisely because* of its limited taxing capacity. This is more clearly the case with the Pacific war, in which the military conflict was for a region rich in nitrate which was a precious mining commodity at the time. Historical accounts indeed point to the fact that Chile, Bolivia and Perú had strong interest in the disputed region because controlling it would provide an easy source of revenues (Gootenberg, 1993, p.192; Kiernan, 1955, p.14). In fact, after winning the war Chile enjoyed a monopolistic position in the nitrate market raising substantial revenues from export duties on the industry: strikingly, the war not only failed to increase the extractive capacity of the Chilean state, but actually reduced it, as this bonanza led to the entire elimination of direct taxes in Chile for a quarter of a century (Marshall, 1939).

To sum, it seems quite clear that wars waged by Chile were not able to transform the fiscal system in a way similar to that highlighted by the bellicist theory in historical accounts of developed countries (Tilly, 1975; Herbst, 2000; Thies, 2005). Indeed, the analysis may even suggest that the effect has been the opposite in the Chilean case: instead of wars producing a more powerful State, in Chile wars have led only to the burdening of the State with debt (both foreign and domestic) without any subsequent increase in tax revenues to meet the costs of debt servicing in future years. Even more telling, the most significant war in Chilean history led to the removal of all direct taxation for a quarter of a century. It thus made the state *less* powerful by making it entirely dependent on the revenues from the export of a single commodity. This weakness became clear when, 25 years later, the nitrate industry collapsed following the invention of the synthetic nitrate and later the Great Depression. The resulting loss of revenue led to an acute fiscal crisis for the Chilean government: ordinary revenue dropped by two thirds between 1918 and 1921 (Gallo, 2008).

Similarly, earlier wars against Spain occurred at a point where the Chilean government did not have the legal and administrative infrastructure to impose an effective income tax system: it is not surprising, thus, that the only way to raise resources was to commit to repay these 'taxes', which were

[24] Note the difference with the British history, on which first register of assets and wealth for tax purposes go back to the Domesday book in 1086 (Everest-Phillips, 2010).
[25] See footnote 17 above.

urgently required to deal with the fiscal crisis arising from war efforts. It is therefore both the nature of the wars (limited wars lacking the strong political shocks required to exert a "*change in the distribution of political power*"[26]) and its timing within Chilean history (when administrative infrastructure was very limited) that explain why they had such a strikingly different outcome in terms of transforming the fiscal system, and did not generate any sort of move towards progressive taxation as was the experience in many developed countries.

B. The dependency approach

B.1 *Globalization of the Chilean economy*

As I argue in Chapter 1, in the context of the globalised economy that emerged since the 1960s many developing countries were influenced (pressured) to adjust their fiscal systems to an increasing world trade, even though their tax systems may not have been prepared for such a move. The Chilean tax system certainly seems to have been shaped by this influence, as it went through one of the most aggressive trade liberalisation experiences in the period 1974-1979 (Ffrench-Davis). Moreover, the trade liberalisation experience marked a clear break with the previous 40 years in which import tariffs had played a significant role both in terms of revenue and of protecting domestic industry. Indeed, revenues from imports dropped from an average of 20% of total revenues in the in the 50s and 60s (Arellano and Marfán, 1987, 140) to 5% in 1982 (IMF).

In contrast to what happened in most developed countries, this swift drop in import taxes was not offset by an increase in other taxes, so the liberalisation policy merely resulted in a decrease in total tax revenues: these dropped from 25% of GDP in 1975 to just over 21% in 1983 (end of first liberalisation wave) and finally to 16% in 1989 (end of second wave).[27] Chile has never returned to its pre-trade liberalisation revenue levels (Cagé and Gadenne, 2018),[28] and the reduction in revenues also resulted reduced public expenditures, including social programmes to the benefit of poor.[29]

The other difference between the Chilean case and liberalisation experiences in developed countries has to do with its distributional effects. Indeed, Chile is a good example of the asymmetry of distributional outcomes between seemingly similar policies adopted in developed and developing countries.[30] While in developed countries trade liberalisation usually meant dropping duties on imported food stuff (such as the Corn Laws in the UK), the goods more heavily benefited by the Chilean liberalisation were non-food consumption goods which were more heavily consumed by high-income people. Data on the change of import composition following the drop in tariffs clearly show this: non-traditional consumer imports grew by 1,100%, while all other imports only grew 62%.

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[26] Wording taken from the institutional theory of economic development in Acemoglu and Robinson (2008).

[27] Between 1981 and 1985, in the middle of a severe economic crisis, the government decided to raise tariffs to 35% to correct fiscal imbalances. After 1985 the liberalization process resumed in much the same line as previously adopted (Cage and Gadenne).

[28] The decline in total revenues is, of course, not entirely explained by the dropped in import taxes, since this policy was embedded in broader neoliberal policies that also affected other taxes (as it will be mentioned later on).

[29] During the period of trade liberalisation per capita public expenditure in health and education dropped by 16% and family allowances were reduced by a massive 72% (Ffrench-Davis, 2002).

[30] Even if developed countries also undertook liberalisation policies, there are at least three differences that explain the very different distributional outcomes of such policies: firstly, most developed countries already relied to a much lesser extent on trade taxes, so the revenue drop was not a concern (Cage and Gadenne). Secondly, most developed countries were able to adapt the liberalisation process to selectively protect strategic industries (i.e. the US, EU and Japan maintained a relatively high tariff for textiles and clothing, and the latter also protected locally produced processed food through high tariffs). Lastly, patterns of imports/exports were markedly different in industrial nations: developed nations were massive importers of basic foods stuff and exported manufacturers. As a result, trade liberalisation benefitted to a large extent the poorer-households while it did not greatly affect employment since labour-intense manufacturing industry was not the main beneficiary of protectionism at the time.

More interesting, from the main import items of non-traditional consumables, the vast majority was more heavily consumed by the richest quintile (Ffrench-Davis, 2010).[31] Even more problematic is the fact that while low-income households benefited to a very limited extent from the increased imports, they bore most of the economic costs of the liberalisation process: the rapid removal of protectionism for domestic firms led to an abrupt increase in unemployment which affected disproportionally low-income households.[32]

In a nutshell, Chilean entry into the globalised economy in the 1970s was marked by a very aggressive removal of import taxes, which had very concerning distributional outcomes: while the rich benefited the most from an explosion on imports of non-traditional consumables, the poor bore most of the costs due to the massive unemployment arising from the collapse of previously protected labour-intensive manufacturing industries and from the cut in public social expenditure.

The critique of this process in no way means that trade liberalisation should not have been undertaken, but instead that it should have been done in a much more gradual and selective way, ensuring that (i) lost revenue from liberalisation is recovered by other (more progressive) tax sources and does not lead to a cut in public social spending, and (ii) the domestic economy adjusted accordingly to absorb the factors of production (mainly labour) from previously protected industries, avoiding increasing unemployment. However, as mentioned in the previous chapter, taking a gradual and careful approach to matters such as trade liberalisation may prove very challenging for developing countries which are being advised or pressured to undertake such policies by both developed countries (from which they need foreign direct investment) and by international financial institutions (from which they frequently need funds) and therefore Chilean liberalisation experience is not surprising if one looks at the "shock therapy" approach on which the Washington Consensus was advised to be implemented.[33]

B.2 The introduction of VAT in Chile

Simultaneously with trade liberalisation, Chile undertook a major tax reform which featured the introduction of a single rate VAT as its main innovation. The idea was to simplify the indirect system of taxation by introducing a 20% VAT to replace the multiple-rate sales taxes. The government claimed to have designed the new VAT on a revenue-neutral basis, although the evidence shortly showed that was not the case: from the very beginning the VAT raised at least 50% extra revenues than the former sales tax, and its revenue continued to increase steadily during its first 10 years (Marcel, 1985).

The merits of introducing a VAT are undeniable. It provided a much simpler way of taxing consumption than the previous sales taxes.[34] The VAT removed the cascading effects of the old sales taxes, reduced evasion and distortions. From an efficiency perspective, introducing a VAT was

[31] Ffrench-Davis shows that from the 13 main items in this category, the richest quintile consumed a higher proportion than its share of total expenditure in 11 of them. Moreover, in several of these items they were almost the exclusive consumers of such items (for instance, the richest quintile acquired 100% of imported color TVs, 99% of imported vehicles, 94% of imported whisky, 92% of imported cigarettes, etc.)

[32] While in the 1960s the unemployment remained between 4% and 8%, it rapidly increased to 22% following the start of liberalization (1976) (Ffrench-Davis, 1980).

[33] For a deep critique of "shock therapy" economic advise by the IMF to developing countries, see Stiglitz (1998)

[34] The sales taxes replaced by the VAT included (i) a general sales tax with multiple rates ranging from 1 to 70% (with a modal rate of 8%) applied at all stages of production (with no credit mechanism), (ii) a single producers tax at 24% rate for some industries (where avoidance of the multistage sale tax was more likely) and (iii) a 50% special luxury tax (Arellano and Marfán, 1987; and Marcel, 1985).

undoubtedly a great achievement. However, the newly introduced VAT had none of the usual characteristics to deal with the distributional effects of VAT: there were no general categories of exempted goods and no reduced rates for basic consumption items.[35] As mentioned by some commentators, Chile seemed to have followed a Nordic VAT model instead of a European model (Marcel, 1985). The obvious question that immediately arises is why Chile (with its very extreme level of inequality) followed a VAT model designed by the most egalitarian countries in the world (which could, therefore, be less concerned about the distributional consequences of the tax). The question is even more interesting if one considers that the Chilean indirect tax system, up to that point, had been constantly amended in an effort to make it progressive.

To answer that question, the influence of the IMF and the Chilean fiscal situation need to be stressed. The IMF had very close links to Chile since the 1950s, and its creditor role continued throughout the following 3 decades. Indeed, in 1956 Chile was the second country to receive a conditional loan from the IMF. Furthermore, Chile was the first case in which the IMF demanded commitments beyond balance of payment and exchange rate issues, extending its lending conditions to anti-inflationary measures and (more importantly for our topic) to increasing governments revenues (and cutting expenditures) (Frenkel and Avenburg, 2009). This close involvement of the IMF on Chilean public policy continued afterwards. In the 1960s the IMF granted a total of 10 stand-by agreements to two different governments (from the right and the centre-left). Unsurprisingly (given Allende's incompatible ideological orientation to the US foreign policy), there were no loans from the IMF to Chile during Allende's government. As soon as Allende government was overthrown, the IMF resumed (with new vigour) its lending relationship with Chile: it granted a US$24m loan on October 1973, and several loans in 1974.[36] In fact, by the end of 1974 Chile received almost half of the "Food for Peace" grants to Latin America.

The relevance of keeping the IMF satisfied with Chile's policies cannot be stressed enough: not only was Chile in desperate need of financial resources (to tackle inflation and limit a balance of payment deficit), but the IMF support was also crucial to unlock rescheduling negotiations with private creditors and to access World Bank loans (Frenkel and Avenburg, 2009; Kedar, 2019).[37] The crucial relevance attached to IMF support is also reflected in Chile's extremely high degree of compliance with IMF conditionality, which makes Chile one of the countries that has more closely followed the IMF's policy recommendations (Arellano, Cortazar and Solimano, 1987).

Under such circumstances, is hard to ignore the difficult fiscal position in which Chile was placed, with IMF conditioning its financial support to increasing government revenues while at the same time promoting international trade by removing import tariffs. Introducing a broad-based and single-rate VAT seems almost unavoidable under such circumstances.[38] As argued in Chapter 1, these circumstances clearly constrained the political debate that should shape tax policy, and the outcome

[35] Only to make the transition to the new tax smoother, the Chilean VAT temporarily exempted basic food stuff (since the replaced sales tax did not tax them).
[36] Including a US$95M conditional loan requested in December 1973 (after an IMF mission met with Chilean ministers of Finance and Economy) which was granted in January 1974 (Kedar, 2019)
[37] Indeed, debt rescheduling conversations with the "Paris Club" started shortly after the signature of the 1974 stand-by agreement with the IMF.
[38] The influence of the IMF in the introduction of VAT and removal of trade taxes has been widely explored in the literature. See Mahon (2004); Stewart and Jogarajan (2004); Reinsberg, Stubbs and Kentikelenis, (2020).

was a fiscal policy that placed exclusive emphasis on the efficiency side of the discussion and neglected the equity side. [39]

Of course, it could be argued (as it is common in the tax literature)[40]that redistribution could be better served by increasing revenues through a broad-based VAT to fund an expansion of redistributive social programmes. However, in Chile the empirical evidence clearly shows that this was not the case: the introduction of VAT was done without extending public social programmes. Furthermore, per capita social expenditures were reduced at the same time as the tax burden was shifted towards the poor through the VAT (Ffrench-Davis, 2002).[41]

I argued in Chapter 1 that one of the problems of VAT in developing countries is the moment (within their tax systems' development) in which the tax is introduced. The argument is that the VAT is such an efficient tax in terms of raising revenue, that if introduced *before* a functioning and effective PIT system is in place, it may lead to what I called a 'regressivity trap': once VAT is introduced, governments face the very difficult choice of either increasing revenues through the VAT or through other, more progressive, taxes which will inevitably lead to strong political opposition and will require large investments in administrative capacity. That choice usually leads to increasing VAT when additional revenues are required, leaving the PIT in a permanent state of deficiency and underdevelopment. Chile has also proven to be unable to escape from such a difficult position. Although the Pinochet dictatorship has been usually to portrayed as a regime that constantly moved the fiscal system towards less progressivity, the actual policies implemented show a slightly more nuanced picture: in the first year in power (1974) the regime actually increased direct taxes considerably: they strengthened the existing wealth tax, by increasing its rates, broadening the base and eliminating tax credits (since its introduction in 1965 income taxes had been a tax credit against the wealth tax, which considerably reduce its revenues),[42] it revalued real estate for the purposes of property taxes and it increased the PIT rates for the highest levels of income (top PIT rate was increased from 65% to 80%). These progressive tax changes managed to effectively increase tax revenues by 4% of GDP in 1974 (Larraín and Vergara, 2000).[43] Indeed, it was only when the VAT was introduced (December 1974) that the regime could afford to definitely repeal the wealth tax and substantially reduce PIT rates.

Moreover, the clearest sign of the 'regressivity trap' was that as VAT revenues proved to be strong and growing, income taxes were reduced and made flatter: tax reforms since the enactment of VAT continually moved the system towards indirect taxation, reducing the relevance and progressiveness of direct taxes. If we compare how applicable marginal PIT rates evolved in the years following the introduction of VAT, the effect of the 'regressivity trap' seems clear. While the top income tax rate dropped massively (from 80% in 1974 to 50% in 1987), the income threshold to trigger it was gradually increased, making it applicable to a truly insignificant part of taxpayers: while in 1975 someone earning the equivalent to today's £45,000 (making him within the top percentile of the

[39] Of course the debate was already seriously limited by the absence of democratic institutions at the time of introduction of VAT.

[40] See for example IFS *et al.* (2011, chapter 9).

[41] It is interesting to note that while Chile may have followed the "Nordic" version of VAT, it did so without introducing the equity-offsetting elements that were simultaneously introduced in the Nordic countries: while in Denmark the VAT introduction was coupled with increases in transfer and subsidies to low-income households, Chile did exactly the opposite, cutting expenditure in social services and family allowances (Ffrench-Davis, 2002).

[42] The wealth tax had been introduced on an annual basis in 1965, but had been re-enacted every year since. Although Pinochet regime claimed it would repeal it, in 1974 the tax was re-enacted being more progressive (Ministerio de Hacienda, 1978, p.63).

[43] The increase in revenues can only be partially attributed to these tax changes. A relevant part was also due to a decrease in inflation and economic recovery. But the argument I made holds: Pinochet regime was willing to introduce progressive tax reforms to raise revenue, but the introduction of VAT offered an easier way to access revenues.

income distribution (INE, 2020)) would have been subject to the top PIT rate (already reduced to 60% at that point) in 1987 it would only have been subject to a marginal rate of 25% (Arellano and Marfán, 1987). In addition, in the same tax reform that introduced VAT, capital gains were fully removed from taxation and the corporate tax rate was reduced from 35% to 15% (Aninat, 1975).

What is also interesting from the Chilean experience was that the erosion of income tax revenues was not merely a result of a reduction in statutory levels of taxation, but also due to changes in enforcement mechanisms that encouraged evasion and avoidance. Historically, one of the main sources of evasion and avoidance from income taxation in Chile has been through sheltering personal income in corporate vehicles. As a response, since 1964 the retained profits of some forms of corporate vehicles (which were those most susceptible of avoidance) were subjected to final personal taxation. In the same vein, in 1975 the retained profits of companies were liable to a withholding tax (*tasa adicional*) that was credited against the PIT of its shareholders. Both mechanisms had been relatively efficient in tackling avoidance of PIT. Notwithstanding the foregoing, in 1984 (after the VAT had been gradually increasing its revenues from 10 to 12.2% of GDP) both PIT enforcement mechanisms were eliminated.

Thus, the outcome of this 'regressivity trap' in Chile has been distributionally negative in two ways. On the one hand, direct taxes have reduced their relevance from 41% of total revenues in 1969 (Foxley, Aninat and Arellano, 1979) to 29% of total revenues in 1996 (Engel, Galetovic and Raddatz, 1999). On the other hand, the progressiveness of the income tax was massively reduced: this resulted in the richest households gradually increasing their after-tax income by around 40% in the 12 years following the introduction of VAT, while the middle income and poor households saw no change at all. What is also interesting is that the 'regressivity trap' seems hard to escape for governments from all over the political spectrum. Indeed, after the transition to democracy governments from centre left also repeatedly resorted to increasing the VAT to raise additional revenues: in the first year of Aylwin's government, VAT was increased from 16% to 18% to fund additional social services.[44] Similarly, Lagos' social reforms in 2003 were funded by increasing VAT from 18% to 19% (Valencia, 2016).

B.3 Dependency: Conclusion

To conclude this section, from the perspective of a dependency approach examining Chile's position in the global economy provides key insights into why its tax system evolved into one that scores so poorly in terms of progressivity. Its colonial heritage explains why its development was extremely "export-led" in the first century of its history. This development, in turns, made very easy to shape the fiscal system to be extremely reliant on trade taxes, which was a suitable tax base for the interest of a powerful domestic elite.

It is thus not surprising (but certainly interesting) that Chile eliminated the entire direct tax system following its monopoly position as nitrate producer following the Pacific war: as soon as it could afford it, the domestic elite exempted entirely their wealth and income from taxes. The most interesting aspect of this episode is that it brings together both the relevance of the bellicist theory and of the dependence approach: not only did wars failed to produce the required shock that could lead to increase progressive taxation (as it did in developed countries) but the position of Chile as an exporter of primary commodities in the global economy explains both the involvement in the war and the outcome in fiscal policy (completely repealing direct taxation).

[44] Although the 1990 reform also included increases to direct taxes, most of those increased were repealed two years later (Weyland, 1997).

Moreover, this episode may have had a strong impact in the future of PIT for the future tax policy: one of the key things to effectively impose a PIT is to gradually develop the administrative capacity and the required information to effectively enforce any statutory PITs. Repealing all direct taxes in 1891 effectively brought any accumulation of fiscal administrative capacity to an end for the purposes of PIT, ensuring that progressive taxation was not going to be a relevant source of revenues for many decades to come.

The other aspect that is worth highlighting is that the emergence of the global economy was not as untimely for the Chilean fiscal system as it was for other developing nations (mainly African countries, as mentioned by Baunsgaard and Keen (2010)). Indeed, Chile had already suffered from a severe fiscal crisis after the Great Depression due to its extreme reliance on trade taxes. Hence, after such trade taxes were not the predominant source of revenues when Chile liberalised its trade in the 1970s. Consequently, the revenue loss from the liberalisation was relevant, but not as critical as it was in other developing countries.[45]

However, in Chile the benefits from trade liberalisation were drastically different from the experience of developed countries in terms of distributional effects. While the rich benefited the most from an explosion on imports of non-traditional consumables, the poor bore most of the costs arising from the massive unemployment from the collapse of previously protected industries and from the cut in social expenditure imposed by reduced tax revenues.

The globalisation of Chilean economy also seems to have been a relevant (if not one of the main) driver for the introduction of VAT (and more generally, to the move away from direct taxes towards VAT) for two reasons. Firstly, the introduction of VAT was required to compensate the loss of tax revenues arising from the trade liberalisation.

Secondly, globalisation offered an additional argument to move from relying on direct taxes to indirect taxes: under article XVI(4) of the General Agreement on Tariffs and Trade (GATT) countries are forbidden from granting subsidies to aid exporters. However, GATT does allow countries to exempt exported products from domestic consumption taxes ("in amounts not in excess of those which have accrued"[46]). As a result, shifting the tax burden from income taxes to domestic consumption taxes is a very attractive way of implicitly (and legally) subsidising export industries in an effort to give them a competitive advantage. In addition, its credit-invoice method makes VAT the perfect consumption tax for this purpose, since it allows to accurately assess the "amount accrued". Chilean authorities at the time of introduction of VAT were explicit about this goal of introducing VAT,[47] which was also consistent with their broader policy of export-oriented development: VAT not only represented an efficient tax that would raise considerable revenues (to recover loss revenue from trade liberalisation) but it would also allow the government to support the export sector by implicitly subsidising it in an amount equivalent to the VAT that would have been paid if goods were sold domestically.

III. Inequality and the tax system

The last section of this chapter tries to shed some light on the particular level and kind of inequality that we find in Chile, to assess whether the tax system plays a role in it. For this purpose, I will briefly

[45] It did have more serious effects on other spheres, such as unemployment and balance of payments deficits.
[46] Note to Article 1(ii) of the Agreement on Subsidies and Countervailing measures (WTO)
[47] See for instance interviews with Finance Minister Jorge Cauas in October and November, 1974 (contained in Ministerio de Hacienda (1978).

explore three issues: the level of inequality, the shape of such inequality, and lastly the (current and potential) distributional impact of the tax system.

A. Chile's inequality levels

Inequality levels in Chile are very high. Household income inequality is somewhere around 0.52,[48] making it one of the most unequal countries in what is arguably the most unequal region in the world (Atria et. al, 2018).[49] Based on Palma (2019) classification of countries according to their inequality levels, Chile is among 15 countries with "Extremely High" inequality.[50] It is also worth mentioning that the inequality level of Chile is not explained by its level of development: even controlling for level of economic development, most countries in Latin America (and certainly Chile) show very high levels of inequality (Alvaredo and Gasparini, 2015).

However, history shows there were periods in which Chile has managed to reduce inequality. This occurred in two periods, in the 1960s and the early 1990s, in the middle of which there was a sharp increase in inequality during the 70s and 80s. In the first period of equalization, the reduction in inequality came from several policies, but the most relevant was a strong rise in public social expenditure (particularly in health and education) and a land reform. However, reforms to the tax system also considerably contributed to a reduction in inequality by increasing its progressiveness: they included the introduction of a wealth tax in 1965 and strengthening of the PIT by reducing evasion and increasing its rates. As a consequence, tax revenues almost doubled from 1950 to 1968 (according to data in Cagé and Gadenne (2018), total tax revenues increased by 73%) and such an increase was predominantly from rising revenues from direct taxes: revenues from wealth and income taxes doubled, while indirect taxes increased by 62% (Ffrench-Davis, 1973).

Between the first and second equalization periods Chile went through a period of marked increase in inequality during the 70s and 80s. Indeed, economic crises and the neoliberal reforms implemented throughout this period led to a sharp increase in inequality. The causes were several: high unemployment, drop in average and minimum wage, reduction in social expenditures, and a badly handled public enterprises' privatisation process. As mentioned earlier, it also contributed to increase inequality the marked regressivity turn that tax policies took since the introduction of VAT in 1975, which led to an increase reliance on indirect taxes, and reduced revenues and a flattening of PIT. The negative distributional impact of these factors was quite substantial, with the share of expenditure of the bottom 3 quintiles reducing considerably: Q1 saw a reduction of more than 40% (from 7.6 to 4.4% of national expenditure) while Q2 and Q3 dropped 30% and 20%, respectively. On the other hand, Q4 share of expenditure remain fairly stable and Q5 saw a strong increase, from 44.5 to 54.9% of national expenditure (Ffrench-Davis, 2002).

The second equalization wave came in the 1990s, when Chile managed to reduce the very high inequality that was a legacy of Pinochet's dictatorship. The reduction responded to several factors: unemployment dropped, poverty was sharply reduced (from 45% in 1987 to 21% in 2000), social expenditures increased (De Gregorio and Cowan, 1996) and average and minimum wage also

[48] Sources showing lower (and improving) levels of inequality (such as the World Bank) seem to be less accurate since for many developing countries they show consumption inequality based on household survey which present severely under report income at the top of the distribution (Alvaredo and Gasparini, 2015).
[49] Sub-Saharan Africa shows a slightly higher *average* inequality but a lower *median* inequality since the average is driven by the unprecedented inequality of South Africa, Botswana, Namibia, Zambia and Lesotho. Within Latin America, only Brazil, Colombia and Honduras are more unequal than Chile (Alvaredo and Gasparini, 2015).
[50] There is only one higher level in Palma's classification: Obscene Inequality, which is only observed in the 5 countries in Sub-Saharan Africa.

increased (Ffrench-Davis, 2002). Although reduction in inequality is less clear than poverty reduction, it has been estimated that from 1987 to 1996 Gini coefficient dropped from 0.52 to 0.47.[51] Still, inequality at the end of the 1990s was higher than in the 1960s (the reduction during the 90s was insufficient to offset the increase during the 70s-80s). Indeed, the Q5:Q1 ratio worsened from 13.4 in the 60s to 16.3 in the 90s (Ffrench-Davis, 2002). Although survey-based data suggest inequality has continued decreasing in the 2000s, there is evidence from tax data strongly suggesting exactly the opposite: inequality has started to reverse its positive trend of the 90s and has been increasing since the early 2000s (Atria *et al.*, 2018).

B. The shape of Chile's inequality

To understand what role the tax system can play in curbing inequality, it also seems relevant to try to understand what drives inequality in Chile. One clearly positive thing about Chile since the 1990 has been its record fighting poverty: it has been consistently reduced from the peak during Pinochet regime (45%) to 8.6% in 2017 (CASEN, 2020).[52] At the same time, we can see that when inequality deteriorated the most, it was the bottom 3 quintiles that experienced all of the loss (see above data on the increase in inequality in the 70s and 80s). It seems that the middle of the income distribution has been fairly consistent in its share of national income. This seems to confirm the theory of Palma, were he shows that most of the differences in inequality has to do with a "fight in just one half of the population, for just one half of the national income" (Palma, 2019, p.1140): inequality is mainly determined by how half of the national income is distributed between the decile 10 and deciles 1-4. Thus, the "Extremely High" inequality that we find in Chile is explained by the fact that, instead of equally distributing this half (25% of national income for decile 10 and 25% for deciles 1 to 4), the top decile is claiming 38% of national income, leaving only 14% to bottom four deciles.[53]

On the other hand, it has been extensively identified that the very top of the income distribution in Chile exhibit an extremely high concentration. Indeed, the top 1% of the population claims extremely high portions of national income, reaching more than 30%, which makes it the largest share among all the countries for which such estimations are available (Lopez et al., 2013).

If we bring these two elements into play (inequality being mostly a fight between decile 10 and deciles 1 to 4, and the evidence from the top income literature) it seems clear that the crux of the inequality problem is mostly explained by the extremely high concentration of income at the very top of the distribution (i.e. in the top 1% or even top 0,1% or 0,001%) and the very low income share at the bottom four deciles.

C. Is there a role for the tax system?

From the brief analysis of Chilean inequality above, it seems that the tax system does have a potentially crucial role to play. On the hand, the period in which inequality increased the most in Chile's history was identified by marked tax reforms with a regressive bias: as stated above, not only did indirect taxes increased considerably their relevance (and their regressivoty) but direct taxes were

[51] These measures of inequality use a different methodology than the mentioned current Gini (and are likely to understate its level) but the relevant fact here is the decreasing trend during the early 90s.

[52] The pandemic seems to have increased poverty in the past years from 8.6% to 10.8% (Observatorio Social, 2020)

[53] 38% and 14% do not add 50%. According to Palma (2019), this is called a 'second distributional failure': when the share of the top decile is so large that not only shrinks the share of the bottom four deciles, but also reduces the share of the middle deciles (deciles 5 to 9).

consistently reduced and made flatter. No doubt there were many other contributing factors that also explains the deterioration in the distribution, but it is clear that the tax reforms played a relevant part. Similarly, we can see that the fiscal policies in the 60s did achieve to reduce inequality, and a relevant aspect of those policies was to enhance the role of direct taxes and its progressiveness.

It is also worth mentioning that the most relevant gains in terms of distribution of income in Chile have come from the expenditure side (increase in public social expenditure was a cornerstone of the 60s and 90s policy in reducing inequality). Even when the tax system has played an equalizing role (in the late 60s), its impact has always been smaller than the equalizing effect of the expenditure side. This highlights two things: firstly, the tax system remains largely unexploited as a redistributive tool (unlike what some have claimed about the expenditure side).[54] Secondly, given the strong distributive performance of expenditure policies, any tax reform that is progressive should, at the same time, be revenue neutral (at least). Ideally, it would be progressive and revenue enhancing, in which case there could be a double gain. But crucially, it should not be revenue decreasing since the cut in expenditure will likely negatively affect redistribution more than the gains on the tax side.

Finally, we have identified that the inequality problem seems to be concentrated in the bottom 4 deciles and in the top decile (and, within it, mostly on the top 1%). This pattern of inequality seems to perfectly match the features of Chilean tax system that makes it a particularly interesting case of the inequality/progressivity paradox: it relies heavily on a VAT without any feature to address its regressivity (affecting the bottom of the income distribution) and it collects extremely low levels of PIT that is designed in a particularly flat way (even if top statutory rates seem fairly progressive, they are triggered only at very high levels on income, resulting in low effective tax rates, as further explained in Chapter 6).

IV. Conclusion

This chapter addressed two research questions. Firstly, it tested the theory presented in Chapter 1 for the emergence of the inequality/progressivity paradox in our case study. The examination of the historical development of the Chilean tax code suggest that the theory, indeed, explains a good part of the emergence of the paradox. From the bellicist theory we can conclude Chile has never been subject to a strong external shock that could elicit the elite's consent to higher and more progressive taxes. Through the lens of the dependency approach, a few lessons can be drawn. First, the colonial past has influenced the 'export-led' economic development of Chile centred on natural resources. This both explains the involvement in the Pacific war and the very negative outcome for Chile's fiscal history: by winning a monopolistic position on nitrate Chile eliminated all direct taxes for a quarter of a century. Secondly, the trade liberalisation experience took place at unprecedented speed and depth, placing huge strain on public finances that (aided by IMF pressure) led to the adoption of a (very broad) VAT. This took place before the PIT system was properly developed, leading to what I call the 'regressivity trap'.

The second research question of this chapter has been what sort of inequality is present in Chile and whether the tax system can play a role in reducing it. The answer is that inequality is very high and likely to be increasing, and its mainly driven by a huge concentration of the national income on the very top of the income distribution, and a very low level of income at the bottom. The historical

[54] Ffrench-Davis (2002) suggests that the installed capacity of the state for redistributing through expenditures in health and education has somewhat already been used, which will make increasingly harder to obtain additional distributional gains through these channels.

evolution of Chile's inequality also suggest that the tax system can play a key role in tackling this very high level of inequality.

Based on these outcomes, Parts II and III of this thesis will undertake a thorough analysis of the tax system to identify those reforms that can exploit the (untapped) redistributive potential of the tax system, both looking at the indirect tax system in search of efficient ways to untax low-income households (Chapter 4 and 5) and the direct tax system to find efficient reforms to increase the taxation at the top (Chapter 6 and 7). If any of those exercises find that gains can be made on a revenue neutral (or enhancing) way, those identified reforms should help address the massive distributional failure that Chile exhibits.

But before embarking on that search, the next chapter will explore some political constraints that could prevent the adoption of progressive and efficient reforms, trying to provide some advice on how to increase the political feasibility of these tax reforms.

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Chapter 3: Addressing the political challenges for adopting progressive tax reforms

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I. Introduction

The thesis will show two striking findings in apparent tension. On the one hand, Chapter 1 has shown the paradox we found in developing countries, where high inequality coexists with tax systems lacking in progressivity. Chapters 4 to 7, in turn, will identify available tax reforms that can produce significant redistribution at limited efficiency costs. From these seemingly contradicting findings (low tax progressivity in contexts of high inequality, yet available efficient progressive tax reforms) I would expect readers to ask why these progressive tax reforms have not been adopted in the past?

An optimistic view of this work would say that the opportunities for increasing tax progressivity identified in chapters 4 to 7 have not been visible for governments in developing countries, which would make this work a fundamental contribution to the development of progressive tax policies in these countries. I do not share this view. I do think this work can contribute to *increase the visibility* of some available progressive tax policies and to highlight the limited efficiency costs they entail. But it seems extremely naïve to suggest that governments in developing countries simply have not been aware of these (or others) progressive tax policies. Instead, a more reasonable view is that there must be some political obstacles for progressive tax reforms that have prevented a more widespread adoption in developing countries. Thus, the purpose of this chapter is to offer some ideas on what these political challenges are and propose some potential responses to increase the likelihood of implementing such reforms.

The research question for this chapter is the following: what political considerations should policymakers keep in mind in order to increase the political feasibility of progressive tax reform? The research conducted for this chapter is exploratory in nature: the topic is too broad to examine it in detail without devoting an entire thesis to it. This is obviously not the goal of this thesis. At the same time, the political side seems to be too relevant to be simply ignored. So, this chapter is an attempt to find a middle ground. It analyses the political obstacles to provide some (limited) guidance on how to navigate through them. As an exploratory research, the chapter invites further work into this topic which would be a valuable complement to this work.

I will first argue that progressive tax policies should be an attractive public policy to almost any politicians, provided we identify and frame its benefits in a way that fits with their social beliefs or political motivations. The chapter will then analyse why is it that the progressive tax policies do not arise in contexts of high inequality (in contradiction to median voter and optimal taxation theories). I will argue that there is a disconnection between the egalitarian values of the people and their preferences around tax policy, and this seems to be explained by failures on the democratic system. Indeed, a lack of independent media and incentives for 'rational ignorance' make it very challenging for people to seriously engage on tax policy debates. On the other hand, I suggest that at least some consent from the economic elite is required to either approve or sustain progressive tax reforms (Collier, 1999; von Schiller, 2012), and thus we should also focus on how that consent can be elicited. I argue that there are three ways in which this minimal support from economic elites can be obtained, which is to engage with the benefit principle, expand analyses of tax efficiency and by highlighting how progressive reforms also improve horizontal equity at the top of the income distribution. Lastly, I will present a phenomenon that seems to negatively impact support for progressive tax policies from both the rich and the poor, which is the misconception that the people hold about the income distribution (and their place in it). To tackle this, two suggestions will be presented, one which should directly correct these misperceptions (legislative drafting techniques) and one which should indirectly contribute to reducing them (reducing social segregation).

The chapter is divided in 6 sections after this introduction. The second section will briefly argue why politicians should support redistributive policies. The third section will focus on making tax policy discussions more available to mass voters. The fourth section will look into ways for overcoming elites' opposition to progressive tax policies. Section five reflects on the widespread misperception on the income distribution, showing how this might affect support for progressive tax reforms and presenting mechanisms to overcome this. The final section offers some concluding remarks.

II. Why engage in progressive tax policies?

Making the discussion as simple as possible, we can think of three types of politicians. The first type of politician is self-interested: their only motivation is their chances of re-election. The second and third type of politician are altruistic (their main driver is not re-election) but with different beliefs about social policy. The second type believes that economic growth is the main driver of social welfare, so it will be sceptical to redistributive policies (which can negatively affect incentives). The third type believes that redistribution can increase social welfare, so (some) economic growth can be sacrificed in the name of redistribution.

It seems clear that the third type of politician would need little convincing to engage in redistributive policies. But the first and second type are likely to be reluctant to pursue progressive

tax policies, unless we can make a case for redistribution that fits with their worldview. While a full normative analysis of distributional impacts of fiscal policy lies beyond the scope of this thesis, it is worth noting a few arguments that help frame progressive tax policies in ways that are attractive to all three types of politicians.

The self-interested politician can see two benefits from pursuing progressive tax reforms. Firstly, high levels of inequality are a very relevant determinant of political instability. The link between income inequality, social discontent and socio-political instability is well established (Alesina and Perotti, 1996; Dutt and Mitra, 2008). Thus, the self-interested politician of a country with high levels of inequality would be well advised to pursue redistributive policies to reduce social discontent and the chances of political revolt that can remove her from office.

Secondly, the self-interested politician would want to implement social programmes that would increase their popularity,[1] and progressive taxation could provide revenues at little welfare costs to taxpayers (unless the progressive tax is too salient, as in the case of taxes that are not withheld at source). It seems that alternative sources of revenues (targeting the wider population) are increasingly being met with strong popular opposition: social protest have surged as reactions to increases in taxes affecting the broad population (or prices of public transport that are similarly broadly targeted): in the last decades we have seen social unrest being triggered due to increases of broad taxes (e.g. France *gillet jaunes* movement triggered from a fuel tax increase, Kenya's 2024 protest against sale taxes on bread and cooking oil, Jordania's 2017 protests against increase in sales tax), increase in price of public transport (e.g. Brazil in 2013, 2014 and 2024, Chile in 2019), etc. Evidence strongly suggests that the growing ubiquity of social media platforms explains the increase in social protests, given that they reduce the costs of coordinating collective action (Jost, et al. 2018) and make easier the spread of information critical of government (Zhuravskaya, Petrova and Enikolopov, 2020). If that is the case, social unrest as response to revenue increases targeting the broader population should continue to increase in the future, making progressive taxes a more attractive source of revenues.

The second type of politician may not find the previous arguments appealing, as their main driver is not re-election. Thus, the potential social instability or the lack of funding to provide populist public goods would not be their main concern. But the negative link between inequality and economic growth has also been widely studied. Although the evidence is more mixed than in the relation between inequality and political stability, there is strong case for suggesting that reducing inequality should increase growth, particularly in developing countries (Barro, 2000). The evidence is mixed as there seems to be a non-linear relationship between inequality and economic growth (the Kuznets curve)[2]: as poor economies start to grow, inequality rises[3] up to a point, where further economic growth will reduce inequality.[4] What seems uncontested, however is that *sustained* economic growth requires (or demands) a reduction in inequality (Acemoglu and Robinson, 2002; Stiglitz, 2015; Berg and Ostry, 2017). There are several ways in which reduced inequality can lead to economic growth, but we will only mention a few: inequality can be reduced by improving public education, which will produce a more skilled workforce which should increase output. Similarly,

[1] As self-interested, the choice of programmes will be exclusively based on the visibility and popularity the programme would bring, not on welfare-enhancing.

[2] Kuznets (1985).

[3] One way in which inequality initially rises is through education: as school enrolment start from very low, increases in enrolment widen the inequality of incomes in the economy. But once school enrolment reaches a threshold, increases in education both reduce inequality and grow the economy (Arshed *et al.*, 2019).

[4] Although the empirical evidence of this inverted U shape pattern of inequality and development is mixed (Acemoglu and Robinson, 2002).

credit market imperfections will restrict the investment of poor people, so redistributing to the poor would increase the average productivity of investment (Barro, 2000). Lastly, the recognised link between inequality and political instability also affects growth, as the latter reduces investment which is essential for growth (Alesina and Perotti, 1996).

Summarising, progressive tax policies can be attractive to all sort of politicians, if framed in the correct way. In effect, progressive taxation is not only attractive to those that have a genuine interest in redistribution, but can also reduce political instability, it can be a good source of revenues for governments (specially in our current age of ubiquitous social media which increases the risk of social unrest as reaction to broad-based tax/price increases). There are also very strong arguments to suggest that progressive taxation can fuel economic growth, in particular if revenues are directed to the channels through which inequality harms growth (education, creating a credit market for low-income households, etc.).

Now that I have made the case for progressive taxation, the rest of the Chapter will analyse what are the obstacles for increasing the political feasibility of these tax policies.

III. The people's voice

A. Strong egalitarian preferences

When studying fiscal policy in countries with high levels of inequality, the key question is what the preferences of voters are. Do the population in a particular country deem inequality to be unacceptably high? Do they view the role of the state to reduce this inequality? In the context of most developing countries, one might intuitively think that both of these questions would be answered in the positive, given their comparatively high levels of inequality. However, their higher level of inequality is largely due to the different effects of government intervention on market inequality: whilst governments in developed countries are able to substantially reduce the inequality produced by the market, their counterparts in developing countries fail to do the same.[5] This makes arguably possible that the voters' preferences are different in the developing countries. So, the question about the people's perceptions on inequality and the role of the state does become a relevant starting point.

Most evidence of public perceptions strongly suggest that the levels of inequality in developing countries are in stark contrasts with the voters' preferences. Indeed, when analysing the International Social Survey Programme (ISSP Research Group, 2022) public preferences regarding social justice in developing countries seem as (if not more) egalitarian than in developed countries. For instance, when asked how fair was the income distribution, participants from developing countries tended to assess the income distribution as more unfair than participants in developed

[5] Goñi, López and Servén (2011) show that the Gini coefficient for market income (pre-tax) is on average 0.46 in EU (including UK) and 0.52 in Latin America. However, the post-tax Gini drops to 0.34 in the EU, while it remains almost unchanged in Latin America (0.51). The UK, in particular, has the same pre-tax Gini than the average LA country, but it reduces it to 0.36 post-tax.

countries.[6] Similarly, they were more likely to describe their society as one with high inequality.[7] Respondents from developing countries were also more likely to respond that the government should have the greatest responsibility in reducing income inequality.[8]

Evidence from the World Values Survey (Haerpfer *et al.*, 2022) also suggests that social preferences in developing countries (especially Latin America) are more egalitarian than in developed countries. For example, when asked to choose between "freedom" and "equality", 48% of respondents from Latin America chose the latter (only 26% in developed countries).[9] Chile is a particularly clear example of this egalitarian preference, as 58% of respondents chose "equality", while only 38% preferred "freedom".

Moreover, public perception surveys in Latin America clearly show that the level of inequality is unacceptable for most of the population: only 16% of the population regard the income distribution as fair, while 84% consider it unfair. The population in our case study seem to have even more egalitarian conceptions, as 92% of participants from Chile consider the current income distribution as unfair (Latinobarómetro, 2020).[10]

B. Weak tax preferences

Despite the strong egalitarian values that surveys identify within developing countries, there is no clear evidence of these values being translated into progressive tax preferences. Indeed, there is some evidence suggesting the opposite: while general egalitarian values are more strongly supported in these countries than in developed countries, tax preferences seem to be less progressive. For instance, data from the International Social Survey Programme (ISSP Research Group, 2022) show that while in developed countries 77% of the population support progressive taxation, this drops to 69% in developing countries. This is particularly notable, considering that these are *the same set of respondents* that assessed the distribution of income in their countries as more unfair than what was perceived by the *same respondents* from developed countries, and were also more likely to regard the governments as having the greatest responsibility for reducing income inequality. A similar picture emerges when it comes to supporting *regressive* taxation: while regressive taxation is only supported by 2% of respondents from developed countries, support from participants from developing countries is three times higher at 6%.

Similarly, the ISSP also shows that whilst in developed countries only 21.6% of participants think that taxes for the rich are "too high or much too high", that percentage increases to 37.4% in developing countries. Those that agree that taxes for the rich are "too low or much too low" also show that tax progressivity does not seem to be strongly supported in developing countries: among participants from developed countries 50% agree that taxes are too low for the rich, while the

[6] On a scale from 1 (very fair) to 4 (very unfair), mean response in developing countries was of 3.1, while developed countries' mean was 2.9.

[7] Participants were presented five diagrams showing different types of society. Two thirds of the participants from developing countries selected the two most unequal diagrams to describe their society (compared with 54% of participants from developed countries).

[8] 76% of respondents from developing countries selected "Government" as having the greatest responsibility for reducing inequality, whereas that drops to 61% for developed countries.

[9] For the purposes of averaging, I have removed from the Latin American respondents those from Nicaragua and Venezuela, which are largely considered as having oppressive regimes that are commonly considered as dictatorships, which likely means that results are bias towards "freedom" without meaning a lower valuation of "equality".

[10] This is almost equally divided between those considering "very unfair" (41%) and "unfair" (50%).

corresponding share is only 31% in developing countries. This is shocking, given that the tax burden on the rich is much lower in developing countries than in developed countries.[11]

It is hard to reconcile these less progressive views on tax policy with their stronger egalitarian preferences in developing countries, unless we introduce some informational failure into the analysis. The literature has identified some features of "unequal democracies" (Bartels, 2016) that could explain this phenomenon. For instance, Bartels (2016) analysis of US political economy seems to be fully applicable to these seemingly contradictory preferences, as he claims that there are high misconnections between people's values and policy preferences. In particular, his analysis on tax policy preferences claims that public opinion regarding tax policies is very shallow and contradictory, and this is mainly explained by ignorance. Indeed, while analysing one of the most regressive tax reforms of the XXI century in the US, Bartels founds that 40% of respondents had not even thought of whether they favoured or opposed the reform. Similarly, when asked about a general feature of the tax system, most participants answered incorrectly (or directly answered they did not know), with only 14% of respondents answering correctly.

Evidence of this very low levels of knowledge of the tax systems (what has been called "tax literacy") are abundant, and the ignorance levels are particularly high and skewed towards low-income taxpayers when it comes to understanding tax progressivity. Pham *et al.* (2020) analysis founds that tax literacy level is strongly associated with income. Although the overall level of tax literacy that they measure is not very low (50%), it is concerning that when it comes to the specific issue of tax progressivity the tax literacy levels drop substantially (accuracy drops to around 27%) and the correlation with income becomes very strong. Similarly, Gideon (2017) highlights that most people seems not to understand the difference between marginal and average tax rates, which is a strong indication that people fails to grasp the very essence of the current progressive income tax systems.[12] Slemrod (2006) also finds that voters' misconceptions explain the support for regressive tax reforms. He finds that many people supported regressive tax reforms because they (wrongly) thought they would lead to a higher tax burden for the rich (when analysing support for a flat tax or a retail sales tax) or that they would relieve from taxation middle-income families (in explaining support for the repeal of estate tax). Of particular concern is the finding that the misconceptions are negatively correlated with level of education of the respondent, which seems to suggest that those with lower income (likely to be those with lower level of education) are particularly affected by this misconception. The evidence we have from developing countries paint the same (or even worse) picture. Indeed, tax literacy in Chile seems to be both very low and positively correlated with income levels (Biehl, Labarca and Vela, 2019).

These findings on tax literacy are clearly problematic. Indeed, the reason why the median voter theory (Meltzer and Richard, 1981) predicts an increase in redistributive policies when inequality increases is because the median voter will be more likely to support such policies. But if voters are rather ignorant of tax policies, and those around or below median income are more likely to ignore or misconceive which are the more redistributive policies, then this prediction is likely not going to materialise.

The concerning idea emerging from the previous paragraphs (that higher inequality *does not* bring more redistribution) is largely supported by empirical evidence linking different income distributions with redistributive policies: Baremboim and Karabarbounis (2008) show that there are

[11] For on evidence on this lower taxation see Tables 2 and 3 in Chapter 1, and Figures 6, 8, 9 and 10 in Chapter 6.

[12] Only a third of respondents reported a higher marginal than average tax rate, which is necessarily true with progressive rates schedules for income taxes.

two correlations between inequality levels and redistribution, one of which is the positive association between the ratio of earnings of the poorest decile to mean income with the level of redistribution (e.g. the less poor are the poorest, the more redistribution they find). Their explanation for this surprising outcome (as it contradicts the intuitive idea that redistribution should increase when the poorest in society suffer higher levels of deprivation) is that the poorer the poor are, the less political participation (influence) they have.[13] The tax literacy literature offers some further explanation: it might be that the lower political influence is due to this correlation between income and the understanding of tax (or other redistributive) policies. The poorest the worst-off are, the less they properly understand tax policies, and thus the less likely they are to translate their egalitarian values into demands for progressive tax reforms.

The other correlation that Baremboim and Karabarbounis (2008) find is the negative association between the ratio of income of the richest decile to the mean income with levels of redistribution (e.g. the richer are the richest in society, the lower levels of redistribution they find). This surprising outcome is also explained in terms of political influence (participation): the more affluent are the rich, the higher political power they have. This strongly suggest that we need to pay special attention to the elites' views on taxation, as some level of acceptance from this group seems to be a necessary condition for (lasting) tax reforms. Section IV puts forward three proposals to elicit this minimum level of acceptance from the economic elite to progressive tax policy.

C. Connecting egalitarian values and tax preferences

Efforts to increase the progressiveness of tax systems in developing countries would thus benefit from ways in which people's egalitarian preferences could be bridged into their tax preferences. This would give a stronger voice to the people to demand progressive reforms. Although a full discussion on how to bridge the gaps between abstract values and specific policy preferences is outside the scope of this work, I believe there are two areas which would facilitate such connection in the context of tax policy in developing countries, and I will present both of them separately.

C.1 Independent Media and Civil Society

There is a powerful role to be played by the media in order to connect politics to the people. Most notably, media contribute by bringing accountability into democratic systems. But it also plays a key role informing voters about the policies of candidates, and in exposing politicians that do not deliver campaign promises so that it is politically costly. More broadly, the media can also have a key impact at an earlier stage of the political process, by acting as agenda setter by raising the salience of social issues.

However, the role the media play in agenda setting and accountability will only benefit the people when there is powerful independent media. If the media is connected to government or to strong economic groups, the benefits will not accrue (indeed, the effect might be the opposite as media connected to government or economic groups can be used to mislead the population, give higher political power to economic elite, etc.).

Civil society organisations also have a key role to play, in examining policy proposals by candidates and highlighting their strength and weaknesses so that voters can make informed decisions. This is

[13] There is also a clear (though not very strong) correlation between income and the probability of voting: wealthy citizens are more likely to vote, and this 'income bias' seems prevalent in most countries (Matsubayashi and Sakaiya, 2021).

particularly necessary when it comes to complex political issues, such as taxation, which requires technical knowledge and numerical skills to assess the social meaning of specific policies (e.g. what is the distributional impact of the tax reforms? what activities are being incentivised/penalised with the reform? what is being (de)funded with the increased (cuts) tax?). In fact, independent media and civil society groups have symbiotic relationship, where civil society groups help inform and mobilise the media, the media spread the information within the public and civil society groups then organise the public and demand changes (Norris and Odugbemi, 2009, p. 402). A good example of a civil society organisation interacting with the media to inform and bring political accountability to tax reforms is the Institute of Fiscal Studies (IFS) in the UK. The IFS's aim is "*promoting on a non-political basis the study and discussion of and the exchange and dissemination of information and knowledge concerning…existing taxes and proposed changes in fiscal systems*" (IFS, 2018). Moreover, soon into the IFS existence the institution realised that the media had a "*ravenous appetite for original, well researched, material"* into tax policy, and understood that feeding the media with the outputs of such research was "*the most effective way of getting our work across"* (Kay, 2010).

Developing countries, unfortunately, face several obstacles that explain the absence of truly independent media and strong civil society organisations. One of the most important challenges are that the media is either controlled by the state (failing to bring accountability) or by powerful economic groups (failing to act as independent agenda setters and to uncover corporate scandals).[14] For the purposes of helping bring about progressive tax reform that connects with the egalitarian values of the population, it seems that the threat of control from economic groups is the most relevant one. Indeed, economically powerful groups controlling the media can restrain its role as agenda setters in regard to progressive tax policies (Petrova, 2008). As a consequence, if the media is captured by economic groups, it will be unlikely to bring social issues such as inequality and regressive taxation to the top of the political agenda. Empirical evidence supports this, as low media freedom has been shown to be correlated with low expenditures on social programmes (Petrova, 2008).

A deep analysis of how to develop independent media and empower civil society organisation lies outside the scope of this thesis, so just a few comments will suffice. Unfortunately, the literature on the role of independent media highlights that there are no short-term and easy solution to increase the independence of the media. Instead, a valuable insight from this literature is that an essential first step is to recognise the key role of independent media in a democratic society, and therefore place it as an essential developmental strategy. Indeed, acknowledging that an independent media is a core institution affecting governance should produce a holistic approach to media development (Norris and Odugbemi, 2009).

Within that institutional approach to independent media, an essential aspect (from the perspective of aiding the introduction of progressive tax reforms) is to tackle market failures so as to unleash the potential benefits of independent media from the dependence from the economic elite. Unless such market failures are addressed, the media will be unable to give adequate attention to the less well-off in setting the agenda of political discussion. In Latin America, for instance, the media has been found biased, primarily covering concerns of rich and urban audiences, investigative journalism is unlikely to target corporate corruption and editorial partisanship is the norm rather

[14] In Latin America, all but two countries suffer from the threat of "market capture" to independent media (a handful of large corporations control the leading newspapers in most countries) making it unlikely they will play the key role setting the political agenda on social reforms to tackle inequality (OECD, 2022).

than the exception. Chile is no exception, with a large degree of market capture of media,[15] leading to poor citizens' concerns seldomly being covered by the media, where low-income citizens are portrayed as victims or perpetrators of crime (Waisbord, 2009). To tackle such market capture, governments should implement funding schemes to support the emergence and financial sustainability of independent media, including to bridging the finance gap between investment for media technology/outlets and the returns in advertising revenues. In addition, recognising the core institution that independent media is for democratic governance, financial sustainability should not always be a necessary condition for long-term support for valuable independent media. As mentioned by Norris and Odugbemi (2009) the overarching object of policy in this area should be to make media systems as pluralists and as diverse as possible, and this usually requires financial support or availability of grants to small independent media that contribute to such object.

Other policies that seem crucial in this institutional approach to media independence is to implement a regulatory framework that promotes plurality and diversity, such as positive contents obligations, special rules during election periods (requiring equal times for competing parties), "must carry" rules for satellite networks to include independent media and community broadcasters, etc (Raboy *et al.*, 2008, chapter 10). Lastly, state-owned media can also provide a crucial contribution in this area, but only in so far as they are turn into 'public service broadcasters' instead of 'state broadcasters': this distinction emphasis that the latter are under government control, which not only makes them unlikely to contribute to political accountability, but indeed means they are a threat to independent media. In contrast, public service broadcasters, although publicly funded, are independent from government and protected against political or commercial interference and are mandated to serve the public interest (Raboy *et al.*, 2008, chapter 11).

C.2 Deliberative democracy

The other area to which I draw attention is to the benefits that instruments of deliberative democracy can bring to tax policies. The idea of deliberative democracy has been deeply explored by scholars such as Bessette (1980), Cohen (1997) and Fishkin (1997). It comes from analysing the current failures of modern democracies, picking up on some of the same issues highlighted in the previous sections. There seems to be some disconnection between people's values and the choices they make in the exercise of their political rights. In particular, it seems problematic that voters are not informed of policy alternatives on which they are called to decide who should govern. Large parts of the population either do not have an opinion on the main topics on which candidates disagree or their opinion is very superficial and not answering to any coherent reasoning.

And this state of affairs is not due to a lack of cognitive ability from the public, but instead is mostly due to the incentives they face in the current democratic process. Indeed, in modern democracies, where individual voters are certain that their vote will not determine the outcome of elections, there is an incentive to remain ignorant (Fishkin, 1997). Indeed, the rational decision giving the incentives faced is to not spend valuable time and efforts on informing about the political contingency on which elections are decided. Thus, it is precisely because voters are rational that we should expect them not to be informed (a concept called 'rational ignorance'). And this is more so when it comes to complex issues (such as tax policy) where it is more costly to obtain the relevant information.

[15] Other work focusing exclusively on Chile has described the media sector as an oligopoly, with minimal regulation and lacking plurality and diversity (Cornejo and Gonzalez, 2022).

Based on the above, the whole predictions of the median voter model become uncertain. If voters are uninformed about policy alternatives supported by the candidates, and more so when it comes to technical issues such as taxation, the theoretical gains from redistribution for the median voter are unlikely to translate into support for specific progressive policies. Furthermore, as suggested by the disconnection highlighted in sections III.A and III.B above, even when voters do express an opinion about certain (complex) topics, these opinions are likely to be little more than "*top-of-the-head reactions to sound bites and headlines*" (Fishkin, 2018, p. 147). They are not the outcome of informed judgments connecting policies to values held by voters, and are therefore vulnerable to fake news, prejudices reinforced by social media interactions among like-minded voters, and the actions of a persuasion industry that transforms economic power in political power.

Faced with this problem, Fishkin (1997) proposes a very innovative solution. He suggests what he calls the deliberative poll, which is capable of both achieving the democratic ideals of participation and deliberation, which mass democracies struggle to achieve. The idea is to gather a representative sample of the population, large enough for accurate statistical inferences but sufficiently small to enable deliberation (e.g. 500 people should meet both conditions *if properly selected* to be a representative sample of the entire population). Within this group, the incentives for rational ignorance disappear, as participants will have influence on the outcome of the poll, both because they are now part of a much smaller group so their vote has an increased value, and because they participate in discussions and deliberations with the other participants, so the chance of influencing the final decision is much higher.

Additionally, the design of the deliberative poll is intended to facilitate deliberation, so that the poll will measure what the people *actually* think about certain policies after digesting the relevant (and accurate) information, valuing the competing arguments and discussing their positions within a diverse context (and not within like-minded people, which is the discussion that characterises social media, which produces polarisation instead of compromise). In a deliberative poll, the participants would be informed on the relevant issues with balanced briefing materials. They would then meet for a few days (usually 2-3) and would discuss the issues in small groups, they would have questions and answers sessions with experts and politicians. At the end, participants are polled on the issues. The rationale for adopting deliberative polls is that it would provide much needed evidence of what people's opinions are on complex topics *under the conditions* that facilitate the development opinions based on accurate information and proper examination of the topics (Fishkin, 2018).

Evidence on the use of deliberative polls suggest four very attractive outcomes for our research. First, it shows that people change their views when confronted with the relevant information and engaged in discussions in a context of diversity. Thus, it strongly suggests that people's opinions are not fixed or ideologically determined, but instead they are responsive to arguments and factual evidence.[16]

Secondly, deliberative polls suggest that voters (faced with the correct incentives) are capable of engaging with complex policy options, process the relevant information nd display opinions supported with coherent arguments. Moreover, they can provide guidance to governments facing difficult policy decisions, which gives reforms certain democratic legitimacy, which can contribute

[16] Evidence of how effective are deliberative polls in changing participants opinions are abundant. For instance, a deliberative poll in Texas before the 1996 presidential elections showed that on almost half of the policy items discussed (47%) the participants changed their attitudes. Similarly, another deliberative poll in Texas on energy policy showed that support for renewable energies rose from 52 to 84%. Experiences in other countries confirm this: in Japan regarding pensions policies; in Australia and Mongolia around constitutional issues, in UK around political reforms .

to political stability around those topics(Mah *et al.*, 2021). There are a number of examples of successful uses of deliberative polls on complex issues, such as Japan, that developed two deliberative polls to inform the discussions around pension reforms and energy policy (after the Fukushima nuclear disaster); Texas (on energy policy),[17] Denmark (on joining the EU single currency),[18] etc. A similar model has been successfully used in Ireland to deal with other complex issues: Citizens' assemblies, with many features in common with deliberative polls, have been used to consider abortion, climate policy and gender issues, and the assessment of the outcome of these initiatives have been widely praised (Devaney *et al.*, 2020).

Thirdly, and even more promising, some of these cases show that deliberative polling (under appropriate design and with the relevant political commitment) can lead to policy reforms. Indeed, the Japanese and Texas cases are particularly illuminating of the potential of deliberative polls. In Japan, the government faced the challenge of reforming their pension system given its unfitness to deal with an ageing population. There were basically two avenues: either introduce a system of individual capitalisation of pensions or a pay as you go systems to be funded with an increase in consumption taxes. Public opinion on the matter strongly favoured the first option. To inform the reform process, the Japanese government conducted a deliberative poll to get an informed and reflective public opinion on the matter. The outcome was surprising: support for the individual capitalisation option plummeted, while support for increasing consumption tax to fund the pay as you go system increased substantially and became the option favoured by the vast majority, and the government followed the preferences expressed by participants on the deliberative pools.

The Texas case was more modest in its aspirations, but it also produced a significant change in policy. It was convened by the regulated utility companies in Texas, that were legally required to consult public about resource planning decisions. Instead of a simple public consultation,[19] the companies decided to conduct a deliberative poll. Again, the results were surprising: support for renewable energies by participants rose from 52% before the deliberative experience to 84% after it, providing a clear mandate to the utility companies. These companies, in turn, delivered: Texas went from being the US state with the least wind power in 1996 (when polls where convened) to being the one with the most in 2007(Lehr *et al.*, 2003; Fishkin, 2018).

Four, there is evidence that suggest deliberative polls can contribute to implementing progressive tax reforms. Although we have very little evidence of the impact of deliberative polls on tax policy, the evidence we do have suggests that they could help understand distributional implications of taxes and increase support for more progressive tax reforms.

From a theoretical perspective, increasing understanding of tax policy should move their preferences closer to their egalitarian values, as we have seen that people show egalitarian values that seem to be at odds with their preferences on tax policy. From a practical perspective, the use of deliberative polls throughout the world provides evidence that this should be the expected outcome. For example, on the deliberative poll conducted in the US before the 1996 presidential election one of the policy items discussed was the introduction of a flat tax to replace the progressive income tax. Support for the flat tax from the participants dropped substantially from 44% before the deliberative poll to 30% after it, showing that understanding the regressive impact of the policy made almost a third of those supporting the policy withdraw their support. Another

[17] For the experiences of Texas and Japan, see Lehr *et al.* (2003) and Fishkin (2018), respectively.

[18] Andersen and Hansen (2007).

[19] Public consultations have issues of self-selection and are vulnerable to lobbyists and organised interest groups, so they are unlikely to represent the opinions and views of the general public.

example comes from deliberative workshops in England to discuss attitudes around inheritance tax (Lewis and White, 2006).[20] This seems a particularly fit topic to assess the potential effect of deliberative polls on support for progressive taxes, as inheritance taxes are considered one of the most progressive fiscal tools and yet they tend to be very unpopular. And the results that they found are encouraging: those unconditionally supporting inheritance taxation raise from 3% before the deliberative experience to 28% at the end of it.[21]

We also have some evidence coming from our case study. Although developing countries experience with deliberative polls have usually not touched directly on tax policy, when analysing different social programmes discussions around funding alternatives give some indication of what their impact would be on tax policy. The only experience of a deliberative poll in Chile focused on two topics: pensions and health, and only discussing the former we found some evidence on how deliberation affects tax preferences (Fishkin *et al.*, 2021). Indeed, one of the most supported ideas - both before and after the poll- was the creation of a minimum pension for the poorest 80% of the population. Participants initially slightly opposed to the funding of such minimum pension with an increase of VAT. However, after deliberation the opposition for using VAT to fund the minimum pensions became extremely strong. In fact, the deliberative poll questioned attitudes on 25 policy items, and this was the item that showed the strongest decline in support after the deliberations (it became the second least popular of the 25 items). Similarly, another policy item measured support for increasing VAT from 19% to 21% with the additional revenue going to increasing pensions, and the effect of the deliberative experience was similar: although finding a mild approval before the poll, support for the policy plummeted after deliberation (it became the third least popular of the 25 items). This suggest that people, when informed on the nature and distributional implications of VAT understand it will burden those worst off and react by opposing any increases to it (especially Chilean VAT which shows none of the usual feature to tackle regressivity concerns).

To conclude this section, deliberative polls seem to provide a very useful tool to assess *meaningful* public opinion on tax policy. Meaningful because they measure the attitudes after providing balanced information and opportunities to reflect and discuss around the topic, and do not merely pick up superficial attitudes. Both from a theoretical and empirical perspective (though not very strong, admittedly) we can expect that public opinion on tax issues will more clearly align with egalitarian values and would strongly support progressive tax reforms if the population had both the information and the incentives to think around these topics. This is precisely the data that deliberative polls can provide to guide (or, even better, mandate) governments to increase tax progressivity in developing countries.

IV. The importance of the elite

Although, theoretically, in a democratic context (with full enfranchisement) the elite's consent would not be required to implement tax policy, evidence suggest that taxes strongly opposed by the

[20] Although this was not a deliberative poll as the number of participants was too low (so it made statistical inferences about the entire population very uncertain), it shared all the other design features of deliberative polls: questionnaires before and after the experience, balance briefing materials, small discussion groups and Q&A sessions with experts.

[21] Increased support for taxation in general was an outcome of the deliberative experience, as people agreeing higher taxes were worth paying for better public services increased from 59% to 82%.

economic elite are difficult to introduce. And, perhaps more importantly, they are unlikely to survive changes in government without at least some support from the economic elite.[22]

There are several explanations for the key relevance of economic elites, including that politically successful groups tend to be small and related to economic groups (Becker, 1983), that political donations and campaign contributions produce a wealth bias in the political process (Campante, 2011), that political participation is strongly correlated with income (Baremboim and Karabarbounis, 2008), that elites can capture democracy by increasing their de facto political power (Acemoglu and Robinson, 2008), etc.

At the same time, empirical evidence indeed indicates that, unlike the predictions of the median voters theory (Meltzer and Richard, 1981), there seems to be (if anything) a negative relation between the level of inequality and the level of redistribution (Moffitt, Ribar and Wilhelm, 1998; Moene and Wallerstein, 2003). This suggest that economic power translates into political power, and thus the more inequality (more economic power of the richest) the more effective are economic elites to block redistributive reforms.

In light of this evidence, a work on potential distributional gains from progressive tax reforms seems to require some comments on how these tax reform can achieve at least some level of support from economic elites. Absent this minimal support, it is very likely the enhanced political power of economic elites will either entirely block or rapidly repeal progressive taxes. Of course, there is some part of the economic elite that will never support progressive taxes, given that short term self-interest is the sole driver of political preferences for some part of the population, and economic elites will (by definition) pay more under progressive taxes than under other forms of taxation (or under no taxation at all). But there seems to be a crucial part of the economic elite that either has broader factors shaping their political preferences (such as regard for economic growth) or has a more extended horizon for assessing their self-interest (which might make them support a progressive tax reform if it might bring some indirect benefit, such as increased political stability or reduced crime rates).[23] Identifying some of the drivers of this latter part of economic elite is a key task to provide political feasibility to progressive tax reforms.

A. Engaging with the benefit principle

One key issue that emerges from analysing elite's perceptions towards taxes is that this group frequently perceives itself as a net-loser of tax and public spending, and this partly explains their opposition to progressive tax reforms (Atria, 2023).[24] And this is particularly the case in context of very high inequality, where tax revenues are usually insufficient to provide good-quality public services so the rich usually opt-out of public services and turn to the market for better quality. Thus, increases in quality of public services has zero benefit for them.

[22] The experience of Colombia is a good example of the importance of (some) consent from the economic elite for the persistence of progressive reforms. Although in 1974 it was able to successfully introduce redistributive tax reforms, in a couple of years these were almost entirely undone by reform of essential administrative and procedural provisions (Gillis, 1989).

[23] Alt, Preston and Sibieta (2010, p. 1233) provide strong evidence to support the idea that self-interest is far from being the sole explanation for public perceptions on tax policy by the rich.

[24] Atria (2023) analyses elites' perception on redistribution and tax progressivity. He finds that members of the elite usually considers that redistribution should not be an aim of tax policy and that a relevant part of the elite believes that they received no benefits at all from government action.

The lack of support for progressive taxes based on the idea that it brings no benefit to the rich is a clear manifestation of the persistent relevance of the "benefit principle" in determining public attitudes to taxes. This markedly contrast with the little use that the benefit principle has in philosophical justifications for tax policy, given that if taxes should be paid in proportion to the benefits received from government -as the principle dictates- this rationale is totally incompatible with any theories of social justice that conceive (at least some) redistribution as a function of government (Murphy and Nagel, 2002, p. 17).

Thus, although discredited as a foundation for a social justice theory, the benefit principle does seem to have some explanatory power in regard to attitudes to taxation, especially for explaining the opposition to progressive taxes from the elites in contexts of high inequality. This suggests that political feasibility of progressive taxes would increase if areas where the action of government is desired by elites can be identified and somehow linked to tax reforms. This is obviously not an easy task, as high inequality contexts usually mean that most public services are not used by the economic elite.

However, there are two areas where government can offer appealing benefits to the elite, particularly in contexts of high inequality. One of them is on security, and this should be an area where we would expect the economic elite to place a high importance as higher inequality is strongly correlated with higher crime rates (Ousey and Lee, 2012). Security is one of the few public services that the rich are unlikely to self-provide (or at least as efficiently or legally, given the state's monopoly on legal use of force) and government could use it to elicit consent to progressive taxes from the economic elites. Colombia is a good example of this, as is one of the few countries in Latin America with a wealth tax, and part of explanation of its successful introduction in 2002 was that the revenue was earmarked for modernising the army and increase defence expenditure, and the tax law itself was called 'democratic security tax' to highlight this political compromise (Bird and Zolt, 2014; Valencia, 2016). Ideally, the benefit of increasing security expenditures should be only used as a political negotiation tool and should not lead to a strict hypothecation of the revenues, as social welfare might require that (some of) the additional revenues be used for other (more redistributive) purposes (which might, indirectly, also reduce crime rates).

The other area where the benefit principle could be successfully engaged with the economic elite is in connection to political stability. Again, political environment in developing countries tend to be more volatile so the benefit of political stability could be particularly appealing in these contexts. Thus, if the government makes a credible commitment to provide a fiscal contract that will be stable and not subject to reforms at the first change of governing coalition, this could be a benefit that (at least part of) the economic elite might be willing to exchange for an increase in progressive taxes. The political economy of taxation literature does lend support to this idea, as it has been found that political party systems that can reduce the uncertainty of fiscal contracts for economic elites can lead to the acceptance of increased burdens under progressive taxes (von Schiller, 2016). The crucial aspect for applying the benefit principle is that the government can make a *credible commitment* to fiscal stability, which requires a broad political consensus to the tax reform, beyond the governing party.

Obtaining such broad political consensus is challenging. However, experiences in tax reform suggest that one potential way of achieving it might be through the formation of official commissions on taxation to present a package of tax reforms. An example of successful implementation of tax reforms emerging from tax commission is South Africa with the Katz Commission (1994). To achieve a cross-party support, however, the commissions should be integrated with representatives of a broad range of stakeholders. The South African experience is

particularly interesting as it comes from one of the few developing countries that manages to raise a substantial revenues from the personal income tax.[25] One of the factors explaining such an unusual (and much desired) feature is the history of South Africa in setting up expert commissions to assess the need for reform and present proposals (Di John, 2006). Maybe the most relevant was the Katz Commission (1994) which included a very broad range of stakeholders from the most relevant political parties, trade unions, business chambers, etc. If an official commission along those lines were to also include input from a deliberative poll (as suggested in section II.C.2 above), the outcome could be a broadly supported consensus on tax reform that would serve as a credible commitment of fiscal stability, whilst also having democratic legitimacy as it would represent the people's tax preferences.

The abovementioned benefits (security and fiscal stability) are only two examples, and policymakers should keep an open mind. Universal benefits (not targeted to income), cultural programmes valued by the elites, etc, might also serve to overcome political deadlocks, and should be strategically used to elicit the minimum level of consent required from the elites.

To conclude, there is another implication of engaging with the benefit principle. I have previously mentioned *positive* applications of the benefit principle (appealing to security, fiscal stability, universal benefits, etc.), but the principle also has *negative* applications. Indeed, given that the principle continues to have some political traction, it would seem ill-advised to overly emphasise the redistributive implications of tax reforms. Indeed, any redistributive implications of a progressive tax reform might likely be understood by the economic elite as a violation of the benefit principle.[26] As a consequence, they will more strongly oppose to this type of reform, given that highlighting the redistributive effects of the reform will make more politically salient that economic elite would be net-losers of the reform. Instead, alternative narratives should be used that would make the reform more appealing to those at the top of the distribution, such as remarking that the reform would *"make everyone pay their fair share"* to fund public services that attract high public support.[27]

B. Expanding analyses of tax efficiency

Another insight that comes from studies of elites' perception to tax policy is the prevalent concern about efficiency. Indeed Atria (2023) finds that almost half of the respondents expressed tolerance for regressive taxes given that they were "*efficient"* and "*easy to collect*". And these conceptions are clearly related with ideas of labour disincentives of income taxes and the higher administrative costs of enforcing income taxes when compared with consumption taxes, and the VAT in particular (Ebrill *et al.*, 2001).

Both conceptions are to some extent consistent with evidence from the tax literature: additional revenues raised through VAT are likely to create less deadweight loss than other available taxes

[25] Unlike most developing countries, not only does South Africa raise substantial revenues from direct taxes, but the trend is for increasing revenues from direct taxes: from 1981 to 2010 PIT revenues have increased from 16% to 35% of total revenues (Steenekamp, 2012).

[26] Of course the redistributive implication of a tax reform might be entirely consistent with the benefit principle, depending on what is the baseline against which benefits from governments are being measured, and on whether we take into account the diminishing marginal utility of money (Murphy and Nagel, 2002). But the political relevance of the benefit principle is likely to be based on a much simpler (myopic) analysis, likely taking market outcomes as the baseline and disregarding the decreasing marginal utility of money.

[27] Atria (2023) finds that although redistribution through taxation is negatively perceived by the elites, social expenditure is much more positively regarded.

(Keen and Lockwood, 2010)[28] and enforcement of VAT can be quite effective due to its so-called self-enforcement mechanism of credit-invoicing. However, this conception of tax efficiency is rather narrow, and a more comprehensive understanding of 'tax efficiency' could be used to argue that, in many ways, consumption taxes are less efficient than some more progressive taxes.

For simplification, I will frame this discussion about tax efficiency by comparing VAT with personal income tax. There are two crucial aspects that could be integrated into the efficiency analysis informing political discussions that would highlight the shortcomings of raising additional revenues from VAT instead of personal income tax. First, compliance costs should also be considered when analysing efficiency of taxes. Usually, the analysis of collection costs focuses exclusively on administrative costs and does not consider the compliance burdens on taxpayers and these can affect efficiency analysis. Indeed, compliance costs have been found to be the highest with VAT.[29] Crucially, they have also been found to be very regressive, as there are large economies of scale involved in VAT compliance that are not accessible to small businesses. Furthermore, compliance with VAT is so burdensome for small businesses that there is evidence that they end up paying a much higher effective VAT rate because they fail to properly claim their input credit given the high burden of record-keeping required for such claims (Mascagni *et al.*, 2023). In comparison, compliance costs for personal income tax tend to be both smaller and relatively proportionate to tax payments (as the tax due is usually related to the complexity of the tax filing).[30]

Secondly, and most relevant for distributional concerns, the efficiency analysis should also incorporate a measurement of the welfare loss to the taxpayers as the literature on optimal taxation has been very clear to show (Diamond and Saez, 2011). Because, properly understood, efficiency in taxation is about optimising social welfare, and not simply national income. Thus, it needs to take into account the decreasing marginal utility of income (DMUI) when measuring the cost of taxation. To be clear, I argue that DMUI should be included even in a strictly efficiency analysis of taxation. There is no need for equity considerations to make the DMUI relevant for the analysis, as even from utilitarian perspectives on taxation, or a non-egalitarian welfarist perspectives,[31] this is a key consideration in order to maximise social welfare. And using any reasonable estimation of the rate of DMUI will give radically different policy recommendations based on efficiency analysis.

A simple example will show how the outcome of an efficiency analysis can entirely change when DMUI is incorporated. Let us assume that the government needs to raise a certain level of additional revenues, and is considering two alternatives, raising the standard VAT rate by 1% (Option 1) or raising the rates of personal income tax (Option 2).

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[28] It is not the nature of VAT which might make it more efficient than other taxes, as it is essentially equivalent to a uniform expenditure tax. The efficiency gains seem to come from the crediting and refund mechanisms that it uses in applying this expenditure tax.

[29] Compliance costs on VAT are high in part because they require a computation of 'value added' which is not of much use besides VAT compliance. In contrast, income taxes are levied on profits which are a relevant information for all businesses (no matter how small) beyond tax compliance.

[30] A relatively small burden under income tax usually arises from employment income and is withheld at source (entailing a small compliance cost for the employer). Larger taxpayers are likely to be wealthy individuals receiving multiple sources of income and engaging tax advisors to fill their returns.

[31] The key difference between a purely efficiency analysis of social welfare and one that also incorporates equity is that the former gives equal weight to everyone's welfare (it simply aggregates individual welfare), while an analysis incorporating equity considerations will give different weight to the wellbeing of individuals depending on some morally (or socially) relevant characteristics (e.g. a Rawlsian perspective will give the greatest weight to the welfare of the poorest in society, while giving no weight at all to the welfare of the wealthiest).

The following table shows a "standard" efficiency analysis. Using empirical data on Chile regarding the additional revenue that would be raised by the reforms and the taxpayers that would be liable to each, I estimate the efficiency costs both narrowly and broadly (by incorporating welfare losses to taxpayers). I am assuming that the VAT reform is more "efficient" (on this narrow understanding of efficiency) because it is both less expensive to administer and because its taxable base is less elastic to the tax rate.[32]

Table 5. Narrow efficiency analysis

	Option 1 (raise VAT rate by 1pp.)	**Option 2 (raise PIT rates by 3.9pp.)[33]**
A. Additional revenues	CLP 195,054m	CLP 195,538m
B. Administration costs[34]	CLP 975m	CLP 3,911m
C. Deadweight loss[35]	CLP 49,374m	CLP 138,944m
Total efficiency costs (B+C)	**CLP 50,350m**	**CLP 142,854m**

Based on the above, the value we must place on public revenues (resources in the hands of government instead of in private control) should be at least 1.26 times the value in the private sector to guarantee adoption of Option 1 reform. The value on public revenues needs to be much higher in this narrow analysis to justify Option 2, as the efficiency costs are much greater so we would need to value resources in public hands at least 1.74 times their value in the hands of the private sector.[36] The efficiency argument in favour of regressive taxes is very clear under this narrow efficiency analysis, as efficiency costs are almost three times higher for raising additional revenues through the PIT than through the VAT.

The outcome of the efficiency analysis, however, completely reverses once we introduce the welfare loss to taxpayers taking into account the DMUI, as shown in the following table:

[32] For our calculations, we have assumed that the taxable labour-supply elasticity to tax rates is 0.2 in the case of VAT and 0.4 for the increase in PIT rates (these are both consistent with economic estimation of labour-supply elasticity, see Scheuer and Slemrod, (2020) who use a 0.3 and state this is in the middle of feasible estimations). Of course, the underlying labour-supply elasticity is the same, but we are measuring the elasticity of taxable labour supply, so the difference is simply a reflection of our assumption that VAT is easier to enforce and less prone to avoidance and evasion.

[33] The increase in PIT rates has been chosen to achieve additional revenues equal to an increase in VAT rate of 1pp. The rate is higher due to the much narrower base of PIT (only paid by top quintile in Chile) and the more elastic taxable base.

[34] As I am assuming VAT is more "efficient" in a narrow sense, I am calculating additional administration costs at 0.5% of additional revenues in the case of VAT and at 2% of additional revenues in the case of PIT.

[35] My calculation of the deadweight loss is a very simple one, simply reflecting the 0.2 and 0.4 labour-supply elasticities. Thus, it is simply the difference between what the additional revenues would be without any elasticity (simply the mechanical effect of increasing the tax rates to the same tax base) and the estimated additional revenues accounting for the elasticity of tax bases (at 0.2 for the VAT reform and 0.4 for the PIT reform).

[36] To justify a cost of 245,403 for Option 1 and a cost of 338,392 for Option 2.

Table 6. Expanded efficiency analysis with welfare costs under DMUI

	Option 1 (raise VAT rate by 1pp.)	**Option 2 (raise PIT rates by 3.9pp.)**
A. Additional revenues	CLP 195,054m	CLP 195,538m
B. Administration costs[37]	CLP 975m	CLP 3,911m
C. Deadweight loss[38]	CLP 49,374m	CLP 138,944m
D. Taxpayers' loss of welfare[39]	CLP 149,652m	CLP 47,266m
Total efficiency costs (B+C+D)	**CLP 200,002**	**CLP 190,121m**

Not only is now Option 2 preferred in terms of the efficiency of optimising social welfare, but it also requires that we value public resources less than when revenues arise from a regressive tax as in the case of Option 2.[40]

Thus, expanding analysis of efficiency of tax policy to reflect the concern with welfare (and not simply income) can enhance the efficiency credentials of progressive reform and therefore achieve a

[37] Same as in Table 1.

[38] Same as in Table 1.

[39] To estimate the welfare losses to taxpayers I have: (i) allocated VAT burden proportionally to each decile's income (e.g. the bottom decile has a 2.7% of national income, so 2.7% of the additional VAT burden was allocated to it), (ii) allocated the PIT burden to the top 2 deciles -consistent with data on PIT taxpayers in Chile being exclusively from the top quintile- in accordance with their proportion of income within the top quintile (e.g. decile 9 has 29% of the income in the top quintile, so a 29% of the additional revenues from PIT was allocated to it). For the purposes of allocating the tax burden, the top quintile was divided in 4 groups (decile 9, centiles 90-95, centiles 96-99, and top centile), and (iii) the rate of decreasing marginal utility of income used was 1.3, and we have given a value of 1 to the median income. 1.3 is the elasticity of marginal utility with respect to income, which means, for example, that an individual with income of £1,000 has a marginal utility 6.5 times larger than an individual with £5,000 income [(5,000/1,000)*1.3].

[40] The estimations of welfare costs are likely to be conservative for three reasons: (i) on the VAT costs, I assumed that both the rich and the poor consume all their income in commodities liable to VAT (and evidence suggest that a smaller share of the rich's income is subject to VAT), (ii) the 1.3 rate of DMUI seems to lie somewhat on the lower bound of estimates for the actual rate of DMUI (see Acland and Greenberg (2023) who indicate that a reasonable rate is 1.6 and that lower and upper bound estimates go from 1.2 to 2.0), (iii) I assumed liability for PIT increases proportionally for all taxpayers subject to the tax (i.e. everyone's liability increased by 3.9 pp), although a progressive reform would likely make the increases progressive instead of proportional.

certain support from economic elites that seem to be a necessary condition for both the adoption and the persistence of progressive tax policy.[41]

C. Appeals to horizontal equity at the top

The last insight I want to highlight in the search for elites' support to progressive taxes is that many at the top are sceptical about tax progressivity because they perceive that it usually entails some unfairness between those at the top. And this perception is usually accurate in the context of developing countries where income from capital is hardly taxed and where tax progressivity is usually restricted to marginally increasing tax rates on formal employment income. The extent of evasion and avoidance also contributes to this perception of widespread violation of the horizontal equity principle between taxpayers at the top of the income distribution. Studies on elites perception show that this is indeed part of the explanation for the weak support for tax progressivity (Atria, 2023).

Scholars have highlighted the limited use of the concept of horizontal equity as a tool for assessing the justice of a tax system, and I agree with that claim, as it rests on placing a normative value to pre-tax market distributions which they do not recognise (Murphy and Nagel, 2002). Economists have also placed little value on the concept (Kaplow, 2011) and I also share that view.[42] However, there seems to be a political value in the concept, as people (perhaps as a consequence of what Murphy and Nagel call 'everyday libertarianism') do seem to be concerned about it (Lindsay, 2016). Indeed, there is abundant experiences of tax reforms that seem to have been successful precisely because they have appealed to horizontal equity as one of the goals of the reform. Lindsay (2016) surveys these experiences, showing that horizontal equity claims had contributed to successful approval of tax reforms in the US, UK, Canada, Australia and New Zealand.

I agree on his view that arguments around horizontal equity can be a valuable political tool to garner support from (at least part of) political parties with different principles on distributive justice. If we can frame a progressive tax reform in terms of bringing horizontal equity between two groups that support a political party that oppose redistributive taxation (e.g. high earning workers vs high earning investors) this should help obtain at least some support from these political parties.

[41] The estimations of welfare losses presented here are only for the purposes of illustrating the effects of incorporating welfare losses in the presence of DMUI into analysis of efficiency in tax policy and should not be taken as a thorough economic analysis of welfare loss estimations. The analysis does not involve any sophisticated (non-utilitarian or non-additive) social welfare functions. I have, however, used credible values (in terms of income shares of each group, rate of DMUI, and elasticities) to make a realistic illustration.

[42] Murphy and Nagel argue that horizontal equity rests on placing some moral significance on pretax income which they argue it does not have. Kaplow criticises horizontal equity arguing that there are many policies that can make some claim to equal treatment, and that respecting equality in respect to pretax income is not the most appealing. Kaplow supports a utilitarian principle that places equal weight on each person's welfare, and argues that this is a morally superior principle.

V. Misperception on the income distribution

The median voter theory (Meltzer and Richard, 1981) claims that redistribution should increase with inequality, as voters around the median income will have a stronger incentive to demand redistributive policies as mean and median income usually become further apart when inequality increases. However, this prediction relies on people having an accurate perception of the income distribution, and this is not an unproblematic assumption, as I explain below.

At the top of the distribution, we find that obtaining support for progressive reforms from the elites is challenging as they usually consider that their tax burdens are already too high (especially in context of high inequality, where economic elites usually make little use of public services such as public health and education, so they perceive -arguably myopically- themselves as net losers from state action). One factor that might explain this relates to the misperception that the better-off have regarding their place in the income distribution. Indeed, there is abundant evidence that shows that people's perception of inequality is inaccurate, as they tend to perceive lower levels of inequality than the actual levels.[43] One key explanation for this misperception is that people at the top of the distribution usually perceive themselves as being less rich (relative to the rest of the population) than they actually are.

At the bottom of the distribution, it is likely that support for progressive reforms is not as strong as we would expect, because the same misconception happens at the bottom, where poor people perceive themselves as less (relatively) poor than they actually are. The net effect of these opposing misperceptions is that nation-wide there is usually a lower perception of inequality than the actual level of inequality.

There is also evidence suggesting that the extent of misperceptions regarding the income distribution is likely to be larger in context of high inequality. Indeed, the largest misperceptions found by Bublitz (2022) was in Brazil, which was by far the most unequal country in the sample (with a Gini of 0.55, followed by Russia with a Gini of 0.40). The study of misperceptions in Argentina (also a high inequality country by global standards) also found that misperceptions were large and widespread (especially at the tails). Indeed, misperceptions tend to affect the vast majority of those at the top and the bottom, and the size of misperceptions is large: Cruces *et al.* (2023) found that 97% of those in the top quintile had a negative bias of their position in the income distribution (wrongly perceiving they were relatively less rich) and the mean bias was almost of 3 deciles (i.e. on average, those in the top decile would estimate they are actually somewhere around the 7th decile). Those in the bottom quintile were also found to suffer widespread (85% wrongly perceived themselves as less poor) and large bias (mean bias was also of 3 deciles, but in the opposite direction: those in the bottom decile, on average, estimated themselves as being somewhere around the 4th decile).

What does this mean for progressive tax reforms? Crucially, a nation-wide perception of lower inequality usually translates in less support for redistribution. A bias of the poor which leads them to misperceive that they are less (relatively) poor is likely to produce a weaker support for redistribution from them (they would, inaccurately, perceive they might be net losers of increased redistribution from the state, or that state support would not target them. At the top, if those on the top 5% of the population perceives themselves as being in the 7th decile, then it is likely they would more strongly oppose a tax reform that would increase their tax burdens, as it would be

[43] Cruces, Perez-Truglia and Tetaz (2013) present evidence for Argentina, while Bublitz (2022) provides evidence that this is a widespread phenomenon as she shows that misperceptions where present in the 6 countries that she studied.

reasonable for them to think that -being a large part of the population richer than them- tax increases should be targeted at those higher up the distribution. Besides the position in the distribution, these misperceptions also bias the spread of the decile (how far above/below are the rich/poor). This informational failure is socially costly as it prevents welfare-enhancing redistributive policies from arising. So innovative ways of solving it would be desirable.

One way of addressing the misperceptions at the top would be to legislate top rates in relative terms. For instance, instead of establishing that the top marginal tax rate for PIT would apply from annual income of £55,000, establish that it will be paid only by those in top 1% of the income distribution.[44] Thus, if someone within the top 1% of the income distribution perceived themselves to be lower in the distribution, they would by more likely to support this reform. Another way of legislating in relative terms is to establish income thresholds relative to median income. This would correct the bias of the spread of the deciles. So if the top threshold is triggered at 10 times median income, is unlikely many would oppose to that -although they might be unknowingly affected by that threshold if they believe that median income is much higher than it actually is. Some may argue that such an approach to tax legislation would misguide voters, but is that the case when the only reason for this (accurate) information to be misguiding is due to underlying misconceptions of reality? I do not think it is.

There are basically two possible political outcomes from such an approach to legislation: the first outcome is that the biased top 1% taxpayer will eventually realise that she supported a tax increase which directly affected her (under the belief it would not) and, based purely on self-interest, withdraws her support for the tax increase. Alternatively, once she realises that the tax increase to the top 1% actually affects her, she may take a more principled approach, and still support the legislation based on a correct conception of her privileged position within the income distribution. Arguably, the second outcome is less likely, but we should still expect some at the top to take such a principled approach, and this would be a welcomed outcome. In any case, drafting legislation in this way means that the tax law will help correct misconceptions about the income distribution (as both the self-interested and the principled taxpayers will now be aware that their income placed them within the richest 1% of the population) which should overall contribute to the emergence of more welfare-enhancing redistributive policies.

This approach might also be useful when conveying information about the current PIT tax structure to the population. In fact, it is hard to think that most people in developing countries would not be shocked at some features of the rate schedule when stated in relative terms. I will give two examples from the Chilean tax schedule that are likely to surprise the vast majority of the population, and would therefore contribute to tackling the biases at the top: first, that the top 40% rate only applies to the richest 0.1% of the population; second, that someone with enough income to put her in the top 1% of the income distribution pays, at the most (assuming full compliance, that all income is from labour and that no tax deduction are used) PIT at an average rate of 13%.[45]

The opposite approach should be taken when addressing misconceptions at the bottom. Given that poor people tend to perceive themselves relatively less poor than what they really are, discussions around minimum thresholds to relieve from taxation those worst-off should be stated in nominal values. Indeed, for instance, if discussing a tax relief for those on the first two quintiles, it would be better to say that relief will benefit anyone earning less than £4,500 than to say that it would benefit

[44] Based on SII (2022), the lower bound of the top percentile in Chile should be around this value.

[45] These assumptions are unrealistic as the extent of tax exemptions and reliefs within the PIT creates strong incentives to engage in (very easy) tax planning (further details in Chapter 6).

the poorest 40% of the population. Indeed, many of those in the bottom 40% of the population will misperceive themselves as being above that point in the income distribution, but they will know their actual earnings so they will be able to properly assess whether they would benefit or not if the discussion is framed in nominal terms.

On a longer term, there might also be less direct policies that might help tackle these misconceptions. One that might contribute to this is to increase social integration at local levels.[46] Indeed, one of the causes of misperception is social segregation: if poor and rich people are concentrated in different geographical areas (within the country or cities), people will use their specific (non-representative) context as the reference based on which they measure nation-wide inequality, which would lead to biased perceptions.[47] Problematically, social segregation is correlated with income inequality (van Ham *et al.*, 2021), so developing countries (usually exhibiting higher levels of inequality) would tend to be more socially segregated, which in turn would lead (as mentioned before) to higher levels of misperceptions on the income distribution.

Thus, by implementing policies to reduce socio-economic segregation (e.g. social housing projects, planning regulations requiring a share of affordable housing in new developments, etc.) it is likely that misperceptions around the income distribution would be reduced, which should lead to increased support for redistributive polices (including progressive taxation). This would be an additional advantage on top of the many (arguably more relevant) benefits that the literature has identified from reducing social segregation (e.g. producing job prospects, overall health outcomes, reduced exposure to crime for the less well-off).[48]

Empirical evidence supports our argument, showing that reduced social segregation leads both to an increase in the perception of inequality (Minkoff and Lyons, 2019) and to an increase in support for redistributive policies (Minkoff and Lyons, 2019; Franko and Livingston, 2022). Furthermore, the effects of increasing social integration in support for redistribution are large: Minkoff and Lyons (2019) found that those living in places with more income diversity increased their chances of perceiving inequality to be high from 50% (for those living in homogeneous places) to 65%. The effect in terms of supporting redistributive policies, in turn, increased the probability of support from 57% (for those living in homogeneous contexts) to 72% (for those living in places with income diversity). Franko and Livingston (2022) results also point to a sizable impact of social integration in support for redistributive policies.

Obviously increasing social integration is not a tax policy, but it is useful to highlight the positive effects it can have in tax policy. Social integration would increase the visibility of inequality (poverty), which should increase support for redistribution. This would, in turn, facilitate progressive taxation that can both directly reduce inequality and fund social spending (and/or expenditures that can be framed as supporting economic growth, such education, health, infrastructure, etc.).

[46] Which has also been called local economic integration (Franko and Livingston, 2022) or neighbourhood income diversity (Minkoff and Lyons, 2019).

[47] In economic terms, this is referred to "*extrapolation of information from endogenous reference groups*" (Cruces, Perez-Truglia and Tetaz, 2013).

[48] See Franko and Livingston (2022, p. 378) for references to studies on negative effects of economic segregation.

VI. Conclusion

The political aspect of adopting progressive tax reforms in developing countries is probably one of the most challenging. Indeed, economic power usually translates into political power, and this is particularly problematic in contexts of high inequality, as found in most developing countries. In addition, large parts of the electorate do not meaningfully engage with tax policy. Under such conditions, it is challenging to obtain the political support for progressive tax reforms to legislate them or to sustain them in the long term.

The chapter has highlighted three areas where attention should be placed to improve the chances of adopting (and sustaining) progressive tax reforms. The first two of these areas look at opposite sides of the income distribution. At the mid-to-low end of the distribution, the most acute problem for the purpose of progressive tax reforms seems to be that there is a misalignment between the abstract egalitarian preferences and support for concrete tax reforms. This should not be surprising, as tax policies are complex and far from straightforward and political systems of mass democracy produce an incentive for 'rational ignorance'. I present two possible ways to mitigate such disconnection from mass voters to tax policy. One of them is to recognise the key role that independent media and civil society groups have to make distributional implications of tax policy more easily accessible to voters, to inform their voting decisions. The other solution, more innovative, is to use deliberative polls to assess what the people *would think* on tax issues when provided with the relevant information and opportunity to discuss such issues. If properly designed, results from deliberative polls can be valid inferences of the tax preferences of the population so should guide government action and give democratic legitimacy to tax reforms that implement them.

The second area deals with the economic elite's opposition to progressive tax reform. I argue that at least some level of consent from economic elites is required to successfully implement progressive taxes, and I propose three ways of eliciting such minimum consent. The first of those is engaging with the benefit principle, as it continues to have a natural political appeal. The second proposal is to expand analyses of tax efficiency by integrating within them the diminishing marginal utility of income. This seems important, as the economic elite seem to place a higher value on efficiency when determining their tax preferences. Lastly, I argue that progressive reforms efforts should also highlight their value in terms of improving horizontal equity at the top of the distribution.

The last area to which I draw attention is a phenomenon that seems to be affecting both the rich and the poor: a misconception around the income distribution (and their place within it). The misconception shows an opposite sign in both tails of the distribution, which means that the overall perception of inequality is considerably lower than actual levels of inequality. This evidently limits welfare improving progressive reforms, as lower perceived inequality should translate in lower redistribution. To address these misconceptions, I present a direct and an indirect response. The direct response calls for a specific legislative technique that legislate tax increases at the top in relative terms while tax reliefs at the bottom in nominal terms. The indirect response highlights the potential of social integration for reducing the misconceptions.

I do not expect this chapter to solve the political puzzle for adopting progressive tax reforms in developing countries. Multiple additional problems are in the way. But I expect the chapter has unravelled some of the political challenges and will make policymakers proceed cautiously when considering the political aspect of tax reforms. The fact that a tax reform will make most of the

population better off is far from ensuring its democratic support. When considering how to effectively get such support, some of the proposals here presented might be useful.

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PART II – IN SEARCH OF PROGRESSIVITY IN THE INDIRECT TAX SYSTEM

Introduction

Part I has shown that tax systems in developing countries suffer from the inequality/progressivity paradox. One of the main reasons why these tax systems exhibit so little (if any) progressivity is due to their high reliance on indirect taxes.[1] These two characteristics (low progressivity and high reliance on indirect taxes) are rarely discussed together in more than a superficial way. When faced with this lack of (sufficient) progressivity and the predominance of indirect taxation, the tax and inequality literature tend to simply conclude that direct taxes need to be increased and strengthened in order to achieve a more positive distributional result through the tax system. This is, of course, absolutely true. But it has also proven to be a policy extremely difficult to achieve for developing countries, especially in the presence of increased tax competition and capital mobility.

Thus, Part II of this thesis tries to provide a deeper analysis linking these two stylised facts, taking into account the difficulties that developing countries face when trying to increase revenues from direct taxes. This Part identifies actions that are available for developing countries to increase their tax systems' progressivity, when acknowledging that direct taxation is likely to remain only marginally relevant at least in the medium term. Or, from a more optimistic perspective, Part II analyses available avenues for developing countries to increase their tax progressivity, that could be pursued simultaneously with efforts to increase direct taxes (in the event that these efforts take longer than anticipated to produce the intended results). With that goal in mind, this Part is divided into two chapters. Chapter 4 focuses on analysing the distributional gains that could be achieved through reforms to the VAT, which is the main revenue source for developing countries. Chapter 5 analyses excise taxation from the lens of distributional outcomes.

Chapter 4: A distributional analysis of Value Added Tax

Introduction

This chapter explores the VAT in our case study from a distributional perspective. It identifies equity gains that may arise from the implementation of three possible reforms: broadening the VAT base, introducing a preferential rate for necessities and introducing (or increasing) a VAT minimum threshold. To reduce the usual trade-off between equity and efficiency in tax reforms, the chapter imposes three efficiency conditions to the reforms analysed. The chapter finds that in the context of developing countries relevant distributional gains may be achieved through the indirect tax system, casting serious doubts on the usual policy recommendation of disregarding this part of the fiscal system in the efforts to curb inequality.

Analysing empirical data on consumption by income levels in Chile, I find that the analysed reforms could achieve a considerable Gini coefficient reduction of 2 pp. The chapter also highlights that developing countries should not simply follow the practices of advanced economies in their efforts to

[1] While OECD countries, on average, collect 31% of its revenues from indirect taxes (OECD, 2020a), developing countries collect substantially more (50% in the case of Latin America, and 52% in the case of African countries) (OECD, 2020b; OECD/AUC/ATAF, 2020). OECD average has been calculated removing members from LAC.

reduce the regressivity of the indirect tax system, and a comparison with the UK is made to highlight this point.

The chapter is divided in seven sections, with the first briefly explaining why indirect taxes are not usually considered in the search for tax progressivity. Next, section II briefly describes Chile's VAT to provide the background for the reforms that are analysed. Section III focuses on the distributional potential of broadening the base of VAT, while the following section analyses the possible gains from introducing preferential VAT rates for necessities. Section V deals with the last reform analysed in the chapter, which is the introduction (or increase) of a VAT threshold and its impact in the equity of the system. Section VI brings together the distributional results from the reforms analysed to show their overall impact on the level inequality of a country, while the final section offers some concluding remarks.

I. The weak case for progressive indirect taxation in the literature

A. The argument from optimal taxation theory

Despite their massive importance in the tax mix in developing countries, it is commonly argued that tax progressivity should not be pursued through indirect taxation. Instead, equity goals should only be addressed through direct taxes on income and property, and this is a powerful and well-grounded argument building on lessons from the theory of optimal taxation. Starting from Atkinson and Stiglitz (1976) and continuing with others such as Deaton (1979) and Deaton and Stern (1986) optimal taxation theory proves that, under certain assumptions, uniform (or no) commodity taxation is optimal.

The intuitions behind such results are hard to challenge: while the Ramsey's inverse elasticity rule suggests a higher taxation on price-inelastic goods (which tend to be necessities), the practical implication seems unclear when including distributional objectives implying a lower taxation on goods consumed more heavily by those with high net social marginal utility of income (most likely low-income households tending to spend larger portions of their income on necessities). As highlighted by Crawford, Keen and Smith (2010) the case for differentiated commodity taxation is further complicated when we introduce cross-price elasticities into the analysis: there is little point on heavily taxing price-inelastic goods to reduce the deadweight loss of the tax system, *if* the increase in taxation of that good results in a reduced consumption on some other (more elastic) good. The key rule, then, is not the price-elasticity of a commodity but rather their complementarity with leisure: since the tax system distorts choices away from labour (due to the unfeasibility of taxing leisure) it would be optimal to indirectly tax leisure by imposing a higher burden on the consumption of those goods that are complimentary with it.

More problematic for the case of differential for commodity taxation is the existence of an efficient and progressive income tax and benefit systems, which have proven to be more efficient in achieving the distributional objectives. The intuition behind this is again quite robust: even if low-income households spend larger portions of their income on essential commodities, in *absolute* terms rich households still consume more of those essentials. Hence, a tax break on those items would benefit more, in *absolute* terms, the rich than the poor, which highlights how blunt a tool for redistribution commodity taxation is. Thus, under those circumstances the only argument for rate differentiation would be to discourage leisure to offset the labour discouragement resulting from the rest of the tax system. However, as mentioned by Crawford, Keen and Smith (2010) not only it is not clear which commodities are

complimentary with leisure, but it also seems that the efficiency gains would be small, and therefore unlikely to be worth the administrative and compliance costs that it would entail.

B. Does it hold in developing countries?

The analysis, however, seems to change in the context of developing countries. There are least three reasons which justify revisiting the case for equity-enhancing reforms to commodity taxation in developing countries. In the first place, as shown in Part I inequality is a much more pressing issue and therefore the gains from redistribution could be larger than in developed countries (see Table 1 in page 6). Thus, gains from reducing such extreme inequality should be larger and might outweigh the bluntness argument against progressive reforms to commodity taxation.

Secondly, there is a theoretical argument that product diversity in an economy increases with income inequality (Gabszewicz and Thisse, 1979). This, in turn, is likely to translate into increasingly different consumption bundles between households at different levels of income. Although empirical evidence is scant on the relation between differences in consumption patterns and inequality levels, there is evidence showing that inequality is correlated with product diversity: an increase in the level of inequality of a country (maintaining its income fixed) leads to an increase in product variety (Falkinger and Zweimüller, 1997; Pennerstorfer *et al.*, 2020). This evidence hints at the possibility that the composition of consumption bundles among different income groups is increasingly divergent as inequality increases. Thus, in contexts of extreme inequality it is likely that differentiated taxation of consumption might be a more targeted distribution mechanism than in countries with more modest levels of inequality.

In addition (and the most relevant argument) one of the crucial conditions on which the theory of optimal taxation advocates for uniform commodity taxation is hardly ever met in developing countries: efficient and progressive income tax and benefit systems are something seldomly found in developing countries. Indeed, personal income taxation (PIT) is particularly irrelevant as a revenue tool in these countries, and thus unlikely to be an effective device to bring the desired progressivity to the tax system. In Latin America, revenue raised through the PIT amounts to barely 8.7% of total tax revenues (OECD, 2020b). Sub-Saharan Africa also raises limited revenues from PIT, averaging 15.7% (OECD/AUC/ATAF, 2020). This compares quite poorly with OECD countries, where 25.6% of their taxes are raised through the PIT (OECD, 2020a).

Even more problematic is the relation between PIT and indirect taxes, as the PIT is supposed to offset the regressivity of indirect taxes: while in OECD countries revenues from PIT represents 86% of indirect taxes, in Latin America they represent merely a 17% and in Sub-Saharan Africa they amount to only 30% of indirect taxes. Furthermore, our case study represents a drastic example of these tax systems highly skewed towards indirect taxation: revenues from PIT in Chile represent barely a 7% of total taxes, amounting to less than 13% of the revenues collected through indirect taxes (OECD, 2020a; OECD/AUC/ATAF, 2020).

These uninspiring data regarding PIT revenues hide another problematic issue: the limited revenues raised through PIT seems to be at least partly explained by the fact that it represents almost exclusively a withholding tax on labour income in the formal sector, which is considerably smaller than in developed countries (Bird and Zolt, 2005). This not only limits its redistributive potential (as income from capital -

concentrated in richest households- largely escapes taxation)[2] but it also entails a serious violation of the horizontal equity principle of taxation (as households with similar income will face radically different tax burdens if operating in the shadow economy, formal economy or deriving their income from capital rather than labour).

Based on these reasons, this chapter explores the idea that equity enhancing tax reforms to the indirect tax system might offer some much-needed distributional gains in the context of developing countries. In order to perform such exploration, the chapter will use Chile's VAT as a case study to highlight the available gains that can result from equity-inspired and evidence-driven tax reforms to indirect taxation.

C. The efficiency requirement for the analysis

However, a valuable lesson from tax history is that equity enhancing reform should keep an eye on the efficiency costs that they entail. Indeed, in the pre-VAT era when sales and turnover taxes were the main levies on consumption, they became so incredibly complicated (in many cases due to equity-enhancing reforms) that there was a consensus that they were unsustainable.[3] Thus, when VAT appeared as an alternative, governments across the world swiftly repealed their turnover systems and replaced them with VAT.

For this reason, the analysis of redistributive reforms to VAT will be qualified by an efficiency requirement imposing three conditions: first, a 'targeting condition' requiring any reform to be sufficiently well-targeted so the benefit arises predominantly (in absolute terms) to the less well-off. Second, a 'revenue neutrality' condition requiring any potential reform to be at least revenue-neutral, since the expenditure side also offers good redistributive potential (see section III.C of Chapter 2). Lastly, a 'simplicity condition' requiring avoiding over-complicating the VAT system while trying to reduce distortions of competition. Thus, distributional gains will be balanced against the complexities and distortions that they would entail, and only those that result in a more positive outcome in that balancing exercise will be argued as worth pursuing.

II. The VAT within Chile's tax system

The VAT is by far the most relevant source of public revenues in Chile. During the 21st century, it has raised on average 39% of total taxes. And this relevance is not declining as the last 5 years have seen an average of 41% of tax revenues raised through this tax (SII, 2022).

VAT was introduced in the early years of the Pinochet dictatorship as part of the economic reforms that closely followed the "Washington Consensus". It was to replace the convoluted sales tax that operated from 1954 until 1975, and immediately proved a powerful source of revenue. Given this context, it is not surprising that the exclusive focus of VAT has been on its efficiency: it was introduced (and remains) with a single rate that has been set on 19% since 2003, and there are no broad categories of exempt items.

[2] This is particularly problematic from a distributional perspective as capital (wealth) is much more concentrated that income (see for instance Roine and Waldenström, 2015).

[3] The efficiency problems of indirect taxes before VAT can be summarised as: (i) cascading effects, (ii) complexities from several different rates coupled with complicated tariff variations, and (iii) obstacles to exports due to non-neutrality of sales and turnover taxes.

Consequently, Chilean VAT has none of the common features that try to deal with the regressivity concerns of this tax: it has no reduced rates for any necessities, nor are any of them exempted.

This broad characterisation of Chilean VAT seems to suggest that it is in line with the recommendations of the theory of optimal taxation, as mentioned earlier. However, at least three aspects of Chilean tax systems make extremely doubtful that its design is close to optimal. First, there are many particularities of Chilean VAT which are frequently overlooked that make it fall well shorth of being a "uniform tax on consumption". Most importantly, there are several 'minor' exempted categories which makes the tax considerably differ from the "uniform commodity tax" advocated by the theory of optimal taxation. In contrast to most VAT systems in the world, none of these exemptions respond to the alleged regressivity of VAT.

Secondly, the rest of the tax systems looks significantly different from what the theory of optimal taxation assumes as a condition for the optimal uniform commodity taxation, the most significant difference being that the PIT shows little progressivity and even less efficiency as a revenue tool. Indeed, even though the statutory top rate of the PIT is set at 40% (seemingly close to world-average for PIT) the structure of the tax makes that the effective tax rates are considerably lower even at extreme levels of income. Indeed, someone who is in the top 1% of the income distribution in Chile is only taxed at a marginal rate of 30.5%.[4] Furthermore, due to the multiple and wide tax brackets, people just inside the top 1% would be subject to an effective tax rate averaging barely 13%.[5] In addition, the exempt income under the PITis set at a relatively high level, which means that around 80% of adult population are below it.[6] Thus, the PIT not only is incapable of bringing *any* progressivity within such a massive part of the population, but it is also only able to bring very modest progressivity within the richest 17% of the income distribution.

Lastly, Chile's VAT does not have a minimum sales threshold below which businesses are not required to charge VAT.[7] This opens the possibility of a potential reform that could achieve a "double-dividend" in terms of enhancing both the efficiency and the equity of the tax. From an efficiency perspective, there is considerable literature arguing in favour of having a minimum threshold leaving small firms out of the scope of the tax.[8] In addition, if low-income households are more intense users of these small businesses, the introduction of such minimum threshold would also (partly) remove a share of their consumption from the VAT net, increasing the equity of the tax. This will be further explored in section V below.

These three aspects of the Chilean tax system suggest that an equity-focused analysis of possible VAT reforms might show available distributional gains worth pursuing, particularly in a context of a tax system

[4] According to data published by Chile's tax authority, to trigger the top marginal income tax rate of 40% a taxpayer would have to be within the richest 0.08% of the adult population (SII, 2022).
[5] This estimated ATR should definitely be considered a higher bound of the *actual* effective rate, since it is calculated assuming full compliance and that all income is from labour subject to the general tax schedule and that the taxpayers does not use any of the multiple exemptions, reliefs and preferences in the PIT (see further details on the PIT and its wide ranging exemptions and preferences in Chapter 6).
[6] Population statistics from INE (2017); and number of taxpayers information from SII (2022).
[7] There is a simplified VAT system for small traders, based on the payment of a fixed amount depending on the level of output. However, it is rarely used as it usually result in a higher tax burden than it would result from the general system (Resolution 33 of 1977 of the Chilean Tax Authority).
[8] Mirrleess *et al.* (2011, p.178), Keen and Mintz (2004), Ebrill, Keen, Bodin *et al.* (2001), Kanbur and Keen (2014).

that scores very poorly in any measure of tax progressivity.[9] Thus, the next 3 sections will analyse the equity gains that could result from three of such reforms.

III. VAT Base-Broadening Reforms

A. Potential Distributional Effects

Although Chile's VAT is usually described as a general tax on consumption at a single rate of 19%, there are several exemptions within the tax code. Some of the exemptions are common structural exemptions within VAT regimes (such as financial services) while other are specific to Chile (such as sporting events). The most relevant exemptions relate to cultural[10] and sporting events, passenger transport services, certain insurance services (life insurance and some property insurance), television and radio services, news services, second-hand vehicles, education and financial services. In addition, there is a wide range of services that escape taxation, such as hairdressers, legal and advisory services, gyms, dental services, etc.[11] In addition, any services 'individually' provided (even if the provider is aided by his family or an assistant) where physical effort predominates are also exempt. It is difficult to identify an underlying principle for these exemptions, although some seem to respond to a logic of merit goods (education and cultural events) and some due to the complexity of taxing them (insurances and financial services).

What is particularly interesting about these exemptions is that most are regressive: they benefit items more heavily consumed by the well-off. Thus, there also seems to be a case of reaping double dividends with base-broadening reforms to Chile's VAT, since it would enhance both its efficiency (by reducing distortions in consumption choices) and its equity (since the incidence of the reform would be progressive, as it will be shown). The regressivity of these exemptions is evidenced by data on their consumption by income levels, as shown in Table 7.

Table 7: Currently exempted items and their pattern of consumption

[9] Studies on tax incidence in Chile consistently show that it is slightly regressive or neutral at best. Indeed, Larrañaga et al. (2012) conclude that the combined effect of indirect and direct taxes in Chile is to increase Gini by 2 pp., while Goñi, López and Servén (2008) and Engel, Galetovic and Raddatz (1999) find that the tax system increases Gini by 1 pp.

[10] Article 12, letter E, no. 1 VAT Law exempts cultural events if they are '*sponsored by the Secretary of Culture*' (CL: DL 825 Ley Sobre Impuesto a las Ventas y Servicios, 1974 [Tax Law on Sales and Services]). However, this sponsorship requirement is little else than a formality mostly to ensure participation of local artists.

[11] Chile VAT law is convolutedly drafted when it comes to defining services under its scope. Only services arising from the performance of activities under no. 3 and 4 of article 20 of the Income Tax law (ITL) are within scope. The ITL refers in no. 3 to industry, commerce, extractive activities, financial and insurance activities, construction, etc. and in no. 4 to brokers, education institutions, maritime trade, hospitals and entertainment enterprises. Thus, the general rule is that any service not within these activities will be exempted from VAT, unless a specific provision brings it into the tax. Conversely, many services within these activities are exempted by specific provision contained elsewhere in the law (i.e. financial services, education services, etc.).

Exempted item	Consumption by quintiles of income[12] (CLP m)				
	1st quintile	**2nd quintile**	**3rd quintile**	**4th quintile**	**5th quintile**
Sporting events	1.4	2.3	2.8	6.1	22.9
Cultural events	1.3	1.7	3.4	5.1	12.6
Transport	35.6	42.1	46.8	46.7	62.3
Exempt Insurances[13]	1.9	3.0	4.9	12.9	46.4
Education	35.6	42.3	51.0	78.8	155.2
Financial services	4.0	5.6	8.0	16.7	47.0
Second-hand vehicles	6.7	11.8	12.0	23.7	64.4
Medical services	8.6	14.1	19.4	27.8	71.2
Dental services	8.2	6.7	8.4	17.7	26.9
Hairdresser	0.8	1.6	1.8	4.2	12.4
House-related services	2.1	2.5	4.2	13.8	55.5
Domestic services[14]	1.0	1.0	1.6	5.9	32.5
TOTAL	**107.2**	**134.7**	**164.3**	**259.4**	**609.3**

Thus, for every £1 forgone in taxes due to these exemptions, almost half benefits the richest quintile households, while the poorest benefits only an 8%. The other side of the coin is, of course, that a reform bringing these exemptions into the VAT net would be clearly progressive since half of the additional tax would burden the richest quintile of the population.

Some readers might not be surprised by these results. After all, it is common that on almost any consumption item the rich will spend more in absolute terms as they have a higher overall spending power (especially in high inequality settings). However, the regressivity of these exemptions also holds on relative terms: they also make up a larger portion of the total consumption of the high-income households compared with low-income household, as Table 8 shows.

[12] INE (2018).

[13] Exempt insurance are life insurance and earthquake insurance. Expenditures on these items has been calculated as indicated in Annex 1.

[14] As most domestic services are provided by individuals which are likely to be below the minimum threshold suggested in section V of this article, I have only included 30% of the value of this category of consumption.

Table 8: Currently exempted items and their pattern of consumption relative to expenditure

Exempted item	Consumption by quintiles of income[15] (% of total household expenditure)				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Sporting events	0.23%	0.31%	0.32%	0.51%	1.04%
Cultural events	0.22%	0.23%	0.39%	0.42%	0.57%
Transport	5.98%	5.66%	5.33%	3.89%	2.84%
Exempt Insurances	0.32%	0.40%	0.56%	1.08%	2.11%
Education	5.99%	5.69%	5.82%	6.56%	7.08%
Financial services	0.68%	0.76%	0.91%	1.39%	2.11%
2nd hand vehicles	1.13%	1.58%	1.37%	1.98%	2.94%
Medical services	1.45%	1.90%	2.21%	2.31%	3.25%
Dental services	1.38%	0.90%	0.96%	1.48%	1.23%
Hairdresser	0.14%	0.21%	0.21%	0.35%	0.56%
House-related services	0.36%	0.33%	0.48%	1.15%	2.53%
Domestic services	0.16%	0.14%	0.18%	0.49%	1.48%
TOTAL	**18.03%**	**18.12%**	**18.74%**	**21.60%**	**27.77%**

The failure to bring these items into the tax net means that 28% of consumption of the richest households goes untaxed, while it only represents a tax break for 18% of the consumption of the poorest households.

Furthermore, if equity is the guiding principle of a tax reform (as it arguably should be in countries with high levels of inequality) the analysis could be much more granular. Indeed, the only exemption listed above which is progressive (in relative terms, exempting a larger share of consumption of the bottom quintile) is transport. Thus, removing that specific exemption would arguably not enhance the equity of the system, even though in absolute terms the top quintile receives almost twice as much of the benefit than the first quintile. However, transport services come in wide different varieties, from an extremely crowded bus commute to work to a luxurious first-class flight to a holiday destination. The consumption patterns of these two transport services are likely to be in stark contrast. Without needing to go into such extreme scenarios, the following table shows how diversely distributed among income level are different transport services.[16]

Table 9: Consumption patterns of different type of transport services

Exempted item	Consumption by quintiles of income[17] (CLP m / % of total expenditure)									
	1st quintile		2nd quintile		3rd quintile		4th quintile		5th quintile	
	CLP	%	CLP	%	CLP	%	CLP	%	CLP	%
Taxi services	1.4	0.23%	2.3	0.31%	2.4	0.28%	4.0	0.34%	8.1	0.37%
Air transport	1.1	0.18%	1.3	0.18%	4.6	0.53%	6.5	0.54%	28.1	1.28%
Bus services	8.7	1.46%	7.6	1.02%	6.7	0.77%	5.4	0.45%	2.2	0.10%

[15] INE (2018).

[16] There are others, relatively irrelevant, forms of transports which have been left out of the disaggregated analysis of transport services (such as rail services, school bus services, etc.).

[17] INE (2018).

Thus, while exempting taxi services and air transport is regressive both in absolute and relative terms (especially the latter, where more than 2/3 of the forgone tax benefits the richest quintile) exempting bus services is actually progressive (also both in absolute and relative terms). This shows two things: firstly, there seems to be a good deal of potential for redistribution through indirect taxes if tax policy follows detailed evidence on consumption patterns. Secondly, it is important to look within the broad categories of consumption since divergent distributional patterns seem equally likely to be found in the type of consumption within a category than between different categories. There is, however, a limit on the level of granularity: the 'simplicity condition' requires that resulting tax needs to be workable and competition between close substitutes should not be distorted. But taxing air transport (and arguably also taxi services, though less obvious)[18] and not buses does not seem to conflict with either such limitations.

By replacing the general category of "transport" by the more regressive items within it, the result of a reform removing these exemptions looks indeed very progressive, as Table 10 shows.

Table 10: Incidence of proposed broad-base reform

Exempted item	Consumption by quintiles of income[19] (CLP m / % of total expenditure)									
	1st quintile		2nd quintile		3rd quintile		4th quintile		5th quintile	
	CLP	%	CLP	%	CLP	%	CLP	%	CLP	%
Sporting events	1.4	0.23%	2.3	0.3%	2.8	0.3%	6.1	0.5%	22.9	1.0%
Cultural events	1.3	0.22%	1.7	0.2%	3.4	0.4%	5.1	0.4%	12.6	0.6%
Taxi services	1.4	0.23%	2.3	0.3%	2.4	0.3%	4.0	0.3%	8.1	0.4%
Air transport	1.1	0.18%	1.3	0.2%	4.6	0.5%	6.5	0.5%	28.1	1.3%
Exempt Insurances	1.9	0.32%	3.0	0.4%	4.9	0.6%	12.9	1.1%	46.4	2.1%
Education	35.6	5.99%	42.3	5.7%	51.0	5.8%	78.8	6.6%	155.2	7.1%
Financial services	4.0	0.68%	5.6	0.8%	8.0	0.9%	16.7	1.4%	47.0	2.1%
2nd hand vehicles	6.7	1.13%	11.8	1.6%	12.0	1.4%	23.7	2.0%	64.4	2.9%
Medical services	8.6	1.45%	14.1	1.9%	19.4	2.2%	27.8	2.3%	71.2	3.2%
Dental services	8.2	1.38%	6.7	0.9%	8.4	1.0%	17.7	1.5%	26.9	1.2%
Hairdresser	0.8	0.14%	1.6	0.2%	1.8	0.2%	4.2	0.3%	12.4	0.6%
House-related ss.	2.1	0.36%	2.5	0.3%	4.2	0.5%	13.8	1.1%	55.5	2.5%
Domestic services	1.0	0.16%	1.0	0.1%	1.6	0.2%	5.9	0.5%	32.5	1.5%
TOTAL	**74.2**	**12.46%**	**96.2**	**12.95%**	**124.6**	**14.21%**	**223.2**	**18.59%**	**583.2**	**26.58%**

To sum up, there seems to be clear potential for redistribution through VAT by expanding the tax base. This type of redistributive reform is particularly attractive for two additional reasons: firstly (as mentioned) base-broadening reforms also enhance the efficiency of the tax, so this could be one of those rare cases where tax equity and efficiency go hand-in-hand. Secondly, expanding the VAT base would result in additional revenues which can be used to fund additional redistributive policies: the suggested base-broadening reform would bring around an additional 20% of total national consumption into the tax net.

[18] The UK does exactly that: passenger transport is zero-rated but only if the vehicle carries at least 10 passengers, thus excluding taxi services from the preferential tax treatment (UK: Value Added Tax Act 1994, Schedule 8, Group 8).
[19] INE (2018).

B. Complexities of the proposed reform

Although the redistributive potential seems clear, the proposed reform entails a few complications which should be assessed before reaching any conclusions about the desirability of this reform. Firstly, it is likely it would encounter political resistance as it targets goods and services which are usually perceived as merit consumption which governments should encourage, such as education and medical services. However, there are two key strategies that should help overcome this political obstacle. First, government should highlight the regressivity of the tax break and argue the unfairness of having a tax break where around 50% of the tax break arises to top quintile (in the case of education and medical services). Second, the government should deal with the claim that these are merit goods that government should be supporting by earmarking the additional tax revenues to support the public provision of these services. In this way, the policy can embrace the argument about the merit of these goods but address the distributional consequences of the tax break by channelling the additional tax revenues into the provision of these services for the benefit of all.

The strategy described above is precisely what the UK government did to overcome the political obstacles to introducing VAT on private schools' fees in 2024. To emphasise the regressivity of the VAT break the Labour manifesto labelled private schools as 'elite' schools[20] and highlighted that only 6% of children attended those schools. And to address claims about the merit of education as a service, the policy was justified in the need to raise revenue to 'recruit 6,500 new teachers in key subject to prepare children for like, work and the future'.[21]

In addition, the taxation of some of the items currently exempted entails particular technical challenges which should also be weighed against the benefits of such a reform, most noticeably insurance and financial services. Indeed, most VAT systems were originally designed exempting financial services due to the difficulties that a transaction-based VAT encounters when applied to financial transactions. The problem arises as financial institutions do not directly charge a price for their services, but instead their fee is effectively the difference between the interest charged to borrowers and the interest paid to depositors (Mirrlees *et al.*, 2011, Chapter 8). This 'spread' is not readily identifiable in each transaction. Taxing insurance services also runs into similar problems: although a premium is charged when insurance is sold, most of the premium does not represent compensation for the financial intermediation provided but rather an amount to pool risks (Cnossen, 2019). The compensation for the services is only the difference between the premiums received and the claims paid, which is also not easily identified in each transaction. Thus, when VAT was originally designed it may have been a good decision to simply exempt these services (which, in fact, partly taxes them, as financial institutions do not recover the VAT charged on their inputs).

However, more than half a century has elapsed since and many solutions have been identified for successfully implementing VAT on financial services. As mentioned by Mirrlees *et al.* (2011) cash-flow taxation of financial services has been suggested since at least 40 years and the mechanism has been

[20] Labour party, 'It's time for real change. Labour party manifesto 2019' (page 40).
[21] Labour party, 'Change. Labour party manifesto 2024' (page 10).

extensively refined and discussed.[22] In addition, the desirability of bringing financial services into the VAT net has been widely acknowledged.[23] Advocating for the most suitable way of bringing financial services into the VAT net escapes the purpose of this work, but international practice increasingly suggests that it is possible. The most promising approaches seem to be following the addition method of taxing value added (taxing cash-flow profits and wages) which is applied in several countries such as France, Israel, Denmark, Norway, and Iceland. Moreover, the IMF (2010) has also advocated for an addition-based VAT for financial services.

IV. Preferential Rates for Necessities

The most common answer to the regressivity of VAT is to introduce reduced (or zero) rates targeting items more heavily consumed by low-income households. This usually translates into preferential rates for foodstuff, domestic fuel, etc. However, when analysing zero-rated items in a particular jurisdiction, it tends to be surprising how many other (less expected) items have made its way into the zero-rated categories. In the UK, for instance, zero-rated items include foodstuff (except some such as savoury snacks, hot food, ice creams, most drinks, etc.), prescribed medicines, sanitary products, water, passenger transport, books, music, magazines and newspapers, children's clothes and footwear, and the construction and sale of residential properties. This (by no means complete) list of zero-rated items is a good example of two of the main criticisms of preferential rates.

First, as it is evident from the previous list, many of these items do not seem to respond to distributional objectives of governments, suggesting that preferential VAT rates are subject to substantial political lobbying. Thus, it is not unusual to find extensive lists of preferentially taxed items where some are very difficult to reconcile with any underlying principles.

Secondly, the list also reflects that preferential regimes may result in a considerable narrowing of the tax base. This, in turn, means that preferential rates are often extremely expensive public policies and very blunt tools for redistribution. Indeed, it is often argued that although low-income families might spend larger shares of their income on reduced-rate items, rich households spend more in those items in *absolute* terms. Thus, the benefit from preferential rates arises predominantly to the benefit of the rich. This has been indeed one of the mains criticisms of UK's VAT.[24]

A. Potential Distributional Effects

However, as mentioned in section I above, these arguments need to be reassessed in the context of developing countries given their different inequality and tax systems' structure. With that in mind, this section shows the distributional potential of introducing preferential rates designed based on evidence on consumption patterns in Chile. The analysis looks at divergences in consumption patterns by quintile of income based on Chile's family budget survey, trying to identify commodities which not only represent a larger share of income of the poorest quintiles (relative progressivity), but also represent a larger

[22] A cash-flow method was presented by Hoffman, Poddar and Whalley (1987) and later discussed by Poddar and English (1997) and more recently by Keen, Krelove and Norregaard (2016) and López-Laborda and Peña (2018).
[23] The main benefit is that reduces distortions by leaving relative consumer prices unchanged (Auerbach and Gordon, 2002). In addition, it removes the implicit tax on business inputs resulting from the current exemption. It has also been argued that taxing financial services under a VAT improve trade openness (López-Laborda and Peña 2022) and, as this article also suggest, that its incidence is progressive (López-Laborda and Peña 2017).
[24] See for instance in Mirrlees et al. (2011, chapter 9).

expenditure for those quintiles in *absolute* terms (absolute progressivity). This second condition should considerably limit the scope (and the cost) of preferential rates, as the high inequality we find in Chile means that the poorest quintiles have much smaller spending power in the first place. This also guarantees that preferential rates are not a blunt and expensive tool for redistribution, since most of the benefit in money terms would arise for the poorest quintiles.

After a first analysis, it became evident that the 'simplicity condition' would require some relevance criteria to be added to define the list of potentially-redistributive items of consumption, as there were multiple items which met the abovementioned criteria (both relative and absolute progressivity) but on which households spend a very negligible part of their income. Thus, the benefit arising from reduced taxation would be outweighed by the complexity it would entail to have such a large list of preferentially-taxed consumption. The relevance requirement introduced consists in the poorest quintile spending on average at least CLP500 per month on such item (around 0.1% of total expenditure of such quintile). Once this relevance condition is added, the list is reduced from 112 to 36 items.

However, as earlier mentioned, when designing the structure of preferential rates there needs to be a balance between the distributional gains and the distortion of competition when different rates apply to close substitutes. Such a balancing exercise led to the conclusion that it was preferrable to remove some of the items with redistributive potential as they were too specific or too close in their consumption to other items with no redistributive potential (or alternatively, to include in the preferential categories items that showed less distributional potential but were very close substitutes to those meeting the criteria). As a result, only 22 items remain for a potentially redistributive reform which is, at the same time, simple and workable while substantially limiting the distortion of competition between close substitutes. These 22 items are grouped in the following 12 categories.

Table 11: Incidence of proposed preferential regime

Proposed preferential category	Consumption by quintiles (CLP m)				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Rice	2.1	1.9	1.9	1.6	1.2
Bread (fresh)	21.9	20.6	18.8	14.5	6.8
Uncooked pasta	2.5	2.6	2.6	2.2	1.9
Wheat flour	0.9	0.8	1.0	0.7	0.4
Chicken meat	8.1	9.3	9.4	7.8	6.7
Eggs	4.0	4.1	4.2	3.7	3.6
Dried pulses	1.4	1.2	1.2	0.9	0.8
Potatoes	4.3	4.0	3.3	2.7	1.8
Sugar	1.4	1.7	1.4	1.0	0.8
School clothes & shoes	5.8	4.7	4.1	4.0	4.6
Firewood	4.0	4.6	4.1	3.5	2.8
Technical education	1.7	1.4	2.0	1.5	0.1
Total CLP	**58.0**	**57.0**	**54.0**	**43.9**	**31.5**
Total as % of expenditure	**9.7%**	**7.7%**	**6.2%**	**3.7%**	**1.4%**
Total as % of income	**16.2%**	**9.3%**	**6.3%**	**3.6%**	**1.1%**

As Table 11 shows, the distributional gains from such a reform are substantial. Indeed, the chart suggests that when preferential rates are applied in a setting of high inequality and following empirical evidence

on consumption patterns, the usually criticised bluntness is considerably reduced. The benefit from reduced (or zero) rates of the reform would mainly benefit the worst-off both in absolute and relative terms. The poorest quintile receives twice as much benefit than the richest quintile, and it would be progressive throughout the entire income distribution, and increasingly so as we approach the richest quintiles. In relative terms the progressiveness is even more clear: this reform would untax (or reduce taxation on) almost 10% of the expenditure of the poorest quintile, while only forgoing taxation 1.4% of the expenditure by the richest. In other words, relative to total consumption, the benefit to the poorest quintile is seven times the benefit to the richest. Relative to income, the poorest quintile's benefit is 15 times more than that arising to the richest.

Furthermore, reducing the bluntness of preferential rates also means that the policy is incredibly less expensive than it would otherwise be. Indeed, if Chile were to implement the same zero-rating policy as that currently in the UK, it would be (i) less progressive (indeed, the argument claiming that it benefits more -in absolute terms- high-income households would also hold in the Chilean case), and (ii) it would be extremely more expensive (the forgone revenue would be almost 6 times the revenue loss from the proposed reform). Table 12 clearly shows this.

Table 12: Incidence and costs of following UK VAT preferential system

Preferential category following UK zero rating	Consumption by quintiles (CLP m)				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Food[25]	154.2	178.2	186.6	189.7	220.6
Medicines	8.8	16.0	19.1	30.2	54.4
Sanitary products	0.6	0.7	0.8	1.1	0.8
Water utility	15.5	16.2	16.5	17.5	23.4
Transport services[26]	26.6	30.8	36.8	35.0	50.7
Books/newspapers/music	1.7	1.8	2.4	4.9	16.5
Children clothes & shoes	13.0	12.8	12.3	11.5	12.4
Total CLP	**220.4**	**256.5**	**274.7**	**289.9**	**378.7**
Total as % of expenditure	**37.0%**	**34.5%**	**31.3%**	**24.1%**	**17.3%**
Total as % of income	**61.5%**	**42.0%**	**32.1%**	**23.8%**	**12.9%**

The drawbacks of following standard practice in some developed countries are eloquently shown in the table: although consumption patterns may be more differentiated between income levels in contexts of higher inequality, the bluntness of the tool still results in the richest quintile benefitting more from preferential rates: the (absolute) benefit to the poorest quintile is only 58% of that obtained by the richest quintile. In terms of redistributive potential, it also performs significantly worse than the proposed reform: under a UK-style zero-rating reform, the ratio between the share of total expenditure removed from tax for the poorest and the richest quintile is only 2.1, while under the proposed reform the same ratio is 6.8. Relative to income, this ratio is 4.8 under a UK-style zero rating reform, compared with a 15.1 under the proposed reform.

[25] Following UK legislation, ice creams, savory snacks, chocolates and confectionary, and most soft drinks are excluded.
[26] Following UK legislation, transport services such as taxi and shared taxis are excluded.

B. Complexities of the proposed reform

As previously mentioned, there are several arguments against introducing preferential rates, which are worth keeping in mind when designing the preferential rate structure, to mitigate the risks highlighted by these arguments.

- **Bluntness:**

One of the main criticisms of preferential rates is that they are poorly targeted and therefore achieve little redistribution at very high costs in terms of revenues forgone. This issue has been addressed by the above distributional analysis which clearly shows that in contexts of high inequality, if empirical data is used to identify the preferential categories and the benchmark used is that of absolute progressivity, redistribution can be achieved in a targeted and cost-effective way.

Moreover, the suitability of redistributive policies needs to be assessed in comparison with other available redistributive measures. Thus, the analysis is not the same in advanced economies than in developing countries. Indeed, the limited redistributive capacity of developing countries has been highlighted by many studies analysing both the tax and the expenditure side of government's budgets. Indeed, Clements, Faircloth and Verhoeven (2007) find that, on average, social spending in Latin America benefits more than twice as much the richest quintile than the poorest quintile. Similarly, Goñi, López and Servén (2011) find that social protection transfers are very badly targeted in Latin America: they calculate that the two richest quintiles receive 70% of the total transfers, while the poorest quintile receives as little as 8% of them.

These empirical studies show how little (or no) redistribution is achieved through the tax system: they find that taxation is roughly neutral overall (direct taxes being slightly progressive or neutral and indirect taxes being regressive). Our case study is by no means the exception: the study finds that in Chile the tax system actually increases Gini by one point, as direct taxes do not affect inequality and indirect taxes are regressive (Goñi, López and Servén 2008).

Against this bleak redistributive background, it is not difficult to understand that the bluntness criticism to preferential rates is weakened. On the other hand, revenues are also considerably lower in these countries so redistributive policies ought to be as inexpensive as possible. As earlier shown, this is precisely what the proposed reform achieves: its distributional effect is clearly (and not negligibly) positive while keeping its costs relatively low.

- **Pandora box effect:**

Another argument against preferential rates is that their introduction opens the door to political lobby from different industries to get new items into the preferential categories (i.e., Mirrlees *et al.*, 2011, p. 154; Panagariya and Rodrik, 1993).[27] Of course, it is hard to guarantee that similar political pressures would not arise, but measures could be taken to minimise such risks.

One possible way of limiting this risk is to follow a principled-based drafting of the legislation. As Avery Jones (1996) argued, legislation can be simple if drafted in a principled way. Principled-based legislation might also considerably reduce the scope of political lobbying in defining preferentially taxed items.

[27] For a political choice view of tax legislation to ground this, see Buchanan (1987).

Indeed, I suggest that legislation introducing the preferential regime should explicitly include guiding principles that shall be followed in the process of updating the list of preferentially rated items. In other words, the legislation could clearly establish what is the policy goal of the preferential rate and what are the benchmarks for an item to be included.

For instance, the legislation could establish that preferential rates can solely be introduced for distributional purposes and that any item to be included shall be supported by empirical evidence showing that its consumption is concentrated on lower-income people. Furthermore, updates to preferential items on periodic reviews could be limited to being revenue neutral. Based on these criteria, periodic reviews to preferential items would determine whether some items should be included or removed from the preferential regime, after empirical data on consumption is presented by the national statistics office or the tax authority. This legislative practice of enacting restrictions for future reforms would not be entirely novel, as it would be similar to the European experience in harmonising turnover taxes and introducing VAT, where Member States could maintain zero or reduced rates of their turnover taxes on their VAT systems as long as they are "*for clearly defined social reasons and for the benefit of the final consumer*"[28]. Moreover, the European experience has also shown that this legislative practice can be effective as a control mechanism for fiscal policy.[29]

EU VAT legislation is also a good example of a tax law that is principle-based (Roxan, 2010), showing that such an approach is not only possible, but also workable. Indeed, the EU VAT Directive[30] sets in its preamble and Chapter 1 the guiding principles for all EU domestic VAT legislation. The Seventh Recital establishes the neutrality of competition principle, which is further specified in several other recitals (i.e., Eleventh Recital, Twentieth Recital, etc.). In the same way, Chapter 1 also establish the guiding principle that VAT is a general tax on consumption "*exactly proportional to the price of the goods and services, however many transactions take place in the production and distribution process...*".

A similar legislative technique could be followed when introducing a preferential rate in order to minimise the risks of political lobbying and increasingly shrinking the tax base: the legislator could establish the guiding principles on which the preferential items are defined, leaving it to the tax authority to periodically update the preferential category in accordance to them.[31] The principles, in turn, could be those mentioned above: absolute progressivity, reduced distortion of competition between closed substitutes and revenue neutrality. These principles should be fairly straightforward to implement as the available information is mostly available. In effect, the Chile's National Statistics Office already undertakes a detailed survey on household consumption that can provide the information for assessing the criteria of progressiveness and revenue neutrality. In addition, the Competition Authority could provide a report on closed substitutes of potentially preferential items to ensure that competition distortion is reduced.

- **Definitional Issues:**

[28] Article 17 of Council Directive 67/228/EEC.

[29] The UK was forced to remove items from its zero-rating list after the European Court ruled that they failed to meet these conditions. See Judgement of 21 April 1988, Commission v UK, Case 416/85, EU:C:1988:321.

[30] Council Directive 2006/112/EC of 28 November 2006 on the common system of VAT.

[31] It could be argued that the political pressures are as likely to interfere with the legislative process introducing the preferential regime as on updating the regime afterwards. However, the effectiveness of political lobbying is likely to be reduced in the introduction of the regime, as this legislative debate would be very much under public scrutiny, whereas periodical reforms are likely not to be under such (level of) public scrutiny. Thus, it seems crucial to restrict the political lobbying in the future by adopting a principled-based legislation in the introduction of the regime.

Maybe the last usual argument against preferential rates is that they will inevitably lead to disputes regarding the exact nature of similar items in respect to a preferred category. This also ties with the issue of distorting competition: if substitute items are subject to different taxation, there will not be a level playing field among them. Several legal disputes are usually mentioned to support this criticism such the Jaffa Cake,[32] the Pringles[33], the Snowball[34] or the Subway case,[35] which are clear examples of the definitional risks that preferential rates can entail.

However, this risk may be sometimes overstated by highlighting the amusing details which can make some of these cases sound rather ludicrous. Firstly, being the drafter aware of the definitional risks can in itself help reduce it: a conscious legislator (following appropriate guiding principles) will foresee the risk of preferentially taxing a specific item and not others in close competition and will avoid making those fine distinctions when drawing lines between preferred and standard-rated items. This is part of the designing exercise done in the previous section, when the potentially redistributive items was reduced from 36 to 22 items that seem to offer a workable and simple preferential regime. For instance, the consumption data showed that consumption of pork chops was concentrated on the poorest quintiles, while pork ribs showed the opposite pattern. Naturally, if only one gets the preferential treatment it is clear that distortion of competition and tax avoidance risks are increased, so both items were excluded from the preferential regime (the category of pork meat did not have good redistributive potential). Conversely, consumption of chicken drumsticks is skewed towards the poor households, while the opposite is true for chicken breast. In this case, however, the entire "chicken" category still had good redistributive potential, so both items were included in the preferential regime. The legislative exercise is about striking a good balance between goals that can come into tension: redistributive gains should not always trump tax simplicity.

Secondly, the often-mentioned risk of legal disputes around definitional issues might be more of an anecdotal nature than empirically relevant. Indeed, an analysis of VAT cases in the UK shows that definitional disputes are actually rare and by no means an abundant area of litigation. The analysis done covered all civil cases relating to VAT since 2006 until 2022 which were heard by the Supreme Court or the Court of Appeal. It covered 100 cases,[36] and only six of them referred to definitional issues in respect of preferential rates or exemptions.[37] In contrast, disputes regarding procedural matters, missing-trader frauds, personal exemptions or exempt financial services are all much more common (14, 12, 12 and 11 cases, respectively). Details of the analysis of VAT cases are given in Annex 2.

Thus, although definitional risks should be something that legislators should bear in mind, they do not seem to be sufficiently serious to outweigh the much-needed distributional gains in the context of

[32] United Biscuits (UK) Ltd [1991] (LON/91/160).

[33] Procter & Gamble (UK) v HMRC [2009] EWCA Civ 407.

[34] Lees of Scotland Ltd and Thomas Tunnock Ltd v HMRC [2014] UKFTT 630 (TCo3754).

[35] Bookfinders Ltd v The Revenue Commissioners [2020] IESC 60. This is the Ireland case regarding Subway sandwiches, arguably more amusing than the UK case (see [2014] EWCA Civ 773).

[36] Those cases heard by both the Supreme Court and Court of Appeal are counted only once.

[37] These cases related to whether: (i) online news services benefitted from zero-rating as "newspapers" ([2021] EWCA Civ 91); (ii) the sale of fractional interest in a property benefitted from the land exemption ([2019] EWCA Civ 849); (iii) the supply of prefabricated accommodation units benefitted from the land exemption ([2018] CSIH 49); (iv) Spot the Ball was a game of chance ([2016] EWCA Civ 436); (v) slot machines were "gaming machines" and thus not within the gaming and betting exemption to VAT ([2015] UKSC 48); and (vi) Subway's toasted sandwiches were zero-rated food or hot take-away food ([2014] EWCA Civ 773).

developing countries. Although legal disputes regarding definitional issues have produced very amusing case law, an empirical analysis strongly suggest that they are not a source of frequent litigation.

V. A (higher) Minimum Threshold

The last reform analysed relates to the distributional effects of introducing a minimum threshold below which businesses are not required to charge VAT. The literature has usually focused on its optimal level from an efficiency perspective, and here I try to build on that literature by shedding some light on the distributional effects that thresholds might have in developing countries.

From an efficiency perspective, it seems fairly undisputed that a minimum threshold should be included when designing a VAT. The basic idea is that below a certain level of turnover the compliance and administration costs exceed the revenue that would arise from VAT (Ebrill *et al.*, 2001). Thus, leaving those small business outside the VAT net and focusing the administrative resources on larger taxpayers is advisable. The application of this simple rule usually results in a threshold level higher than those in most VAT systems (Ebrill *et al.*, 2001). Based on the estimations by Cnossen (1994), adapted to Chile's VAT rate, this would result in an optimal level of around $32,000.[38] Ebrill *et al.* also give an additional argument to support a high threshold: there seems to be an empirical regularity in the size distribution of enterprises such that a relatively small portion of firms account for a vast majority of VAT revenues (they provide as a rough rule that the largest 10% of firms usually collect around 90% of VAT revenues).

However, Keen and Mintz (2004) correctly point out that the rule abovementioned is incomplete as: (i) it does not account for the fact that firms below the threshold still pay some VAT (as they are unable to deduct their input VAT), and (ii) does not account for the behavioural responses of firms near the threshold level. These responses can be both positive and negative. For example, increasing the threshold will result in a productivity gain from those businesses hovering just below it, since they will be able to raise their output to the new (higher) threshold. At the same time, those businesses just above the original threshold level will drop from the VAT net, losing its VAT revenue (though not entirely, as they will be burdened with the VAT on their inputs). As Keen and Mintz show, considering these additional elements results in a substantially higher threshold: they estimate that the threshold is somewhere between 6 and 7 times what would be by applying the simple rule described above, leaving between 45% and 50% of the firms outside the scope of the VAT. Yet, the firms within the scope of VAT would account for more than 93% of the total output.[39]

More importantly for developing countries, high levels of informality should also lead to higher threshold levels (Kanbur and Keen, 2014). The simple intuition behind this is that the cost of raising the threshold is lower in these settings as many of the businesses that would be removed from the scope of VAT were not paying tax in the first place as they operate in the informal economy. Furthermore, if the VAT threshold level is placed sufficiently above the income tax threshold, this could induce some of the informal businesses to become formal and pay their income tax liabilities. Looking at the evidence on informality in our case study, policymakers should definitely have these considerations in mind as evidence points that both levels of formality and tax compliance are deteriorating among small

[38] I am replacing Cnossen's assumed 15% tax rate for Chile's 19%.

[39] We are only mentioning the results of their simulations using a tax rate of 15%, since the other rates that they use (5% and 10%) seem to be outliers for VAT in developing countries (except some rare exceptions such as Paraguay, Panama, Nigeria, Vietnam, Mongolia, Indonesia, Malaysia, Thailand and Myanmar).

enterprises: between 2016 and 2019 informality among small businesses increased from 48.7% to 53.1%, while the level of VAT compliance also dropped as those filing their VAT returns decreased from 77% to 67% (Ministerio de Economía, 2020).

A. Potential Distributional Effects

Beyond this very strong efficiency argument, what is even more interesting for the purpose of this chapter is that including such a threshold also seems to have positive distributional effects in developing countries, which makes it all the more difficult to reconcile the inexistent of a threshold in Chile's VAT with any underlying principle.

When analysing data on food consumption, it is clear that high-income households are more intensive user of hypermarkets and supermarkets than low-income households. Indeed, the richest decile acquires up to 93% of their food in these types of retailers, while such a percentage drops to 67% for the bottom 5 deciles.[40] The other side of the coin is more contrasting: while the lowest decile acquires more than 12% of their food consumption from farmers' markets[41] and neighbourhood corner stores, the richest decile acquires less than 1% of their total food from those retailers (Anigstein, 2019).

This potentially positive distributional effect is also suggested by the location of farmers' markets: while 81% of these markets are located in low socioeconomic neighbourhoods, only 2% are located in high socioeconomic boroughs (Observatorio Feria Libre, 2013). Moreover, surveys of consumers in farmers market also show that they are mostly a marketplace for low and middle-income families: in a 2013 survey the average income of the participants was 35% lower than the average income in that region (Gallardo *et al.*, 2014).

As a consequence of this pattern of consumers of farmers markets and small neighbourhood stores, it seems that the threshold also offers the chance to reap a "double dividend": not only it would enhance the efficiency of the system by releasing small traders from the VAT compliance burden and by freeing scarce administrative resources, but it would also result in reducing the tax burden of low-income households who more intensively purchase from them.

B. Complexities of the proposed reform

The existence of a threshold will create behavioural responses from taxpayers, but there are policy alternatives to minimise them. The responses can be separated into real and artificial, depending on whether there is a genuine (and legal) change in the economic activity responding to the incentives introduced by the threshold (e.g. restricting real output) or they are only avoidance or evasion schemes to obtain the benefit of the threshold lacking economic substance (e.g. splitting a large business into several small ones or failing to report cash transactions).

[40] Data on consumption from type of business comes from market studies which use 7 socioeconomic groups (based on income, education and occupation). The first 3 groups represent the highest 10% on the ranking, while the bottom 2 represent the lowest 45%. Thus, our information on the bottom 5 deciles actually comes from the bottom 45% in this socioeconomic classification, but these should be closely correlated (information on the socioeconomic classification can be found in (AIM, 2012) and (Criteria Research, 2011)).

[41] Farmers markets in Chile do not involve a direct sale of agriculture products from local farmers. Instead, sellers acquire their products from small family farmers (Observatorio Feria Libre, 2013).

Although real responses are for a good part unavoidable, there are alternatives in the design of the threshold that could minimise them (HM Treasury, 2018). Some of these try to reduce the compliance costs of becoming a VAT-registered business,[42] such as introducing a simplified scheme for businesses close to the threshold (such as the UK Flat Rate Scheme, which reduces compliance costs by charging VAT at a fixed rate to overall turnover for businesses with turnover not exceeding £150,000).[43] Other alternatives aim at reducing the financial costs arising from becoming liable to VAT, such as granting a gradually reducing relief on first VAT bills (e.g. the UK grants a 1% reduction on the rate at which the Flat Rate Scheme applies on the first year of VAT registration). A third alternative considers that different businesses face different incentives in respect of VAT. Thus, it has been shown that businesses with low VAT-inputs relative to sales and those with reduced share of sales to VAT-registered businesses have higher incentives to avoid registration (Liu *et al.*, 2021). In response to this evidence, tax authorities could focus enforcing efforts or impose a lower threshold on industries with those characteristics.[44] The benefit of these measures, however, needs to be balanced with the complexity that they build into the tax system.

On the other hand, illegal avoidance and evasion schemes are largely dependent on the existence and enforceability of anti-avoidance measures and the effectiveness of auditing VAT returns. However, most VAT avoidance and evasion practices are not unique to a VAT threshold. Indeed, underreporting sales is also a risk for income tax and general VAT (as it would reduce the VAT liability). Likewise, artificially splitting of business into several "small" businesses is a risk faced by all size-based regulation, which is far from exclusive to tax policy. Indeed, many labour regulation have size-based requirements, and thus efforts to identify artificial divisions of businesses are not unfamiliar.[45] In Chile, in fact, a law was enacted in 2014 precisely to tackle artificial division of businesses to avoid labour regulation, allowing authorities to treat as a single employer different legal entities that met certain criteria.[46] Much the same rules could be applied if a VAT threshold is introduced.

VI. Overall Distributional Impact of Proposed Reforms

A. Estimated distributional impact

The analysis so far has shown that the proposed reforms appear to be very progressive, as benefits concentrates on the lower-income households and the new tax burdens would concentrate on the top quintile. However, the overall progressivity of the reforms needs to be assessed in comparison with the original Gini index for the distribution of incomes (i.e., before the proposed reforms). As usual in the literature, I use Kakwani index to test whether the seemingly progressive reforms are indeed equalizing against the original income distribution (Kakwani, 1984). When analysing a reform that imposes an additional tax liability (as the base-broadening reform proposed here) the concentration index of the new tax must be higher than the Gini index of the underlying income distribution to conclude that the reform will reduce the original inequality (i.e., the new tax burden is distributed more unequally than income). On the other hand, if we are analysing a new transfer (or tax break), its Gini concentration should be

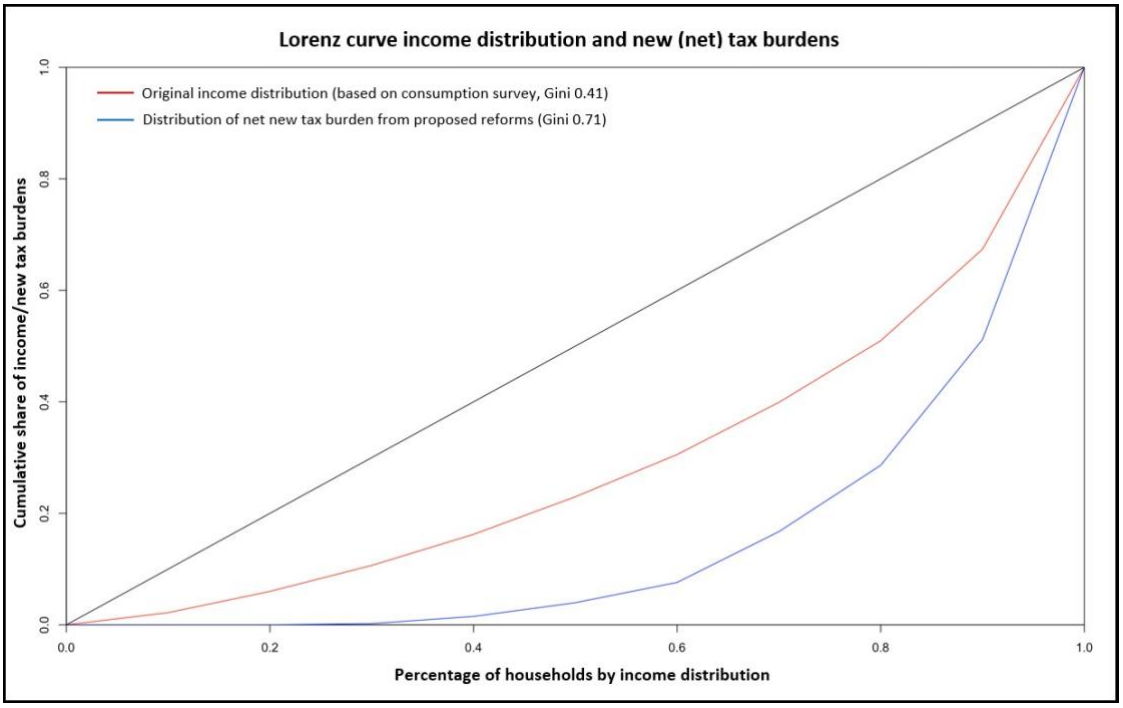
[42] Avoiding compliance costs can be the main incentive for staying below the threshold, even more than avoiding the tax liability (Harju, Matikka and Rauhanen, 2019).
[43] Section 26B of Value Added Tax Act 1994 and VAT Notice 733 of HMRC.
[44] France and Ireland, for instance, have a lower threshold for business supplying services (HM Treasury, 2018). The VAT threshold in Australia does not apply to taxi drivers (or to ride-sharing apps).
[45] For a good analysis of size-based regulation and their economic impact, see Garicano, Lelarge and van Reenen (2017).
[46] Law 20,760. The criteria relate to common ownership, common address and external appearance of a business unit.

lower than the Gini index of income distribution for the transfer to have an egalitarian effect on the income distribution. The Kakwani index is then the difference between the Gini of the social intervention and the Gini for the income distribution.

Also relevant for understanding the redistributive potential of a policy is to assess its redistributive effect, usually measured by using the Reynold-Smolensky index. This corresponds to the difference between the Gini index of the income distribution before and after the intervention (a positive result showing a redistributive policy) (Reynolds and Smolensky, 1977). Although these two measures are very similar, they provide complementary information. The simple intuition is that a very progressive tax might have little or no redistributive potential if it raises only very minimal revenue. Thus, the redistributive measure captured by the Reynold-Smolensky index depends on both the progressivity and the magnitude of the policy.

The Kakwani index for the net effect of the three reforms (assuming zero-rating for the preferential regime) is very positive at 0.30, showing that the net new tax is substantially more concentrated (0.71) than the underlying concentration of income (0.41), as shown below.

Figure 2.



The distribution analysis also results in positive results (although not very large, as expected from a tax reform only focusing on VAT). I have calculated the post-reform Gini coefficient at four cumulative levels. First, after broadening the VAT base, then after introducing the preferential regime (assuming a zero-rated regime). On a third level it was considered the equalizing effect of the introduction of a threshold. The last step takes into account the fact that this is a revenue-raising reform package, and

therefore measures the Gini coefficient also considering a lump-sum transfer back to the taxpayers for an amount equal to the additional revenues.[47]

Table 13 – Reynolds-Smolensky index of reforms

	Gini %	Reynolds-Smolensky
Original income Gini index	40.6	-
After base broadening reform	40.5	0.1
Plus preferential regime	40.1	0.4
Plus threshold reform[48]	39.9	0.2
Plus lump-sum transfer of additional revenues	38.8	1.1
Overall distributional impact	-	**1.8**

The analysis shows two interesting findings. First, the reform package has the potential to produce a relevant reduction in income inequality, as reducing the Gini index by 2 percentage points is by no means negligible. The second finding also highlights how relevant it is that tax reforms in most developing countries aim at being (at the very least) revenue neutral, even if their exclusive goal is to increase progressivity. Indeed, over half of the reduction in inequality arises from the lump sum transfer that the additional revenues from the reform can finance.

The second finding might be interpreted as pointing that it could be convenient to only focus on tax reforms that could raise additional revenues, in order to have larger sums to transfer back to households. This could be used to argue against the introduction of the preferential regime, as it reduces the additional revenues that could be used to fund the lump-sum transfer. This argument, however, does not seem convincing for three reasons. The first one is simply an empirical one: removing the preferential regime and increasing the lump sum transfer with the additional revenues is a less progressive reform as the one suggested. Indeed, removing the preferential regime has two opposite effects: losing the equalizing effect that it produces (the 0.4% reduction in the Gini coefficient, as shown above), and increasing the redistributive effect of the lump sum transfer. However, the latter effect is insufficient to fully offset the former loss of progressivity.[49]

Secondly, there is uncertainty on the feasibility of a universal lump-sum transfer. Not only there seems to be political economy challenges that lead to regressive expenditure policies in developing countries (Clements, Faircloth and Verhoeven, 2007), but problems relating to the take-up of benefits also cast serious doubts on the ability to effectively implement universal transfers. Indeed, evidence from

[47] The transfer is assumed to be a universal transfer for the same value to every household.

[48] The estimations of the distributional impact from the introduction of the thresholds are likely to be the less reliable ones, as data on places of consumption by income level is sparser than the data used to estimate the base-broadening and preferential regime reforms. The incidence estimation using this data is explained in Annex 3.

[49] The overall effect on redistribution is reduced from a reduction of the Gini coefficient of 1.8 percentage points to 1.7 percentage points. This might seem negligible but only because the amounts of revenue are not large. In terms of progressivity, the preferential regime achieves an additional third of redistribution than the additional lump-sum transfer.

developed countries suggest non-take-up of benefits is a severe problem of social policy (Szeintuch, 2022). It is likely that non-take-up is even more problematic in developing countries.

Lastly, the introduction of a preferential regime with the explicit policy goal of alleviating the tax burden on the less well-off also has a valuable symbolic value, beyond its redistributive impact. Indeed, it is a message to taxpayers stating that the equity of the tax system is a concern for policy-makers, which might lead to higher levels of acceptance of taxes and improved tax morale. Details of the methodology to estimate the distributional impact are given in Annex 3.

B. Limitations of distributional analysis

To conclude this section, it is appropriate to state that the distributional impact presented here is only a referential estimation, as it has various limitations. First, it does not take into consideration any behavioural response to the reform. Secondly, it is only based on the data available which is not complete to conduct a more precise estimation of the incidence analysis, in particular regarding the impact of the introduction of a threshold. Thirdly, it does not take into account the impact of the informal economy in the incidence of the proposals. Lastly, it assumes that the tax rate changes will be fully passed on to consumers. These are important limitations, but, except for the last two, it is unclear in which direction they would affect the results (i.e. make the reform more or less progressive) so they only place some uncertainty on the precision of the distributional estimation, but do not challenge the analysis. Informality and the rate at which the tax changes are passed on to consumers seem different in this regard, so we briefly comment on its impact below.[50]

The impact of the informal sector

The fact that developing countries tend to have relatively large informal sector can be thought to represent an important limitation in assessing the distributional implication of the reform presented here. After all, firms operating in the informal economy do not directly pay any taxes, so no VAT would be charged in their sales to consumers. If consumption in the informal economy is concentrated in lower-income households, then this would suggest that these removes the tax burden that VAT would otherwise impose on these households (and the subsequent tax relief of preferential rates for necessities). This is a compelling argument against the introduction of preferential rates for necessities, but I present three reasons why this argument is considerably weaker than it might first appear.

The first reason is to simply highlight that consumers in the informal sector also pay VAT. This is due to the structure of VAT where the tax is collected at each stage of production on the value added in each stage. This means that even goods sold in the informal sector would carry VAT charged at earlier stages of production.[51] This also means that tax reliefs for these goods could benefit consumers in the informal sector by reducing the input VAT that has been charged in the earlier stages of the production process. In the extreme, goods sold in the informal sector could actually be burdened with a *higher* overall VAT that those sold in the formal sector, if there has been some informal firm in the middle of the production chain that would be denied the ability to reclaim the input VAT in the earlier stages of

[50] Informality might mainly impact the distributional effect of the introduction of the threshold. However, that reform was proposed both on efficiency and equity grounds, so it seems as a sound policy even if the distributional gains are reduced by informality. In addition, having a threshold would remove any equity concerns of efforts to tackling the informal economy, which would also be a positive outcome of the proposed reform.

[51] Unless the informal firm sources its products from a production chain where all the firms are informal, which is likely to be exceptional.

production.[52] Why do not have empirical data to assess to what extent firms in the informal sector are burdened with VAT from earlier in the production chain, so we can only say that, in theory, preferential rates for necessities can also benefit consumers in the informal sector by reducing the input VAT charged on their consumption before the retail stage.

The second, and maybe most important reason, is that prices in the formal and informal economy interact with each other. Thus, a reduction in prices in some commodities in the formal sector (due to a reduction in the VAT rate on those commodities) would have effects in the informal sector. These effects could be varied but would in general mean that consumers of the informal sector would also benefit from the tax reduction. The most obvious interaction is that a drop in prices in the formal sector would force a drop in prices in the informal sector. Those informal firms unable to reduce their prices (as informal firms tend to be less efficient) would lose some of their clients that would shift their consumption either to the formal economy or to another informal firm able to react to the price reduction in the formal sector.

In a way, none of these effects reflect a *direct* tax reduction on consumers of the informal sector as they were not paying VAT in the first place (if we ignore input VAT embedded in prices in the informal sector). But this is hardly relevant. Tax policy should be concerned about welfare effects on households, not in the changes in the 'formal' tax burden suffered by each household. This is, indeed, the reason why tax scholars would not support an unfunded reduction of taxes, as this would negatively affect households through an increase in inflation (which is more regressive than consumption taxes).[53] Empirical evidence to assess the extent of these effects is not readily available, but there is substantial literature on informality that shows that a reducing the benefits of informality (e.g. reducing the comparative advantage of informality by a drop in the VAT payable in the formal sector) reduces the overall size of the informal sector, and this reduction can only occur due to consumers shifting to the formal sector (e.g. formal firms reducing their sales or exiting the market) or informal firms moving to the formal sector (D'Erasmo and Moscoso Boedo, 2012; Ulyssea, 2020; Haanwinckel and Soares, 2021).

The last reason that undermines this argument is that relying on informality to make the tax system progressive (less regressive) is very problematic. There are multiple reasons why countries would want to reduce the size of the informal sector, so being concerned that such a move would make the tax system regressive seems an unhelpful distraction from those efforts. Indeed, the informal sector restricts aggregate productivity (Charlot, Malherbet and Terra, 2015; Meghir, Narita and Robin, 2015), reduces firms' profitability (Perry, 2007; de Mel, McKenzie and Woodruff, 2013), lowers wages among unskilled workers (Perry, 2007; Meghir, Narita and Robin, 2015), facilitates tax evasion, and non-compliance with general regulation (minimum wage, health standards, etc).

To summarise, informality can definitively affect the distributional analysis if we are focusing the 'formal' tax burden paid by households. But this is not what should concern policymakers. Instead, the focus should be on welfare effects of tax policy, regardless of whether this is a direct welfare improvement from a reduction of tax rates or an indirect welfare gain from a reduction in prices in the informal sector (or a shift in consumption from the informal to the formal sector) due to competitive

[52] Though this should also be very exceptional, as formal firms would not source their goods from informal firms, as these would deny them the input tax credit that they could otherwise deduct from their VAT payments.
[53] For a distributional comparison of VAT and inflation, see Jaar and Ritto (2024).

pressures from the reduction in VAT rates in the formal economy. We should also not lose sight of the fact that VAT can also burden the informal sector through its effect on the earlier stages of the production chain, so preferential rates could also benefit consumer of the informal through this channel. Overall, informality is definitely an important factor but should not be overstated. It should also not be a characteristic on which we would want to rely to make the tax system progressive, as we would not want to make tax progressivity a trade-off to the benefits of reducing the informal economy.

Are changes in VAT rates passed on to consumers?

The second limitation to the distributional analysis that we explore in some more detail is the question of whether changes in VAT rates would be reflected in identical price changes, or if retailers would retain (suffer) some of the tax benefit (increase). There is substantial literature on this topic, so we can present an informed response to this challenge.

The first thing is to recognise that the frequent assumption of full pass-through of changes to VAT in the tax literature is problematic. From a theoretical perspective it has long been shown that the degree of pass-through depends on the elasticity of demand and supply of the relevant commodity (Kotlikoff and Summers, 1986) as well as on the conditions of market competition (Besley, 1989; Delipalla and Keen, 1992).

Empirical evidence also challenged this simplistic assumption, with plenty of evidence that VAT increases or decreases can be over or under shifted to consumer prices (Kosonen, 2015; Benzarti and Carloni, 2019; Gómez-Antonio, del Moral Arce and Hortas-Rico, 2022; Neidle, 2022). Accordingly, we explore this literature to assess what level of pass-through could we expect from the proposed reforms and qualify our distributional analysis appropriately. We separate the discussion between the introduction of preferential rates for necessities and the base-broadening reforms.

Expected pass-through of preferential regime for necessities

When it comes to the introduction of a preferential regime for necessities, the empirical evidence strongly suggests that the reduction in VAT could be fully reflected in a price reduction for the selected commodities. The best empirical study I have found on the incidence of VAT on necessities is Gaarder (2019) where she studies the incidence of a reduction of VAT on food items in Norway, and she finds that the tax reduction is fully shifted to consumer prices. Other studies looking at VAT changes on food items have also found full or near full shifting into consumer prices in different settings such as analysis of VAT reforms in Cyprus (Lyssiotou and Savva, 2021), Hungary and Romania (Ván and Oláh, 2018).

There is also evidence of only partial shifting of VAT changes into consumption prices, but these studies do not seem to be the most relevant to estimate the incidence of the preferential regimes. Most of the literature finding partial shifting of tax changes into prices refers to tax changes applying to labour-intensive and non-essential services, such hairdressing (Kosonen, 2015; Benzarti *et al.*, 2020), sit-down restaurants (Benzarti and Carloni, 2019) and cultural events (Gómez-Antonio, del Moral Arce and Hortas-Rico, 2022). And the market structures and dynamics are likely to be different when comparing non-essential labour-intensive services with essential goods.

One analysis that presents evidence on partial shifting of a VAT change on an essential commodity is the report by Neidle (2022) on the zero-rating of menstrual products in the UK, but his findings are in contradiction to those of Buettner, Hechtner and Madzharova (2025) that analyse the same policy in Germany. Although it is possible that the same policy had different incidence in these two jurisdictions

UK and Germany, the latter paper uses a much more precise price data[54] of the relevant commodities and more sophisticated identification strategies[55] that suggest that their findings are more robust than those of Neidle.

The preferential regime suggested in this chapter comprises 12 categories of items, of which 9 are basic food items, and these represent 80% of the tax reduction that would apply to the lowest income quintile. Of the remaining three items, two are also necessities goods (firewood and school clothes and shoes) and only one item is a service (technical education). Thus, the findings of full shifting of tax changes on food items and essential goods seems to be the most relevant, although we cannot rule out that only partial shifting could take place on the only preferentially taxed item which is a service (technical education).

Expected pass-through of base-broadening reform

The base-broadening reform proposed in section III above covers 13 items. As the consumption of these items is concentrated within the richest households, they are by definition non-essentials. Of the 13 items, 12 are services and most (9) are labour-intensive (except for air transport, insurances, financial services).

Taking into account these characteristics, the empirical literature showing only partial shift of changes in VAT into consumption prices seems relevant for this part of the analysis (Kosonen, 2015; Benzarti *et al.*, 2020; Benzarti and Carloni, 2019; Gómez-Antonio, del Moral Arce and Hortas-Rico, 2022). Specifically, we cannot rule out that extending the VAT base to these items will not generate a price increase commensurate to the new tax liability. However, the distributional and policy implications of this possible partial pass-through are not particularly problematic, and we explain both below.

From a distributional perspective, if pass-through of the new tax liability on these items is not full, it means that some of the tax incidence will fall on the suppliers of these services. Distributionally, this should not be negative, as capital owners of the firms supplying these services are also likely to be concentrated towards the top of the income distribution and some might also be foreign.[56] Of course we cannot rule out that some of the incidence might fall on the employees of these firms, although the empirical evidence suggest that the incidence should fall mainly among capital owners and consumers (Kosonen, 2015; Benzarti and Carloni, 2019). The only service within the items targeted by the base-broadening reform where the tax incidence on the suppliers could have negative distributional consequences is on 'domestic services' although low-income suppliers are likely to be outside the VAT net due to having a turnover below the minimum threshold.

From a policy perspective, the fact that the tax incidence might not fall fully on the consumers does not affect the conclusion that this is a desirable tax policy. Indeed, the base-broadening reform is justified both due to its distributional effects and for its efficiency, as it would make the tax system less distortive by removing the distortion to consumption decisions that VAT exemptions create. So, even

[54] While Neidle (2022) relies on ONS sample data used to compile the consumer prices index (which include 250 price sample on tampons per month), Buettner, Hechtner and Madzharova (2025) use granular weekly product-level data on the unit sales and scanner prices for the entire brick-and-mortar markets in Germany and Italy (which include more than 30,000 observations in Germany and 45,000 in Italy).

[55] Neidle (2022) relies on comparing price variation on tampons and other 13 'broadly comparable products'. In contrast, Buettner, Hechtner and Madzharova (2025) rely on three different strategies to proxy the counterfactual scenario without the tax reduction. The first strategy is to compare price variations on the same products on two non-bordering countries (Germany and Italy). The second strategy is similar to Neidle's in comparing price variations between the benefitted products and a similar product (panty liners). The third strategy combines the previous two approaches into a 'triple-difference estimator'. Their analysis is also complemented with a event-study specifications that allows them to assess their identifying assumptions.

[56] The distributional implication can even be positive, given that capital is much more concentrated than consumption (even within these non-essential commodities).

if the distributional impact of this is reform is diluted by the partial pass-through of the new tax liability (though the partial incidence on the suppliers of services should have a similar -if not greater- distributional gains) the policy would continue to be advisable on efficiency grounds.

To sum up this section's discussion, the fact that changes to VAT might not by full passed-through to consumer prices brings some uncertainty to the distributional gains that the proposed reforms might produce. But I argue that this does not affect the conclusions of the analysis in any significant way for two reasons. First, the empirical literature suggests that the reduction of VAT rates on necessities are likely to be fully reflected in consumer prices, so the benefit of a preferential regime for necessities should predominantly arise to the consumers. Second, although the tax incidence of the base-broadening reform is likely to be shared between consumers and suppliers, this does not seem to materially affect the distributional gains of the analysis, as the suppliers are also likely to be within the high-income taxpayers. More fundamentally, the base-broadening reform is also justified on increasing the efficiency of the tax system, so it remains a strong policy even in the absence of distributional gains.

VII. Conclusions

This chapter has tried to explore whether there is potential in the VAT system to enact efficient progressive reforms in developing countries. I have qualified the search for progressiveness with an "efficiency" requirement imposing three conditions relating to targeting (progressive in *absolute* terms), revenue-neutrality and tax simplicity (including limiting distortion of competition).

By analysing empirical data on consumption patterns in our case study the chapter has tried to estimate what redistribution outcomes could be achieved and the results seem to be positive. The work has found that there appear to be several potential reforms to Chilean VAT which met the criteria of both progressive and efficient: base-broadening reforms, introduction (or reform) of preferential rates and the introduction (or increase) of minimum VAT thresholds all show good distributional potential. This strongly suggest that developing countries could achieve some tax progressivity by following evidenced-based tax reforms of their indirect tax systems, instead of simply waiting to achieve tax progressivity through their resiliently poorly-performing direct taxes. This could be a positive first step in addressing the inequality/progressivity paradox.

The work has also highlighted that two of the proposed reforms (broadening the base and introducing or raising the threshold) also enhance the efficiency of the system, so the case for introducing such reforms is even stronger. In the case of base-broadening, the reform would reduce distortions to consumer behaviour and might increase productivity as it would remove the implicit input tax of financial services for businesses under the current exemption. In the case of the minimum threshold, the economies of developing countries usually have a large informal sector which justifies an even higher threshold level. Moreover, the gains from redeploying administrative resources from policing small traders might also be larger in the context of developing countries: the very low levels of revenues from PIT in these countries suggest that increasing administrative resources to target compliance of direct taxes might help reduce the widespread avoidance and evasion of PIT.

The third proposed reform (preferential rates for necessities) entails the usual trade-off between equity and efficiency, although the proposal tries to minimise the efficiency costs by choosing a preferential regime which does not discriminate between close substitutes, it is workable and simple. I have also

suggested that a principled-based legislative approach when drafting preferential regimes might minimise the political risks of introducing such regimes.

Moreover, the overall reform package is estimated to substantially increase revenues,[57] which could further increase its redistributive potential if the additional revenues are used to fund public programmes targeted for the less well-off. This is particularly relevant for developing countries which usually trail well behind developed economies in terms of their tax share.

To finish, it seems important to go back to the lessons from the theory of optimal taxation: a well-functioning PIT systems will always achieve progressivity in a more efficient way than any differentiated structure of commodity taxation. Thus, reforms such as those proposed in this chapter should always be understood as second-best solutions, and therefore should ideally be only a temporary stage while developing countries are able to build an efficient and progressive structure of personal income taxation. That should be the ultimate goal, but it is one that has proven to be very elusive for developing countries. As long as such elusiveness persists, the reforms proposed here achieve distributional gains that seem worth pursuing. Part III of this thesis will offer alternatives to overcome such elusiveness, but first Chapter 5 will complete the analysis of the indirect tax system by examining the most relevant excises in search for progressive reforms.

[57] 22% of the additional revenues from the base-broadening reform would suffice to fund the suggested preferential regime. The introduction of a threshold should not entail a reduction in net revenues (considering savings in administrative resources and additional revenues from larger taxpayers more closely monitored).

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Chapter 5:

Distributional impact of excise taxation in developing countries

I. Introduction

Excise taxation may seem a minor aspect of modern tax systems, which might explain why they have received relatively limited attention in the scholarly literature. However, in the context of developing countries there are two reasons that suggest we should pay closer attention to their distributional impact and whether they can be improved.

First, excises represent a significant share of total revenues for these countries, close to 10% in LAC. Moreover, in many developing countries they raise substantially more than that, with several countries raising more than a fifth or a fourth of all their revenues from excises.[1] This

[1] It is not infrequent for developing countries to raise well over 10% of their taxes through excises, and even more than 20%. The most notorious examples of this are Cambodia (26%), Laos (27%), Samoa (24%) and Thailand (23%).

revenue relevance of excises is in contrast with personal income taxes (PIT), which receive much more attention in the literature and policy discussions, yet in many cases they are less significant in terms of revenues (see table 14). This is certainly the case in LAC,[2] where average revenues from PIT are lower than from excises, but it also occurs in many other developing countries around the world.[3]

Table 14. Revenues from excises and PIT (as % of taxes, average 2015-2019)

Country	Excises	PIT
Chile	9.3%	6.9%
Latin America and Caribbean	9.3%	8.6%
Sub Saharan Africa	7.8%	16.6%
Developed countries	7.1%	25%

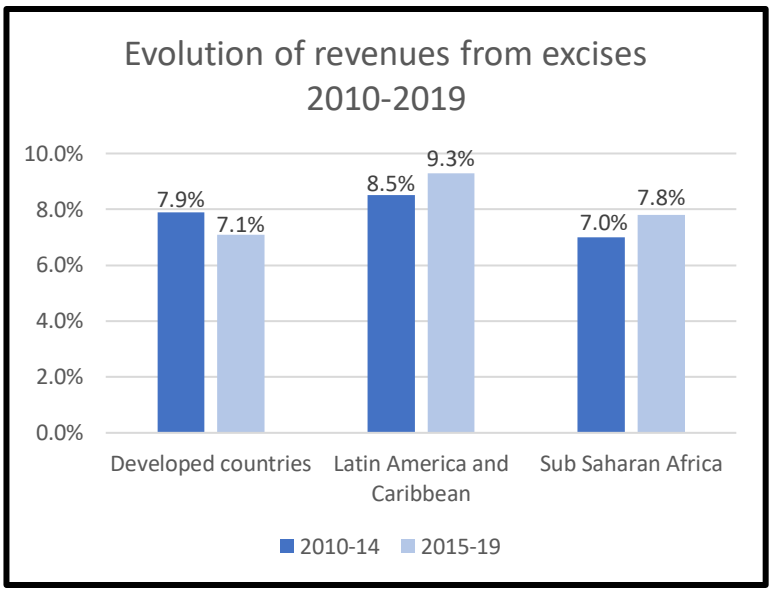
Source: own preparation based on data from OECD (2024) and SII (2023).

Secondly, the trajectory of revenue from excises seems to be following opposite directions in developed and developing countries in the last decades. Indeed, in developed countries revenues from excises (as % of taxes) has been dropping, whereas in developing countries it seems to be increasing (see Figure 3). While revenues from excises dropped in developed countries (as % of taxes) by more than 10% in the 2010s, the exact opposite has occurred in developing countries, where they increased by at least 10%. These two reasons suggest that analysing excises in developing countries should be part of a work that intends to identify opportunities for effectively improving the distributional impact of the tax system, and this chapter presents the findings of such analysis.

Figure 3

[2] In more than 60% of LAC countries excises raise more revenues than PIT.

[3] Examples of non-LAC developing countries that raise more revenues through excises that PIT: Turkey, Cameroon, Mauritius, Seychelles, etc.



Source: own preparation based on data from OECD (2024)

In addition, excises pose a particular challenge from a horizontal equity perspective. Indeed, the burden of excises may not only be unevenly distributed *throughout* the income distribution, but it is also unevenly distributed *within* the same income levels (it will only burden those consuming the 'sin goods'). Thus, unless excises can be strictly justified by the negative externalities of the targeted goods,[4] general policies with redistributive effect may be able to offset the former inequality (vertical inequality) but are not suitable to offset the latter inequality (horizontal inequality). This means that the common argument that we should only be concerned about the overall distributional effect of the fiscal system is considerably weakened in the case of excises: unless fully justified from a Pigouvian perspective, equity in excises should also be analysed in isolation, as they only burden the consumers of the targeted commodities.

Based on the above, this chapter analyses the most relevant excises from the lens of their distributional effects, to assess whether unjustified regressivity is going unnoticed or if there are progressive reforms available (without undermining the efficiency consideration of Pigouvian taxation). The focus is on the three main excises in current tax systems: tobacco, alcohol and fuel. It tries to identify whether the logic of Pigouvian taxation[5] can fully explain the existence, level and structure of these excises in our case study. When that analysis fails to fully explain the structure of excises, the chapter tries to identify what are the relevant distributional consequences of the current system. In doing so, I identify that there seems to be a regressive bias in excise taxation in our case study, which is likely to be present more extensively in developing countries.

[4] If the sole role of excises is to properly internalise the negative externalities of the consumption of certain goods, there would be no equity concerns (horizontal or vertical), as the tax would be simply correcting the price mechanism to properly account for -so far ignored- social costs imposed by the consumers of the targeted goods. The discussion below about tobacco taxation more directly engages with this.

[5] A Pigouvian tax is imposed on activities that produce negative externalities, to correct the inefficiencies arising from such externality. In its simplest, the tax should be equivalent to the marginal externality of the activity (Pigou, 1924).

Indeed, the only excise that is roughly in line (if not exceeding) with the estimated negative externalities is on tobacco taxation, which is precisely the only 'sin good' consumed more heavily by the poor. In contrast, fuel taxation (where consumption is strongly and positively correlated with income) seems to be considerably below what a Pigouvian analysis recommends. When it comes to alcohol, although its overall consumption seems to be similar throughout the income distribution, lower-income groups tend to concentrate their consumption on beer, while the rich tend to consume more wine and spirits. Unsurprisingly, the current system taxes more heavily beer (in proportion to its alcohol content), thus also showing a regressive bias in alcohol taxation. These findings are valuable as they suggest that there are efficient (from a Pigouvian perspective) reforms in the area of excise taxation that should also improve the distributional effect of tax systems in developing countries.

The chapter is structured in 5 sections. After this introductory section, part 2 deals with tobacco taxation, while part 3 and part 4 address alcohol and fuel taxation, respectively. In each of these three central sections I start by analysing general issues on the relevant excise, I then move on to briefly explain the design of the particular excise in Chile and I conclude by showing the distributional effect of the current design of each of these excises. Section 5 offers some concluding remarks.

II. Tobacco taxation

II.1. General issues in tobacco taxation

Historically, tobacco taxation was justified as an easy source of revenues, and it continues to be so in many countries (Chaloupka, Yurekli and Fong, 2012). Based on Ramsay's 'inverse elasticity rule',[6] it was considered an efficient tax as it was claimed that tobacco's demand was relatively price inelastic, and it was easy to enforce given the few tobacco producers/importers. Thus, tobacco taxation was considered as an efficient tax creating few distortions in consumption and little administrative costs. This efficiency argument was later challenged by the optimal taxation literature, which pointed that the inverse-elasticity rule was, in fact, suboptimal.[7] However, the challenges to the inverse-elasticity rule did not lead to a reduction in tobacco excises, as awareness of the negative effects of tobacco consumption offered a different justification based on its externalities.

The literature on tobacco taxation is extensive, and it is beyond the scope of this chapter to offer a detail summary of its evolution in the past 3-4 decades. More details on how the insights from

[6] To minimise the deadweight loss of the tax systems, commodities with elastic demand should be tax less heavily than those with inelastic demand (Ramsey, 1927).

[7] On the challenges to the inverse elasticity rule see Chapter 4, section I.A.

this literature have evolved are provided in Annex 4, but for the purpose of this chapter its suffices to mention the three main conclusions of this literature.

Firstly, tobacco consumption is regressive (Hiscock *et al.*, 2012),[8] so its taxation requires a clear Pigouvian rationale in order not to violate principles of tax equity. Secondly, tobacco consumption seems to have low (net) externalities.[9] Lastly, behavioural economic studies have shown that tobacco users are not rational in their consumption decisions (Gruber and Koszegi, 2001; Gruber and Köszegi, 2008), which is due to the addictive nature of tobacco. This means we should treat some of the costs to the own consumers as 'externalities' (what is called 'internalities'). These three findings have a clear policy implication: the high taxation of tobacco can only be justified in order to help smokers overcome their addiction, so its taxation should be part of a broader policy package that tries to assist smokers in reducing or quitting their consumption.

This last insight from behavioural economics has led in the past decades to public health literature conducting incidence studies on tobacco taxation which take a broader view of the costs and benefits of its taxation (Denisova and Kuznetsova, 2014; Verguet *et al.*, 2015). Thus, the studies not only measure the direct income effect of increased taxes (which is usually regressive) but also incorporate the indirect income benefits that tobacco taxation can bring to smokers by reducing the so-called internalities. These indirect benefits arise due to higher life-expectancy, lower smoke-related health costs, etc. These latter indirect income effects might well be progressive, as low-income people have a higher potential to reduce tobacco use (as they tend to have a higher smoking prevalence). But the distributional effects of these indirect income effects will also crucially depend on the responsiveness of smokers to taxes throughout the income distribution (i.e. does smoking levels -both prevalence and intensity- of low income people respond more or less than those of high-income people to increased taxation).

II.2. Tobacco taxation and use in Chile

The taxation of tobacco has changed considerably in the past decades. The current law on tobacco taxation was enacted in 1974 and it originally was an ad-valorem tax. However, since 2010 the excise has been a mix of ad-valorem and specific levy. In 2010 the ad-valorem component was increased from 60.4% to 62.3% (tax-inclusive basis, on which VAT also applies)[10] and a specific component was added in the excise structure, equivalent to around 0.4

[8] Except in the first stages of the tobacco epidemic (Hiscock et al., 2012), but the vast majority of the countries are already in the later stages where tobacco consumption is clearly regressive.

[9] This might be surprising for many, but it broadly comes from the savings in public resources from smokers dying early. See Manning *et al.* (1989), Pekurinen (1991) and Viscusi (1995).

[10] The tax inclusive base is a smart legislative technique to impose very high tax-exclusive rates without causing political upsets: 62.3% excise rate and a 19% VAT rate (both on tax-inclusive basis) are equivalent to a 333% excise rate and a 102% VAT rate on a tax-exclusive base. For the excise rate, the calculation is: 62.3%/(1-62.3%-19%)=333%.

pence per cigarette (thus a pack of 20 cigarettes was charged 8 pence of specific tax).[11] In 2012 the excise structure was shifted towards the specific component: the ad-valorem rate was slightly reduced to 60.5% and the specific component was almost doubled, which in most cigarettes resulted in a increase in overall taxation.

The last amendment of the tax occurred in 2014, when there was a strong shift towards the specific component of the tax. Indeed, the ad-valorem tax on cigarettes was reduced to 30% and the specific element was increased eightfold. The net effect of this amendment was a substantial increase in revenues (estimated at an extra 0,02% of GDP),[12] but it also had a very regressive effect, as the reform produced a substantial tax increase on cheaper cigarettes (as the specific levy represents a very high percentage of their pre-tax price, which burden low-income smokers that more heavily consumed this type of cigarettes). On the more expensive cigarettes (consumed by high-income smokers), the change actually represented a tax cut as the ad-valorem component dropped substantially and the specific levy is not sufficient to offset such drop.

These high rates might be justified as tobacco consumption in Chile is very high. Indeed, Chile is within the top quintile of countries when ranked on per capita tobacco consumption and it is by far the country with the highest tobacco prevalence in the Americas (WHO, 2021). It has, however, been falling in the past decades: monthly tobacco use has fallen from 41% in 1994 to 31% in 2018 (SENDA, 2019).

From this evolution of tobacco taxation in Chile, there are two features that seem worth highlighting. Firstly, it seems that while a Pigouvian rationale has been used to justify its high taxation, the reforms may have been driven simply by a need to raise additional revenues, and tobacco offered an inelastic source. Two historical events suggest this was the main driver of tobacco taxation. Firstly, in 2010 the country suffered a strong earthquake producing substantial damage. Immediately after, the government introduced a tax reform including a steep increase in tobacco taxation (among other measures). It is hardly possible that the earthquake had increased tobacco consumption, but the government was in need of additional revenues to fund the reconstruction. Similarly, the last rise of tobacco duties came in 2014 when the incoming government pursued a tax reform to increase revenues to fund an overhaul of the public education system in Chile. In addition, the broader context of tobacco policies challenges the Pigouvian argument:[13] although Chile has implemented a high level of tobacco

[11] The specific component is established in a special unit widely used for tax purposes which is indexed to inflation (*Unidad Tributaria Mensual)*. Value indicated above corresponds to today's value converted into GBP at the current exchange rate. The final rate of the tax on cigarettes (including both specific and ad-valorem components) would be around 347%, and the VAT rate would be around 85% (on a tax exclusive basis).

[12] Biblioteca del Congreso Nacional (2014, p.238).

[13] Pigouvian taxation does not necessarily entail producing incentives to reduce the targeted activity. For instance, if a tax on car use is calculated to internalise the congestion externality, then if charged at a correct rate the tax could fund investments in infrastructure that would fully offset the congestion externality. As we have seen, however, the Pigouvian rationale for high

taxation which exceeds the minimum required by the World Health Organization Framework Convention on Tobacco Control, it has failed to introduce the required policies aimed at curbing tobacco use in other 5 areas (out of 12) contained in the same Convention. And this is not specific to Chile: developing countries in general are rather good at imposing high levels of tobacco taxation while failing to adopt broader tobacco policies to tackle the epidemic.

Secondly, distributionally speaking tobacco taxation is problematic. In line with the findings of the literature on the tobacco epidemic (see Appendix 4) tobacco use in Chile is concentrated on lower-income people and therefore its taxation entails some important regressivity. Indeed, the prevalence of daily smoking is 23% higher in the people from low socioeconomic status (SES) compared to the prevalence in high SES. Furthermore, not only is smoking more prevalent among low SES, but they also show a more intense use of tobacco, as smokers from low SES consume, on average, 10% more cigarettes than those from high SES (SENDA, 2019).[14] The regressive use of tobacco is even more striking when comparing the share of total income that tobacco represents on different groups: as a share of income, people from the first and second quintile spend 7 times more than those from the top quintile (INE, 2018).

From this evidence, however, it would be an oversimplification to conclude that tobacco taxation is regressive and therefore should be reduced. As the literature on tobacco control and behavioural economics points, the distributional analysis should also incorporate the indirect income benefits that the tax could bring to tobacco users through a reduction in smoking.[15] The crucial question from a distributional point of view would then be twofold. First, how does the tax directly affect the income of different households throughout the income distribution? And secondly, how are the positive effects of reduced consumption distributed through the population? And the answers to both rests on three crucial elements (Lockwood and Taubinsky, 2017): (a) what is the level of consumption by income level, (b) how large is the consumer bias (i.e. to what extent should indirect effect be considered *internalities*) and how does it vary throughout the income distribution (i.e. are low-income smokers more addicted? Do they show larger time-inconsistencies[16]?), and (c) what is the price elasticity of demand of tobacco, and does it change through the population?

tobacco taxes only holds if we treat some 'internalities' as externalities given the characteristics of tobacco consumption (addictiveness and time-inconsistent preferences). Given that, the Pigouvian rational necessarily should coexist with conditions that increase the likelihood of smokers quitting.

[14] Although the national drug survey only classifies respondents in 3 SES, the regressive trend in consumption seems clear and the differences are likely to be wider among the lower and higher deciles.

[15] It is only because tobacco consumption shows characteristics of addictiveness and time-inconsistency that it is proper to include these indirect effects from reduced smoking in the distributional analysis. Absent such properties, it would incorrect to include these indirect effect, as the consumer itself would fully include them in its cost/benefit calculus when deciding its level of consumption.

[16] The term "time inconsistent preferences" is used to explain individual choices that would not have been made if it had been contemplated from a removed, dispassionate, long-term perspective (Hoch and Loewenstein, 1991). Tobacco consumers show a high degree of it (Cherukupalli, 2010).

II.3. Direct income effects of tobacco taxation

As previously mentioned, smokers tend to concentrate on lower income levels, and they also tend to smoke more intensely on those levels. Thus, the direct income effect of tobacco taxes is almost always regressive, and this is certainly the case of Chile.

Moreover, the direct income effect of tobacco taxation does not depend exclusively on the consumption pattern for tobacco products, but it also depends on the structure of the excise (specific and ad-valorem) and on some features of the tobacco market (tax-free sale points). We address both below.

(a) Specific versus ad-valorem taxes[17]

From a distributional perspective, it is important to highlight that specific taxes are more regressive than ad-valorem, as they represent a higher share of the purchase price at lower prices (as lower priced goods tend to be consumed by lower-income consumers). Thus, at the low-range of tobacco products, specific taxes are considerably higher (as proportion of the price) than at the high-range: for 20-pack cigarettes in Chile, the specific element of the tax represents 100% of (excise-free) retail price on the cheapest brand, and only 33% on the most expensive ones.[18] Ad-valorem taxes, of course, do not present this regressivity, as they leave relative prices unchanged within the industry.

From a Pigouvian perspective, however, it is argued specific levies should be preferred, as the externalities relate to the volume consumed and not the price of the goods. In addition, specific taxes reduce the relative price gap between high-quality and low-quality items, so it should be preferred if we want consumers to upgrade into higher-quality goods. In addition, if investments by the sellers of the taxed commodity are desirable, specific taxation should also be preferred given that ad-valorem taxation would tax any investment that result in a price increase of the goods (in the case of tobacco, however, it is highly debatable whether upgrading and investment by producers is desirable as we mention below).

In addition, when the sole purpose of the excise is to discourage consumption there is an argument against ad-valorem taxes as they result in strong price competition between producers (since the ad valorem levy will have a multiplier effect on any price reduction). This would result in lower prices (compared with the case when specific levies are used) and therefore less reduction in consumption. However, this would not be an issue when there are producers with some kind of monopoly power in which case ad-valorem taxation would

[17] Specific taxes are those that levy a fixed nominal amount on each unit of the taxed commodity (e.g. in the UK this is 32p per cigarette). Ad-valorem taxes levy a tax proportional to the price of the commodity (e.g. in the UK this is 16.5% of the retail sale price).

[18] Calculated based on retail prices published by Chilean tax authority on March 2022 (available on https://www.sii.cl/valores_y_fechas/cigarrillos/precios_cigarrillos.htm) and using March 2022 value of the Monthly Tax Unit (*Unidad Tributaria Mensual)*, on which the specific levy is stated.

actually be more attractive, both from a revenue raising and consumer perspective (Keen, 1998).

In the case of Chile, we can see that since 2010 there has been a strong shift towards specific taxation, which increases the regressivity of the tax (when considering only the direct income effect of the tax). And although this move may be considered to be in line with some literature on tobacco control (Agostini, 2017) and Pigouvian taxation, it is problematic from several perspectives.

Firstly, the shift towards specific taxes shockingly ignores its equity and revenue raising consequences, which are arguably the two most pressing issues in the design of tax systems in developing countries. Second, the upgrading effect of specific levies might be also attainable by other means which are not regressive: regulation could enforce minimum standards on cigarette quality, producing a similar upgrading effect without the regressivity effects of a move from ad-valorem to specific taxes. In addition, it is very doubtful that encouraging investments from tobacco producers is actually desirable from a public health perspective, as the tobacco industry has a very poor record of focusing their investment decisions on health improvement in.[19] Instead of investment in less harmful products, investment might simply result in increased lobby efforts from tobacco industry, higher marketing expenditures and/or investments to enhance the addictiveness of their products (Cnossen and Smart, 2005, p. 40). Lastly, the market structure of Chilean tobacco industry also suggests the preferrable use of ad-valorem taxes. As previously mentioned, in the presence of monopoly power in the industry, ad-valorem taxes are more efficient as they increase the tax revenues and do not lead to reduced prices.[20] The data on the Chilean tobacco market clearly shows that there is substantial monopolistic power that makes increased ad-valorem taxation advisable: the main player in the industry controls over 90% of the entire market.[21]

It thus seems unlikely that the last decade's move towards specific taxation has been optimal in the Chilean case. There is, of course, a case for having an element of specific taxation within the tax, as the externalities that partly justify the levy do relate more to the quantity of consumption than to the price. In finding that balance between specific and ad valorem tax, there is one innovative tax structure that seems to strike a good balance: this is the ad valorem with specific floor taxation proposed by Sornpaisarn *et al.* (2015).[22] The idea is simple: you

[19] Even if investment on 'higher quality' does indeed mean a less harmful product, evidence from tobacco control literature has shown that smokers will adjust their smoking patterns to compensate for "lighter" cigarettes, a finding that questions the desirability of upgrading in the market of tobacco (National Cancer Research Institute, 2001).

[20] In competitive markets, a move towards ad-valorem taxes would result in a reduction in prices (due to increased price competition) and a subsequent increase in tobacco consumption (Cnossen and Smart, 2005).

[21] According to a study by the Chilean Antitrust Authority, British American Tobacco controlled around 93% of the market for cigarettes in Chile in 2014. Available at http://www.fne.cl/transparencia/libro/archivos/archivo/nuevos/informe_2227_13.pdf.

[22] The authors propose this structure for alcohol taxation and their arguments are different (to highly tax low-alcohol products that initiate drinking among the young, but not reduce the tax burden on (expensive) highly advertised, high image products). We add to the benefit of the structure that it addresses regressive concerns in the case of tobacco taxes.

impose both an specific and ad valorem tax, but only the tax that produces the higher burden is applied. For example: let us assume we impose a £3 specific tax on 20-pack cigarettes and also an ad valorem tax of 100% (tax-exclusive basis). On a cheap brand of cigarettes (assuming £2 tax exclusive price), the specific tax would be paid. On a high-end brand (assuming £6 tax exclusive price) the ad valorem tax would be paid. The benefits of the ad valorem with specific floor structure are that it addresses the Pigouvian rationale for allocating negative externalities (and internalities) more precisely, while it removes the regressivity associated with specific taxation on high-end commodities, as the tax will then increase proportionally, and also increases the potential revenues from the tax (as the tax rate will not drop on more expensive products).

- **Availability of tax-free purchases**

The other aspect that affects the direct income effect of tobacco taxes is the availability of sale points free of taxes and their accessibility by different income groups. In the tobacco and alcohol industry this is not small: duty-free purchases tend to concentrate massively on tobacco and alcohol products, and usually make a non-negligible part of the market.[23] The presence of duty-free regimes has been strongly criticised due to their arbitrariness, distortive effect and overall undermining of tax policy (Christiansen and Smith, 2001).[24] In developing countries, a further negative effect can usually be added to the existence of duty-free schemes: they enhance (reduce) the regressivity (progressivity) of the tax system, as the consumption of international travel is heavily skewed towards higher-income people.

Chilean data clearly support this distributional concern: households from the top quintile spend 26 times more in air transport than those in the poorest quintile, and even when comparing with its nearest quintile the difference is massive, as they spend 4.3 times more than those in the closest quintile. In total, the highest quintile accounts for almost 70% of total air transportation. For the purposes of this analysis, however, the difference in access to duty-free purchases is almost certainly much more concentrated in the rich households, given that only international travel grants access to duty-free shopping, which is likely to be considerably more concentrated within the rich population than domestic travel (as they are substantially more expensive than domestic air travel).[25]

It thus seems clear that abolishing duty-free schemes would be advisable.[26] Not only would this remove a blatant unfairness of the tax system (what make international travellers worthy of the

[23] Bjørkås (2020) show evidence of how significant duty-free consumption is in Norway, accounting for 10% of total alcohol consumption and for around 700,000 kg of tobacco per year. Equivalent data for Chile is not available.

[24] In their words *"There can be few more arbitrary, and transparently wasteful, economic phenomena than duty-free sales to travellers".*

[25] According to a study of air travel industry in Chile, the average price of an international flight is 3.6 times the average price of a domestic flight (Junta Aeronáutica Civil, 2011).

[26] There is also the environmental argument that duty-free schemes are harmful as the revenue forgone represents a subsidy to the highly polluting air travel industry (Christiansen and Smith, 2001, p. 21).

tax break?) and economic distortions (costs that sellers and shoppers incur to benefit from the tax break, that they would not otherwise do), but it would also improve the efficiency of Pigouvian taxation[27] and would have strongly progressive distributional effects as the tax break currently benefit almost exclusively the high-income households. There are, however, strategic issues that countries face when deciding on duty-free policies, and therefore the move could prove to be challenging. Coordinated action within Latin American could be desirable, repealing duty-free zones in regional travels in a similar fashion as the EU did in 1999. Highlighting the equity gains from repealing duty-free could also encourage developing countries to push for internationally coordinated actions in that direction, which should find a receptive international audience in the context of the current environmental crisis. But coordinated action is not imperative. Chile could unilaterally abolish duty-free treatment of returning travellers (even without getting rid of duty-free sales in Chilean airports). However, unilateral action could produce high enforcement challenges, which is why coordination is desirable. But the alternative of unilateral action could be used strategically to persuade other countries to implement the policy co-ordinately.

To sum up, it is clear that the direct income effects of tobacco taxes fall disproportionately on the poorest quintiles in most developing countries, and data from Chile confirms this. Not only is tobacco use higher among low-income people, but smokers within lower-income households also tend to smoke more intensely. To make the tax even more regressive, higher-income households tend to be the almost exclusive beneficiaries of duty-free schemes which allowed them to purchase tobacco products free of tax, further increasing the regressive direct income effect of the tax.[28]

II.4. Indirect positive effects of reduced consumption

To have a fuller picture of the incidence of tobacco taxes, we need to complement the previous analysis with an assessment of the indirect benefits that may result from tobacco taxes and its distribution within the population. The literature on tobacco control emphasises that taxes are an efficient mechanism to curb smoking (Chaloupka et al., 2012), and that tobacco users who quit or reduce their use will see health and income benefits: higher life-expectancy, increased years of employment, lower medical expenses, etc.

As tobacco consumption is more prevalent and more intense among the poor, these indirect benefits can potentially arise to a larger extent to low-income smokers. However, this depends on the price elasticities of demand for tobacco throughout the income distribution (i.e. are

[27] Christiansen and Smith (2008) show that duty-free undermines the case for Pigouvian commodity taxation, and that the optimal Pigouvian tax is less than the full externality costs in the presence of duty-free schemes.

[28] They are, economically, not *entirely* free of tax, as the duty-free prices usually are not equivalent to the tax-free price in the high street. Indeed, some of the tax break is recovered by the State (in the form of auctioning fees to duty free companies) and gained as rent by the sellers. However, evidence show that the savings for duty-free consumers are still substantial (see Christiansen and Smith, 2001).

low-income smokers more responsive to tobacco taxes?). Standard economic theory suggest that low-income people should have higher price elasticity of demand, as variations in the price of a commodity will have a larger impact on their budgets. However, tobacco products present particular characteristics that may produce different behavioural responses to those predicted by standard theory: addictiveness, time-inconsistencies in smokers preference, etc.

The literature on tobacco control suggests lower elasticities of demand from low-income smokers, as it has found that reduction in tobacco use is skewed towards the high-income groups (Hiscock *et al.*, 2012), and the empirical evidence from Chile points in the same direction: although smokers have reduced in the last decades, the reduction has been considerable higher among high socioeconomic groups. Similarly, the reduction in the intensity of tobacco use is also larger for smokers from the highest socioeconomic groups, who have reduced their cigarette intake by more than twice as much than those from the lowest group (SENDA, 2019).[29] Moreover, although tobacco users from different income levels may be equally likely to attempt to quit, the success rates on those attempts are very different (Reid et al., 2010), with a UK study showing that those from the highest socioeconomic group are almost twice as likely to succeed than those from the lowest (Kotz and West, 2009).[30]

Based on the above, it is likely that price elasticities of demand for tobacco is lower for low-income smokers. Their response to price increases (at least when measured in number of cigarettes, which seems the relevant measure from a policy perspective) is likely to be lower than the response from high-income smokers.[31] At the same time, comprehensive incidence studies on tobacco taxes have highlighted that this elasticity is fundamental to determine the overall distributional impact of the tax (Verguet *et al.*, 2015; Fuchs and Meneses, 2017).[32] This literature shows that the overall distributional impact depends on the level of elasticity and how this varies with income. The tax is more progressive the largest if the behavioural response of poor smokers.

The key lesson that emerges is that there is an essential role for the government to play to improve the distributional impact of tobacco taxation: implementing policies aiming to increase the price elasticities of demand among the low-income smokers would significantly affect the progressivity of the tax. And the tobacco control literature has stressed that there are many such policies available for government to implement (targeted smoking cessation

[29] When analysing the population divided in 3 socioeconomic groups, the reduction in daily-smokers prevalence between 1994 and 2018 has been more than 35% higher in the top group than in the bottom group. Similarly, daily cigarette intake has dropped between 2002 and 2018 by 12% among the top group, but only by 5% among the lowest group.

[30] The causal mechanisms explaining this remain uncertain. The authors suggest possible explanations: different nicotine dependence, exposure to environment with more smokers, higher stress levels, etc.

[31] Demand could still respond in terms of total expenditure in cigarettes if the consumer adjust its consumption only by buying cheaper cigarettes. But this is not the effect that a Pigouvian tax is trying to achieve.

[32] Using data from Chile, Fuchs and Meneses (2017) show that, under the assumption of large and uniform elasticities (-0.75), a 25% tobacco tax increase results in the lowest income decile gaining an equivalent to 0.64% of their total consumption while the top decile only gains 0.13%.

programmes, provision of pharmacotherapy, increasing salience of harmful effects through mass media campaigns, etc.). Unfortunately, these broader measures on tobacco control are seldomly implemented in revenue-constrained developing countries, and Chile is no exception (Sandoval *et al.*, 2021).

One possible solution to ensure government broader policy is aligned with the stated goals of tobacco taxation is hypothecation. Indeed, earmarking revenue from tobacco excise to fund programmes to help people reduce or stop smoking can connect the regressive direct income effect with the potentially progressive indirect income effects. If the programmes are properly targeted (to those more heavily smoking and less successful their attempts to reduce or quit), the regressivity concerns largely disappear, as those paying higher taxes would be obtaining the indirect benefits from reduced consumption (assuming the policies are reasonably successful). Hypothecation also has the merit of addressing horizontal equity issues of excises, as the beneficiaries of the programmes would be precisely those burden by the excise.[33]

II.5. Conclusion on tobacco taxation

Levies on tobacco in Chile are likely to be regressive, even when we considered both direct income effects from tax paid and the indirect benefits from reduced consumption. And this seems to be a feature more broadly present in developing countries. However, there is not an inevitable trade-off between public-health concerns suggesting high tobacco taxation and tax equity pointing to its regressivity, as there are available policies that would address the latter without affecting the former.

The direct burden of the tax is very regressive both because the poor tend to smoke more (and more intensely) and also due to the structure of the tax. Indeed, the move towards specific-taxation has shifted part of the burden from high to low-priced cigarettes, increasing the tax per cigarette (as proportion of purchase price) for poor people and reducing it for rich people. I argue that moving to a tax structure of ad valorem with specific floor structure would achieve a good balance between public health concerns, tax equity and revenues. This could be implemented very simply by just going back to the former ad-valorem rate, which is payable conditional on the tax liability from it being higher than the liability from the specific component of the tax.[34]

In addition, the availability of duty-free shopping, on which the richest households are the almost exclusive beneficiaries, also contributes to the regressivity of the tax while undermining

[33] It was already mentioned that horizontal inequality is not a concern when excises are fully justified on negative externalities. But tobacco taxes are also explain by negative *internalities* (see section II.1 above) so hypothecation can actually play a role in addressing horizontal inequalities.

[34] As mentioned, the ad-valorem component was dropped from 62.3% to 30% while the specific component was increased fifteen-fold (first almost doubling and then increasing it eight-fold). Reversing this trend to an ad-valorem with specific floor component would require increasing slightly the specific component (to account that now only one of the components will determine the entire liability) and reintroducing the 62.3% ad valorem rate.

the public-health goals of the excise. Coordinated action to eliminate duty-frees (or banning tobacco products from the exemption) could address both the regressivity of the tax and further advance the fight against the tobacco epidemic.

The indirect income gains from reduced consumption could change this bleak distributional picture, but this fundamentally depends on the price elasticity of demand of tobacco users. In order to turn a seemingly regressive tax into a progressive policy, governments need to implement policies that would increase the responsiveness of people to tobacco prices. The WHO has been promoting these policies for decades, such as offering pharmacotherapy or counselling to help those intending to quit, mass education campaigns to increase awareness of harmful effects, and imposing regulation that restricts tobacco visibility and attractiveness, such as banning advertisement, imposing plain packaging, etc. As the poor are disproportionally affected by the tax and seem less responsive, the policies should be targeted towards low-income smokers, which would enhance the progressive potential of reduced smoking. It is surprising that many developing countries have not yet adopted these policies, as they were included in the WHO Framework Convention on Tobacco Control which has been signed by almost every country (World Health Organization, 2003). Moreover, earmarking the revenues from tobacco tax to fund smoke-cessation programmes targeting the poor would ensure (assuming reasonable success of this programmes) that the overall incidence of the tax is not regressive, and it would also address horizontal equity concerns.

What seems clear is that imposing the very high tobacco taxes that are common today without implementing comprehensive policies to reduce smoking shows a total disregard for the regressive nature of the tax. Such a narrow policy seems to reflect something mentioned earlier: governments view tobacco taxation simply as an easy source of revenues, but they use public health arguments to justify them before the public. If concerns about inequality and public-health are genuine, then tobacco taxes need to be complemented with policies targeting the lower-income smokers to assist them in their efforts to reduce tobacco consumption which can be supported out of revenues from tobacco taxation.

III. Alcohol taxation

III.1. General issues in alcohol taxation

The taxation of alcohol shares much of the same characteristics as levies on tobacco. Its original rational was an easy source of revenue on a commodity that could not be considered a "necessity". Thus, it was first understood as an efficient source of revenues based on the inverse-elasticity rule. As mentioned for tobacco taxation, however, this was later challenged

by commodity taxation highlighting the relevance of cross-price elasticities of demand and by the modern literature on optimal taxation.[35]

As with tobacco, these challenges did not lead to a reduction in alcohol taxes. Instead, the discourse on its taxation shifted towards a Pigouvian rationale, as the awareness of the harmful effects of alcohol consumption increased. Thus, its taxation started to be justified on internalising the negative externalities that its consumption produced: traffic accidents, violence, health issues, reduced productivity, etc.

There are, however, two characteristics of alcohol that differ from tobacco. First, the literature has highlighted that the regressivity concerns of tobacco taxation are not as important in connection with alcohol taxation (Smith, 2005). Indeed, although the tax might be regressive in some countries (Poterba, 1989), its regressivity seems to be considerably less than in the case of tobacco. And there is also evidence suggesting alcohol taxation would indeed be proportional and not regressive (Smith, 2005).[36] Thus, from an equity perspective alcohol taxation would be a stronger tax policy than tobacco taxation.

Secondly, the relation between the externalities and the consumption of alcohol is weak. Indeed, the vast majority of the externalities are only caused by abusive drinking, and this tends to be a minor part of alcohol consumption.[37] Moreover, even among abusive drinkers, the externality of each drink is not linear (Smith, 2005). This is problematic for its taxation, as any gains that might be obtained from internalising the social costs of alcohol need to be weighed against the welfare loss from reduced consumption from non-abusive drinkers. Thus, from a tax efficiency perspective this would suggest that the case for alcohol taxation is weaker than that of tobacco.

III.2. Alcohol taxation and consumption in Chile

Taxation of alcohol is one the oldest types of levies in Chile. Indeed, it was firstly enacted in 1902, and it was the first tax on domestic sales. Its implementation also entailed establishing the first tax agency, as other duties were collected by the custom offices and local authorities.[38] Interestingly, the discussion on alcohol tax had a complex interaction with the landowning elite, as the wine industry has been an important economic activity for it. Unsurprisingly, the first alcohol tax exempted wine, which increased the political outrage towards the new tax

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[35] Supra n 7.

[36] Differences results in distributional analysis depend on the country analysed (consumption patterns differ between countries) and on the baseline used (as showed by Pechman (1985) if annual income is used the tax appears more regressive than when using consumption or lifetime income).

[37] There is evidence that *any* amount of alcohol is cancerogenic (Bagnardi *et al.*, 2015), but most externalities justifying its high taxation are beyond this.

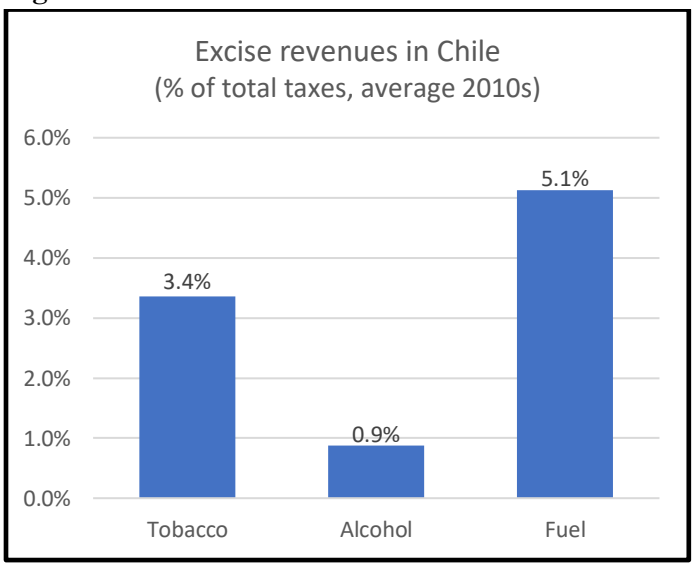
[38] The *Adminsitración del Impuesto Sobre Alcoholes* (Alcohol Tax Administration) was later transformed into what is now the Internal Revenue Service.

among the affected industry, mainly industrial distillers (Fernandez Labbe, 2006).[39] This special treatment of wine has been a constant feature of alcohol taxation in Chile, and remains today.

The current alcohol taxation has been included in the VAT law since 1979, and it is an ad-valorem levy on the same tax-free base as the VAT. The rates were last increased in 2014, as part of the tax reform to fund improvements to the public education system in Chile, leading to a 20.5% rate for beer and wine, and 31.5% for spirits. Unlike the VAT, however, the tax is levied on all stages of production except on retailers, therefore leaving out of the tax the value added by the retailer.

Consumption of alcohol in Chile, on the other hand, is high and very problematic. While it is one of the major social health issues in Latin America (Lim *et al.*, 2012), Chile has the highest alcohol consumption in America and, more seriously is characterised by episodic drinking as the culture is to drink (large amounts) only a few days a week (Peña *et al.*, 2017). This results in a higher tendency to abusive consumption, which explains why alcohol is considered the leading risk factor of death and disability in the country (Ministerio de Salud, 2008). When comparing the social costs of alcohol and its taxation, there is a strong argument for substantially increasing the tax, with estimations that the negative externalities are around 5 times the tax revenues from alcohol levies (Margozzini *et al.*, 2018). Figure 4 shows that alcohol is, by far, the lowest excise, which is surprising as it is the leading risk factor of death and disability.

Figure 4



Source: own preparation based on data from SII (2023)

[39] The law imposed a fix duty per litre of pure alcohol on producers, but only applicable to drinks of at least 16º of alcohol, implicitly exempting wine.

Unlike tobacco, however, its consumption is not concentrated in the lower income groups. Indeed, the alcohol literature has shown that abstinence is actually higher in low socioeconomic groups, while volume of alcohol consumed and patterns of abusive consumption show similar levels across different socioeconomic groups (Peña *et al.*, 2017). Data on consumption patterns by income level confirm this, showing that expenditure on alcohol is roughly proportional throughout the income distribution (INE, 2018).

There are, nonetheless, differences in the structure of consumption between different income levels which seem relevant for a distributional analysis. Indeed, consumption of wine and spirits is positively correlated with income (highest quintile spends more than (almost) twice as much on wine (spirits) than the lowest quintile, in relative terms). Conversely, beer consumption is negatively correlated with income, as the poorest quintile spends almost 50% more on it than the richest quintile, as a share of expenditure (INE, 2018). As a share of total alcohol consumption, wine and spirits represent a 43% and 21% for the richest quintile, respectively, while for the poorest quintile they only amount to only 25% and 13%, respectively. Beer, on the other hand present the opposite pattern, amounting to a 62% of alcohol consumption of the lowest quintile, but only 36% of the richest.

III.3. Distributional incidence of alcohol taxes in Chile

Based on the patterns of consumption shown above, Chile seems to confirm the predictions of the tax incidence literature: distributional concerns around alcohol taxation are not as important as those raised by tobacco taxation. This is mainly the result of two factors. Firstly, alcohol taxes are substantially lower than tobacco taxes, so any distributional impact will be considerably smaller. AS shown in Figure 2, revenues from tobacco taxation are almost 4 times larger than those from alcohol. In terms of tax by unit of consumption, in Chile total taxes on tobacco fluctuate between 230% and 1,900% of the tax-free price, while alcohol taxation only represents between 36% and 45.1%.[40]

Secondly, the consumption of alcohol in Chile does not seem to be higher in the lower-income groups than in the rest of the population. Therefore, the incidence of the tax is likely to be roughly proportional. This is not to say that there are no potential reforms that could improve alcohol taxation in Chile from an equity perspective, but simply that the tax is not particularly regressive.

Nonetheless, a (roughly) proportional tax in a context of high inequality (as in Chile) is far from ideal, which is why progressive reforms are further analysed. A more granular analysis of alcohol taxation in Chile shows that improvements are indeed possible and could target both

[40] These percentages are not the sum of the excise rate (20.5% and 31.5%) and the VAT rate (19%) as the alcohol excise is not applied to the retailer stage. Thus, I have applied the excise on the price at the wholesale level, using the OECD's estimations of value-added by sector, which show roughly 17% of value-added by Chilean's third sector (OECD, 2022).

the efficiency and the equity of the tax. The first of this improvement relates to more closely connecting the harmfulness of the goods to the tax, as the tax is only justified on Pigouvian grounds. Evidently, the externalities are associated with the volume of *alcohol* ingested. Thus, the optimal tax should be directly related to the alcohol content of the drink, as stronger drinks are potentially more harmful. Indeed, uniformity in taxation *per unit of alcohol* across the main products would seem optimal from a Pigouvian point of view (Smith, 2005). This is however, far from the case in Chile (see table 15 below).

Table 15: Rates per litre of alcohol content *current tax* (relative to taxation of beer)

Beer (5% abv)	Wine (12.5% abv)	Spirits (40% abv)
100%	40%	19.2%

The above shows that beer, relative to its alcohol content, is very heavily taxed in comparison with wine and spirits. This is indeed puzzling, as beer is arguably the least prone to abusive consumption: spirits (and to a lower degree wine) have the greatest potential to intoxicate very fast and, thus, tend to be more abusively consumed than beer. Not only is this in conflict with a Pigouvian rationale, but it is also in stark contrast with international experience: all EU members states levy taxes on spirits on the basis of alcohol content, and tax on beer is also always based on its strength (Smith, 2005). Moreover, the tax burden is usually *increasing* (per unit of alcohol) as the strength of the category rises, as stronger drinks are more susceptible to abusive consumption. In the UK while the typical beer is taxed at a 19.08 pence per degree of alcohol per litre, the typical wine is subject to a levy of 23.7 pence, and spirits are taxed at 28.74 pence.[41] In the US, the federal alcohol tax is similarly punitive with spirits, as they are taxed at more than twice the rate on beer per degree of alcohol (Shafer, 2014).

A revenue-neutral move towards uniform taxation per unit of alcohol would imply a tax rate of 2% per degree of alcohol,[42] which would result in the typical beer being subject to a 10% tax, the typical wine being subject to a 25% tax, and the excise on a typical spirit would be 80%. This would make the tax more efficient by more closely aligning the harmful component with the tax burden. It would remove the bias towards wine and spirits that is currently present in the system, inducing consumers to less harmful consumption of beer, and it should reduce the welfare loss from reduced consumption of non-abusive drinkers.[43] It also has the merit that it creates incentives for the industry to reduce the alcohol content of their products.

[41] Alcoholic Liquor Duties Act 1979, section 5, 36 and Schedule 1 Part 1.

[42] Based on the data on households' expenditure, on a static basis such a reform would be slightly revenue-enhancing, as the average household would pay almost 21% more alcohol tax than under the current system.

[43] Such a reform could encounter strong opposition from the wine industry. However, most wine produced in Chile (80%) is exported, so domestic taxation should not be essential for the industry (Wines of Chile, 2013). If support from the wine sector is essential, the reform could be coupled with exports incentives which should be more relevant to it.

Following the argument made by Smith (2005), however, we should impose rates *progressively* increasing as stronger drinks may be more harmful per unit of alcohol. A revenue-neutral reform under that rationale could impose a 1.5% tax rate per degree of alcohol on beers, a 2% rate on wine and a 2.25% on spirits (roughly replicating the proportions in the UK legislation), resulting in rates of 7.5%, 25% and 90% on typical beers, wines and spirits. This would raise slightly more revenues than the uniform 2% rate, [44] but it may be more efficient from a Pigouvian perspective and more progressive in distributional terms, as shown below. Removing the exemption from alcohol duty for retailers would also enhance the efficiency of the tax, but will not be explored here as it does not seem to have equity gains associated.[45]

At the same time, the finding from Margozzini *et al.* (2018) that alcohol externalities massively exceed tax revenues in Chile, imply that there is a strong argument for doing a revenue-enhancing reform. Based on that, the reform could impose higher rates per alcohol unit, by imposing a 2% rate per unit of alcohol for beer, a 3% for wine and a 4% for spirits. A reform along these lines would result in very high tax rates for spirits (typically around 160%), but this would be consistent with international practice. In the UK, for example, if we calculate the effective tax rate on pre-tax prices on the 6 most sold spirits, the simple average of the Spirit Duty would be around 181%.[46] Such a reform would (ignoring behavioural responses) double the revenues from alcohol taxation and would also be very progressive, as shown below.

What is really attractive of these proposals, is that they would be very progressive. As Table 16 shows, in the case of the 2% uniform rate per degree of alcohol, the tax liability of the poorest quintile would be roughly the same, while the burden of the richest quintile would increase by 34%, reflecting the fact that their alcohol consumption is more concentrated in high-alcohol drinks such as wine and spirits. Even more progressive would be the reform that imposes *progressive* rates per degree of alcohol, which would increase the burden of the richest quintile by 39% while leaving the tax liability for the poorest segment unchanged.

Table 16: New alcohol tax burden under proposed reforms (as % of original burden)

Quintile	Uniform 2% per alcohol degree	Progressive rates (1.5-2.0-2.25%) per alcohol degree[1]
First	102%	101%
Second	108%	108%
Third	105%	104%
Fourth	124%	126%
Fifth	134%	139%

[1] 1.5% applied to beer, 2% applied to wine and 2.25% applied to spirits.

[44] Would raise 23% more revenues than the current duty, without considering behavioral responses.

[45] Efficiency would increase by removing the incentives to vertically integrate with retailers to reduce the tax base of the alcohol tax.

[46] Calculations based on prices of one of the biggest supermarkets in the UK for the top 6 spirits according to Morning Advertiser (2019).

In the case of the revenue-enhancing reform, it would not only double the revenues from alcohol taxes but would do so in a very progressive way: almost half of the additional revenues would arise from the top quintile, while the bottom quintile would only be burdened with 5% of the additional revenues (see Table 17)

Table 17: Distribution of additional revenues and new tax burden from revenue-enhancing reform (progressive (2-3-4%) rate per alcohol degree)[1]

Quintile	Distribution of additional revenues	New alcohol tax burden (as % of original burden)
First	5%	162%
Second	9%	174%
Third	11%	168%
Fourth	28%	208%
Fifth	47%	228%

[1]2% rate applied on beer, 3% on wine and 4% on spirits

The previous proposals might look overly complex for some developing countries, and I am conscious that simplicity is a key concern in these settings. But the alleged complexity should not be unsurmountable. There are ways of legislating a reform along the lines proposed here which would minimise complexity. For instance, it could be established that the 10% tax rate (or 7.5% in the case of progressive rates) will apply to any beer with alcohol content between 4º and 6º, which would cover the vast majority of them. Similar provisions could be established for wine (25% rate applying to any wine between 10-15º of alcohol) and for spirits (80 % rate applying to any spirit between 35-45º of alcohol). In addition, small producers could be subject to a fixed rate on their products notwithstanding the precise alcoholic content, removing some of the compliance burden to producers which may have less control over the precise alcohol content of their products.

III.4. Indirect benefits from alcohol taxation

As mentioned for tobacco taxation, distributional analysis of alcohol levies should also consider the indirect benefits from reduced alcohol consumption as a result of taxation. As previously mentioned, the magnitude and incidence of these benefits will crucially depend on the elasticity of alcohol consumption within the population and between the different socioeconomic groups. Thus, as suggested by the alcohol control literature, government action should not be limited to imposing higher taxes on alcohol. Instead, alcohol duties should be part of a wider policy addressing abusive alcohol consumption (Peña *et al.*, 2021).

As in the case of tobacco, benefits arising from reduced alcohol consumption have the potential of being progressive. This is somewhat surprising as alcohol consumption is not concentrated among the lowest-income groups (unlike tobacco). However, it has been widely observed what has been called the "alcohol-harm paradox": people from low socioeconomic groups tend to experience greater alcohol-related harm, even when the amount of alcohol

consumption is the same or less than for individuals of higher socioeconomic groups (Bloomfield, 2020). The paradox is puzzling for epidemiologist and public health experts, but its existence is not challenged.[47] Given the existence of this paradox, governments efforts at increasing the elasticity of demand of alcohol would be able to reap a double dividend: reducing the externalities related to alcohol consumption and enhancing the progressiveness of alcohol taxation by curbing the 'alcohol-harm paradox'.

Unfortunately, developing countries tend to fail in imposing wider alcohol-control policies (WHO, 2018), and Chile is no exception. This failure seems to suggest that the taxation of alcohol is not pursued solely to reduce its consumption but more likely as an easy source of revenue: indeed, from the three "best buys" policies advised by the WHO, almost all countries impose excises duties on alcohol (95%), but the implementation level in other pricing policies, marketing restrictions and regulating availability is substantially lower (WHO, 2018). In this regard, Chile is no outlier: it has followed taxation policies prescribed by WHO (although without directly linking the tax to the alcohol content, as mentioned above), but there has been reluctance in legislating more encompassing policies. Indeed, there is almost no restriction on alcohol marketing and measures to reduce alcohol availability have actually been weakened in the past decades, both legislatively and due to lack of enforcement[48] (WHO, 2018).

Similar to the case of tobacco, policies implementing treatments for alcohol dependence targeted to low-income groups have great potential to enhance the progressivity of the tax. Simultaneously, public programmes to increase the screening and brief interventions[49] for harmful drinking would also help ensure that the indirect benefits of alcohol taxation arise fairly within the population, especially if focused on removing poor people from being trapped in the 'alcohol-harm paradox'.

III.5. Conclusions on alcohol taxation

Although alcohol taxation raises less equity concerns than tobacco, the current state of alcohol excise in Chile is far from ideal. Three aspects seem problematic in the Chilean case, and some of them might reflect common defects of alcohol taxation in developing countries. First, the tax seems to be too low when compared with the externalities produced by alcohol consumption. Secondly, the structure of the tax seems to be both inefficient (not closely

[47] It is not clear what are the causal mechanisms through which socioeconomic conditions increase alcohol-related harm (keeping alcohol consumption fixed). Possible explanations offered by the literature are more heavy episodic drinking (Probst *et al.*, 2020) and more alcohol outlets in poor neighbourhoods (Berke *et al.*, 2010).

[48] There seems to be a political economy failure in the policies to reduce alcohol availability. The most relevant of such policies is to limit the number of outlets in a borough to a maximum of 1 per 600 residents. However, the regulation is enforced by local municipalities, who benefit from the licence fee that outlets need to obtain. Thus, the local municipalities do not have an incentive to enforce the maximum ratio of outlets, and the evidence is shocking: a 2018 study found that current number of alcohol licences are three times more than it would be if the 1/600 ratio was properly enforce (Peña *et al.*, 2021).

[49] Screening interventions aim to identify harmful alcohol consumption patterns (Babor *et al.*, 2001), while briefing interventions provide information, advice, counselling or referrals to those identified as harmful consumers (Babor and Higgins-Biddle, 2001).

connected with alcohol content) and with a regressive bias (disproportionally taxing beer, which is more heavily consumed by low-income consumers). Indeed, wine (the preferred drink for high-income consumers) is subject to the same alcohol excise as beer, even though it usually has 3 times the alcohol content. Spirits (also preferred by high-income consumers) are barely subject to a 50% higher tax rate than beer, although usually have 8-10 times the alcohol content of beer. Thus, a move towards uniform or progressive rates per unit of alcohol would increase the efficiency of the tax and would also shift part of the tax burden from the poorer to the richer households.

Lastly, the tax seems to be almost a stand-alone policy trying to deal with harmful alcohol consumption, while the government fails to introduce broader public health policies that could make the tax progressive by increasing the elasticity of alcohol consumption within the population and specially among the low-income segments. Indeed, the indirect benefits from alcohol taxation can potentially make the excise progressive, but that requires a broader public policy intervention to help low-income consumers overcome the observed 'alcohol-harm paradox'. Failure to introduce these broader public health policies also suggests that alcohol taxation is driven more by its revenue potential than by a genuine Pigouvian rationale. As mentioned above in the case of tobacco, earmarking revenues from alcohol tax to finance these programmes should be a good policy, as it would ensure that the Pigouvian rationale drives the policy and should contribute to making the tax progressive (if programmes are properly targeted to tackle the 'alcohol-harm paradox'). Another aspect of tobacco taxation also apply in the case of alcohol: duty-free schemes only make the excise more regressive while undermining the public health concern that allegedly justifies the tax.

IV. Fuel Taxation

IV.1. General issues in fuel taxation

Similar to the other taxes analysed here, taxation of fuel has also changed in the way it is perceived, from being originally conceived as an efficient revenue-raising tool to being lately considered an externality-correcting mechanism. The first fuel levies were mainly thought to raise revenue to fund highway constructions in the US (Burnham, 1961). Subsequently, as automobile use expanded, the negative externalities grew and became apparent. Thus, tax on fuel was seen as an efficient way of correcting congestion and pollution costs. Furthermore, as climate change emerged as a criticual issue the externalities from fuel now also include the negative *global* impact they have on the planet.

From a distributional perspective, this is another area where there seems to be significant differences between advanced economies and developing countries, and where Pigouvian goals have been seen as conflicting with distributional aims of fiscal policy. One of the reasons that might explain this perceived trade-off between externality-correcting benefits and vertical

equity in fuel taxation has to do with the fact that the tax incidence studies on fuel taxes was, until recently, almost exclusively focused on developed countries, where fuel use patterns resulted in fuel taxation being somewhat regressive. Indeed, fuel taxes were found to be regressive in the US (Poterba, 1991) and in the UK (Santos and Catchesides, 2005) and that regressivity insight seems to have permeated into political discussions in many countries, even though the results of these studies were very difficult to generalise beyond their specific settings.

More recently, the alleged regressivity of fuel taxes has been subject of a renewed attention, as environmental issues have gained political momentum. In that context, incidence studies started to appear from developing countries, which showed an interesting result: the distributional consequences of fuel taxation tend to be the opposite than in advanced economies, as they seem to have a progressive impact. Studies in Costa Rica (Blackman, Osakwe and Alpizar, 2010), Mexico (Antón-Sarabia and Hernández-Trillo, 2014), Brazil, China, Indonesia and India (Sterner, 2012) confirm this progressive impact of fuel taxes in developing countries. However, most of these studies highlight that the distributional effects are not uniform since they are very sensitive to the characteristics of the domestic economy. Thus, not only the extent of progressivity varies significantly between developing countries, but there are also some cases in which the tax has been found to be neutral or even regressive, as in Mexico (Sterner and Lozada, 2011)[50] and Iran (Ettehad and Sterner, 2011).

The enactment or increase of fuel taxes also tends to trigger strong political challenges, which often have been insurmountable. This strong political opposition tends to rest on regressivity concerns of the tax. In the past decade several riots and protests were triggered by fuel tax reforms around the world, with the *gilets jaunes* being arguably the most memorable.[51] Any attempt at reforming fuel taxes should be acutely aware of this political obstacle, and strategically plan effective ways of framing the reform to highlight that the tax is fair and progressive.

IV.2. Fuel taxation and use in Chile

The first tax on fuel in Chile was enacted in 1986. As in other countries, the levy was introduced simply as a useful revenue raising tool, specifically in the context of funding the reconstruction efforts after the 1985 earthquake (Agostini and Jiménez, 2015). The 1986 law included a specific levy of 3 Monthly Tax Units (UTM)[52] per cubic metre of gasoline plus an ad valorem component. In the case of diesel, the specific levy was only of 1.5 UTM per cubic

[50] The two Mexican studies reach different conclusions as one measures the distributional impact of an optimal tax (2014) while the other measures the incidence of the current fuel tax (2011).

[51] Other examples of riots triggered by fuel taxes/subsidies: UK in 2000, Myanmar in 2007, Bolivia in 2010, Bangladesh and India in 2011, Nigeria in 2012, Indonesia and Sudan in 2013, Mexico in 2017, Zimbabwe in 2019, Ecuador in 2021, Kazakhstan in 2022.

[52] This is an inflation-indexed unit used for tax purposes: *Unidad Tributaria Mensual,* equivalent today to around £55.

metre. The ad valorem component was dropped a few years later, while the specific levy has remained in place until today, and its value has changed significantly (and not consistently) over time. Since 2010 it has been stable at 6 UTM for gasoline and it has remained unchanged at 1.5 UTM for diesel since its enactment in 1986. In addition to fuel tax, VAT is also applied on an excise-free basis.

This excise structure results in a marked under-taxation of fuels from a Pigouvian perspective. Indeed, it has been estimated that an optimal level of fuel taxation in Chile would entail an increase of 60% of gasoline and more than 300% on diesel levies, as the negative social effects are considerably higher than current tax revenues (Parry and Strand, 2012).

Direct fuel consumption, on the other hand, seems to be strongly correlated with income. Indeed, the average expenditure on fuel for the top quintile is 5.5 times more than for the lowest quintile, and the positive correlation with income is observed throughout the entire income distribution. Even as a share of total expenditure, the richest quintile spends 50% more in fuel than the poorest quintile (INE, 2018). This is not surprising, as car ownership is strongly concentrated on the richest segments of the population: while in the bottom quintile less than 10% of households own a car, 74% do in the top quintile.

IV.3. Distributional impacts of fuel taxes in Chile

The distributional incidence of fuel taxes depends on three elements. First, and most relevant, is the direct income effect of the tax. As mentioned, the car ownership and the expenditure data strongly suggest that this effect should be clearly progressive in Chile. Secondly, fuel taxes will also hit household budgets through their impact on other items of consumption, most importantly on public transport costs, as fuel is a relevant intermediate input.[53] This, as most studies on fuel tax incidence show, is likely to be regressive yet considerably smaller than the direct income effect.[54] Chilean consumption patterns confirm the findings on most developing countries, as expenditures in public transports are clearly decreasing with income: the lowest quintile spends 4 times more in public transport than the richest quintile (as a share of total expenditure).

Thirdly, as in every case of Pigouvian taxation, we need to properly understand the distributional impact of the externalities the tax is intending to correct. Thus, even if a corrective tax is regressive in its direct income effects, if the externalities are borne exclusively

[53] Fuel taxes also affect the prices of other commodities in the economy such as food or housing since fuel is part of their cost structure although significantly less relevant than in the case of public transport. The economic literature suggests that the impact of these 'second order' effects is likely to be minimal (Blackman, Osakwe and Alpizar, 2010), so I exclude them from the analysis.

[54] The exception would be on very poor countries, where the poorest segments of the population would be unable to afford public transportation, therefore not being affected by the indirect impact through public transport. This has been found by Cao (2011) for the case of China; by Mekonnen et al. (2011) for Ethiopia; and by Akpalu and Robinson (2011) for Ghana.

by the poor it might turn out to be neutral or even progressive. The literature on tax incidence has found that fuel levies in Chile are, indeed, progressive (Agostini and Jiménez, 2015). Although the study did not address indirect effect of fuel taxes through public transport prices (which is likely to be regressive), the overall progressivity is unlikely to be offset by the indirect effect on public transport, as taxes on fuel used for public transport (diesel) raise considerably less than the rest of fuel taxes (gasoline revenues represent around 80% of total fuel revenues).

As it was the case with alcohol tax, even if the fuel levies do not raise strong equity concerns, there are improvements that could enhance its progressivity and tackle the inefficiencies it has from a Pigouvian perspective. Firstly, there is the critical issue that fuel is significantly undertaxed when compared with its negative externalities, so increasing it would make it more efficient. From a distributional point of view, the crucial question is who is getting away with uninternalized externalities and who is bearing those uninternalized costs, and the evidence strongly suggests that these are at opposite ends of the income distribution: those at the top are more likely to produce the uninternalized externalities, while those at the bottom seem more likely to suffer those negative consequences.

Indeed, when analysing patterns of mobility by income levels, it has been found that the richest quintile pollutes 6.7 times more than the bottom quintile and consumed 7 times the energy, both of which are mostly down to the extreme concentration of private car use in the top quintile. Although it is hard to precisely estimate how are the burdens from these externalities distributed among the population, there is evidence that the poor are more heavily burdened: the bottom quintile travels on average 38% slower that the richest (thus seem more burdened with congestion) and benefits 60% less from investments in transport infrastructure (Iglesias *et al.*, 2019). At the same time, it has also been found in Chile that people living in poorer areas tend to be exposed to higher air pollution (Fernández and Wu, 2016).

Secondly, and even more shocking from a Pigouvian perspective is the beneficial treatment afforded to diesel: its taxation is a quarter of the levy on gasoline, while its external effects are likely to be higher since it is more polluting (diesel vehicles emit more nitrogen oxide and particulate matter). In addition, this is clearly distorting vehicles choices of consumers: in Chile from 2002 until 2008 diesel cars increased by a 112% while gasoline cars only increased by 30%. More problematically, the distortive effect is likely to be regressive: when analysis data on *gasoline* consumption, Agostini and Jiménez (2015) found the puzzling pattern that the top quintile was the only group that had not increased their gasoline consumption in the period

1996-2006, and suggested as a possible explanation that these groups were shifting to diesel cars to benefit from its reduced taxation.[55]

Thus, from both from an efficiency and an equity perspective correcting the under-taxation of fuels and the arbitrary discrimination in favour of diesel seem to be advisable.[56] The consumption patterns of fuel guarantee that the overall effect should be progressive, and the resulting reduced externalities are likely to also benefit lower-income groups the most.

The political feasibility of such a reform, however, should not be taken for granted as the experience (both from Chile and abroad) shows that fuel tax reforms are politically challenging. Regressivity claims (though unfounded in most developing countries and certainly in Chile) and strong political power from truckers' associations have curbed any attempt to increase diesel taxation. There is also evidence that the price of public transport is also as (or more) salient than fuel taxation.[57] The combination of these two factors suggest a policy alternative that should increase both the political feasibility and the distributional impact of an increase to fuel taxes: earmarking additional revenues from an increase in fuel taxes to fund a subsidy to the price public transport.

Lastly, there is an additional policy available that could both enhance the efficiency and the equity of fuel taxation. As it is also the case with VAT, the aviation industry is preferentially treated when it comes to fuel taxation (not only in Chile but in most countries), as fuel used for aviation is expressly excluded from the excise. As mentioned in Chapter 4, the consumption of air transportation is probably one of the categories of commodities more highly concentrated within the high-income groups. Indeed, the top quintile spends 26 times more on air transport than the lowest quintile (INE, 2018). This preferential treatment seems to be no longer sustainable both on environmental and tax equity grounds. As a consequence, a move along the lines of the EU to bring into the tax net aviation fuel could be an even stronger policy choice for developing countries such as Chile, since it not only has environmental benefits but also very progressive distributional effects.[58]

IV.4 Conclusions on fuel taxation

A Pigouvian analysis of fuel taxation in Chile clearly shows that currently fuel is considerably undertaxed when compared to its externalities. A distributional analysis also shows that

[55] This is definitely feasible as diesel vehicles in Chile tend to be more expensive than gasoline vehicles (although cheaper in the long run given the under taxation of diesel). Thus, taxpayers with more financial resources are likely to be in a better position of shift to diesel cars as they do not face liquidity constraints.

[56] If diesel is used for public transport, there is a strong case for giving a tax relief targeted to public transport. Alternatively, the additional revenues from an increased in diesel taxation could be recycled into subsidies for public transport.

[57] The price of public transport is arguably one of the few topics that are more politically salient than fuel taxes. Indeed, the strongest social uprising of the last decades in Chile was triggered by a hike in the metro fare in 2019.

[58] The European Commission proposed a "green deal" package including phasing out the free emission allowances for aviation (European Commission, 2021).

increasing the tax should be progressive. In addition, increasing the tax should reduce the domestic externalities of fuel use, congestion and pollution, and this reduction should benefit low-income families the most, as evidence suggest that they are the most affected by these externalities.

Based on the above, the recommendation would be to align fuel taxation to its Pigouvian optimal, which would mean increasing gasoline tax in 60% and diesel tax in 300% (Parry and Strand, 2012). As these are large increases, a staggered implementation seems advisable. From a political perspective, the additional revenues should be earmarked to subsidies and investment into public transport, which seem to be one of the few areas that are more politically salient than fuel taxation. Recycling the additional revenues into public transport should also increase the progressivity of the reform, as lower-income households as the use of public transport is concentrated among middle and low-income households. It is also advisable to remove the exemption that benefits the aviation industry, which should also be very progressive as air transport used is very concentrated among high-income households (see chapter 4 for details).

V. Conclusions

The analysis of the three main excises in Chile leaves very interesting lessons for tax policy of developing countries. Firstly, there is an intriguing pattern emerging which suggest a strong regressive bias: while only one of these excises raises strong equity concerns due to its regressive pattern of consumption (tobacco), it is precisely the most heavily (and regressively) taxed. Contrastingly, while both alcohol and fuels do not entail such equity concerns, they are both massively undertaxed from a Pigouvian perspective. It thus seems that efficiency arguments are very persuasive when they burden the poorest segments of society, but less so when they also entail correcting the behaviour of the better off.

Secondly, the analysis shows that there are efficient distributional gains available in all three excises. Interestingly, these equity gains in many cases also entail efficiency gains, as with the case of increasing alcohol and fuel taxation to fully price the social costs that they impose. On tobacco taxation the analysis highlights that this is the more regressive of the excises, although its high tax burden seems justified from a public health perspective. To address the regressivity of the tax, three key lessons emerge: first, ad valorem taxation would reduce the regressivity of the tax. If a specific component is justified from a Pigouvian perspective, following an ad valorem with specific floor structure is suggested. Second, duty-free shopping provides a tax-exempt point of sale which is almost exclusively available to richest consumers, increasing the regressive effects of tobacco (and alcohol) taxation. There is no valid justification for maintaining duty-free regimes and so they should be repealed. Lastly, the tobacco excise needs to be part of a comprehensive policy effort to reduce smoking, including programmes to

increase the responsiveness of smokers to tax increases. This should ensure that the indirect benefits of the tax (reduction in smoking) offset the regressive direct effects of the tax.

On alcohol taxation the analysis identified three reforms that should advance both the equity and the efficiency of the regime. First, the overall alcohol taxation should increase to match its negative externalities. Secondly, the structure of the tax is currently biased in a regressive way, as it imposes the highest burden (per unit of alcohol) to beer, which is the only alcoholic drink more heavily consumed by lower-income groups. Reforming the tax to apply uniform or progressive tax rates per unit of alcohol would increase both the efficiency and the distributional impact of the tax. Lastly, the alcohol excise also should be part of a wider policy effort to tackle abusive alcohol consumption to ensure the indirect benefits from reduced consumption are fairly distributed within the population.

Fuel taxation is the only excise that can be clearly progressive in the context of developing countries. In line with the regressive bias that we identify on excise taxation in general, fuel is also very undertaxed from a Pigouvian perspective. The analysis identifies three improvements to the excise which should advance both its efficiency and its progressivity. Firstly, increasing the tax to align with its negative externalities is totally justified, and the effect should be progressive. Second, the beneficial treatment of diesel should be repealed as it undermines the Pigouvian rationale and seems to be shifting the tax burden away from high-income households (as they are more likely to shift to diesel vehicles given the distortion introduced by a reduced fuel tax). Finally, the political challenges of increasing fuel taxes should be addressed by earmarking the additional revenues for public transport subsidies, which should increase the political feasibility and progressivity of the overall reform.

This chapter concludes the analysis of the indirect tax system. The findings of this Part II are welcomed, as they show the availability of progressive reforms in all areas of the tax system examined, which can enhance the distributional impact of the tax system at reduced efficiency costs. Part III will not focus on the direct tax system.

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Part III

In search of progressivity in the Direct Tax System

Introduction

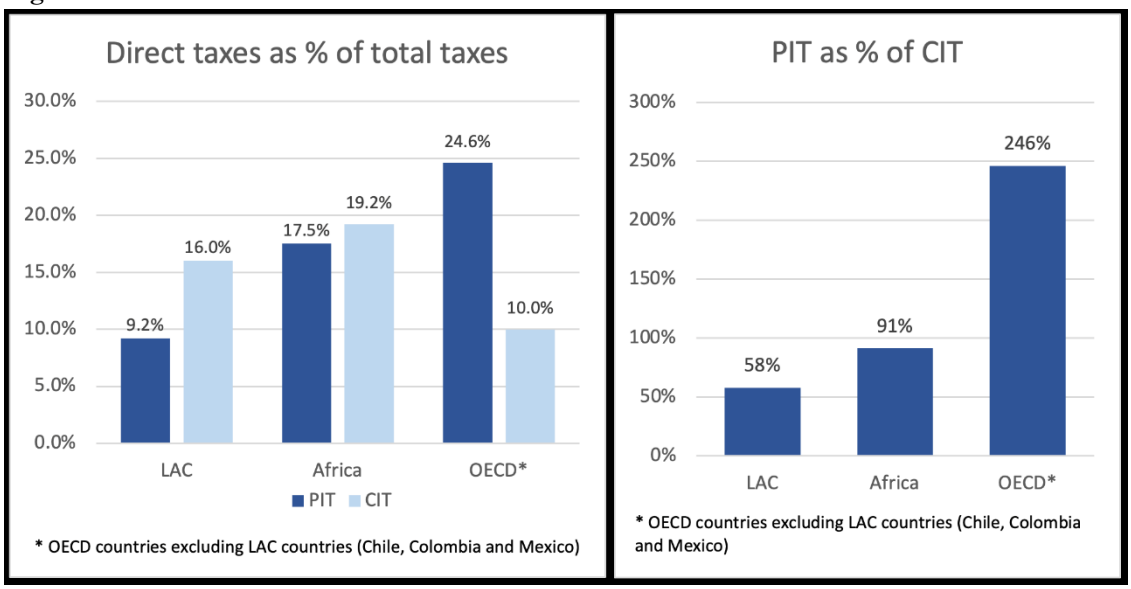
There is little doubt that direct taxes offer the greater potential in terms of redistribution. Indeed, most countries that reduce their inequality levels through their tax systems mostly do so by means of direct taxes, mainly personal income taxes (including levies on capital gains) and wealth taxes (including different levies on properties as well as gifts and inheritance taxes). From a redistributive perspective, their advantage rests on the fact that their tax bases are more closely aligned with what tax systems would ideally use to discriminate in the allocation of the tax burdens: earnings-potential or endowment (Mirrlees, 1971). The fact that income levels are closely related to abilities in part explains why progressive schedules of taxation have developed for the purpose of income/wealth taxation and have been seldomly implemented on other tax bases.

The superior redistributive potential of direct taxation has been clearly shown by the literature on optimal taxation. Furthermore, when a non-linear income taxation and welfare benefits systems are available as policy tools, the case for differentiated commodity taxation is considerably weakened (Atkinson and Stiglitz, 1976). Under the condition that a non-linear income tax can be imposed and effectively administered, any redistributive aims can be achieved at reduced efficiency cost through this rather than through differential commodity taxation (IFS *et al.*, 2011, p.149).

On the other hand, effectively imposing a progressive income and capital tax system that yiels sufficient revenue is challenging. Successful administration requires accessing and processing extensive information on taxpayers' activities, a considerable level of tax compliance, and a sophisticated authority to curb evasion and avoidance. All these conditions are rare in developing countries, which partly explains why their direct tax systems do not raise sufficient revenues to offset the regressive effects of their (proportionally) large indirect taxes. Lacking these conditions usually leads to a direct tax system that is little more than a withholding tax on earnings from formal employment: a payroll tax levied on a progressive schedule, incapable of sufficiently offsetting the regressivity features of the rest of the tax system (Bird and Zolt, 2005).

The stunted development of PIT also results in another feature particular to developing countries: Unlike most developed countries, direct taxation relies mostly on corporate income taxation (CIT), while PIT plays a very minor role in the system. This divergence should also be kept in mind, as the incentives and distributional effects of both types of direct taxes are different (as explained below).

Figure 5: Direct taxes as % of total taxes and PIT as % of CIT



Thus, efforts to increase tax progressivity while affecting efficiency the least should inevitably lead to analysing how direct taxes (and specially the PIT) can be enhanced in developing countries. The purpose of Part III is to contribute to this analysis. The research question for this Part III is what tax policy design alternatives could efficiently enhance revenues from direct taxes in developing countries. Although extremely relevant, this work will not address issues of tax administration as it exceeds the scope of this project, but the administrative limitations will be taken into account to support some policy choices over others. To answer the research question, I will analyse the direct tax system in our case study to identify and illustrate the current shortcoming of direct taxes in developing countries and the potential impact that the suggested policies could have. Chapter 6 will deal with personal income taxes (including taxation of capital income) while Chapter 7 will deal with taxation of wealth, including wealth taxes, taxes on specific property, and levies on the transfer of wealth (gifts, inheritance taxes and estate taxes). Corporate taxation will not be directly analysed, although it will be the object of indirect attention as its interaction with PIT is relevant for analysing the latter, as explained below.

Although both Part II and Part III analyse areas of the tax system, their objectives are slightly different. While Part II is largely trying to bring (some) progressivity to tax systems that currently fail to effectively impose relevant progressive direct taxes, Part III is trying to overcome this structural

flaw of tax systems in developing countries. Thus, we could see Part II as a second-best solution required while the objectives of Part III are not accomplished. Indeed, Part II proposes some solutions that would (ideally) be only temporary, while Part III is trying to propose definitive solutions to personal direct taxation in developing countries which (once successfully implemented) would make some recommendations of Part II largely unnecessary.

It might seem strange to deal with temporary solutions in Part II and with definitive solutions in Part III. This responds to the fact that reforms suggested in Part II seem more politically feasible than those proposed in this Part. Indeed, the irrelevance of PIT seems to be a very resilient characteristic of tax systems in developing countries, so it might take considerable time and political efforts to change that. Taking a realistic view of such a phenomenon, the temporality of Part II does not make it any less relevant from a tax policy perspective, as it is likely much more immediately applicable and might remain in place for a substantial period until the political obstacles to increasing direct taxation can be overcome.

Why not analysing Corporate Taxation?

An immediate question that arises from the outline of Part III is why there is no chapter on corporate taxation. This is mainly due to the motivation for this thesis: I do not intend to do an overall assessment of tax systems in developing countries. Not only would that be unrealistically ambitious, but it also would deviate from the motivation for the project. The focus of this work is narrower: is a search for policies in developing countries that can improve the distributional impact of the tax system in effective ways. Considering that focus, a direct analysis of corporate taxation seems to lie beyond the scope of the thesis. This is not to say that corporate taxation is a less relevant area of tax policy, as it is key for many other goals of taxation: increasing economic efficiency, encouraging (foreign and domestic) investments, promoting shifts in market practices and production processes, contribute to the transition to sustainable economies, etc.

There are three reasons why a full analysis of corporate taxation seems unsuitable for a work focusing on improving the distributional impact of the tax system. The most important is the uncertain economic incidence of corporate taxation. The literature on corporate tax incidence has a long history from Harberger (1962) onwards. Although the conclusions from this literature are far from settled, there seems to be consensus that in open economies at least around half (or more) of its burden falls on workers (Bradford, 1978; Gordon, 1986; Kotlikoff and Summers, 1986; Randolph, 2006; Desai, Foley and Hines, 2007; Arulampalam, Devereux and Maffini, 2012). More problematic for the purposes of using corporate tax as a redistributive tool in developing countries is the fact that there is evidence of the incidence being increasingly shifted to labour in smaller economies.

Secondly, the incidence of corporate taxation is also likely to be very heterogeneous, which further complicates the task of designing progressive tax policies through this area of the tax code (Advani, Hughson and Summers, 2023). Indeed, not only incidence is very different between different countries, depending on the openness and size of the economies (Harberger, 1962), but it is also likely to be different between individuals (shareholders of public corporations or small private companies), industries (labour intensive or capital intensive industries are likely to have very different incidence), and firms (firms with more market power could increasingly shift the tax incidence away from capital owners). Additionally, corporate taxation is almost invariably levied at

proportional rates,[1] so even if its incidence was progressive (which available evidence makes it doubtful) its redistributive potential would be limited.

Lastly, corporate taxation is an area where countries (especially developing) seem to have less room for deviating from world trends. Indeed, tax competition has mainly affected corporate tax, making substantial deviation from average world rates (or structures) extremely difficult. I will not assess whether it is undesirable to deviate (given a fairly low revenue maximising rate due to capital flight responses) or simply politically unfeasible (the tax competition argument being an unsurmountable political obstacle), as in both cases the consequence for the purpose of this work are the same: they make corporate tax *policy* an area with low potential in terms of increasing tax progressivity.[2]

However, it would be a mistake to completely ignore corporate taxation, as personal taxation of capital owners is closely connected with the taxation of the underlying corporations. In fact, one of the factors that undermine personal taxation in some developing countries is the (ab)use of closed companies[3] to shelter income from PIT. Although this is an issue that needs to be tackled mostly from improving audits and enforcement efforts (which is beyond the scope of the thesis), there are also tax design issues that can contribute to reducing the risk of avoidance. In this context, the introduction of a dual income tax (DIT) that I propose in section 4.4. of Chapter 5 is particularly mindful of the interaction between CIT and PIT and the design proposed contains features focusing on preventing some of the avoidance schemes that rely on abusing corporate vehicles to prevent the application of PIT. Additionally, the proposal for a DIT that I make in Chapter 5 is also mindful of the essential need for CIT revenues for developing countries (as these are the main source of direct taxes, as shown in Figure 5 above). With that in mind, I highlight the importance of considering withholding tax rates on capital returns under the double tax treaty network of the country, to ensure that the introduction of a DIT does not result in unilaterally relinquishing taxing rights in the context of international taxation.[4] I expand on both of these issues on section 4.4.H of Chapter 6.

[1] Usual exceptions to strictly proportional schedules mostly relate to reduced rates for new and small business to encourage entrepreneurship, not having a redistributive objective.

[2] Note the emphasis in '*policy*', as efforts to tackle CT avoidance and properly enforcing CT do offer a progressive source of revenues.

[3] I use the term "close company" as meaning a private company with few shareholders, but I do not advance any specific definition. In the UK, for instance, a close company is one which is under the control of no more than 5 participators (or any number if they are all directors) or which half of its assets would be distributed to no more than 5 participators on winding up (Part 10 of Corporation Tax Act 2010).

[4] Reducing the tax rate imposed on some forms of income can be argued to make the economy more attractive to foreign investments. But giving up taxing rights is not equivalent, as this would usually not ultimately benefit the foreign investors but its residency country (as the investor would get a tax credit for the taxed paid at source, giving up taxing right would only reduce the foreign tax credit and increase the taxes on the residency country, thus not affecting the overall taxation of the foreign investor).

Chapter 6: Making Personal Income Taxation Relevant

This chapter deals with the first (and most relevant) item in direct personal taxation in developing countries: personal income taxation (PIT). Indeed, as previously mentioned, the relative irrelevance of PIT revenues seems to be one of the most noticeable differences with tax system in advanced economies. Based on that, this chapter analyses the differences between PIT in a developing and in a developed context and proposes reforms that could effectively enhance the revenue potential of PIT in the former.

The chapter is divided in five parts. The first part describes differences between PIT in developing countries and in advanced economies, in order to show the magnitude of the problem to the reader. The second part presents the argument that these differences are not simply a result of social and economic conditions, but also a consequence of deliberate policy-making decisions. Section three then uses Chilean PIT to understand the shortcomings of PIT in developing countries, trying to identify the most relevant elements to be targeted by reforms aiming to increase the relevance of PIT.

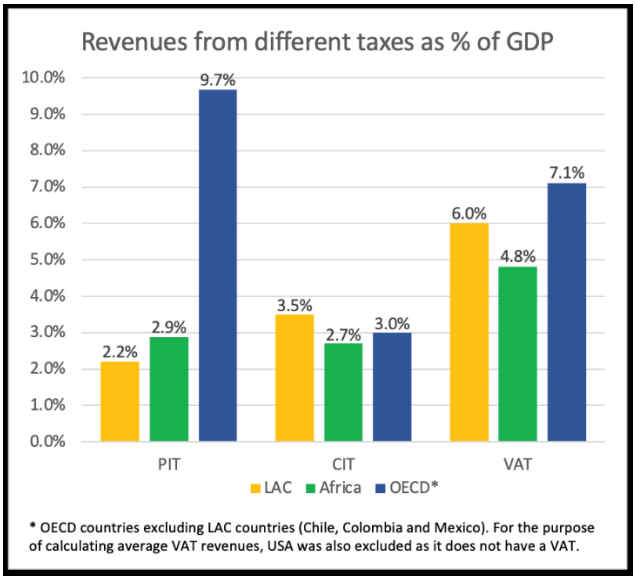
The last section is the most relevant and extensive, where I suggest four reforms that could lead to enhancing revenues from PIT. The reforms suggested are a result of an analysis constrained by taking into consideration political feasibility, reducing efficiency costs and administrative simplicity. I argue that all the reforms proposed meet these conditions while having the potential to substantially increase revenues in a progressive way.

The first reform I propose calls to reconsider automatic indexation mechanisms in a context where there is an acute need to increase revenues from PIT, as removing those automatic mechanisms would force governments to periodically assess the suitability of their PIT schedules. The second and third reform both aim at improving PIT schedules by reducing the tax brackets and introducing a withdrawal of the exempt threshold, both of which would result in substantial revenue increases. Lastly, I argue that the largely inexistent taxation of capital income in developing countries means that the case for introducing a dual system of taxation is particularly strong, and I suggest how such a system might be designed and what revenue and distributional consequences it could have. The chapter ends with some concluding remarks.

1. Comparisons between DGC and DDC

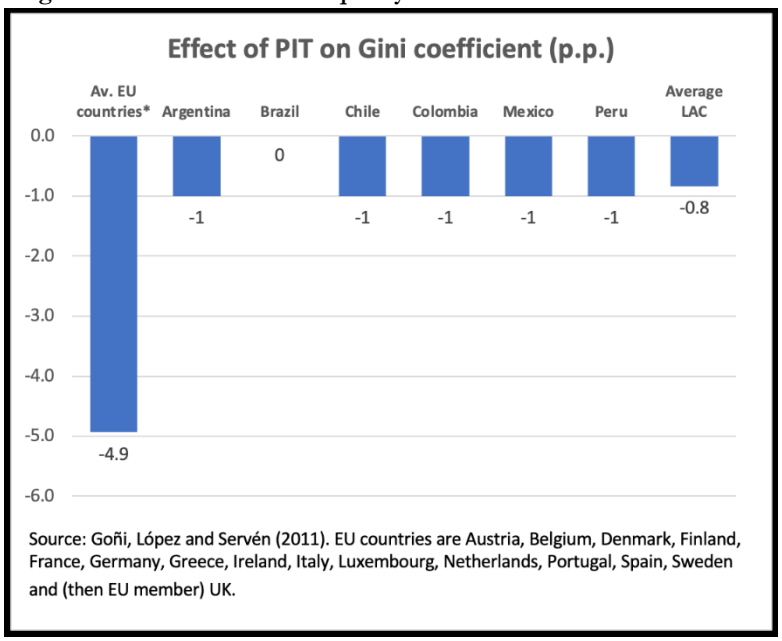
Arguably the most significant difference between tax systems in developed and developing countries lies in their PIT. While the PIT in developed countries is one of the main pillars of their fiscal system, it is largely irrelevant in the context of developing countries (this is particularly true in LAC). Indeed, LAC and African countries raised amounts relatively similar to OECD countries through CIT and VAT, but the difference in terms of PIT is shocking, as Figure 6 shows.

Figure 6: Revenues from different taxes (%GDP)



This difference also largely explains the stark contrast in redistributive outcomes across tax systems. Indeed, indirect taxes in isolation are almost always regressive, both in the context of developed and developing countries. This regressivity is usually more than fully offset by direct taxes in developed countries, turning the tax system progressive and redistributive. The same cannot be claimed in the context of developing countries: direct taxes either do not, or only minimally, produce tax progressivity, therefore leaving the overall incidence of the tax system being roughly neutral, as shown in Figure 7.

Figure 7: Effect of PIT on inequality.



Own preparation based on Goñi, López and Servén (2011)

It clearly emerges from this that the main avenue for increasing the redistributive potential of tax systems in developing countries is by increasing the revenues collected through the PIT. This, however, is not in the slightest straightforward. As it was argued in Chapter 1, PIT is likely to be the most difficult tax to effectively collect. Successfully implementing the tax is a particularly challenging for several reasons. First, it is imposed on an abstract concept such as income, which opens multiple

possibilities for avoidance and evasion. For the same reasons, the information requirements to curb such practices are substantial and, even when available, processing them is very demanding. In addition, as it is (generally) imposed on a progressive schedule, the incentives for avoiding the tax increase with taxpayers' resources, which make the tax administration role particularly difficult.

From a political perspective, the PIT also raises unique challenges which make its legislation usually more problematic than other taxes. Firstly, given that a progressive schedule requires the calculation of pre-tax income in order to determine the tax burden, imposing or increasing a PIT requires overcoming a vague (and erroneous) notion that PIT *takes away* what one has *deservedly* earned in the market.[5] No similar notion (or at least not with any comparable strength) has to be overcome when government increases trade or consumption taxes. Secondly, PIT targets economic elites as the top rates only apply to those at the top of the income distribution. This is an obstacle as economic elites tend to be more implicated in political debate and with substantial resources to support their preferred policies (Acemoglu and Robinson, 2008). Lastly, any changes to the PIT will require analysing the corporate income tax, as it is the combined effect of both taxes which will determine the overall tax burden on business activity. This means that changes in PITs can be constrained by notions of countries' attractiveness for foreign investors, a concern which is particularly powerful in the context of developing countries (Fairfield, 2015). Thus, implementing or expanding PIT presents an acute legislative challenge which requires investing substantial political capital to overcome.

2. Is the irrelevance of PIT in developing countries inevitable?

The minimal revenues raised through PIT in developing countries has been commonly attributed to the complexity of effectively enforcing an income tax and the lack of adequate conditions for such enforcement in these countries. Indeed, many features of developing economies have been argued as curbing the revenue potential of PIT: large size of the hard-to-tax agricultural sector, sizable informal economy, strong reliance on natural resources, fragmented capital markets, etc. (Burgess and Stern, 1992; Besley and Persson, 2013). Other social factors such as low tax morality (Bird, 2014), ethnic tensions (Alesina, Baqir and Easterly, 1999), and low administrative capacity (Profeta and Scabrosetti, 2010) have also been offered as explanations for the irrelevance of PITs. From these arguments, there seems to arise an image that there is a large degree of inevitability in the low levels of revenue from PIT in these countries. And although I do not purport to deny that these factors do contribute to hinder the development of PIT in developing countries, I argue that they only go so far in explaining their irrelevance.

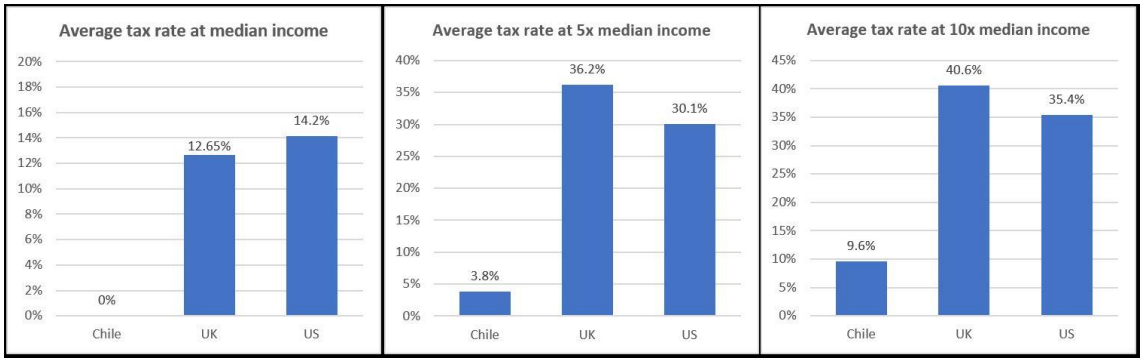
Indeed, a careful analysis of PIT schedules in developing countries leads to an additional explanation, which rests on deliberate policy-making decisions rather than inevitable circumstances. There seems to be a positive legislative effort to impose the tax on a very limited part of the population, on a rather narrow base and at very modest rates.

Figure 8 shows the modest rates at which PIT is levied in Chile, when compared with the UK and the US. The picture that emerges seems quite eloquent: even assuming full compliance and a broad-

[5] This shows the ideas that Murphy and Nagel (2004) framed as "everyday" libertarianism: that we have some sort of entitlement to our pre-tax income and that market outcomes are presumptively just. As they point out, this pre-tax income is nothing more than a book-keeping figure.

based PIT, the average tax rates (ATRs) on similar levels of income (relative to the country's median income) are extremely low in the Chilean case.[6]

Figure 8: Average tax rates at multiples of median income.



Source: own preparation.

It is possible that the lower level of ATRs in Chile is merely a result of having a much lower income level than the UK and US. Assuming there is some fairness in not taxing a certain amount of income necessary for life essentials, given that Chile has a lower level of GDP per capita, it is arguable that the graphs are only reflecting this: under that argument the ATR on five times the median income would be only 3.8% in Chile because a large part of that income is required to acquire essential goods for a dignified living standard.

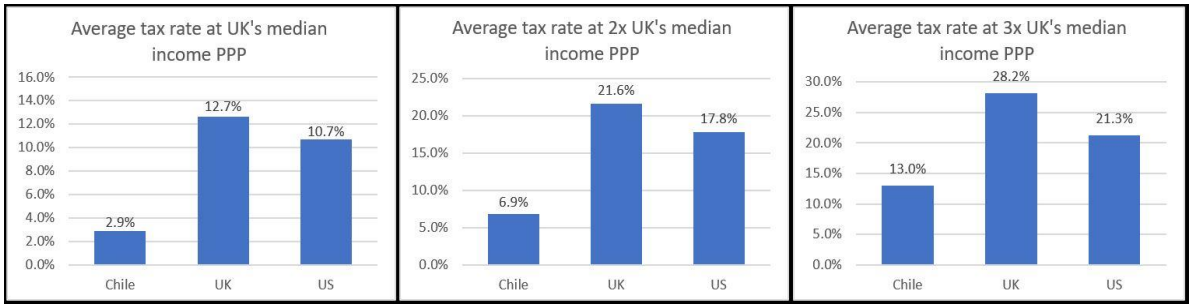
Similarly, it could also be argued that the lower ATRs in Chile are simply a consequence of its higher income inequality: as inequality increases, mean income increasingly exceeds median income. If we assume that there is some fairness in allocating tax burdens in proportion to taxpayers' earning relative to mean earnings (which I doubt), the lower ATRs in Chile might be simply explained by the higher inequality. Indeed, while earning five times the median income in the UK would place you very close to the top 1% of the income distribution, in Chile it would only place you close to the top 10% of the income distribution.[7]

I explored whether these rationales could account for the staggeringly different tax rates found in developing countries, and the Chilean data strongly suggest these have a rather limited explanatory power. I have analysed the ATRs in these countries at the same level of purchasing power that the UK median income (and multiples of it) affords to someone in the UK. The result shows that a small part of the difference in ATRs can be explain in this way, but most of the difference remains. Indeed, even at the same level of consumption afforded by the median income in the UK, the tax burden in Chile is more than 4 times less than in the UK.

[6] The choice of the US and UK should by no means be seen as an upper-bound example of the magnitude of the difference between developed and developing countries. Indeed, among developed countries neither are characterized either by high levels of tax revenues or by the strong progressivity of their tax system.

[7] Data on income distribution suggests that in the UK you need around 2.4 times median income to get into the top decile. With 3.2 times that income you would get into the top 5% and earning 5.3 times median income would place you just inside the top percentile. For Chile, the same places in the income distribution are only reached at 5.4, 5.7 and 14.3 times median income, respectively.

Figure 9: Average tax rates at multiples of UK median income (at PP in Chile and USA).

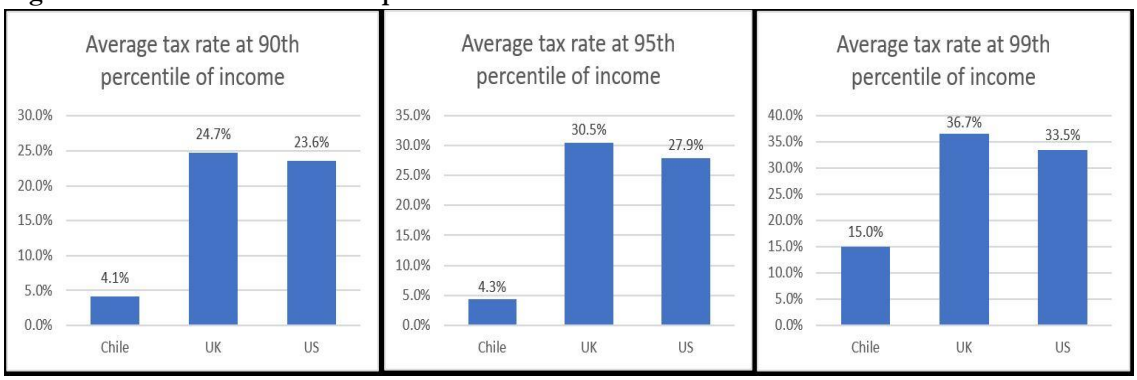


Source: Own preparation.

The graph in Figure 9 are more surprising than they might appear at first sight. In fact, given that even on purchasing power parity (PPP) terms Chile is much poorer than the UK and US, one would expect that *at the same level of purchasing power* people would be taxed more heavily in Chile, for it would take a larger share of national income in Chile to sustain such level of wellbeing. The opposite is true for the US: since the US is *richer* than the UK in PPP terms, we could anticipate that tax burdens will be lower at the same level of purchasing power, as in the US such level of consumption could be afforded with a smaller share of national income.[8] However, these reasonable expectations are only met in the case of the US. In the Chilean case, exactly the opposite occurs: even at the same level of purchasing power, Chilean tax rates are remarkably lower.

To deal with the second possible argument (i.e. in higher inequality contexts median income -and multiples of it- will place you lower in the income distribution) I explore the ATRs within the top decile of the population of each country. Indeed, if tax burdens should be determined by your place in the income distribution, we would expect similar tax rates on the same percentiles of the distribution. That seems to be, in fact, the case for the UK and the US, but clearly not for Chile.

Figure 10: Effective tax rates at top of distribution.



Source: Own preparation.

Even for those in the 90th and 95th percentile, the tax burden in Chile is more than six times lower than in the UK. And for those at the very top (top 1%) the tax burden remains shockingly low, at less than half of that sustain in the UK and the US.[9]

[8] Relative to the UK, on a purchasing power parity the US has a GDP per capita of about 1.3 times the UK's and Chile of about 0.55 time the UK's (World Bank Open Data, 2024a).

[9] The figures relate to household income. To calculate the ATR I have assumed full compliance, single-earners households and that earnings come entirely from employment income. I have not considered social security contributions (which are likely to further increase the gap between Chile and the UK). For the US, I have calculated an average state-level income tax for each federal income tax bracket and have added it to the federal tax rate.

To sum up, although developing countries have characteristics that contribute to explain the limited revenues that PIT raise in those countries, there is another very powerful explanation based on deliberate design of the tax code to minimise its role. Indeed, when looking at Chile as an example assuming full compliance, comparing tax burdens at identical income levels as those found in rich countries, or at the same positions at the very top of the income distribution, we find that the tax schedule is designed to levy only very modest tax burdens (even on very high incomes for developed countries) and substantially lower than in developed countries.

3. What type of tax is Chilean PIT?

The next step to identify what legislative actions could enhance PIT is to properly understand what type of income tax exists in Chile. Besides being a tax with a schedule designed to levy only modest ATRs on anything but extremely high earnings, what are the other relevant features? What type of income definition does it follow? Is it a comprehensive or a schedular tax? Is it genuinely an income tax or does it resemble an expenditure tax? What treatment is given to capital gains? And to windfalls? All these questions are relevant before one can rightly assess what tax policies are suitable.

A comprehensive income tax is one that follows a definition of income close to the Haig-Simmons concept (Haig, 1921; Simons, 1938) which defines income as the result of consumption plus (less) savings (dissavings) in a period. In addition, it taxes all sources of income in the same manner and under the same schedule. Strictly speaking, this would entail taxing capital gains on an accrual basis. It would also require granting relief for capital losses on the same basis. As the comparative experience shows, this is not simple and arguable also not advisable (given the level of complexity it builds into the system) even in the context of developed countries. As a consequence, a feasible comprehensive basis in the context of developing countries would tax all income on an accrued basis and all capital gains on a realisation basis and would subject them to the same tax schedule.

So where in that spectrum is Chilean tax code's definition of taxable income? On its face, the Chilean code seems to have fairly comprehensive income definition: "*profits or benefits that a thing or activity produces, and all the benefits, profits and wealth increases received or accrued, whatever their nature, origin or denomination*".[10] Despite this, the rest of the tax code provides such a broad range of exceptions and reliefs that it makes the system depart considerably from any resemblance of a comprehensive income tax, as the following analysis shows.

3.1. The (non) taxation of capital in Chile

The single most relevant departure from a comprehensive income concept is the result of the multiple tax reliefs granted to capital, both through tax exemptions for several types of gains or of capital income. These are so extensive that it is accurate to say that, in practice, capital gains are usually *not* taxed in Chile, while several types of income arising from capital are also frequently exempted. Thus, the seemingly comprehensive definition of income is completely undermined by piecemeal tax reliefs given to capital.

The most relevant forms of capital gains are given very broad tax benefits. Firstly, gains from the disposal of shares are almost never taxed. To start, such gains are exempt if they do not exceed around £7,000 in a year. This seems very similar to the UK's annual exempt amount, except for two important differences. First, the Chilean allowance is specific to gains from disposal of shares. Thus, if a taxpayer has substantial gains from other sources, these will not reduce the availability of its

[10] Article 2.1 of the Law Decree 824 on Income Tax Law ("ITL").

exempted amount of gains from shares. Secondly, relative to median income the amount of the allowance is considerably higher in Chile than in the UK's (even when Chilean allowance is specific to gains from shares): the Chilean allowance exempts capital gains amounting to more than 130% of median income, while the UK allowance only amounts to 36% of median income. In addition, gains arising from the disposal of publicly traded shares are also exempt from taxation if they meet a 'substantial market presence' requirement.[11] This is indeed a very large and hard to justify tax exemption: it covers a very large part of the stock market, it has no cap, it is not restricted to any minimum holding periods, nor is the benefit withdrawn at high levels of personal income.[12]

Capital in the form of real property also benefits from similarly generous concessions. As in the case of shares, gains from the disposal of real estate also benefit from a general exemption: they are tax exempt up to a lifetime limit of around £250,000.[13] This is a remarkably high amount. Indeed, this allowance represents more than what a median-income worker would earn in a lifetime.[14] It is also not subject to any of the usual requirements for these type of exemptions: there is no need for the property to have been the residence of the taxpayer, thus also benefitting second homes or investment properties, there is no limit on the number of properties , and the benefit is not withdrawn for wealthy taxpayers.[15] In addition to this extremely generous exempted amount, any gain in excess is subject preferential taxation: *at the taxpayers choice*, the excess gain can be taxed either (i) at the taxpayers' marginal tax rates under the PIT schedule, according to her other income in the year of disposal, (ii) at a 10% flat tax rate, or (iii) averaged over the holding period (with a limit of 10 years) and taxed at the taxpayers' marginal tax rates under the PIT schedule in each period.

Notwithstanding these extremely generous concessions, there are additional tax benefits for real estate. There is a very generous exemption to rental income arising from residential property: rental income from properties qualifying as "economic housing" is entirely exempt from PIT.[16] On its face, this might seem a reasonable policy to boost affordable housing. On its detail, however, it simply looks like a tax-break for landlords. Indeed, the definition of "economic housing" is so broad that it is hard to justify the policy on the grounds of incentivising supply affordable housing. According to the law, economic housing is defined as those with a floor space not exceeding 140m^2. This basically allows the vast majority of the properties to claim the benefit: according to statistics by the Ministry of Housing, only around 7% of all residential properties exceed 140m^2 (Ministerio de Vivienda y Urbanismo, 2023). This benefit is also granted on a very generous basis: each taxpayer can claim the

[11] The fulfilment of this requirement is relatively easy: it requires the securities meeting a minimum trading volume or having a "market maker". As a percentage of the overall stock market, the exemption covers a very substantial majority of transactions.

[12] This benefit has recently been restricted: for capital gains arising from disposal of shares after September 2022, they will be subject to a 10% flat tax. It is hard to assess how effective this tax will be in advance, but the text of the reform suggests that revenues are unlikely to be substantial as: (i) it gives plenty of flexibility to the taxpayer to determine the base cost of the shares (to compute the gains on disposal) therefore opening substantial space for tax planning, (ii) it gives the option to taxpayers to rebase their shares at their value on 31 December 2021, (iii) institutional investors (broadly defined, including banks, financial institutions, funds administrators, etc) are carved-out of the flat tax, (iv) domestic taxpayers are not subject to a withholding mechanism (which only applies to foreign investors), therefore increasing the opportunities for tax evasion, and (v) the tax only takes effect 6 months *after* the law has been published, giving additional opportunities for tax planning.

[13] The exemption is granted for gains up to 8,000 *unidades de fomento* (development units), which is also a unit indexed to inflation.

[14] Assuming someone works for 47 years (from 18 years up to retirement age of 65) earning the current median income, lifetime earnings would amount to 93% of the allowance for real estate.

[15] There is a very nominal minimum holding period of 1 year to qualify for the exemption.

[16] The law also grants some other benefits: reduction in stamp duty and property tax, and no inheritance tax (further explored in Chapter 7).

benefit on up to 2 properties,[17] there is no limit on the amount of rental income that is exempt, nor is the exemption withdrawn for taxpayers with high income.

To further remove Chilean PIT from a comprehensive concept of income, tax benefits are not limited to returns from capital, but they also extend to the acquisition of capital assets. On the acquisition of securities, voluntary pension contributions (to personal savings accounts) are deductible from PIT, therefore representing a subsidy to the investment equal to the marginal tax rate applicable to the taxpayers' income. The deduction is capped but the limit is extremely high: taxpayers can deduct voluntary pension contributions from their PIT tax base up to an annual amount of around £19,000, which represents almost four times Chilean median income. Similar tax benefits are available for mortgage interests, which can be fully deducted from the PIT tax base up to an amount of around £5,500, which represents slightly more than Chile's median income. The mortgage interest deduction (unlike the voluntary pension contributions) is subject to a limit, although very generous: at around annual income of £60,000 (c. 12 times median income) the maximum deduction is gradually withdrawn until no deduction is allowed at annual income of around £100,000 (c. 20 times median income).

Although these types of tax incentives are not unfamiliar to developed countries, the redistributive consequences are very different in a developing context. As we mentioned, the PIT schedule in developing countries is usually designed to only levy taxes on a very small part of the population at the top of the income distribution: thus, all these incentives are extremely regressive as they only benefit those in the top of the distribution. In addition, as they are usually designed plainly as deductions from the tax base, the amount of the benefit increases as the taxpayer moves into the higher marginal tax rates, making the tax expenditure very concentrated on the very top of the distribution. These regressive effect of tax deductions are usually removed (or mitigated) in tax systems in developed countries. In the UK, for instance, mortgage interest deductions for the own residence were abolished in 2001. Deductions for pension contributions in the UK are less restricted, but still clearly more than in Chile. They are limited to £40,000 per year (118% median income, compared with 378% of median income in Chile), and are also subject to a lifetime limit to restrict the benefit even further. In addition, the maximum allowable deduction is tapered at a 50% rate when the taxpayer reaches high levels of income (the rules are complex, but the benefit starts to be withdrawn when annual income reaches around £240,000).

What, then, can be inferred about the taxation of capital income in Chile? An example might be enlightening. Let us follow the tax path of a hypothetical well-off executive in Chile who also earns income from capital. Her total income is sufficient to put her in the top 1% of the income distribution (i.e. annual income of £65,000). Of that income, two thirds correspond to her salary (£43,000, which alone would place her in the top 3%) while she earns £10,000 on gains from shares, she has rental income of £8,000 and she has made a gain of £4,000 from of a property. All her properties have been financed by mortgages, so she can deduct mortgage interest of up to £4,800 (as she is slightly above the threshold at which the mortgage interest deductions start to be tapered, she cannot claim the full deduction). She can also deduct £19,000 as voluntary pension contributions. Thus, she can reduce her employment income to just £19,200. Her rental income is not taxable as it comes from "economic housing". Half of the capital gains on shares comes from listed securities and are therefore exempt. The remaining gains on disposal of shares are not taxable as they are below the minimum allowance

[17] This restriction was only introduced in 2010. Before that, there was no limit on the number of properties that could claim the benefit per taxpayer. The change is unlikely to substantially reduce the benefit since the cap only applies to properties acquired *after* 2010 (and properties inherited after 2010 do not count toward the 2-properties per person cap).

of £7,000, as is her capital gain on the disposal of one of her properties. Thus, her only taxable income will be her reduced salary of £19,200, which will pay PIT at a marginal rate of 8%. The ATR on her reduced employment income is 3%. The ATR on her total employment income is less than 1.4% and her ATR on her entire income (including gains and rental income) is only 0.9%. Compared this to another taxpayer with the exact same level of income, but coming exclusively from employment income of £65,000. He does not own property and does not make voluntary pension contributions. He will pay income tax on his full income at a marginal rate of 30.4%, and his ATR will be 15%. Even though his ATR is still very modest (considering he is part of the richest 1% of the population), it is massively higher to that of the first taxpayer. By earning a third of her income through the ownership of capital and taking advantage of tax benefits for savings, the first taxpayer has reduced her tax liability to almost nil (reducing her tax liability by 94%).

The example eloquently shows how taxation of capital in Chile is little more than nominal. In practice, is extremely easy to arrange one's affairs to trigger no taxes at all on income from capital, and capital investment is effectively subsidised as (with little planning) they can reduce the already meagre PIT on other sources of income (mostly from employment).

3.2. Is this an expenditure tax?

Given the generous benefits for savings and investment, it might sound like Chilean income tax is actually an expenditure tax. An expenditure tax taxes all sources of income but relieves from tax all forms of savings and investment. At the same time, it levies a PIT on all forms of disinvestment (unless immediately reinvested). And there are good reasons for imposing an income tax on an expenditure tax basis, as it encourages investment, it does not distort the choice between consumption now and in the future, it deals better with large windfall receipts and with unrealised capital gains (Meade, 1978).

Relief for savings: The first essential element of an expenditure-type PIT is that it does not levy the tax on income that is saved. The most obvious way of achieving this is by simply not levying PIT on income that is invested. However, the same economic effect might be achieved by two indirect ways, as it was pointed out in the Meade Report: the principle of any expenditure tax is that there is an equality between the rate of return of individuals' savings and the rate of yield on investment financed by those savings. This can also be achieved indirectly by taxing all income (including savings) but relieving from tax the returns from investments. It can also be obtained in a less straightforward (but equally effective) way, by taxing under the PIT all income (including savings and returns of investments) but granting a 100% capital allowance for assets financed with the investment.

Chile clearly relieves from tax substantial income when saved, whether it is invested in real estate (through mortgage interest deductions) or saved into pension schemes (by pension contributions deductions). It also approximates an expenditure tax by relieving from tax many of the returns of investments: gains from real estate which remain below the (extremely generous) allowance, or from publicly traded shares or below the (less generous) allowance. It also relieves from tax rental income from real estate that meets the (incredibly broad) requirement of "economic housing".

The third way of designing an expenditure tax is slightly more complex to assess, but an analysis of the treatment of depreciation in the Chilean tax code suggest that it is also following an expenditure tax in this regard. As with the definition of income under the ITL, the general rule for capital allowance seems to be entirely consistent with a comprehensive definition of income: the allowable expense for depreciation is the portion of a capital asset's acquisition cost divided by the years of useful life. As with the definition of income, however, the very broad exceptions to this rule

completely change the nature of the underlying principle. Indeed, taxpayers can choose to write-off their capital assets in a third of their useful life. Even more generous, businesses with revenues of not more than around £3.2 millions can write-off their capital assets in a tenth of their useful life. Statistics from the tax authority show that only 1.5% of businesses exceed this limit, thus making this the most applied pattern for capital allowance (which is basically granting a 100% capital allowance to all the assets which have 10 or less years of useful life). It is also not infrequent to have *temporary immediate depreciation* allowed for times of economic crisis. Indeed, for any investment carried on between October 2019 and 31 December 2022, this is the regime applicable: the capital assets can be immediately writen-off.

Not only is depreciation given a very generous treatment by the Chilean tax code, but there are additional tax benefits granted to investment in capital assets. Indeed, investment in fixed capital assets attract a tax credit between 4% and 6% of the amount of the investment, depending on the size of the business.[18]

To sum up, the Chilean tax code seems extremely generous in providing relief for investments. Not only are savings deducted from the PIT base in the case of mortgages and pension contributions, but they also attract very generous capital allowances (in most cases amounting to immediate write-off of capital investments) and also grant a tax credit. This means that, in many cases, not only is income saved not taxed, but the investment is actually subsidised as the following table shows. The table displays the tax consequence of a taxpayer deciding to put £1,000 into his pension saving. For ease, it is assumed that the CIT rate and the marginal PIT rate of the taxpayer are both 25%. This is arguably an extreme case, as it assumes the taxpayer is taking advantage of all the reliefs available in the code.

Table 18. The subsidy to investment in Chile

Income contributed to pension savings	£1,000
Tax saved due to deduction from PIT tax base	£250
Consumption forgone	£750
Value of investment[19]	£1,408
10% return on investment	**£141**
Corporate tax on return (25%)	£35.25
PIT on return as capital gain[20]	£0
After tax return	£105.75
After tax return as % of forgone consumption	**14.1%**

This clearly shows that the Chilean tax code can be overly generous when granting relief for capital investments. Not only are these rules equalizing the rate of return of the taxpayer with the rate of return of the investment financed with its savings, but it is actually subsiding it. The taxpayer is getting

[18] The tax credit is capped at around £28,000 and will not be available for very large businesses as of 2023 (businesses with revenues exceeding around £3.2m, which, as mentioned, represent the largest 1.5% of businesses).

[19] As the Meade report clearly points out, the value of investment for the investee firm is the actual investment (£1,000) plus the savings in its tax bill due to the 100% capital allowance and the 4% tax credit. Thus, if the firm invests £1,408 in a capital asset it will get a tax savings of that amount at the corporate tax rate (25%) from the immediate depreciation, i.e. £352, plus a 4% of that amount (£56) as a tax credit. Thus, the value of £1,000 investment to the firm receiving it will be of £1,408.

[20] It is being assumed that the taxpayer is able to get his return in the form of exempted capital gains, which is not an unreasonable assumption given the many exemptions to capital gains taxation.

a return that is 40% higher (as a proportion of his forgone consumption) than the return of the investment he is financing.

Taxing dissaving and windfalls: After assessing the types of relief available for savings, to determine whether we are in the presence of an expenditure-type PIT we need to analyse if the dissavings and windfalls (mostly gifts and inheritances) are subject to the PIT or an equivalent tax (i.e. bringing a comparable tax burden).

On dissavings, it is clear that the Chilean tax code does not follow an expenditure tax. As mentioned earlier, gains from real estate and from shares are rarely taxed, as they benefit from exemptions and from generous allowances. Even in the odd cases where these are taxed, their tax burden is very light: in both cases the tax burden is capped at 10% on the taxable amount (actual gains reduced by the available allowances) resulting in effective tax rates that are substantially lower.

Treatment of windfalls in Chile is also inconsistent with an expenditure tax. Firstly, there is a generous annual exemption for gifts of around £14,000 (which correspond to 250% of median income).[21] In addition, inheritance taxation is also very limited in Chile and will almost never represent a burden comparable to that under the PIT. Indeed, not only are rates very low (starting rate of 1% and then very gradually increasing) but the rules are designed to make it extremely easy to limit the tax to very modest marginal rates. On the minimum threshold before the tax is triggered, Chile exempts an amount which represents around 6 times median income. On its face, this seems a more restricted than in the UK, where the nil rate band is almost 10 times the median income. However, the exempted amount in Chile is applied to each individual beneficiary and not to the estate as a whole. Thus, if the estate is left to the surviving spouse, two daughters and 2 grandchildren, the exempted amount available will be multiplied by 5, thus fully exempting from inheritance tax an estate valued in up to 30 times the median income.

The lighter taxation of inheritances is more evident when we analyse the burdens when the tax is triggered: the starting rate of inheritance tax in Chile is 1%, and it only reaches a marginal rate of 10% when the amount left to an individual beneficiary exceeds around 62 times median income. The marginal and effective tax rate on an individual beneficiary receiving the equivalent to a lifetime median income would only be 7.5% and 3.2%, respectively.[22] In contrast, UK inheritance tax is levied at 40% on the amounts that the estate exceeds the minimum exempt amount.[23] Thus, an estate worth the same as the lifetime median income in the UK would be liable to tax at marginal rate of 40% and would pay an effective tax rate of 32%.[24]

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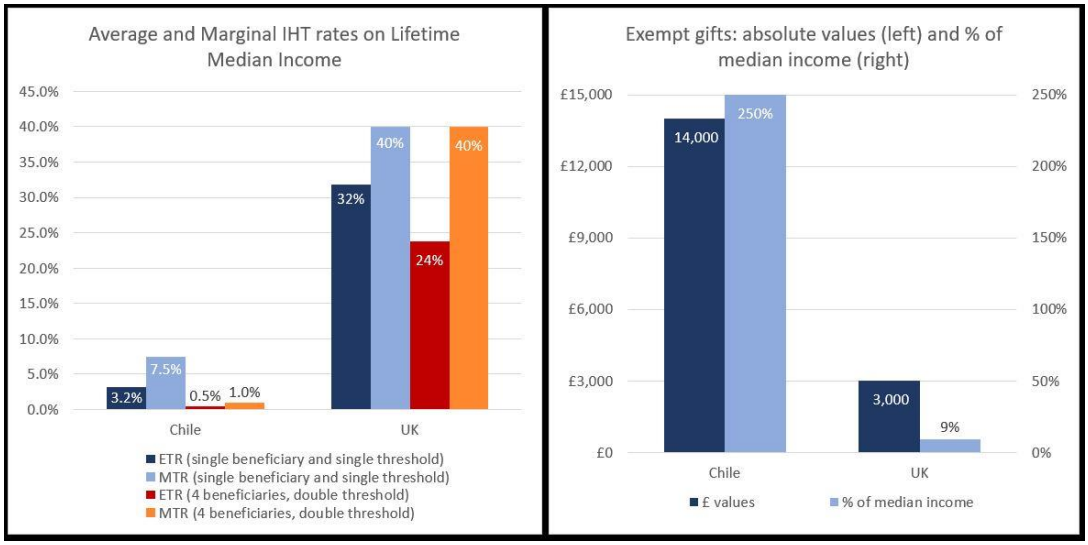
[21] Compare this to the annual exempted amount in the UK which amounts to £3,000 (or less than 9% of median income).

[22] As mentioned, Chilean inheritance tax is levied on the individual amounts that each beneficiary receives, which makes it extremely easy to reduce the tax burden. Thus, on an estate worth the equivalent of a lifetime median income that is left to 4 beneficiaries in equal shares, the marginal and effective tax rates would be reduced to 1% and 0.5%. This is also represented in the graph above. Tax planning/avoidance opportunities also exist in Chile and enforcing/compliance is much weaker.

[23] There are problematic rules under UK IHT which I am not considering here. Particularly, the exemption from IHT for gifts given 7 years before death and the generous reliefs for agriculture and business assets seem to undermine the integrity of UK IHT (Boadway, Chamberlain and Emmerson, 2010).

[24] The nil rate band can be increased by the unused amount of their deceased spouse. Thus, if a person dies and leaves everything to its spouse (not taxed), when the latter dies there will be a threshold of £650,000. In that case, the effective ATR on an estate worth the lifetime median income would be of 24% (still considerably higher than in the Chilean case). This is also represented in the graph above. The effect of the residential nil rate band is not considered as this is not universally available and is withdrawn for estates valued at more than £2m.

Figure 11: Rates of IHT and values of exempt gifts.



Source: Own preparation.

Of course, exceptions and reliefs that undermine the general structure of the tax could totally reverse this comparison (see footnote 23 below). However, looking at data on tax revenues from these taxes confirm that they do not change the overall picture which I show here, which is that Chile has a very limited taxation of IHT when compared with developed countries. Tax revenue data shows that in the last 20 years on average Chile's IHT barely raises around a quarter of the revenues raised by UK's IHT (in terms of % of GDP). And this is not specific to the comparison between the UK and Chile, but indeed it seems generalisable. In fact, from OECD countries fiscal data, the average tax revenues from IHT in developing countries is barely 10% of the revenues raised on developed countries (OECD, 2024).[25]

3.3. Conclusion

Based on the above analysis, it is not easy to characterise the Chilean PIT as it does not fit well on any of the common types of PIT. It is most definitely not a comprehensive income tax as it fails to tax most capital gains and grants substantial relief to income from capital. In the exceptional cases where tax is levied on returns from capital, it is usually done so under preferential rules: specific allowances for certain types of income from capital, low and flat tax rates, etc.

On the other hand, the Chilean PIT also does not fit well with an expenditure tax. From the perspective of not taxing savings it does resemble an expenditure tax. However, it goes above and beyond what an expenditure tax entails, as the combination of tax deductions for savings, very generous depreciation allowances and exemption from tax on returns from capital, in many cases represent a subsidy to investment and savings. More problematic from a perspective of an expenditure tax is the failure to levy the tax (or a different tax imposing comparable burdens) on dissavings and windfalls. As earlier mentioned, gains from disposal of capital assets are usually exempt (or minimally taxed) and gifts and inheritances are given very generous exempted amount and subject to only minimal taxation on the excess.

[25] Data availability restricts the analysis to only the subset of developing countries that are part of OECD (Chile, Colombia, Costa Rica, Israel, Mexico and Turkey as per the UN country classification).

Furthermore, Chile PIT also seems not to be a dual income tax or a schedular type of PIT, as the general rule continues to be that all income is taxed under the same progressive schedule. However, the extent of the exceptions so profoundly undermines this general rule as to make it doubtful whether in reality we are not in the presence of a disguised schedular PIT.

In essence, the Chilean PIT seem to be little more than a modestly progressive tax on very high labour income and on some limited sources capital returns (i.e. dividends). This is combined with very generous incentives to investment and savings which grant the tax some hybrid nature between a tax and a subsidy system for investments. This definition helps understand why the PIT is so irrelevant in terms of revenues. It also helps identify what paths of reform would most likely turn it into a relevant source of revenues and in an effective tool for redistribution, which is what the next section deals with.

4. Making the PIT relevant and distributive

4.1. Extending the base: the problem of indexation

One of the most noticeable differences between PIT in developing countries and advanced economies is the number of taxpayers subject to the tax. In developed countries the issue of taxpayers subject to PIT seems to become problematic when the population not liable to the tax comes near 50%.[26] In contrast, in developing countries the taxpayers' base is usually restricted to the top quintile of the distribution, or even less.

It can be argued that given the higher inequality and the lower income levels in developing countries, it is only reasonable that a higher portion of the population be left outside the tax net. However, the rest of the population is not entirely out of the tax net, but only out of the PIT net. They will still be subject to taxation on their consumption under VAT and excises. Thus, tax equity would be enhanced if some of the tax burden is shifted from the indiscriminate consumption taxes and onto the progressive PIT. The other problem of exempting from PIT most of the population is that it requires a very high minimum threshold below which no tax is levied (at least relative to median income). Consequently, the effects of this high threshold (relative to median income) are mainly two: (i) a majority of the population is left out of the PIT base, and (ii) the tax base of those actually paying the tax is substantially reduced.

The problem of extending the tax base is mainly political. It is hardly attractive for politicians to state that they will make more people pay income tax. Even if coupled with a reduction in other taxes, the salience of the PIT makes it very difficult to pass reforms that reduce the minimum threshold, particularly when people's perception about their relative well-being are usually distorted (as explained in Chapter 3, section V). So how have developed countries managed to make their PIT apply on such massive portions of the population? Two elements seem to stand out in the process of extending the PIT base: the first is the role of wars in providing strong incentives to increase the tax base of the PIT (and to elicit the taxpayers' acceptance to such increases). This was highlighted in Chapter 1.

[26] See for instance the debate generated in the US by Mitt Romney statement about 47% of voters not paying federal income tax (Schenk, 2013; Zelenak, 2013).

The second element that arises is inflation. After the direct legislative broadening of PIT tax bases during war periods, inflation seems to be the most powerful explanation of how the PIT was extended to around or more than half of the population in developed countries. Indeed, even in war times a substantial part of the PIT base-broadening was a result of inflation: Torregosa-Hetland and Sabate (2021) report that during the First World War in the US more than half of the new revenues from PIT were due to inflation. In the UK and Sweden the effect of inflation was even more severe, accounting for more than 60% and 80% of new revenues, respectively. The effect of inflation in the increase in revenues during the Second World War was not as large, but still very significant, accounting for a little more than a quarter of new revenues in the US and Sweden and almost half in the UK.

The same effect has occurred in more recent periods and on most developed countries: between 1979 and 1981 inflation was around 10% in the US while the tax schedule was fixed in nominal terms: the resulting "bracket creep" produced the largest increase in marginal tax rates since the Second World War (Saez, 2003). Similarly, between the 50s and 70s the French tax schedule remained relatively stable, not following inflation pressures, leading to an increase in the number of taxpayers and on the marginal tax rates. This massively contributed to the peak of 65% of all households paying PIT in 1984 (Andre and Guillot, 2014). In Italy, a similar process took place in the 70s and 80s (Baldini, 2020).

The redistributive consequence of this fiscal drag is not entirely obvious, as there are two effects of this "bracket creep". On the one hand, inflation may reduce the progressivity of the PIT as it will push people on relatively low incomes into the tax net. At the same time, it will increase revenues collected through the PIT as it will both increase the number of taxpayers and the average tax rates applicable to each taxpayer. This second effect, however, has been found to dominate the first effect when analysing the overall equalising effect of the tax: even if the progressivity of the tax might be reduced, it will produce a more redistributive tax system (Immervoll, 2005; Fuenmayor et al, 2005). This equalising effect of inflation should be even stronger in developing countries, given that those that would be pushed into the tax net would be relatively well-off and that these countries are in more need of revenues.

So why has the "bracket creep" effect of inflation not occurred (or not to the same extent) in developing countries? The more straightforward answer is that developing countries have had such exorbitant periods of inflation that they have indexed many of the features of their tax systems, including minimum thresholds and brackets for PIT, consequently preventing the base-expanding effect of the bracket creep.

In the Chilean case the creation of the indexed *unidad tributaria mensual* (monthly tax unit) in 1975 was mainly driven by the need to protect the tax revenues: with a galloping inflation that averaged 190% annually in the 70s, tax revenues were substantially reduced when assessed on nominal values and paid a year later. At its worst (1974 recorded an inflation rate of more than 500%) the tax revenues paid a year later would amount to a sixth of the burden in real terms, massively eroding the public finances. Thus, one of the main aspects of the 1975 reform was to introduce an indexed unit on which tax liabilities would be calculated for the purposes of maintaining their real value up to the time of payment. Indexation of the tax system is, of course, not unique to Chile but indeed usual in

developing countries: Uruguay introduced an indexed unit in 2004, Colombia in 2005, Argentina and Venezuela in 2017.[27]

However, the fact that the tax system was indexed in 1975 has also meant that no bracket creep at all as been possible ever since. The only possible way of expanding the PIT is by active legislative action by Congress, which is politically very unappealing.

I argue that that there are two main problems with automatic indexation of the PIT in developing countries.[28] First, and most importantly, indexation means that there is no need for Congress to periodically assess the fairness of the PIT. This is particularly problematic in developing countries, where PITs are notoriously deficient and tax systems remarkably lack (sufficient) progressivity. Moreover, it is not uncommon among developing countries for their PIT to have their origin in non-democratic periods in their history, which raises further questions about whether they reflect the social preferences of the population.[29] Without automatic indexation, Congress would need to regularly assess whether the exempt amount and the bracket thresholds conform to the prevailing notions of social justice. Particularly in times of inflation and cost of living crises, this would likely lead to some (albeit modest) shifts of tax burdens towards those higher in the income distribution. These periodical modest shifts, however, lead to substantial reassignment of tax burden over time as the experience of developed countries has shown.

This incremental process might be particularly relevant for developing countries since there is a marked tendency for PIT in developing countries to have its origin in non-democratic periods. Thus, ending indexation would force a periodical democratic reassessment of the tax, which would gradually confer democratic legitimacy to a tax which (in many cases) has non-democratic origins. Indeed, the 30-countries dataset used by Brambor (2016) to analyse the origin of PIT, show that in developing countries only a 20% of countries adopted the tax under a democracy, while this proportion increases to 55% for developed countries. This figure is likely to understate the issue, however, as developing countries have been particularly affected by authoritarian regimes in the twentieth century that have had the chance to reform the PIT therefore removing whatever democratic legitimacy it had in its origin.[30] The non-democratic origins, moreover, is not only an issue of legitimacy but also seems to be extremely relevant for the potential revenue that PIT can provide in the future. Brambor (2016) shows that non-democratic origins of PIT have a lasting legacy by creating inefficient PIT that raise

[27] Indexation of tax systems seems to be a very common (and increasing) feature in Latin America. African and Asian countries do not seem to have adopted indexation to the same extent (Balasundharam, Kayastha and Ribeiro, 2023). However, it is possible that indexation requires a certain level of administrative capacity which might not yet be achieved by low-income developing countries. Thus, it is possible that (as with the widespread introduction of VAT) African countries will eventually follow the path of indexation that Latin American countries have adopted.

[28] There is a third less relevant advantage of unindexed PIT, with relates to dealing with inflationary pressures. A progressive (unindexed) PIT provides an automatic stabilisation mechanism in times of inflation: by bringing more taxpayers into the tax net and by pushing others into higher tax brackets, it removes purchasing power therefore easing inflationary pressures. This automatic stabilisation mechanism is arguably more beneficial in developing countries where problems of inflation are a constant concern: since 1990, average inflation rates in Sub-Saharan Africa and Latin America have been close to three times higher than in OECD countries (World Bank Open Data, 2024c). This argument is weaker when inflation is coupled with increased unemployment, although discretionary adjustments by Congress will be available to better deal with such circumstances (as argued by Sunley, 1979).

[29] In Latin America, for instance, public opinion surveys usually show that poverty and inequality levels are at odds with people's ideas of fairness, strongly suggesting that the tax system (and the PIT in particular) are not properly reflecting the social views on justice and redistribution.

[30] This is the case of Chile, where a very limited PIT was introduced under democratic period in 1924, only to be modified in 1925 after a coup d'état that suspended parliament. The same can be said of the 1974 and 1981 tax reforms during the Pinochet regime that massively eroded the PIT tax base.

little revenue. Thus, ending (automatic) indexation is essential to ensure democratic re-evaluations of the tax systems, which could both enhance the legitimacy of the tax and its revenue potential.

The second problem is that automatic indexation builds into the system a regressive interaction between direct and indirect taxes (Meade, 1978). For example, if the government plans to increase public revenues by increasing the VAT, this will lead to an increase in the consumer price index (CPI). As most automatically-adjusted PIT use the CPI for indexing, the increase in indirect taxes will automatically translate into a higher threshold for paying and for triggering higher tax rates under the PIT. This results in removing taxpayers from the PIT net and reducing the burdens of those remaining in the net. Thus, the increase in revenues from indirect taxes will be partly offset by a reduction in revenues from PIT. This effect of indexation is really problematic from a distributional perspective, as it offers a tax relief from increases in indirect taxes, but the relief is only beneficial to those higher up in the income distribution. Furthermore, the benefit of the relief increases with income, so those at the very top of the income distribution will be the most protected from increases in consumption taxes through a corresponding reduction in their income tax.[31]

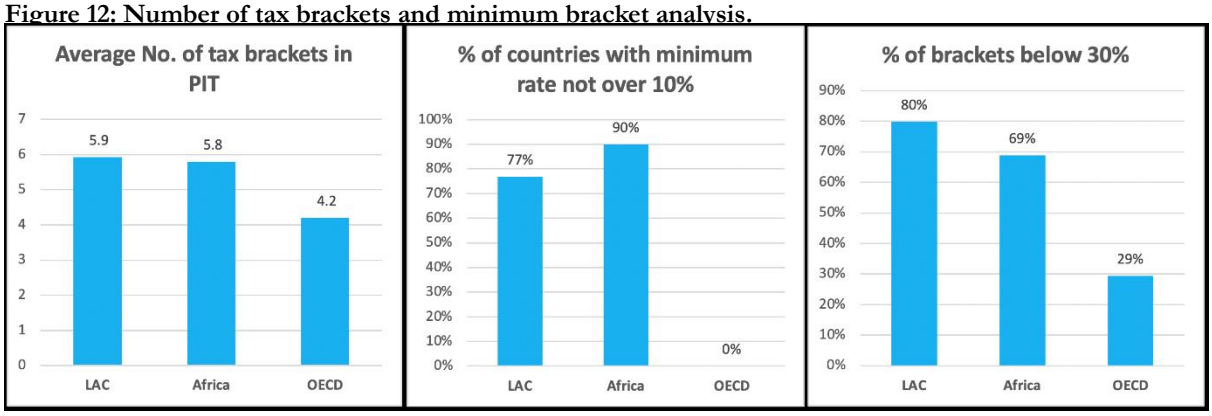
To conclude this section, I should introduce some qualifications to the argument advanced here. The argument is not to disregard inflation as a relevant factor when making decisions about the tax structure. Instead, the argument is to remove *automatic* adjusting mechanisms that only provide relief against inflation in an indiscriminative way, not considering that the richest households will usually be the least affected by inflation, if anything due to the decreasing marginal utility of income and their increasing access to wealth that shelters them from inflation. Instead, inflation indices should be a relevant concern for tax authorities and should be regularly reported to Parliament to feed into (or trigger) debates to provide discretionary adjustment to the system, balancing the needs to recognise the diminished purchasing power, to maintain (and arguably increase) a certain level of public revenues, and to maintain (and arguably increase) the progressivity of the system. There is of course a legitimate concern about the efficiency of Parliament to provide a timely response to reductions in real incomes as a result of inflation, but this should not immediately lead to full-automatic adjustment: mixed system can be devised. For instance, during times of particularly high inflation there could be an automatic update of nominal values according to variations in the CPI (i.e. if annual inflation reaches 10% the automatic adjustment is triggered). Below that, inflation would be relieved on the basis of discretionary adjustment.

4.2. Increasing the rates: the opportunities of indexation

As mentioned above, the tax rates in developing countries are very modest. In addition, as Figure 12 shows, there seems to be a tendency to have too many tax brackets, which translates into very modest starting brackets, which result in top brackets applying only to a very limited part of national income. And even within the tiny group of taxpayers to which top brackets do apply, the multiple brackets mean that the top rate only applies to a very limited part of their income.

[31] The Meade Report also highlights that automatic indexation can have bizarre effects when inflation is driven by a deterioration in the terms of trade of a country, which would suggest that there is fall in the standard of living (in which case, if tax burdens should be determined by the position in the income distribution, it would be logical to proportionally reduce the threshold for PIT).

Figure 12: Number of tax brackets and minimum bracket analysis.



Source: own preparation.

These factors partly explain the irrelevance of the PIT in terms of revenues, and its limited potential even if evasion and avoidance are substantially reduced. It thus seems clear that average tax rates under the PIT need to increase, but the political challenge of legislating such changes are very significant.

Indeed, even if a government was to introduce such a reform on a revenue-neutral basis (by offsetting PIT increases with reductions in other taxes), the political obstacles are likely to be substantial: any reduction in indirect taxation is unlikely to be felt in individual's budget as directly as an increase in the PIT. The effect of reductions in indirect taxes will be somewhat confused with routine price variations in consumption goods, and therefore some medium voters are unlikely to notice the tax reform. Furthermore, price reductions following a cut to indirect taxes is likely not fully passed to prices immediately but rather in the medium term, as productive capacity needs to be expanded to cope with increased demand from reduced prices, further distancing the tax break and its effects. In contrast, an increase in PIT would be immediately felt and it would be very salient: salaries and wages would immediately drop by the exact amount of the tax increase, and that would be reflected in payslips. The same argument is true when a tax increase is intended to fund additional public goods, as the benefit from these are likely to not be felt immediately, whereas the tax increase has an instant political cost.

The fact that PIT systems are currently indexed, however, offers an attractive alternative to gradually introduce both changes that seem to be required to increase the relevance of PIT (increasing the rates and reducing the brackets). The graduality of the tax reform is not only (or even mainly) desirable because it lowers the salience of the tax reform (and therefore reduces its political costs). Graduality in tax reform is almost always a desirable feature of tax reform,[32] as it reduces the windfall gains and losses that tax reform usually entail and allows taxpayers to adjust their economic activities to mitigate any economic costs that the tax change may produce (i.e. cash flow issues, budget deficits, etc).

I will use the Chilean tax schedule to explain my proposal, which consists of 8 tax brackets.

[32] It may not be desirable if it provides a time window to design and implement avoidance schemes targeting the new tax burdens.

Tax bracket (# of median income)	Marginal tax rate
Bracket 1: Up to 1.5	0%
Bracket 2: From 1.5 to 3.4	4%
Bracket 3: From 3.4 to 5.7	8%
Bracket 4: From 5.7 to 8.0	13.5%
Bracket 5: From 8.0 to 10.3	23%
Bracket 6: From 10.3 to 13.7	30.4%
Bracket 7: From 13.7 to 35.3	35%
Bracket 8: Above 35.3	40%

The values of the tax brackets are established in *Unidades Tributarias Anuales* (Annual Tax Units), which is indexed to inflation rates. Thus, there is no possibility of any bracket creep. Let us assume that the government decides to cut the tax bracket to only five, and to increase average tax rates throughout the PIT schedule by eliminating the marginal tax rates of 4%, 13.5% and 35% (the abolished brackets). By freezing the values of the starting threshold of brackets 3, 5 and 8 (those immediately above the abolished brackets) this could be gradually achieved at a substantially reduced political cost. As indexation continues to apply to the abolished brackets, these will gradually apply to a reduced income base and will eventually completely disappear. Indeed, when the minimum threshold of the abolished brackets reaches the freeze amounts of the brackets above them, the abolished brackets would have effectively been completely eliminated.[33] Assuming an average 5% inflation rate per year, the second bracket would entirely disappear after 6 years, while the fourth and seventh bracket would be completely eliminated after 6 and 16 years, respectively.[34] In the intervening years, however, revenue from PIT would gradually be increasing as a response to the higher average tax rates imposed on PIT taxpayers. Under this proposal, after the complete elimination of the abolished brackets revenues from PIT would increase by around 22%.[35]

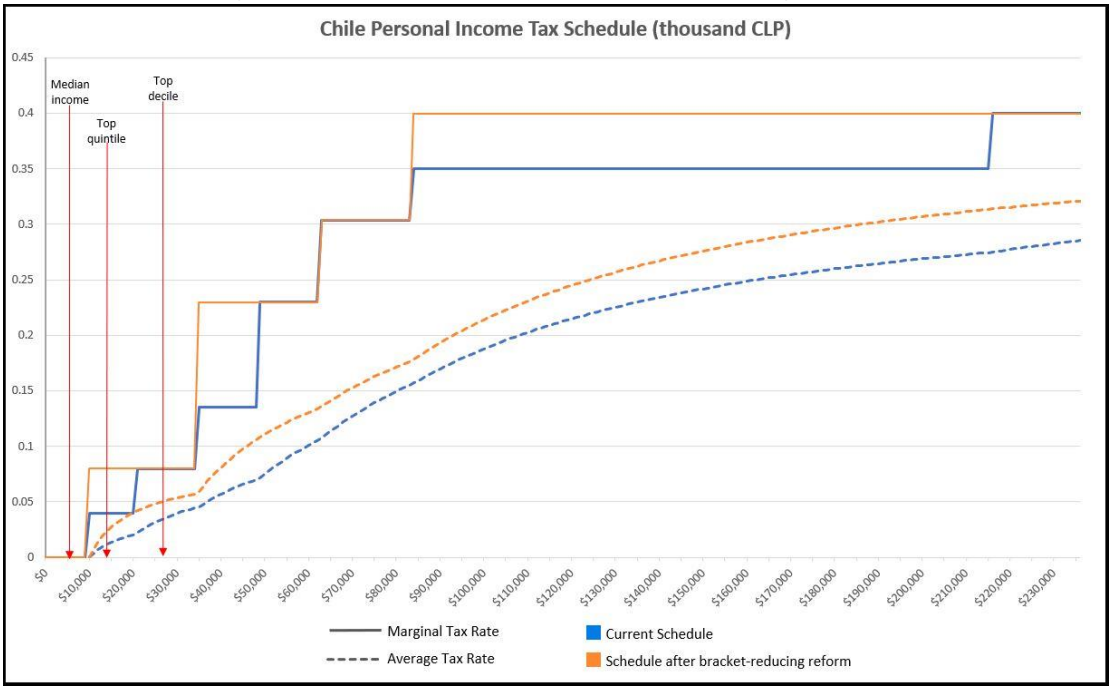
These additional revenues, in addition, are raised from a progressive source, as the increase in PIT would be very concentrated in the richest decile of the population, as shown in Figure 13. Indeed, median households would not be affected at all, while those in the 80th centile would only experience a 1.2 pp. increase in their ATR, and the increase would be larger as you move into the top centiles: the change in ATR would be of 1.5 pp. for those in the 90th centile, of 3.6 pp. for those in the 97th centile, and would remain above 2 pp. thereafter.

[33] At this point there is a policy alternative: either maintain automatic indexation (i.e. the starting 8% tax rate will continue to apply to indexed values representing 1.5 times the median income) or -in line with the suggestions on section 4.1- to end automatic indexation (i.e. the threshold for the starting tax rate will continue to be frozen, and therefore bracket creep will continue to expand the tax base unless Parliament approves discretionary adjustment to offset inflation).

[34] According to World Bank data, the average inflation rate in Chile for 1992-2022 is 4.9%, making the 5% inflation assumption a sensible one (World Bank Open Data, 2024b).

[35] These estimations are only considering the mechanical effect of such reforms using data on current number of taxpayers and amount of tax paid in each bracket. They are not taking into consideration possible behavioural responses to the gradual increase in average tax rates. Saez (2003), however, argues that increases in taxes due to "bracket creep" might reduce substitution effects as it is harder for taxpayers to understand the effect on the marginal tax rates, so this effect might be minimal.

Figure 13: Chile PIT schedule (current and after reducing brackets).



Source: own preparation based on calculations using statistical data from PIT revenues from SII (2021).

These estimations are encouraging, as they show that a politically feasible reform could bring substantial additional revenue from the most progressive tax in the system. The suggested reforms are politically attractive as usual arguments against increasing direct taxes are particularly weak in this case. Opposition to increases of direct taxes usually argue that the worsening of incentives from increased direct taxation outweigh the gains from the additional revenues. This seems to be a weak argument in the face of a reform that would only increase marginal rates for a limited number of taxpayers, doing so only in a very gradual way (thus the change in marginal tax rate per year would only affect a very reduced number of taxpayers).

4.3. The problem of the threshold

A typical feature of PIT in developing countries is their relatively high exempted amount (in terms of national median income). Indeed, while in advanced economies the minimum threshold for PIT is usually well below the median income, in developing countries it tends to be substantially above it (see Table 3 in Chapter 1). This is obviously an obstacle to increasing revenues from the PIT, but it needs to be dealt carefully.

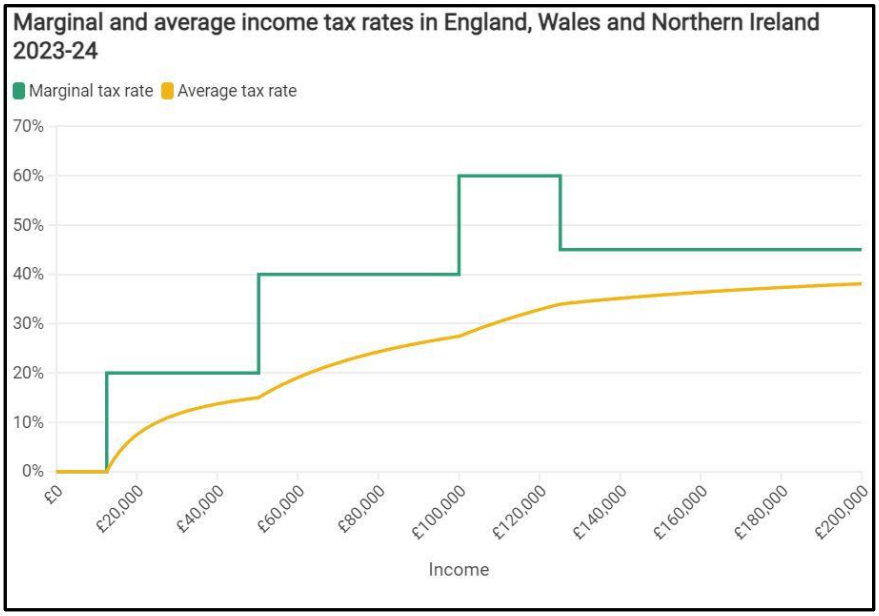
Lowering the threshold to the levels found in developed countries does not seem to be a politically feasible option. In a developing context the income of those in the middle of the income distribution is particularly difficult to tax for two reasons. First, the income levels are considerably lower than in advanced economies, and therefore those living on a median income only have a modest living standard, not far from the minimum required for life's essentials. In addition, those in the middle deciles tend not to be the target of state support and public services tend to be of low quality, which makes them less willing to pay taxes than in developed countries (where they receive state support and benefit from public services of a much better quality). Thus, imposing a direct tax on the middle class is very challenging from a political perspective.

On the other hand, having a high threshold is not optimal from a perspective of tax design. From an equity perspective, a high inequality context would require a strongly progressive tax system, but having a high PIT threshold means that, on an otherwise similar tax schedule, you would raise substantially less revenue. Thus, for any given revenue target you would need to place a heavier burden on consumption taxes which would make the entire system less progressive than it would be in the presence of a lower threshold. The high exempted amount also means that those at the top of the income distribution will benefit from a larger portion of their income going untaxed, therefore imposing lower ATR on their incomes.

From an efficiency perspective the high threshold is also not a good policy. Indeed, the higher the threshold the narrower the base for PIT. Thus, for any revenue target the rates will need to be higher in the presence of a large exempt threshold, which would lead to larger distortionary effects of the tax, as it has been estimated that the deadweight loss of a tax increases in proportion to the square of the tax rate (Bird and Zolt, 2005). However, other efficiency arguments also seem relevant in the context of developing countries. In particular, the presence of a large informal sector might require a large part of the population to be left out of the tax net, to avoid placing additional incentives to shift to (or remain in) the shadow economy. Thus, although efficiency usually requires a broader base, in developing countries the base-broadening efforts should not be at the risk of expanding the informal economy.

Based on these considerations, the only seemingly feasible alternative to expand the PIT base through reducing the threshold might be to do so without affecting median income families. In a search for such a tax policy, the UK PIT system offers a solution that fits with the need to relieve from tax mid-income earners while denying the benefit of the threshold to rich households: withdrawing the benefit of the threshold at a certain high-income level. Indeed, in the UK the personal allowance (PA) for PIT is withdrawn at a rate of 50% once your earnings exceed £100,000 (for every £2 earned in excess of £100,000 the personal allowance is reduced by £1). The design of this withdrawal, however, needs to be carefully considered as it might lead to some strange-looking tax rate schedules, as the UK schedule clearly shows. Indeed, the withdrawal system in UK leads to the peculiar situation where once you reach an income of £100,000 your marginal tax rate will increase from 40% to 60% (as the PA withdrawn at a 50% rate will be taxed at the marginal tax rate of 40%) but it will then drop to 45% once your PA has been completely withdrawn (at £125,140, see Figure 14).

Figure 14: Current UK PIT schedule.



Source: (IFS, 2024)

This seems to vaguely reflect one of the intuitions from the optimal tax literature which suggest that at the very top of the distribution marginal tax rates should drop, as the substitution effect would dominate any increased revenues from higher rates as there would be no taxpayers above this rate (who would pay additional revenues but without their work choices being distorted as they would still face the same marginal tax rate).[36] However, I believe an outcome such as this should be avoided when trying to legislate the withdrawal of the threshold. As mentioned, political opposition to increasing direct taxation tends to be extremely powerful in developing countries, and thus any issues that could provide arguments that might further strength such opposition should be definitely avoided. It seems clear that proposing a reform that leads to a marginal tax rate that drops for the very rich is open to strong criticism from a vertical equity perspective.

There is a second policy option when withdrawing the exempt threshold: instead of making the withdrawn threshold subject to the marginal tax rate of each taxpayer, it could be simply taxed at the basic tax rate. Thus, the withdrawal of the exempt amount would simply expand the income bracket of the starting tax rate of the PIT. This, however, results in a tax policy which is substantially less progressive and with a significantly reduced revenue potential, when compared with the option of levying the applicable marginal tax rates.[37]

Based on the above, I suggest a policy design which would withdraw the benefit of the exempt amount under the PIT while meeting two conditions: first, it would not lead to a marginal tax schedule where tax rates drop at some higher income level; and secondly, it would impose tax on

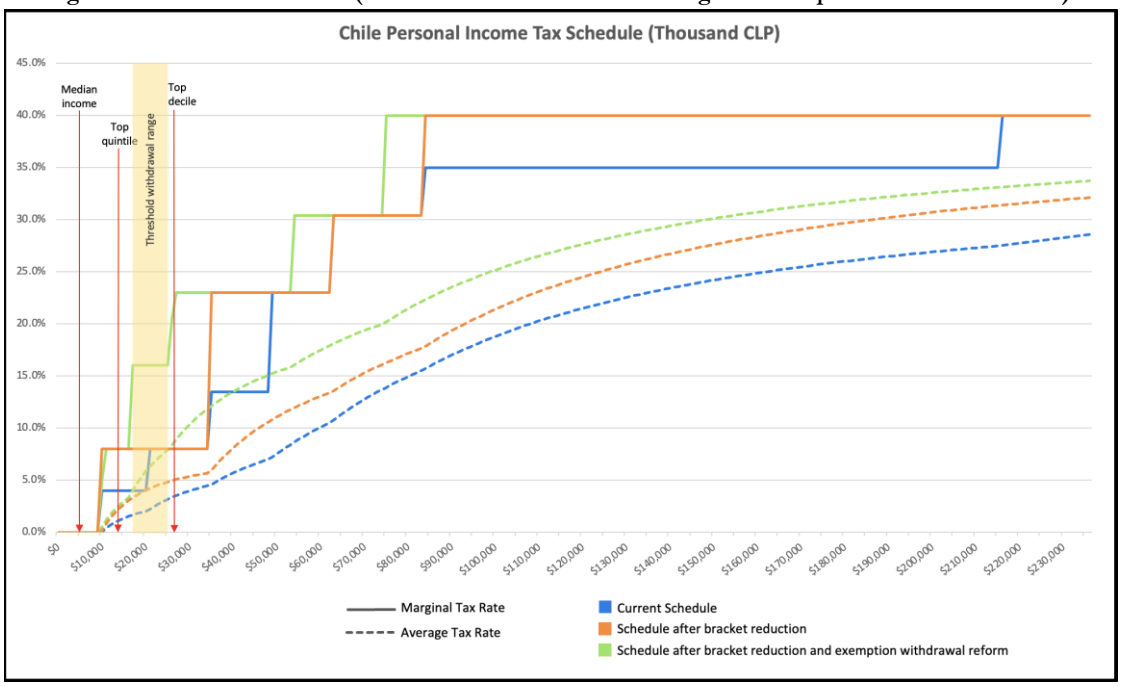
[36] It only "vaguely reflect" the lesson from the optimal tax literate as the conclusion of this literature (i.e. that at the very top of the income distribution tax rates should be zero) is qualified by the fact that such zero top rate should only apply to the single top earner of the economy. Thus, it cannot be considered a policy-relevant suggestion (Scheuer and Slemrod, 2019).

[37] A simulation of a reform around these lines clearly shows these shortcomings. Additional revenues from withdrawing the threshold are less than half of the additional revenues from the reform proposed here. As for the reduced progressivity, a reform that applies only the basic tax rate to the withdrawn amount does not affect much the ATR of those at the top of the distribution: it increases the ATR of those in the 95th and 99th percentile by only 1.9 pp. and 0.7 pp. respectively. On the reform advanced here (i.e. imposing marginal tax rates to withdrawn threshold) the ATR for the same taxpayers is increased by 5.4 pp. and 3.3 pp., respectively.

the withdrawn amount on the marginal tax rates of the particular taxpayer. To achieve the first condition, we need to find a place in the income distribution where the following tax rate is sufficiently high to be able to absorb the implicit increase in marginal tax rate at the income level where the withdrawal would take place. Starting from the reformed tax schedule from Figure 13 (a schedule with only 5 tax backets of 0%, 8%, 23%, 30.4% and 40%) it seems sensible to withdraw the minimum threshold in the last portion of the 8% bracket (the "withdrawal range") at a 100% rate (i.e., the exempt threshold would be reduced by the same amount that income exceeds the lower bound of the withdrawal range). This implicitly means introducing an additional marginal tax rate of 16% in the last part of the 8% tax bracket.[38] The benefit of placing the withdrawal range immediately before the next tax bracket is that it effectively avoids creating a tax schedule where marginal rates drop after the withdrawal range. Thus, immediately after the withdrawal range imposes an implicit marginal tax rate of 16%, the next tax rate of 23% kicks in, therefore producing an effective marginal tax schedule that continues to increase monotonically.

To meet the second condition, we need to maintain the width of the tax brackets unchanged when introducing the threshold withdrawal mechanism. Thus, the tax brackets above the withdrawal range will be shifted to the left (towards lower income levels) as a result of the reform.[39] This means that the reform imposes the marginal tax rate of each taxpayer on the withdrawn exempt amount. The resulting tax schedule is shown in Figure 15 (graphically represented against the current tax schedule).

Figure 15: Chile PIT schedule (current and after bracket-reducing and exemption withdrawal reform).



Own preparation based on calculations using statistical data from PIT revenues from the Chilean Tax Authority (SII, 2021).

[38] On that range, marginal income would be taxed at the 8% statutory rate plus it would reduce the exempt threshold by the same amount, which would also be taxed at 8%, leading to an implicit marginal tax rate of 16% in the withdrawal range.

[39] This is clear in Figure 15. Note how the 23%, 30.4% and 35% tax brackets are effectively shifted to the left by the same amount of the exempted threshold.

This reform would result in yet additional revenues collected from the PIT, as it would increase the revenues by an additional 32%. If these two reforms (i.e. reducing brackets and withdrawing the exempt threshold) were to be enacted simultaneously, they would bring an additional 58% of revenues from the PIT.[40]

The additional tax burden, as in the previous case, is also very progressive. As shown in the above figure, the median income tax position would remain unchanged (untaxed under PIT). Moreover, anyone outside the top quintile would also not be affected by the withdrawal of the exempt threshold, as this would only kick in at around the 82nd percentile. In addition, the withdrawal of the exempt amount would impose the taxpayers' marginal tax rate on that amount, so it would levy a considerably higher tax burden on those at the top of the distribution than on those outside the top decile.[41]

A last comment about this reform has to do with political feasibility. As it is clear from analysing Figure 15, the threshold withdrawal reform is equivalent to introducing an additional 16% tax bracket and lowering the threshold of the brackets above that. But legislating it as a withdrawal of the exempt amount appears to be a much more attractive political statement. It also serves to create an understanding that the exempt amount under a PIT is, in fact, a tax relief (and not a necessary feature of a progressive tax schedule). As such, there is nothing particular in targeting this relief to those less well off, as most tax relief and subsidies are to restrict the cost of the relief/subsidy.

4.4. Enhancing taxation of capital income: Dual Income Taxation

As described in section 3 above, on its face the Chilean tax code seems to follow a comprehensive income tax, where all income, notwithstanding its source, is taxed under the same progressive schedule. However, the comprehensive appearance of the PIT quickly vanishes as we take a closer look at the taxation of income from capital. Indeed, generous exemptions for capital gains and income from capital eloquently tell a very different story. Capital income is in fact largely untaxed under the current tax code.

As previously described, gains from disposal of shares and real estate are almost never taxed, while rental income is also largely exempt. Dividends and interests also benefit from an specific exempt amount which further undermines capital income taxation. In addition, in the exceptional cases where capital gains are taxed, they are subject to a preferential regime that caps the tax burden at 10%.

Are there any potential justifications for these extremely generous preferential regimes? A traditional explanation given for having an expenditure tax is that returns on capital should not be taxed to avoid discriminating against those that postpone their consumption. But we have seen in the section 3.2 that the Chilean PIT does not follow an expenditure tax design, as it can be overly generous on the reliefs for savings (or the equivalent deductions for investment) and fails to tax dissavings, so this justification lacks theoretical consistency in the case of Chile.

Another explanation frequently mentioned is that these tax preferences are advisable simply to promote investment and savings. From this reasoning, however, it is difficult to justify why the

[40] These estimations are not considering behavioural responses to the reforms, so they might be somewhat overestimating the additional revenues.

[41] For a person with income just enough to have her exempt threshold entirely withdrawn (around the 89th percentile) the tax on this amount would be levied at a 16% tax rate, while for someone closer to the top of the distribution it would be levied at a 40% tax rate.

preference are given in such different terms to different returns from capital. If encouraging investment is the policy intent, why are exemptions from dividends and interests restricted but the exemption for rental income is unlimited? Similarly, why are capital gains much more generously exempted from tax than dividends and interests, when they can be economically-equivalent returns to the same investment? These heterogenous tax treatments seem to be creating economic distortions for no reason.

Alternatively, the justification for the generous exemptions and benefits might have to do simply with the fact that effectively enforcing a comprehensive income tax is too complex. Thus, a large portion of capital income is deliberately left out of the tax net, and enforcement focuses on the narrower basis that remains within it. However, if the aim is to avoid complexity, it seems more relevant to simplify the tax and its collection mechanisms than to simply narrow the base. Indeed, for any given revenue target a broader base will allow lower rates and will remove the tax discrimination that exemptions entail, both of which should lead to less incentives to engage in tax avoidance.

Thus, withholding mechanisms and flat rates might be more effective in addressing complexity than simply carving out part of the tax base by way of piece-meal exemptions and preferences. It would also, very likely, result in more revenues being collected from a wider base and on flatter rates. This is precisely what a dual income tax could offer, even though the historic reasons for introducing a dual income tax are more related to tax competition than to simplifying tax policy.

A dual income tax system (DIT) introduces a separate tax schedule for income from capital, which would be removed from the general tax schedule for labour earning. The latter would continue to be taxed under the general progressive tax schedule, while a new flat tax would apply to income from capital (the "flat tax"). The flat tax would be considerably lower than the top marginal tax rate of the PIT. In its purest form, the flat tax would apply to all income from capital, including imputed income from owner-occupied housing and from business assets of sole traders. The rate of the flat tax, in addition, should be equal to both the CIT rate and the starting rate of tax for labour income. The main justification for a dual income tax when introduced by Nordic countries was to deal with tax competition for capital whilst maintaining a very progressive tax schedule for labour income. In addition, some of these countries realised that taxing capital income under the same tax schedule as labour income was actually resulting in revenue *losses*, as effective tax on income from capital has always been far from comprehensive (as practical feasibility requires concessions for several sources of capital income, such as owner-occupied housing, unrealised capital gains, etc.) but expenses related to capital assets were able to offset high marginal tax rates from labour income (Sorensen, 2007).

The most popular argument against dual income taxation comes from the perspective of horizontal equity. Indeed, it is hard to reconcile with ideas of tax justice that two similarly wealthy taxpayers suffer different tax burdens simply because one receives his income from labour while the other receives her income from the holding of capital assets. But horizontal equity could also support the introduction of a dual system if the current system discriminates between two similarly well-off taxpayers by allowing one to substantially reduce its tax bill by the deduction of capital expenses (on assets which will produce largely exempt income) while the other pays her full tax liability. Thus, the requirements that stem from a horizontal equity perspective largely depend on what is the baseline from which the introduction of dual income tax needs to be assessed against.

The argument in this section is that the current state of PIT in developing countries makes the introduction of a dual system of taxation a very attractive policy. Not only are the benefits that Nordic countries seek in the 1990s also present in the PIT systems in developing countries, but particular

characteristics of these systems make the case for dual income taxation even stronger. I explain these below.

A. Tax competition for capital. The pressures from tax competition in the 1990s are arguably less acute than the current ones. Indeed, average corporate tax rates have gone down from an average of around 50% in the 80s to 35% in the early 2000 (Devereux et al, 2008) and further reduced to around 20% in 2021 (OECD, 2021). In addition, developing countries tend to have a particular need for FDI, and therefore adopting a dual system could allow them to offer attractive tax rates for capital income at a reduced cost from the perspective of forgone revenue. Lastly, as administrative tax capacity tends to be limited in developing countries, there is a pressure for reducing incentives for tax avoidance from abuse of corporate vehicles by reducing the tax gap between PIT and CIT, which results in flatter PIT schedules. This pressure would be eased by separating the PIT schedule along the lines of a dual taxation system, as further explained in section 4.4.H. below.

B. Horizontal equity concerns. Maybe the strongest argument against a DIT is considerably weakened in the context of emerging economies. The argument that similarly well-off taxpayers should be subject to a similar tax burden disregarding the source of their income is usually less persuasive in the context of developing countries: the fact that the current PIT system only imposes modest tax rates on anything other than extremely large incomes makes horizontal equity claims against a dual system largely inapplicable. Indeed, in the case of Chile if a 15% flat tax rate is applied to income from capital, this will be equivalent to the average tax rate under the progressive PIT schedule that applies those well inside the top percentile. Thus, horizontal inequities would be contained to the very top of the income distribution and would not be large, which would considerably reduce their appeal.

C. **Revenue consequences.** Another usual concern when discussing the possibility of introducing a dual income tax is that it will lead to a loss of revenue. This is simply not a concern in a developing country context, precisely because, in the current state of their PIT system capital income taxation (or tax collection) is almost inexistent. Moreover, as it was the case with Norway and Sweden before DIT, taxation of capital income is very likely to be negative, as exemptions and preferential regimes are abundant while deduction for capital expenses are generous. If only to reduce and make less regressive the tax value of deductions of capital expenses, there seems to be a strong case for the move towards a DIT. Indeed, data on Chilean PIT is clear in this regard: in the last 13 years, withholding taxes on labour represent on average 106% of final revenue from PIT. This is explained by the fact that PIT on income from capital has been negative in all but one year (SII, 2021).[42] At the same time, looking at tax expenditures in the PIT, is clear that those related to capital assets are substantial: in 2021 tax deductions for expenses related to capital income represented 8% of all the revenues from PIT, while tax forgone due to exemptions and preferential regimes for capital income amounted to 24% of all revenues from PIT. This is a shockingly large fiscal cost that is extremely regressive: not only is the PIT levied only on the richest quintile, but inequality of ownership of capital assets is substantially higher than income inequality (Frankema, 2005; and

[42] This negative result is partly due to the credit for CIT exceeding tax revenues from other capital income. But integration of CIT and PIT is not inherent to a comprehensive income tax, so it could be repealed without moving towards a DIT. However, when top rates under a PIT are around 40%, arguments about the double taxation of income from corporations gain a lot of strength. Problematically, integration also creates plenty of opportunities for evasion/avoidance (e.g. allocating shares to family members with no or low income). Thus, moving to a DIT would remove the argument for integrating the CIT and PIT, which would increase revenues and remove avoidance opportunities.

Deininger and Olinto, 1999) and the tax value of deductions increases through the income distribution in proportion to the PIT schedule.[43] Thus, it is clear that introducing a DIT would not lead to any loss of revenues and is likely to produce substantial additional revenues.

D. Enhancing compliance. Maybe the most sensible explanation to the multiple tax preferences for capital income in developing countries is simply that, in practice, little revenue is actually forgone through such concessions since enforcement of the PIT is extremely poor on income sources that rely on self-reporting and quasi-voluntary payment of the tax. However, there is nothing specific to capital income that requires its compliance to be based on self-reporting and not on more effective means of collection such as withholding at source or retentions from third parties (as in the case of labour income).

The reason why withholding mechanisms are not suitable for capital income taxation is due to the combination of two conditions: (i) the payee of the capital income is not aware of total capital income of the taxpayer (in opposition to labour income, where the employer is likely to be the sole income source of the employee), and (ii) the tax is imposed on a progressive schedule depending on the total income of the taxpayer. The second condition would fail under a DIT and thus would make withholding mechanisms suitable for capital income, which would undoubtedly enhance compliance/enforcement.

In addition, introducing a DIT needs not be considered as a definitive stage of capital income taxation. Indeed, a dual system could be seen as a first step in bringing capital income effectively into the tax net, where sufficient information about asset ownership would be provided to the tax authority, which is an essential condition to effectively enforcing any progressive taxation on capital income if this is deem convenient in the future.[44]

E. What type of DIT for developing countries? As mentioned earlier, a pure DIT is not a simple tax as it requires levying the tax on all sources of capital income, introducing income-splitting rules for sole traders and possibly for the share of profits accruing to active shareholders in closely held corporation (Sorensen, 2007, p. 574). It also means adapting the tax rate schedule to align the CIT rate with both the starting rate of PIT and the new flat tax rate for capital income.

Simplicity is usually a consideration for tax reform in any context, but in developing countries it seems a necessary condition. It thus seems advisable that, at least on an initial phase, a simpler DIT be introduced. The current PIT schedule in developing countries is also not particularly suitable to follow the recommendations of a pure DIT having a single tax rate for the flat capital income tax and for the basic rate of tax for labour income. Thus, some deviations from the pure form of DIT seems advisable.

The first and most salient issue in designing a DIT would be the flat rate that would apply to income from capital. As we mentioned earlier, the vast majority of countries in LAC and SSA have starting rates for PIT that do not exceed 10%. At the same time, CIT tax rates are usually above

[43] Although only measuring land inequality, the differences between this and income inequality are massive. Frankema (2005) estimates that land ownership Gini in Chile was around 0.84 in 1997, when income inequality was around 0.55 (World Bank data).

[44] The history of British taxation shows that flat taxes can be used as a starting point to build administrative capacity to effectively enforce progressive taxes later. The current UK income tax system can be traced to the 1842 Peel income tax and the 1853 Gladstone budget where all sources of income were taxed at flat rates. This was the basis on which the government was able to effectively enforce an income tax under a progressive schedule on the People's Budget of 1909 (Daunton, 2001).

20% and they tend to be higher in developing countries. Indeed, while world average CIT rate is around 23%, in South America and Africa the average is around 28%. It is therefore unlikely that the flat tax rate for capital income can be at the same time the CIT rate and the starting PIT rate. However, in order to reduce avoidance incentives, the rate of the flat tax for capital income should be chosen in a way that, when combined with the CIT, it would lead to a tax burden that is roughly equal to the top tax rate for labour income.[45] Thus, in the case of Chile, a 16% flat tax could be introduced for capital income. This, together with the 25% CIT would lead to an overall tax burden of 37% (25% + 16%*0.75), which would be relatively close to the top rate under the PIT (40%).

The second most important element is the tax base. How comprehensive should the tax base be (i.e. should it include returns from owner-occupied housing and unrealised capital gains)? Again, in the interest of simplicity I argue that the tax base should be less comprehensive to ensure that the tax is efficiently enforced. Enacting tax reforms that are feasible to effectively enforce given the existing administrative capacity should be a key consideration in developing countries (and one that has been overlooked in the past).[46] Thus, the tax base should include the most typical types of capital income that are currently taxed: interests, dividends, royalties, rental income and realised capital gains.[47]

Another very relevant aspect in designing any tax has to do with collection mechanisms, and this is particularly important in the present case, as one of the main attractions of a DIT for developing countries is that it would be easier to administer and enforce. The main reason is that a flat rate tax is particularly suitable for withholding mechanisms which have proven to be the most successful collection techniques in history.[48] From the tax base previously mentioned, all but capital gains are very straightforward to implement by withholding at source.

Furthermore, withholding mechanisms could even be implemented with capital gains. In particular, when gains arise from the disposal of listed securities it seems relatively straightforward to impose withholding duties on the financial institutions acting as intermediaries.[49] For the disposal of real property it seems more difficult to impose withholding mechanisms, but intermediaries are also frequent in these transactions and could therefore have a duty to withhold the DIT. In addition, public registries are crucial for the passing of title to the property, so they could also be used to

[45] If the combined tax burden of the flat DIT and the corporate tax is substantially less than the top rate of PIT, the dual system will create an incentive for sole traders and controlling shareholders in closed corporations to transform their labour income into dividend and interest payments, thus reducing their overall tax burden. If the opposite is the case (the top PIT rate being substantially lower than the combined burden of CIT and DIT) there is an incentive for controlling shareholders to pay a larger salary and therefore reduce their CIT and capital income tax. The latter, however, should not be a major issue since if the controlling shareholder has the power to discretionally determine her salary it is arguably the case that being taxed as a sole trader is not an avoidance scheme but simply a reflection of the economic substance of her activity.

[46] It is not unusual to see developing countries enacting tax reforms that follow the example of advanced economies, without considering they require a strong tax administration and access to (and capacity to process) substantial information about the tax base. It seems, in my opinion, that the negative consequences of imposing a tax which is unenforceable have been underestimated: it is not only that you fail to collect some (or most) of the revenue from the new tax, but more importantly it damages tax morale in the society, which reduces tax compliance within the overall system and not merely within the new tax. It also undermines the perception of fairness of the tax system and the willingness to support revenue-enhancing reforms in the future.

[47] Sorensen (2007) makes the same recommendation when advocating for a DIT for Canada, suggesting that starting simple might be a good idea even in a developed country. He does propose the introduction of some complexities on a second stage, which is something which might not be advisable in the context of a developing country.

[48] According to Daunton (2001) it is precisely the early implementation mechanisms of collection at source that are seen as the key to the success of the British tax system.

[49] Financial intermediaries acting as brokers and investment banks (in IPOs) will usually have all the relevant information to determine the gain arising to their clients, and will therefore be in a good position to withhold the applicable tax.

effectively enforce the tax. For instance, in Chile the transfer of real property must be done by means of a public deed signed before a notary public, which is subsequently registered in the land registry. Duties to withhold taxes could be imposed on both the notary public and the land registry. For instance, the notary public could be required to ensure that the public deed states the capital gain realised in the disposal before authorising the public deed of transfer. Similarly, the land registry could be required to refuse any registration that has not provided evidence of paying the applicable tax. Alternative withholding mechanisms are abundant[50] and advising on the most appropriate is beyond the scope of the argument, which is simply to highlight that the benefit of a DIT crucially lies on having these withholding mechanisms in place as extensively as possible.

Rental income received from individual taxpayers may be a challenging area to impose withholding taxes,[51] but there are mechanisms that could be designed to produce the relevant information for implementing effective enforcing mechanisms by the tax authorities. For instance, under the general PIT system, there could be allowed a deduction (or tax credit) for rental expenses, which would give individual tenants the incentive to deliver accurate information about tenancy contracts to the tax authority, which could then be used to audit landlords.[52]

F. Making the flat tax on capital income progressive. One final aspect in designing a DIT relates to the progressivity that the tax should have (if any). Single-rate taxes can be made progressive mainly by two ways. The most common one is by allowing some minimum amount to be exempt from the tax, which will give a modest degree of progressivity to the tax. The second mechanism is by using abatements (widely used in England in the XIX century, in what Daunton (2001) calls the 'Gladstonian fiscal constitution'). Abatements are simply deductions from tax for amounts that vary with the level of income. Thus, for instance, the British income tax in 1898 was levied at a single rate, but it was granted an abatement of £160 for incomes between £160 and £400. The abatement amount was gradually reduced and no abatement was available on incomes above £700. Thus, the effective tax was nil for incomes below £160 and it progressively increased to the full single rate for incomes above £700. The same can be applied to the flat tax under a DIT if vertical equity concerns prove strong. The key, however, is that this progression does not prevent withholding at source.[53] The disadvantage of this mechanisms, however, is that it cannot achieve strong progressivity without creating cash flow issues for those on lower income, as it requires the imposition of the higher tax

[50] Another mechanism of collection at source adopted in Australia and Canada is to impose a fixed % of the price to be withhold by the buyer (this usually applies only when the seller is non-resident but can also apply to resident sellers in some circumstances). In these cases, the buyer is required to withhold a certain % of the sale price (12.5% in Australia, 25% in Canada) and pay it to the tax authority. The seller can release the buyer from its withholding duty by providing a clearance certificate issued by tax authority (Cui, 2017; Krever and Sadiq, 2019).

[51] When rent is paid by a company the withholding mechanism should work well, as the renting company will have an incentive to accurately report this expenditure to reduce its CIT. If the CIT deduction for rental payments is only allowed where the renting company has withheld and remitted the DIT on rental income, there should be sufficient incentives to ensure a good level of compliance. The tax saving for the renting company will be larger than the tax burden for the landlord, so there seems to be little room for avoidance.

[52] When deciding whether to give a deduction or a tax credit, a tax credit is preferrable as it would be less regressive than a deduction, as a credit has the same value to all taxpayers, no matter their level of income. Thus, a tax credit for an amount equivalent to the starting rate of PIT applied to the rental income capped at some maximum amount could be a good tax policy, as it would lead to revenue gains (assuming the starting rate of PIT is below the flat rate on capital income) and would provide the required information to effectively enforce the capital income tax.

[53] According to Daunton (2001) the use of abatements in XIX century England was both due to the administrative advantage of deduction at source and to the psychological advantage of not using the concept of graduated rates (which generated substantial political opposition at the time). Instead, the concepts of "degression" or abatements were used.

rate, which is only relieved at the end of the tax year when the level of total income allows the tax authority to calculate the final abatement.[54]

Either of these mechanisms seems advisable to address issues of tax equity, particularly if they become a political obstacle to introducing the dual system in the first place. It also has the advantage of encouraging taxpayers to provide information about their assets ownership and transfers to claim the abatements, which can be checked against the information collected from third parties withholding the tax at source. Given the very high inequality of asset ownership in developing countries, however, only a relatively modest abatements seem to be necessary to deal with political concerns about vertical equity.

G. Removing exemptions and preferential regimes. In order for successfully introducing a dual system, the reform should be framed as aiming to rationalise the taxation of capital income. Thus, the main argument for introducing a DIT should be to eliminate all the distortions that are created by the existing piecemeal tax preferences to different forms of capital income. In addition, some of the preferential regimes will no longer be justified in the presence of a single-rate tax schedule. For instance, many preferential regimes for capital gains have been originally justified by the fact that it may be unfair to apply the top rate of PIT to a taxpayer that has been pushed into the top bracket simply because she made a large gain from the disposal of an asset held for a long period. Such concerns would no longer apply in a dual system and therefore the preferential regimes should be abolished. Crucially, the DIT should not be introduced as an option to taxpayers, as this would mean that avoidance opportunities would remain in place under the general system and the dual system would only act as a cap to potential tax liabilities.[55] Thus, the DIT should replace all previous forms of capital taxation to ensure that its revenue potential is not undermined by surviving exemption and preferences to capital. This would also be key to implement withholding mechanisms, as there would be no special exemptions that could be used to avoid deduction at source. In this way, any revenue losses from the reduced tax rate should be more than compensated by the additional revenues from the removal of previous preferential regimes.

H. Integration of CIT and PIT. Once a DIT is introduced, integration of CIT and PIT is arguably no longer required. Indeed, if the flat rate of tax under the DIT is chosen in a way to approximate, when combined with the CIT, the top PIT rate, the case for integration of both taxes is considerably weakened. There would still be a case for integration to avoid discriminating against equity investment when compared with debt financing (as both dividends and interest would pay the flat capital income tax, but only interest would be deductible from the CIT base). But this is not specific to DIT, as almost all income tax systems currently discriminate against equity investment.

[54] But there are ways in which even strong progressivity could be achieved under this system. For example, relying on a taxpayers' level of income on the last tax year can provide a presumption of the current year total income and provide a lower withholding rate. This is similar to the way in which individual tax codes -which determine amount to be withheld by employers- in the UK vary according to information on total income/reliefs from previous years to try to achieve the most precise withholding at source (HMRC, 2024).

[55] This has been a key mistake of recent tax policy in Chile, where some forms of flat rate taxes to income from capital have been introduced but giving substantial options to taxpayers when deciding whether to apply them. For instance, a 10% flat tax has been introduced for capital gains on real property above the exempt amount, but the taxpayers have the alternative to either pay the flat tax or to be charged under the general PIT schedule (or allocate the gain over the tax years on which the assets has been held). Thus, avoidance opportunities where a gain is attributed to a family member to benefit from their unused personal allowance remain in place, and the flat tax is actually only used as a cap to the tax liability.

However, if tax neutrality between debt and equity is a priority, different solutions have been suggested in the literature that might make more sense than simply integrating the PIT and CIT. One of them is the Allowance for Corporate Equity scheme (ACE) proposed by IFS (1991), which would grant an allowance for the cost of equity finance to compensate for the delay in receiving depreciation allowances. Although this might prove too complex in the context of most developing countries, it does highlight the key issue that relief for double taxation needs not be given at the shareholder level but can instead be given at the corporate level. Thus, if the tax discrimination against equity financing wants to be avoided/reduced, solutions that would not make the DIT more complex might be preferable, such as introducing a split rate system of corporate taxation, [56] thin capitalisation rules, etc. Whether tax neutrality between debt and equity justifies the introduction of any of these mechanisms needs to be balanced with the crucial concern in developing countries of not creating opportunities for tax avoidance. Indeed, if the split rate method leads to a larger gap between the final tax on dividends and the top tax bracket for PIT, there would be a strong incentive to transform labour income into dividends. Such avoidance opportunities might prove difficult to tackle in the context of developing countries, which might make the goal of tax neutrality between debt and equity less relevant for tax policy purposes.

There are, however, additional interactions between the CIT and the PIT that need to be considered, and a proper implementation of a DIT should be mindful of these:

- **(Lack of) Alignment between capital income tax rate and CT rate:** one key aspect in which a DIT in a developing country might differ from the pure dual tax system is by the lack of alignment between the flat rate of tax applied to capital income and the corporate tax rate. This difference should lead to adjustment in corporate tax deductions to avoid generating opportunities for tax arbitrage due to the rate differential. If the flat rate of the DIT is lower than the tax rate for CIT, interest deductions at the corporate level should be reduced to a proportion equivalent to the rate of the former to the rate of the latter. Thus, if the flat rate on capital income is 16% and the corporate tax rate is 25%, interest deductions at the corporate level should be reduced to 16/25 of the actual interests paid. Failing to reduce the interest deductions would lead to additional tax incentives for debt financing as it would further reduce the overall tax burden, as the flat tax levied on the lender would be less than the reduction in tax for the borrower. This is the solution applied in Uruguay when a dual system was introduced (Barreix and Roca, 2007).

- **Tackling abuse of corporate vehicles to avoid PIT:** As mentioned in the introduction to Part II, one of the explanations for the limited revenues arising from PIT in developing countries is due to the abuse of corporate vehicles to shelter income from PIT rates. In these evasion schemes, an individual incorporates an (typically) investment company to receive income, and never make any formal dividend distributions. Instead, the company pays for the personal expenses or make interest-free loans to the individual.[57] The scheme is very simple, and a sophisticated tax administration would be able to tackle them with appropriate audits and

[56] Under a split rate mechanism, profits distributed as dividends would be subject to a lower corporate tax rate than retained profits. This would reduce the tax burden on dividends, therefore narrowing the gap between the tax treatment of interests and dividends.

[57] On the most aggressive version of this evasion scheme, the investment company would deduct from its corporate tax base the personal expenses of the individual, disguising them as allowable corporate expenditures. Less aggressive, it would simply not report this expenditure, thus only paying corporate tax on the profits channelled through the investment company but not PIT.

enforcement.[58] But in the context of developing countries, it is an evasion technique that has proven hard to curb.

In that context, a DIT system can make a difference, as it has always been part of the design of a DIT to split earning of self-employed and sole traders between a capital component (to which flat rate of capital income tax is applied) and a labour component (to which the progressive PIT rates apply). This same income splitting system can readily be used to tackle the use of companies to shelter income from PIT. In those systems, sole proprietorships (which combine capital and labour from the owner) are required to split the returns of the business between the capital and labour component. The way this is done is to simply impute a rate of return to assets of the business, on which the flat capital income tax rate applies. Any residual profits from the business after deduction this imputed return on capital would be taxed as labour income (Sorensen, 2007). The same mechanism can be applied to closed corporations, but simply recognising an additional layer of taxation at the level of the corporation. An example will clarify the equivalence of both applications of the splitting system, where the starting position is that there are £100 of business assets and £80 profits.[59]

Table 19. Split-income mechanisms under a DIT

	Unincorporated sole proprietorship	Closed company
£100 worth of Business Assets		
Profits	£80	£80
10% imputed return on BA	£10	£10
Residual labour return	£70	£70
Corporate income tax (25%)[60]	-	£2.5
Capital income tax (16%)[61]	£1.6	£1.2
Tax on labour return (40%)	£28	£28
Overall average tax rate	**37.0%**	**39.6%**

Using this splitting system, it no longer matters whether the profits are distributed as dividends or kept in the company, they will be subject to both capital income tax and labour tax regardless. The key aspect of the design is to define closed companies on which this splitting mechanism will be applied. Offering a precise definition of closed company exceeds the scope of this work as it would be a feature of the corporate tax system. However, the definition should usually capture four aspects: (i) that is a private company, (ii) owned by a small number of individuals,[62]

[58] The problem of abuse of corporate vehicles is not limited to developing countries as it also occurs (though to a lesser extent) in developed countries. A great paper empirically showing the use of companies for personal expenditures is Leite (2024).

[59] In this example, there is a slight gap between the overall tax on the sole proprietorship and closed company business. This is not surprising, as the benefit of limitation of liability can justify such a higher tax. In more complex business scenarios (involving financing transactions, employees, capital investments, etc.) the corporate structure will be more generous in the deductions from the tax base which can reduce the gap or even make the corporate form a more tax-advantageous business structure.

[60] The corporate tax is applied on the profits after deducting the residual labour return. In the example, the splitting systems results in £70 treated as residual labour returns, so the CT is applied on profits of £10 (80-70).

[61] In the case of a closed company, the capital income tax is applied on the 10% imputed returns (£10) *after* deducting the corporate tax (£2.5). So the 16% capital income tax is applied on £7.5.

[62] The definition should not limit to a number of shareholders but should also include individuals related to the company in ways that are economically equivalent. For instance, the UK definition of close corporation is one that has five or fewer

(iii) with appropriate rules for trading companies that allows them to deduct actual investments, and (iv) include targeted anti-avoidance rules to make sure that the definition is not easily circumvented (e.g. using family members or associates as shareholders to exceed the threshold).

- **Withholding taxes on Double Tax Conventions:** Another key consideration when designing a DIT is to set up a flat rate which does not result in unintendedly relinquishing taxing rights under double tax conventions (DTC). DTCs allocate taxing rights to each country over cross-border economic activity. This can be done be either establishing exclusive taxing rights to one jurisdiction (e.g. taxation over employment income, in most cases)[63] or by limiting the taxing rights of one jurisdiction and granting unlimited residual taxing rights to the other (e.g. dividends, interest and royalties are usually subject to limited source taxation, with unlimited residual residence taxation).[64] The net effect of this limited and residual taxing rights is usually what is called 'capital export neutrality' from the point of view of the residence country of investors: from a tax perspective the investor is indifferent to the location of investment, as it will be subject to unlimited taxation in its residence country (although part of its taxes will be paid in the source country and then credited in the residence country). With that in mind, it is important to establish a flat tax rate on capital which is higher than the withholding tax rates on capital returns under a country's DTC network. In the Chilean case, a 16% flat tax for capital income would achieve this, as the highest withholding tax rates under its DTCs is 15%, so the introduction of a DIT would not lead to any loss of revenues from capital returns of foreign investors.[65]

I. Potential revenue and distributional effects of adopting a 16% DIT. Given that a very relevant part of capital income is currently exempt, it is hard to estimate the potential revenue that this reform could bring as data on the tax base is scarce. However, tax expenditure reports by Chilean tax authority do suggest that gains could be substantial.[66] For instance, the removal from the general PIT tax base of expense deductions relating to capital income would result in an increase of PIT revenues of more than 40%.[67] On top of that, the flat tax is likely to produce considerable additional revenues. From the statistics regarding corporate tax credits granted for the underlying CIT to individuals receiving dividends (SII, 2023), we can estimate that the flat tax would raise an amount equivalent to 20% of current revenues from the PIT. Additional revenues would also arise from the application of the flat tax to rental income, although this is hard to estimate. A rough figure would be around 8% of current revenues from PIT, which corresponds to the tax expenditure valuation of

'participators', covering any individuals entitled to share capital or voting rights, but also certain loan creditors (CTA 2010, Part 10).

[63] Article 15 of the OECD Model Convention.

[64] Under articles 10, 11 and 12 of OECD Model Convention.

[65] Some might argue that a lower tax rate on capital returns could be desirable to attract foreign investment. However, this is not always the case as under the OECD Model DTC any reduction in tax at source will usually be offset by a corresponding increase in taxes paid in the residence country. This could be different depending the domestic rules on taxation of dividends in the residence country of the foreign investors (e.g. for UK corporate investors, dividends from subsidiaries would usually be exempt from CT in the UK). Thus, if reducing tax on capital returns is desired as a policy to attract foreign investors (a proposal I am not advancing here), the mechanism for implementing such policy should not be a general reduction of the DIT rate (as this could simply result in additional taxing rights to the residence country of the investor). Instead, a more tailored tax should be granted, to ensure that the benefit of the reduced source taxation is effectively passed on to the foreign investor.

[66] The revenue gains estimated from these reports should be considered a lower-bound estimation, as these reports have usually under-estimated the tax expenditures related to income from capital (as an IMF (2020) analysis highlights).

[67] In the current integrated system of PIT and CIT, an amount equivalent to 33.6% of total revenues from PIT was refunded to individual taxpayers as an excess corporate tax credit against their PIT liabilities in 2019. Total revenues from PIT were further reduced by an amount equivalent to 7.4% of its total revenues as a result of mortgage interest deductions and deductions of voluntary pension contributions.

the exemption from PIT of rental income from economic housing (which, as we mentioned above, is the vast majority of residential real property in Chile).[68] Lastly, the taxation of interest is also likely to bring additional revenues, although we do not have any relevant data from which to (roughly) estimate its potential. On terms of loss of revenue, the only potentially significant item could be on the tax applied to foreign investors from non-DTC countries, where a 35% withholding tax applies to remittance of capital income from Chile. There is no data available to estimate what proportion of taxes on foreign investors come from non-DTC countries, but is likely that most foreign investors would make use of Chile's DTC network to reduce the withholding taxes on remittances.[69] I made a very conservative assumption that 20% of revenues from withholding taxes on foreign investors are applied to investors from non-DTC countries, which would mean that the DIT would produce a loss of revenue on those of 5% of current revenues from PIT. As Table 20 shows, a DIT at a flat rate of 16% would very likely result in considerable additional revenues, of almost two-thirds of the current revenues of PIT.

Table 20. Additional revenue estimations from 16% DIT

Item of revenue from DIT	**Additional revenue (% of current PIT revenues)**
Repeal of corporate tax credit	33.6%
Repeal of mortgage interest deduction and voluntary pension contributions	7.4%
Flat tax on dividends	19.9%
Flat tax on rental income	8.2%
Loss revenue from reduced WHT on foreign inv.	-4.8%
Total additional revenues from adopting DIT	**64.3%**

In terms of the distribution of the new revenues, evidence points to this being very progressive. Indeed, capital asset ownership is extremely concentrated in developing countries, and thus the tax burden should fall almost exclusively in the top decile.[70] In Chile, everyone outside the top decile has only very modest wealth (if any) and would thus be unlikely to be affected by the flat tax on capital income.[71] And even within the top of the distribution, asset ownership remains very unequally distributed even when compared with the already highly unequal income distribution: while the top percentile in the income distribution has an average income of around 2.4 times the average income of the 99th percentile, in the assets distribution the average wealth in the top percentile is around 7.4 times the average wealth in the 99th percentile.[72] Data on the composition of income at the top of

[68] Based on the estimation of the tax expenditure made by the Chilean tax authority (SII, 2021). However, this is not a precise estimate as currently there is no reporting of the exempt rental so the estimations simply comes from a family income survey (IMF and OECD, 2020).

[69] Chile has a fairly broad DTC network, with 37 DTC currently in force, which include most of the world's biggest economies (all G7 countries except Germany have a DTC in force with Chile. There are also DTC in place with India and China).

[70] There seems to be very high overlap between the position of individuals in the income distribution and in the wealth distribution. Based on tax microdata, a report from the Chilean Treasury (Ministerio de Hacienda, 2022) shows that of those in the top percentile in the income distribution, 82% are also in top decile in the wealth distribution. The actual overlapping might be even higher, as it is likely that some of the discrepancies between both distributions is explained by incomplete data about income and (especially) asset ownership.

[71] Not only is wealth very modest outside the top decile, but its composition suggest that it would not be subject to any taxation: outside the top decile, wealth is mostly held in chattels (cars and other durable assets) that would go untaxed under a flat tax for capital income. In contrast, from the top decile real property and corporate interests make most of the wealth (Ministerio de Hacienda, 2022).

[72] The 1st percentile refers to the people from 0% to 1% of the population, the 99th percentile refers to people from the 98% until the 99%, and the top percentile is from 99% to the very top.

the distribution also confirm this extremely unequal asset ownership pattern: while outside the top decile the income from capital is largely irrelevant in proportion to total income (less than 3% in all cases), the relevance of capital income gradually increase in the top decile from 3% in the 91th percentile to 12% in the 99th percentile. And in the top percentile, capital income represents a 67% of total income, clearly reflecting the extremely skewed distribution of capital assets (Ministerio de Hacienda, 2022).[73]

5. Conclusion

PIT is indisputably the weakest part of developing countries' tax systems. It is this very weakness and its persistence that have largely motivated the search of tax progressivity elsewhere in the tax system in previous chapters of this thesis. However, it is also clear that the only way to have effectively (and sufficiently) progressive taxation is to tackle the problem of the PIT.

This chapter has tried to show that the current paltry state of PIT in developing countries is not simply an inevitable consequence of economic or social conditions. It also seems to be the result of conscious legislative action to reduce its relevance. This is good news, as it means that there are actionable paths to (at least partially) revert this situation, and the chapter has tried to show what these might be. This is exemplified by an analysis of the current PIT in Chile, addressing its several shortfalls.

After identifying the deficiencies of PITs in developing countries, the chapter proposes four reforms that would represent a big step in improving direct personal taxation in this context. I firstly argue that automatic indexation of PIT thresholds is not desirable if enhancing revenues from PIT is required. Bracket creep seems to be a very relevant part of the explanation of how developed countries reached the current stage were usually at least half of the population pay income tax. Instead, I argue that regular discretionary adjustments to offset the effect of inflation are preferable, as this would ensure periodical assessments by the government of the suitability of the PIT schedule and the trade-offs that indexation entail (reduced revenues to be matched with either increased indirect taxation or reduced public services). This is likely to lead to a more progressive and revenue-relevant PIT.

The chapter also highlights the shortcomings of current PIT schedules in developing countries, which are characterised by very high thresholds, multiple tax brackets and modest starting tax rates, all of which results in very modest ATR even on extremely high incomes. On that basis, I argue that there is room for considerable increases in revenues in a politically feasible way by removing tax brackets. Current automatic indexation mechanisms can be used to implement this gradually to avoid the political salience of the reform and minimising the economic costs that tax reform entails.

I also argue that the lower income levels in developing countries make the problem of the threshold a difficult one, as a high exempt amount (in terms of median income) might be difficult to change in light of the very modest living standard of those in the middle of the income distribution. Consequently, I propose following a tax policy similar to that found in the UK might be desirable, where the threshold is withdrawn at a high level of income. I show the different ways in this can be

[73] This last statistic should be taken cautiously as it also includes retained corporate profits. Thus, realised capital income should represent less than 67% of total income in the top percentile. However, retained corporate profits should reduce substantially if the abuse of corporate vehicles is tackled as mentioned in section 4.4.H before.

done and exemplify with Chilean data what I argue is the most convenient form of threshold withdrawal. These two changes to the PIT schedule have three merits: first, they seem to be politically feasible, as they leave top statutory tax rates and minimum thresholds unchanged. Secondly, they reduce the usual efficiency trade-off of equity-enhancing reforms, as they do not modify the top tax rate of PIT nor do they alter the marginal tax rate of the vast majority of the population (which would remain outside the PIT tax net). These have been deliberate decisions, as political obstacles seem very substantial when it comes to reforming direct personal taxation in developing countries. Lastly, they can produce substantial additional revenues, as their combination would increase revenues from PIT by an estimated 58% in a static basis.

Lastly, I argue that capital income taxation in developing countries is largely inexistent and thus a complete overhaul might be desirable. In light of that, I argue that introducing a DIT is particularly attractive in the context of developing countries and shed some light on how such a DIT might look like in this context. I use data on income from capital in Chile to show that this would likely lead to substantial additional revenues and would be very progressive.

Overall, the reforms here proposed would more than double current revenues from PIT (see Table 21).[74] I believe this is a great outcome, as these are reforms have been identified with two conditions in mind. First, I have tried to minimise efficiency costs of the proposed reforms, which is why the top rate of the tax has not been increased and the minimum threshold has not been reduced (although that might be a long-term effect of removing indexation, but that is not captured on the estimations of additional revenues). Secondly, I have identified reforms that are politically feasible, which is why the bracket removal should be gradual and framed as a tax simplification structure. Similarly, the introduction of a DIT is also politically feasible as it can be framed as a move towards rationalising the taxation of capital and reducing the top marginal tax rates on capital income (even though the ATR is increased for the vast majority of taxpayers holding capital assets). In sum, this is not a revolutionary change in the structure of PIT, although it brings additional revenues that can radically change the shape of tax systems in developing countries.

Table 21: Estimations of revenue effects of proposed reforms (as % of current PIT revenues)

Reduction in # of tax brackets	+26%
Withdrawal of exempt amount	+32%
Dual Income Tax for capital income	+64%
Total revenue effects	**+122%**

[74] This should be considered as a lower-bound estimation as it does not assume any bracket creep from removing the automatic indexation of tax thresholds, which is something we would expect in the long run (based on the experience of developed countries).

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Chapter 7 – Enhancing progressivity through the taxation of wealth

I. Introduction

Taxation of wealth does not usually receive the same level of attention as income and consumption taxes, as they usually only account for a small part of overall revenues. This seems to remain true even after the COVID pandemic triggered a re-emergence of discussions about wealth taxes[1]. In this chapter, I define taxes on wealth as those where the tax base is the ownership of assets (whether this is a particular type of assets or a broad category of assets). These levies could be imposed either on the transfer of the assets (with the tax base the full value of the asset rather than the gains accruing to the transferor) or on a regular basis (typically annually). It could also be a one-off levy on some stock of assets. Under this definition of taxes on wealth, thus, the most relevant taxes captured are property taxes, inheritance or estate taxes and wealth taxes.[2]

This is another area where developing countries raise substantially less revenue than developed countries. Indeed, in developed countries taxes on wealth collect slightly less than 2% of GDP. Developing countries, on the other hand, usually collect substantially less revenues through these taxes. Indeed, LAC countries raise less than 1% of GDP, while African countries raise less than 0.4% of GDP, as reflected in Table 1.

Table 22. Revenues from Taxes on Wealth (as % of GDP)[1]

Developed Countries[2]	1.82%
LAC	0.89%
Africa[3]	0.36%

Source: Stats.OECD

[1] Simple averages from 2000-2020.

[2] OECD countries excluding members that are developing countries according to UN classification (Chile, Costa Rica, Colombia, Mexico and Turkey)

[3] Data for African countries only available for period 2010-2020

Thus, when comparing the broad categories of tax bases, wealth is the least relevant in terms of revenue, far behind income or consumption. And this is the case both in advanced economies and in developing countries. However, the secondary place that taxes on wealth occupy from a revenue perspective is contrasted with the prominent role that they have in discussions of tax equity and tax progressivity. Indeed, the reason for public discussion of wealth taxation re-emerging since the COVID pandemic is precisely because the pandemic has exacerbated inequalities, and taxation of wealth is seen as an area that can offer powerful equalising policies (Advani, Chamberlain and Summers, 2020b). The main reason for linking taxes on wealth with strong redistributive policies is due to the fact that wealth is much more unequally distributed than income.[3]

Given this progressive potential of taxes on wealth, this Chapter analyses potential reforms to taxes on wealth in developing countries as an area where redistributive gains could be significant, even if the revenues involved might not be substantial. The motivation for this chapter's research is that

[1] One of the most debated proposals have been the wealth tax proposed by Saez and Zucman (among others) firstly for the US (Saez and Zucman, 2019) and then globally (Alstadsæter *et al.*, 2023).

[2] A clarification: throughout this chapter I use with different meaning the terms "taxes on wealth" (a broad category of tax instruments on which the tax base is a stock of assets) and "wealth taxes" (one of those tax instruments, characterised by being levied on a the entire wealth of the taxpayer, ideally covering all assets owned by a taxpayer, although usually allowing some exemptions for political or practical reasons).

[3] According to the World Inequality Database, the world average for the 2010s share of national income going to the top 1% of the income distribution was 19.8%, while the share of national wealth hold by the top 1% is slightly more than twice that at 40.6%. For developing countries the difference in level of income and wealth inequality is either similar (Latin America) or larger (Sub-Saharan Africa): in the decade of 2010s the average share of income going to the top 1% in Latin America was 22.8% and in Sub-Saharan Africa it was 21.5%, while the share of wealth going to the top 1% was 45.3% and 86.3%, respectively (World Inequality Database, 2024).

properly imposing and enforcing taxes on wealth is fundamental for developing countries for three reasons.

Firstly, these taxes are highly progressive so they can contribute to addressing the inequality/progressivity paradox identified in Chapter 1. Crucially, the lack of tax progressivity in developing countries is to an extent the result of the failure to properly tax income from capital (see Chapter 6), so taxes on the stock of capital (i.e. taxes on wealth) can play a key role by indirectly taxing such returns. Secondly, two of the taxes discussed in this chapter have the unusual combination of being both progressive and administratively simple to enforce.[4] Indeed, property taxes are one of the oldest fiscal tools precisely because avoidance and evasion are easy to curb: the tax base is both immobile and visible, so effective enforcement is not challenging. Similarly, inheritance tax (IHT) is levied at a time when multiple formal processes involving third parties (e.g. Court filings, probate processes, etc.) which are required for the purposes of transferring the estate to the inheritors. These processes and the third parties involved provide with perfect instances for enforcement, which should also make avoidance and evasion of the tax very difficult. Lastly, effectively enforcing taxes on wealth provide crucial information to the tax authority for the purposes of building administrative capacity which is essential to successfully enforce progressive tax systems. Indeed, properly designed property taxes and inheritance taxes should, over time, generate valuable data on wealth distribution and capital asset ownership throughout the population. This information is critical for properly enforcing personal income taxes on gains, dividends, rents, interest, etc. Similarly, it is a necessary condition for successfully implementing a wealth tax, which might be desirable in context of high inequality.

Thus, this chapter will review the three main taxes on wealth and will assess whether there is potential for developing countries to either implement or reform such taxes to obtain redistributive gains in an efficient manner.[5] As an outcome of the review, the chapter proposes efficient ways to enhance the role currently played by inheritance and property taxes. When it comes to a wealth tax, I will argue that even though wealth taxes have a relevant role to play, the current conditions are not quite optimal for imposing them in most developing countries. Instead, I will argue these countries should work on building those conditions so as to make wealth taxes an available (enforceable) policy for the future. The chapter will end by providing an estimation of the additional revenues that could be obtained from the proposed reforms, showing that these can be substantial (increasing threefold current revenues), which strongly suggest that these taxes can play a much more relevant role than they currently do.

This chapter is divided in 7 sections. After this introduction, the following two sections will summarise the most persuasive arguments for imposing taxes on wealth (section 2) and for opposing them (section 3). The fourth part of the chapter will briefly describe the taxation of wealth in our case study (drawing some comparisons with developing countries more broadly), separately explaining the role of the inheritance tax, property tax and wealth tax. Section 5 is the most extensive, where I present reform proposals to efficiently enhance revenues from taxes on wealth for our case study. Section 6 will present estimations of the overall increase in revenues that our reform proposals could have. The final section offers some concluding remarks.

II. The case for taxes on wealth in the literature

[4] Administrative simple in comparison to other progressive taxes such as income taxes on capital returns or wealth taxes.
[5] I have not included in this chapter a discussion on taxes on specific transfer of properties, such as the UK stamp duty land tax. This is both because these taxes are less common in an international context and because they seem to be a particularly inefficient way of taxing wealth as they discourage otherwise beneficial transactions from taking place, thus preventing efficient allocation of resources (Boadway, Chamberlain and Emmerson, 2010).

It is far from obvious that we need taxes on wealth in a well-functioning tax system. Indeed, there is a rough economic equivalence between taxing the stock of wealth and taxing the returns that such wealth generates (whether this is actual or deemed returns). For example, assuming real estate wealth yields a 4% return per annum, a 1% tax on the stock of real estate wealth is equivalent to a 25% income tax on the returns. Of course, this equivalence is far from perfect, as any returns in excess of a "normal" return would go entirely untaxed through a tax on wealth but would be captured by an income tax. On the other hand, idle property or assets that do not produce returns (e.g. artworks, jewellery) would not be subject to any taxation under an income tax, but its tax liabilities would be unchanged from the perspective of a tax on wealth. More importantly, there are returns that are not easily observable under an income tax that may (and usually do) escape taxation under an income tax but would be captured by a tax on wealth. This is the case of owner-occupied housing which generates a return for the owner (forgone rental expenditure) but it is seldomly captured by income taxes.[6] It is also the case in most income tax systems for unrealised capital gains, as taxes are usually only triggered upon realisation events. Given this equivalence, the literature has explored what meaningful contribution can taxes on wealth offer to justify their introduction, and in this section we summarise those that seem more persuading.

A. Economic arguments for taxes on wealth

1. Efficient allocation of resources

A common argument in favour of taxes on wealth is that they would encourage a more efficient allocation of assets. Indeed, taxpayers who hold assets but are inefficient in getting a return from them would have a strong incentive to dispose of those assets and invest the proceeds in assets that generate a higher return. As an illustration, we can think of single person living in a large (and expensive) house. As the house is able to provide housing services to multiple individuals, the current use of the asset is clearly inefficient. As the owner of an expensive asset, she would be subject to a substantial charge under a tax on wealth, and the asset does not generate any income from which to pay the tax. Thus, a tax on this asset produces the incentive to sell the house, buy a smaller property to live in and spend the rest of the proceeds on securities that provide sufficient return to fund the tax on wealth. Alternatively, she could convert her large house into several flats, keep one and rent the others to fund the charge under the wealth tax. Both responses would produce a more efficient allocation of resources, increasing aggregate productivity and output (Guvenen *et al.*, 2019).

This argument has, however, several weaknesses. First, the previous example illustrates one of the political challenges of introducing wealth taxes, usually referred as the problem of the asset-rich, cash-poor. The stereotypical example of such taxpayers is the widow that lives alone in the large family house (where she once raised a large family) and only receives a small pension income (Loutzenhiser and Mann, 2021). From a political perspective, it has proven a powerful rhetorical obstacle claiming that the tax would effectively force her to sell the family house in order to pay the tax liability. There is also some vague fairness concern, as it might seem unfair that the tax system would force taxpayers to dispose of assets to which they have strong emotional connections (such as the family house).[7]

[6] Except where the income tax includes an imputed rent to owner occupied housing, as is the case in the Netherlands.

[7] There are simple solutions to the problem of the asset-rich, cash -poor. One suggested by Atkinson (2015) is capitalising the tax liability in certain circumstances. In this way, the widow would not be forced to sell the family house to which she ascribes a high emotional value, but the unpaid tax (with interests) would represent a liability of the estate upon her death (or earlier disposal of the asset).

Secondly, the flipside of this efficient allocation of resources argument is that those holding assets and getting excessive returns would not see their tax liability increased, so the above-normal returns would go untaxed. Economically speaking, this is undesirable, as excess returns (or economic rents) are precisely the perfect tax base from an efficiency perspective.[8] This suggest that the economic case for taxes on wealth is only as a supplement to income taxes, encouraging an efficient allocation of resources while income taxes raise revenue by tapping into excess returns.

2. Diversifying sources of revenue

There is another economic argument that suggest that there is a role for taxes on wealth in order to diversify the tax handles of governments. Given the rough economic equivalence of taxing income from capital and taxing the assets producing such income, raising revenue from wealth would allow governments to reduce the rates of other taxes (income or consumption) which would lead to a reduction in the deadweight costs of the overall tax system, as the efficiency loss from a tax increases disproportionally to the tax rate (Adam and Miller, 2021). Having taxes on wealth which are significant in terms of revenues could allow for a reduction in tax rates applying to labour income or consumption, which would also ease the usual trade-off between redistribution and work incentives.

This argument, however, needs to be balanced with the administrative and compliance costs that entail having an additional tax in the system, and the result of this balancing act is not straightforward as administrative costs of taxes on wealth are usually estimated to be considerable (see Troup *et al.* (2020) and Burgherr (2021) on the costs of administering a wealth tax).

3. Indirectly taxing earnings potential

There is an additional argument favouring the taxation of capital which relates to the considerable evidence showing that individuals with higher earning capacity have a higher propensity to save, even after controlling for level of income (Carroll, 2000; Dynan, Skinner and Zeldes, 2004; Benjamin, Brown and Shapiro, 2013). Thus, taxing savings would be an indirect mechanism of taxing earning abilities *without* taxing *actual* earning (and thus not affecting work incentives). Although this argument is applicable both to support taxes on wealth and on capital income, it is arguably the case that some form of tax on wealth would be necessary to complement capital income taxes, as the latter are usually incapable of comprehensively taxing capital income (e.g. unrealised capital gains, income from owner-occupied housing, etc.).

4. Inexistence of conditions for optimal non-taxation of capital

Maybe the only argument which is particularly strong in the context of developing countries relates to the conditions under which the optimal tax literature concludes that there is no role for the taxation of capital. The conditions for such a conclusions are that people only save to smooth consumption, that there are no inheritances and that all savings earn the same normal rate of returns (Adam and Miller, 2021). These do not seem to be very realistic assumptions, even in the

[8] If we are concerned about not distorting saving decisions, the normal return on investments should not be taxed and the tax should only capture returns in excess of the normal return. This would equalise the rate of return of individuals' savings and the rate of yield on investment financed by those savings, as indicated in the Meade Report (1978). In other words, postponed consumption will be able to finance future consumption at the same rate as the rate of return on investment financed with its savings.

context of developed countries. However, they paint a particularly inaccurate picture in the context of developing countries.

Firstly, economic rents seem to arise more regularly in developing economies than in developed countries, as these countries are characterised by having a social order in which access to valuable economic and political functions is limited in order to produce economic rents, what is labelled a "limited access order" (North *et al.*, 2007). In addition, tax systems in developing countries are usually incapable of imposing similar levels of taxation on different sources of income (therefore producing unequal after-tax rate of returns): evidence strongly suggests that many forms of capital income go largely untaxed, while income earned in the informal economy also escapes the tax net. If some forms of income escape taxation, it is likely that it will enable the accumulation of large wealth holdings (or at least larger than those resulting from the receipt of *fully taxed* income). Thus, the imposition of some taxes on wealth would indirectly reduce the unequal tax treatment of the different sources of income.

Secondly, inheritances seem to be a significant factor shaping the distribution of wealth in both developed and developing countries. Moreover, given the extremely high levels of wealth inequality in developing countries, it is likely that inheritances and bequests play an even bigger role in this context. The literature has indeed pointed out that, in the medium to long run, inheritances have the effect of increasing wealth inequality, and thus seems to confirm this idea (Nekoei and Seim, 2022).[9] Of course, if inheritance play a relevant role in shaping the distribution of wealth (and this phenomenon is likely to be stronger in developing countries) the logical conclusion is that taxpayers do not exclusively save to smooth consumption.

5. Utility of wealth

The last economic argument I will present in favour of taxes on wealth refers to the fact that holding wealth might not only serve to smooth consumption over lifetime, but there are also benefits derived from wealth that do not depend on the income generated from such wealth (and the corresponding consumption such income can fund). Indeed, if the mere holding of wealth confers advantages such as security, influence, status and power, from an economic perspective we should consider such utility when determining the ability to pay of each taxpayer. The Meade report also suggests that wealth should be taxed because it is a fundamentally different and more beneficial source of income than labour. Indeed, as a source of income wealth has two main advantages: firstly, its ability to generate returns will not decrease with age or illness; and secondly, unlike labour, capital returns are generated without sacrifice of leisure, so they represent a higher utility (Meade, 1978, Ch. 15). Thus, taxing the capital returns in the same way that labour income is insufficient.

There is evidence supporting the idea that wealth confers utility beyond the income it generates: for example, Carroll (2000) shows that the savings behaviour of the rich does not fit the life-cycle model, and indeed suggests that wealth is intrinsically desirable. Similar findings reported by Jakobsen *et al.* (2020) show the richest taxpayers tend to die at (or very close to) their peak wealth, casting strong doubts on the idea that wealth accumulation is used only to smooth consumption (at least among the very rich).

[9] There are articles finding that even though inheritances increase absolute inequality, they can have an equalizing effect in terms of *relative* inequality (Boserup, Kopczuk and Kreiner, 2016; Elinder, Erixson and Waldenström, 2018; Wei and Yang, 2022). This is consistent with the short-term effect found by Nekoi and Seim (2022), who find the same reduction in relative inequality in the short term due to inheritances. However, Nekoei and Seim analysis goes further and estimate the effect of inheritances after a decade, finding that inheritances ultimately also increase relative inequality as inheritances received by the rich show a much lower rate of depletion than those received by the rest of the population.

The abovementioned evidence on saving behaviour should not be overstated. The inaccuracy of the life cycle model shown on those articles is only in connection with the (very) rich. Thus, the basic idea from the life cycle model that tax burdens should not change simply because some choose to save more than others remains relevant for the majority of the population. But the failures of the model when applied to the very rich are relevant for discussion on taxes on wealth, as they usually only target the richest part of the population, therefore respecting the life cycle model in the tax treatment of the rest.

From the perspective that wealth provides utility beyond the income that generates, the following question is how we should tax such utility. Although a thorough discussion of optimal wealth taxation lies well beyond the scope of this thesis, briefly summarising what is (in my view) the most coherent proposal for taxing wealth seems appropriate. This was proposed in the Meade report, and it was named the Progressive Annual Wealth Accession Tax (PAWAT), which is essentially an accessions tax levied on the receipt of a gift or inheritance (Meade, 1978, Ch. 15). The amount of tax levied depends on the time when the gift is received (the tax is higher the sooner it is received on the donee's life) and on the amount gifts previously received by the donee in their lifetime. The tax depends on the time of receipt because it acts as a pre-payment of an annual wealth tax: if you receive a large gift at 30 years old, you are paying in advance for the benefit that this wealth will provide you over your lifetime (i.e. until life expectancy). If you pass that wealth on (either as a gift on upon your death) prematurely, the excess tax you paid originally is reimbursed (e.g. if you die age 50, and had advanced the tax until 80, your estate will be reimbursed for the excess tax).

The PAWAT is fully compatible with the economic principles that justify taxing wealth, although it is also incredibly complex from an administrative perspective. Thus, it does not seem relevant as a policy choice for developing countries, but it is good to highlight the issues that are relevant for other taxes on wealth.[10] In particular, from a principled perspective PAWAT is superior to a wealth tax because it does not levy taxes on wealth accumulated from work and savings (so the PAWAT respects the life-cycle model and incentivises wealth creation). It is also preferable to an inheritance tax, because it does not penalise wealth that changes frequently of hands (if the recipient of a large inheritance goes on to make frequent gifts, they would get a reimbursement for the tax paid on receipt) and because the tax increases with the period for which the wealth is held (reflecting the fact that wealth generates benefits throughout the period of ownership).

B. Equity arguments for taxes on wealth

1. Correcting the past

Given the rough equivalence between income taxes and taxes on wealth, one of the main differences between them is that the latter can impose implicit tax rates in excess of 100% of the returns generated by the assets on its base. This extremely high tax rates are usually considered undesirable as they drastically reduce the incentives for economic activity while creating strong incentives for tax avoidance and evasion. However, if the tax rates are unresponsive to the actual returns, the disincentive effect on economic activity should not be a concern: from a tax planning perspective it becomes pointless to reduce certain economic activity as the tax liability is not determined by the income obtained from the assets but from the value of the assets (but the incentives for tax evasion/avoidance will remain). Indeed, in this case the income effect of such high rates might actually produce positive economic responses: if the tax liability is unchanged by

[10] The Meade Report also presents two slightly simplified versions of the PAWAT: the LAWAT (the linear version of the PAWAT) and the AGAWAT (based on the age gap of donor and donee, instead of requiring a reimbursement and a charge under the PAWAT). They are still very complex to consider them as policy relevant for developing countries, although they could be more feasible for advanced economies.

the returns obtained from the assets, an increase in the rate of tax on wealth will only produce an incentive to increase the economic returns of the asset (so as to maintain as much as possible the post-tax rate of returns).

In addition, if for some reason we consider that something has gone wrong in the past, which is one of the reasons explaining the extreme levels of wealth inequality that we found in some developing countries, then only taxes on wealth will be able to (at least partially) correct those wrongs (Summers, 2021): as they can be imposed with implicit rates in excess of 100% of the returns of wealth, they can lead to an overall reduction in the levels of wealth concentration. Indeed, if there is an understanding that unfair tax systems, market failures,[11] unjust exploitation[12] or some other causes,[13] have unjustly enabled the accumulation of very large holdings of wealth, we might find desirable to impose high taxes on wealth to effectively break-up those concentrations of wealth and produce a dispersion of wealth ownership through the expenditure side.[14] The same outcome cannot be achieved through an income tax, as the stock of assets that produce the taxed income will remain untouched. At the most, a high-rate income tax could reduce the rate at which such stock of assets increases over time.

2. Negative externalities of wealth

There is another argument for imposing taxes on wealth, which relate to negative externalities that high levels of wealth concentration might have. For instance, we might reach the consensus that a certain level of wealth inequality is harmful for the democracy of a country as Rawls suggests (Rawls, 1971, p. 225).[15] Similarly, following Dworkin's view we might consider that overly concentrated wealth might lead to harmful social stratification (Halliday, 2016) and thus would want to impose taxes on wealth as a backstop for such risk.

What is interesting in this case is that we would not have any revenue expectations for these taxes on wealth, but simply to prevent very large wealth accumulation which we deem to be negative for the overall functioning of a democratic society. If the level of wealth concentrations surpasses what is considered socially desirable, taxes on wealth should produce sufficient revenues to curb such concentration (and tax rates can be legislated accordingly). But if wealth concentration is lowered to a socially acceptable level, taxes on wealth will not produce much (if at all) revenues.

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[11] For instance, it is well documented that some poorly managed privatisation processes enabled a few to accumulate massive wealth in short periods (Stiglitz, 2002). Data on inequality in Russia, for example, support this account by showing the dramatic increase in the share of national income appropriated by richest 1% of the population: for instance, the top 1% of the population's share of income went from around 5% in 1991 (when privatisation started) to 27% in 2008 (Novokmet *et al.*, 2018). A similar process was documented in the privatisation process in Chile in the 70s (Dahse, 1979).
Another example might be the massive levels of wealth accumulated by the "robber barons" in the late 19th century, which was in many cases explained by monopoly position they were able (and allowed) to obtain.

[12] We could think of slavery and some exploitative colonial institutions as examples of this.

[13] War can also be an example of other causes for a desire to correct the past. For instance, in post-WWII West Germany and Italy there was a perception of an unfair distribution of the burdens of the war (simply because some wealth was entirely destroyed by the war while other remain intact). To correct such unfair allocation, they imposed a very high-rate wealth tax (top rate in Italy was of 60%). The West German tax was actually called "Law on Equalisation of Burdens" (*Lastenausgleichsgesetz*) and it imposed a flat rate of 50% over the value of wealth (see O'Donovan, 2021).

[14] For instance, the UK tried to bring about a more disperse distribution of wealth with the Child Trust Fund policy between 2001 and 2011, by giving a start-up grant to all children as they reached the age of 18.

[15] Rawls argues that equal liberty requires equal rights of participation for all members of society, meaning that "*everyone should be able to make use of [the public forum]…and have a fair chance to add alternative proposals to the agenda for political discussion*". And that this is threaten when "*those who have greater private means are permitted…to control the course of public debate*". Based on that, he argues that steps need to be taken to protect the equal rights of participation, and one way of doing that is by keeping "*property and wealth…widely distributed*" (Rawls, 1971, p. 224 and 225).

III. Arguments against taxes on wealth

Although many arguments have been given against taxes on wealth, I only mention those that seem more relevant and widespread in the literature or in the political debate. I found that only the latter two are persuasive enough to shape the decision around taxes on wealth.

A. Double taxation

A typical response on political debates around taxes on wealth is that they represent an illegitimate exercise of state power as they impose double taxation on income, as they are levied on the holding of goods acquired with after-tax with income. The argument is very weak, as all consumption taxes are also imposed on expenditure of after-tax income, yet no one oppose to them on these grounds.

There is, however, some political force in this argument that should not be quickly dismissed but instead taken into account when designing taxes on wealth. It has been argued that one reason that might explain this could be that taxes on wealth usually only target some forms of wealth (e.g. property taxes are levied only on real estate, while inheritance taxes only affect the wealth that is held until death) and this perceived unfairness might be behind the political power of the argument (Boadway, Chamberlain and Emmerson, 2010). It is also the case that one of the most prominent forms of taxes on wealth (inheritance tax) is levied in the most inappropriate of times, and so special considerations as to payment times might be advisable.

The strength of the double taxation argument is also very dependent on the perspective from which we look at the taxes. In particular, inheritance taxes can be perceived as taxes on the donor (estate taxes) or taxes on the donees (inheritance taxes), and the double taxation argument is stronger (though still weak) when perceived as a tax on the donor (who may have accumulated the wealth they want to pass-on while paying all the applicable taxes). Based on this, it could be argued that people should be able to pass their wealth on tax-free. But that is quite different from saying that people should be able to receive any amount of wealth tax free. In the words of J.S. Mills: "*Each person should have power to dispose by will of his or her whole property; but not to lavish it in enriching some one individual, beyond a certain maximum"* (Mill, 2000, p. 256-257). From this perspective one would favour an inheritance tax (with a minimum exempt amount) than an estate tax, as the former could allow the donor to pass their wealth tax-free if it does so be spreading it among multiple different beneficiaries ensuring individual bequests do not exceed the exempt threshold.

The perspective from which we analyse a wealth tax will also impact the design of the tax. Indeed, a estate tax is basically a wealth tax that is levied once a generation. So we could impose it at whatever rate seems reasonable for an annual wealth tax, compound by 25 years (assuming each generation lasts 25 years).[16] Conversely, from the point of view of the donee, the inheritance tax is, in essence, equivalent to an income tax (imposed on an accretion of net wealth consistent with the Haig-Simons comprehensive income definition). As such, we should apply a similar tax schedule, multiplying the exempt amount under the income tax by 25 to take into account the lumpy nature of this particular income receipt.

B. Life cycle model

As mentioned above, there is a strong argument against taxes on wealth that emerges from the life cycle model, in which differences in savings (and therefore wealth) do not reflect a higher ability to pay but simply different expectations around lifetime expenditures and income. Thus, a professional sportsman might have substantial wealth early on in his life, but that may only reflect

[16] The exempt amount could also be designed to replicate the returns that would be untaxed under an annual wealth tax.

his expectations of a short period of time with high levels of income. Thus, he should not be subject to a higher tax burden simply for that reason.

As mentioned earlier, the life cycle model is a strong argument when it comes to defining a fair allocation of tax burden for most of the population and suggest that taxes on wealth should only target that part of the population for which wealth accumulation is not a result of consumption smoothing (the rich).

C. Administrative complexity

The main reason why wealth taxes have been gradually repealed in many countries since the 1970s is mainly related to the fact that they usually entail a high level of administrative complexity and have rarely raised significant revenues.

This argument, however, does not apply with the same strength to different forms of taxes on wealth. For wealth taxes, this is a particularly strong argument, especially considering the historic background on which wealth taxes were administered and repealed in most countries (mostly 80s and 90s) where capital controls had been removed but international tax cooperation and information exchanges were very limited, and the technological improvements brought about by digitalisation and information technology were inexistent (Perret, 2021). The argument is less strong for inheritance taxation, as this levy requires assessment only once in a lifetime and can take advantage of probate processes required for transferring and disposing assets of the estate upon death. And it is a particularly weak argument for property taxation, characterised by a very immobile and visible tax base which makes avoidance very difficult (OECD, 2018).

IV. The taxation of wealth in Chile

As it has been mentioned before in this thesis, the Chilean tax systems is either slightly regressive or proportional in overall terms (CITAS). This is usually explained as the net result of regressive commodity taxation and only slightly progressive income taxes. In that general picture, taxes on wealth play almost no role at all. This irrelevance as a redistributive tool is due to either negligible amount of revenues that are raised through taxes on wealth or to a lack of sufficient progressivity on the only one that raises non-negligible revenues (property tax).[17] The net effect is that current taxes on wealth are unable to produce any significant effect on the overall equity of the tax system. In this section, I will briefly explain the taxes on wealth on the Chilean tax code to provide a base upon which to discuss efficient reform proposals in the next section.

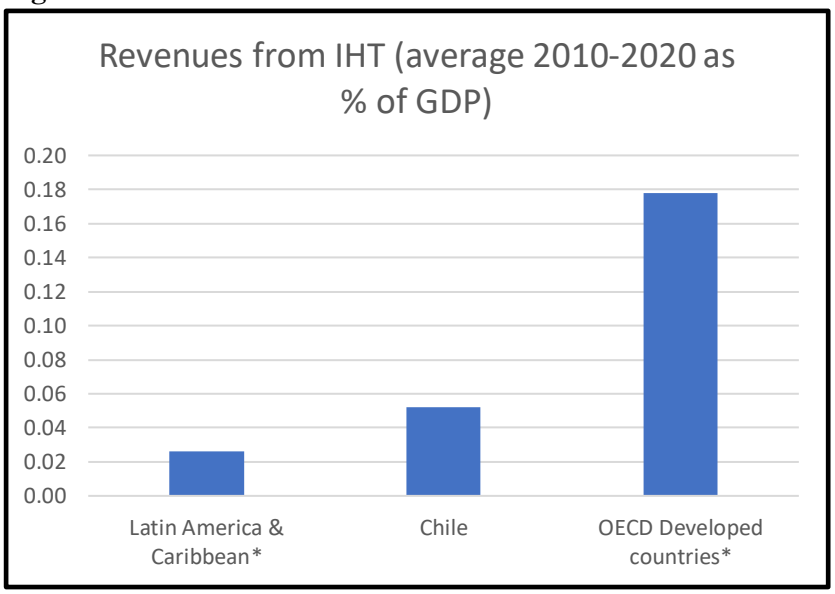
A. Inheritance tax

Chile has had an inheritance tax since 1965 but it has never raised any significant revenue. Indeed, in the ten years from 2010-2019 it raised an average of 0.3% of overall tax revenues (and less than 0.05% of GDP). The negligible revenues raised through the tax is unsurprising, as an analysis of the design of the tax suggest it has been intended to only produce a very modest tax liability, if at all (except on the very extremely large inheritances). This is representative of developing countries, the vast majority of which raise incredibly low revenues through inheritance taxes. Although revenues from inheritance taxes are modest in developed countries, they still manage to raise substantially more revenues through these taxes, on average 7 times more than LAC (in terms of % of GDP).

[17] The progressivity of the property tax is also restricted on the expenditure side, as it is used to finance municipalities, which restrict its potential for redistribution in context of very geographically segregated countries such as Chile. This aspect, however, exceed the scope of this project.

This is yet another area where developing countries markedly depart from the experience of developed countries.

Figure 16.



Source: OECD Data Explorer: 2010-2020, Total estate, inheritance and gift taxes for OECD and LAC
* LAC only include those with positive values from IHT, although many report zero revenues from these taxes. The average of LAC drops from 0.03% to 0.008% of GDP if we include *all* LAC.
** OECD Developed countries only includes those that have an inheritance or estate tax[18]

Broadly speaking, the tax is charged on the value of the inheritance received by each heir, at progressive rates ranging from 1% to 25%. There is a personal allowance for each heir on which no tax is charged, the amount of which depends on the closeness of the relationship with the deceased (those unrelated to the deceased have no personal allowance). For distant relatives the tax liability is increased by 20%, whilst for those unrelated to the deceased the tax due is increased by 40%.[19]

The insignificant revenues that the IHT collects is explained by several features of the tax structure. First, the rate structure starts with an extremely low rate of 1% and then only very gradually increases up to a relatively moderate rate of 25%.[20] The rate increase is very slow and the top rate of 25% is only triggered when the assessed value of the inheritance received by an heir is approximately £900,000. In addition, the multiple rates means that even when the inheritance reached this amount, the effective tax rate is only 11.8%.[21]

Secondly, the tax grants an exempted amount of around £35,000, but the exemption is available for *each* inheritor. Thus, splitting an estate into multiple heirs will multiply the exempted amount in as many times as heirs are designated.[22] In addition, the fact that the tax is levied on the inheritor

[18] Excluding from the measurement countries without an IHT (or estate tax) seems reasonable, as other taxes can be used for a similar purpose. For instance, Canada does not have an inheritance tax, but it charges capital gains tax on death. Similarly, Norway does not levy an inheritance tax but it charges an annual wealth tax.
[19] The rules can seem rather arbitrary: whereas siblings are considered "distant relatives" (and thus their tax liability is increased by 20% and have a smaller exempt amount), a great-grandchild is considered a "close relative" (so its tax liability is not increased and has a larger exempt amount).
[20] The full rate structure consists of an exempted amount and 7 gradually increasing rates: 1%, 2.5%, 5%, 7.5%, 10%, 15%, 20% and 25%.
[21] This is the effective tax rate on the assessed value of the inheritance, which can be considerably lower than the market value (as mentioned below). Thus, the effective tax rate on the market value is very likely well below 10%.
[22] With the limitation that the exempted amount is only applicable to the spouse, parents (and grandparents and great grandparent) and children (and grandchildren and great-grandchildren). For more distant relatives the exempted amount is only around £3,500.

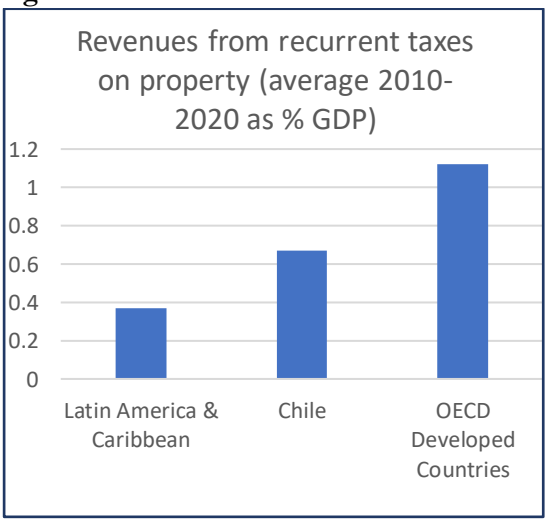
means that splitting the estate will also radically reduce the average tax rate on the overall estate, as the rate structure applies to each inheritance (not the overall estate). Thus, for example, the effective tax rate on an estate with an assessed value of £1 million can be reduced to less than 3% if split equally between 4 heirs.[23]

Lastly, there are rules on the determination of the tax base that substantially erode the values on which the (very modest) tax rates are applied. Firstly, real estate is assessed at their valuation for the purpose of property tax, leading to massive undervaluation (more on this issue in the next section, but suffices to say that valuation for property tax is usually around only 50%-60% of market value). Secondly, residential property qualifying as "economic housing" are not considered when valuing an estate for inheritance taxation. As mentioned in the previous chapter, however, the definition of "economic housing" is so broad that it leaves most residential property within the category, further narrowing the tax base of the inheritance tax.[24] The combination of the undervaluation of real property and the exemption of properties meeting the definition of "economic housing" results in a massive erosion of the tax base for inheritance tax, as they both relate to the (by far) most important component of household wealth, as real property has been estimated to represent around 75% of the overall wealth of households (Martínez and Uribe, 2017). Lastly, payments under life insurances triggered upon death are also excluded from the tax base of the inheritance tax, which creates a massive incentive to take expensive life insurance policies as a saving mechanism to pass wealth tax-free to heirs. This last provision was eliminated in 2022, but only for insurance policies taken after February 2022, so for the next decades this exemption will continue to benefit those receiving payments under policies taken before that date.

B. Property tax

The recurrent tax on immovable property is the only tax on wealth that raises non-negligible amounts in Chile, although the revenues are still well below those raised by this kind of tax in developed countries, as is shown in the figure below. Chile's situation is consistent with the rest of the LAC (although better), which shows that property taxes raise substantially less in developing countries than in developed jurisdictions.

Figure 17.



[23] Assuming the heirs are all either parent, children, grandparents or grandchildren of the deceased.

[24] To meet the definition of social housing the property must have a floor space not exceeding 140m². This is an incredibly broad definition which captures 93% of all residential properties (for more details on the definition of "economic housing" see Chapter 5, section 3.1). Since 2010, however, the exemption from inheritance tax is limited to only two properties meeting the definition of "economic housing".

Source: OECD Data Explorer: 2010-2020. Total estate, inheritance and gift taxes for OECD and LAC.

The tax is levied annually at very slightly progressive rates on the assessed value of the property exceeding an exempted amount. The exempted amount is currently established at around £50,000 and the tax is levied at an initial rate of 0.893% on assessed values above that amount. At a level of around £180,000 the rate is increased to 1.042% (but only applicable to the value exceeding this amount).[25] The tax liability thus determined is paid in quarterly instalments.

There are a few features in the design of the tax that considerably reduce its revenue capacity. Firstly, the tax is levied on the assessed values of the properties, which markedly differ from their market value. The process of assessing the values (and updating them) puts emphasis on construction costs and quality of buildings, and leaves only a small role for information from market transactions (despite information technology being now available to fully benefit from such information in an almost live manner). Thus, the assessed values on which the tax rate is applied is usually around 50-60% of market value, which in itself means that almost half of the tax base disappears due to this faulty assessment method.

In addition, there are some exemptions from the tax that also affect its revenue potential. First, residential property classifying as "economic housing" benefit from a 50% reduction on the property tax for between 10 and 20 years from the date on which they have been first acquired.[26] As mentioned in Chapter 5 (section 3.1) a vast majority (93%) of housing stock in Chile classifies as "economic housing" so this benefit results in a large erosion of the tax base. Secondly, there is a large list of specific exemptions that also considerably reduces the size (and progressivity) of the tax base. For instance, all educational, sport and religious institutions are exempted from the tax on the properties they own.

Lastly, there are two very particular (and obscure) provisions which ensure that the evolution of the tax (in particular regarding increases in valuation of the base) does not result in any considerable increase in revenues. Both provisions seem to be the result of a problem of political economy when it comes to property taxation: although very efficient and progressive they seem to be politically unpopular. These provisions are connected to the revaluation process of the assessed values, and they seem to reflect some concern that at some point assessed values might match market values and are therefore built into the tax to limit the effect that this would have on tax liabilities.

The first of these provisions establishes that the exempted amount will be updated in the same proportion to the average increase in the assessed values each time these are updated (which should be every 4 years). This effectively means that as real estate becomes more valuable (as a proportion of GDP or of wages) the exempted amount will still remove from the tax net the same proportion of the real estate stock. Although this might seem rather sensitive on a first reading, on closer scrutiny it is hard to understand the rationale behind the mechanism. Indeed, the original provision (which was changed in 2005) was much more sensible: the exempted amount was updated by the change in the consumer price index, which maintained the real value (in the whole economy) of the exempted amount, but would gradually reduce the portion of the stock of properties exempted as they increase in value more rapidly than the cost of living (and would also reduce the exempted portion of properties with values exceeding the exempt amount). Some data on housing values might show the relevance of this issue as housing has become increasingly unaffordable: from 2010-2019 the housing price index, *adjusted by inflation*, has risen by 64% (thus, increasing the exempted amount by the consumer price index would have resulted in a 64% less increase than it actually did). Furthermore, workers' wages in the same period only increased by 22% (Vergara-

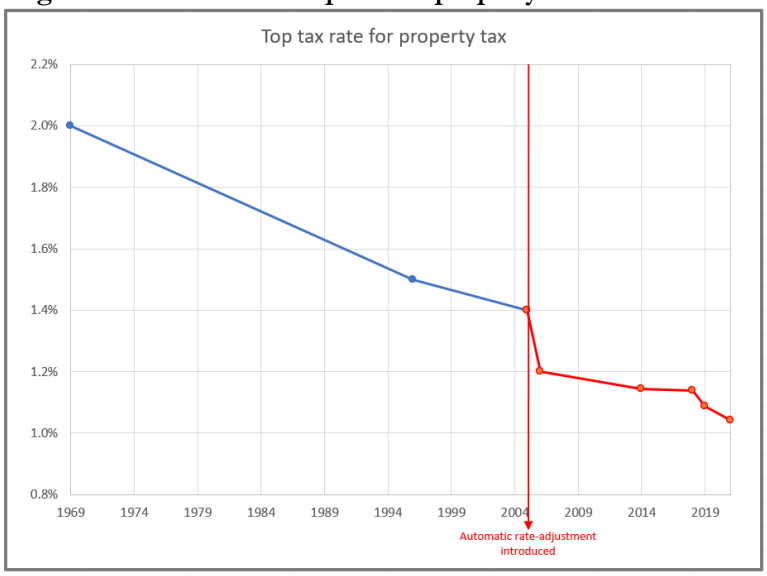
[25] These unusual tax rates are the result of a mechanism built in the law to prevent the tax revenues from increasing more than 10%. More on this in section V.B below.

[26] The period for which the property will have this benefit depends on the surface area of the property. Those with less than 70m^2 will have the benefit for 20 years, those with an area between 70-100 m^2 will have it for 15 years, and those with a surface area above 100 and below 140m^2 will have it for 10 years.

Perucich and Aguirre-Nuñez, 2020). Thus, this provision ensures that those holding real estate and getting richer by the *real* increase in value of their assets are protected from increasing tax liabilities resulting from that enrichment.

The second provision limiting the revenue potential of the tax is a mechanism which ensures that the revenues of the tax do not increase by more than 10% after an updating of the assessed values of properties. If the update on the assessed values would lead to revenues exceeding this amount, the rate of tax must be automatically lowered to prevent that. It is hard to find a rationale behind the introduction of such a provision, beyond a political economy argument against a salient tax such as property.[27] Indeed, the provision results in the bizarre outcome that as housing becomes less affordable (thus owners becoming richer) the tax rates on it will be reduced. The evolution of the tax rate is shown below, which graphically reflects this regressive mechanism.

Figure 18. Evolution of top rate of property tax in Chile



What is more problematic about this mechanism is that it creates some undesirable incentives. First, it creates a very obscure mechanism for reducing the tax on property: if the updating of assessed values is delayed, this should usually guarantee a reduction in the tax on property. Indeed, if 10 years lapse without any update on the assessed values of property, the uplift on assessed values is likely to be substantial, which would almost certainly increase tax revenues by more than 10%, which would trigger the rate-adjustment mechanism to reduce the tax rates. Not surprisingly (given the political economy obstacle to property tax that we have mentioned), this is exactly what has occurred: although the property tax law establishes that revaluation of assessed values shall occur every 4 years, Congress has constantly passed specific laws to postpone this revaluation process. Indeed, in the period from 1990-2014 there where 7 different laws passed to postpone the revaluation process.[28]

Secondly, this mechanism removes all motivations from doing an accurate revaluation process from the tax authority perspective. Indeed, if the real estate values have increased substantially in the past

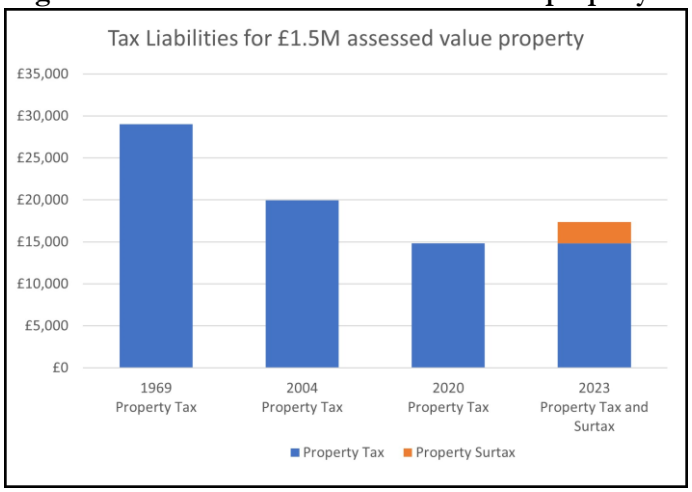
[27] The political economy argument seems to make sense when analysed in the light of the historical evolution of property tax rates. Indeed, before the introduction of this rate-adjustment mechanism the tax rate for property tax was reduced (by deliberate legislative action) from 2% to 1.4% in 36 years (so at a rate of 1.6 basis points per year). From the introduction of the rate-adjustment mechanism, the rate has further dropped from 1.4% to 1.042% (so at rate of 2.2 basis points per year, similar to the previous rate of reduction). Thus, the reform seems to have automatised the deliberate legislative action that occurred from time to time in the previous 36 years.

[28] Law 19,000 of 1990; 19,182 of 1993; Law 19,259 of 1993; Law 19,380 of 1995; Law 20,002 of 2005; Law 20,455 of 2010; and Law 20,650 of 2012.

years, an accurate revaluation process that reflects this increase could only lead to a maximum of 10% increase in revenues, and the rest would be offset by a reduction in tax rates. This clearly means that administrative resources can be more effectively used in other areas. But an inaccurate revaluation process is not without its problems, as it would negatively affect the equity of the system.[29]

This regressive evolution of the property tax for the past 50 years was partially addressed in a 2020 reform which introduced a progressive property surtax on very expensive residential properties. Although this is also a tax on the ownership of property, it is a separate tax with an extremely narrow tax base, as it only applies to taxpayers who own properties that have a total assessed value exceeding around £500,000. The starting rate of this property surtax is very low at 0.075% which applies to assessed values between £500,000 and £850,000. The next rate is 0.15% for assessed values between £850,000 and £1,100,000, with a top rate of 0.425 for assessed values exceeding the latter amount.[30] This property surtax, although a welcomed reform, is only able to very minimally reverse the regressive trend of the property tax in the past half century.[31] Indeed, if we take a hypothetical taxpayer with property assessed at a value of £1,500,000, the property surtax is not even able to bring her tax liabilities up to what they would have been under the 2004 tax rate schedule, as the figure below shows.

Figure 19. Evolution of tax liabilities under property tax in Chile



Source: own preparation.

[29] It is likely that some property owners have enjoyed massive appreciation of their assets while others have only modestly gain from price increases. A "rough" revaluation process might lead to a 10% increase in all previous assessed values (ensuring the rate-adjustment mechanism is not triggered) which would shift part of the the tax burden from those experiencing high increases in their property values (whose effective tax rate would drop) to those that have obtained only modest increases (whose effective tax rate may increase).

[30] The fact that this was introduced as a separate tax rather than as a reform to the existing property tax gives some indication of the nature of the political challenge for reforming property tax. Indeed, it is possible that the property tax is perceived as a tax that burdens the middle class, and thus increasing it (even if structured to only affect the wealthy) triggers a political opposition that is difficult to overcome. On the other hand, structuring the surtax as a separate tax increases the complexity of the system and thus the administrative and compliance costs.

[31] The reason for this minimal effect is the following: even though the surtax is bringing top tax rates on property back to a level comparable to 2004 (and slightly higher) the threshold at which the top rate applies is extremely high, resulting in a considerable part of the tax base being still subject to a considerably lower tax rate than in 2004.

C. Wealth tax

Chile does not currently have a wealth tax. This has been the case for most of its tax history, except for a brief period between 1965 and 1975 when a wealth tax was implemented.[32] Although this brief experience with a wealth tax did not quite meet the expected benefits, its abolishment does not reflect a social dislike for the tax, as it was done in a wider context of regressive tax reforms (following policy recommendations that were later a part of the "Washington consensus") imposed in a political context of a dictatorship.

The wealth tax was in placed from 1965 until 1975, but it always had a temporal nature as it was first legislated as a one-off wealth tax which was then renewed for further years until definitely repealed in 1975. The tax rates evolved in these 10 years but started with a two-rate schedule of 1.2% and 2.1% (French-Davis).[33] It had a minimum threshold which was meant to leave out of the tax net about 97% of the population. The revenues raised through the tax, however, were very limited and substantially less than the expectations: in 1969 revenues raised through the wealth tax where about 0.4% of the total tax revenues. This limited revenue capacity is likely to be the result of two factors: (i) high rates of evasion: which have been estimated at 40% for direct taxes in that period (Foxley, Aninat and Arellano, 1980), and (ii) design of the tax as a "minimal personal income tax": indeed, the wealth tax included a provision which granted a tax credit for the personal income tax paid in the relevant year. This substantially eroded the potential tax revenues from the tax.[34]

V. Potential reforms to taxes on wealth

This section will present potential reforms to enhance the revenue capacity of taxes on wealth while trying to minimise the efficiency costs. As taxes on wealth are usually regarded as very progressive, the outcome of a revenue increase in this type of taxes should have a progressive effect on the overall tax system.

A. Enhancing revenues from inheritance taxation

As mentioned in the previous section, from the point of view of tax design there seems to be three separate explanations for the negligible revenues raised through inheritance taxation: from the perspective of the rate structure, the current schedule produces only very modest effective tax rates, except for extremely large inheritances. From the perspective of the tax base, both the design of the exempt amount and the exemptions from the tax base substantially erode the revenue potential of the tax. We will address both aspects separately.

The rate structure:[35]

From the perspective of the rate structure, there are three features that seem problematic. Firstly, the top rate of inheritance (25%) seems quite low, especially when comparing it with top rates of personal income taxation (40%). It seems hard to justify why should we grant a preferential tax rate

[32] The tax base was broad, including land and property, shares and securities, personal chattels, etc. The only relevant assets that were excluded were cash, bank deposits and pensions. The tax was framed as an income tax on a deemed return on the wealth of the taxpayer. Thus, it was presumed that the taxable wealth generated a 6% return (later increased to 8%) which was taxed at progressive rates from 20% to 35% were applied. Thus, the maximum tax rate on the taxable wealth was originally 2.1%, which then increased to 2.8% (Law 16,250 of 1965).

[33] The rates were later increased to 1.6% and 2.8% to finance the reconstruction of the country after the 1965 earthquake. They were then reduced back to their original level, and then increased to 1.6% and 2.8% in 1970.

[34] The tax credit was later reduced to 50% of the personal income tax paid in the relevant year. During the final year of the tax (during the dictatorship) the tax credit was entirely removed.

[35] In terms of the theoretically ideal rate schedule, the PAWAT structure seems the most theoretically coherent (yet administratively very complex): a progressive schedule applied based on the age of receiving the inheritance and the cumulative wealth received over the donee's lifetime (see section II.A.5 of the explanation of PAWAT). As mentioned, the complexity of PAWAT makes it irrelevant for policy choices in developing countries.

to income received through no effort at all than to income received as compensation for labour (except for some concern about the elasticity of the tax base, but there is no suggestion that inheritances are more elastic than labour income).[36] Indeed, from a moral point of view the opposite is actually justified: luck egalitarianism strongly suggest that we should tax more heavily sources of inequality that are not a consequence of choices of individuals but simply the result of brute luck.[37] Thus, it seems reasonable to suggest that top rates of inheritance tax should be at a similar level to top rates of personal income tax.

In addition, the current structure features a high number of tax brackets (9 brackets), with the result that the higher tax rates are only trigger at extremely large inheritance levels. Indeed, there are 5 tax brackets before we get to the very modest rate of 10%.[38] Even in the name of tax simplification, it seems reasonable to reduce the number of tax brackets from 9 to 6: removing the tax rates of 2.5%, 7.5% and 15%, and applying the next rate from the threshold of the removed tax brackets (e.g. we remove the 15% tax rate and start applying the 20% rate from the threshold at which the 15% was previously triggered).

Lastly, the thresholds at which the higher rates are triggered are extremely high, ensuring that only extremely large inheritances pay more than a very modest effective tax rate. Indeed, the value of an inheritance to trigger the top 25% tax rate in Chile is 2.5 times the value of an inheritance to trigger the top tax rate in the UK (a top rate which is substantially higher at 40%).[39] When compared with other countries with functioning inheritance taxes, the outcome is similar: in comparison to Spain, the value of an inheritance in Chile is 1.5 times the value required in Spain to trigger a 25% tax rate, and when compared to France this ratio is 4 (at which point a 30% tax rate is triggered). This nominal value comparison, however, hides a good part of the regressive design of inheritance taxation in Chile, as it does not consider the difference in income levels between Chile and these developed economies (or different purchasing powers that the same nominal income can afford in these countries). A more accurate understanding of this regressivity emerges when we compare the thresholds in relation to the median income in each of these countries, which show quite shocking differences in the design of the threshold. For instance, in Chile the top 25% tax rate is triggered at a value equivalent to 106 annual household median income. In the UK, the inheritance only needs to be of a value equal to 17 median income to trigger the 40% tax rate, while in France the 30% tax rate is triggered at a value equivalent to 14 median income and in Spain the 25% tax rate is triggered at a value equivalent to 28 median income. These comparisons are graphically shown in the figure below.

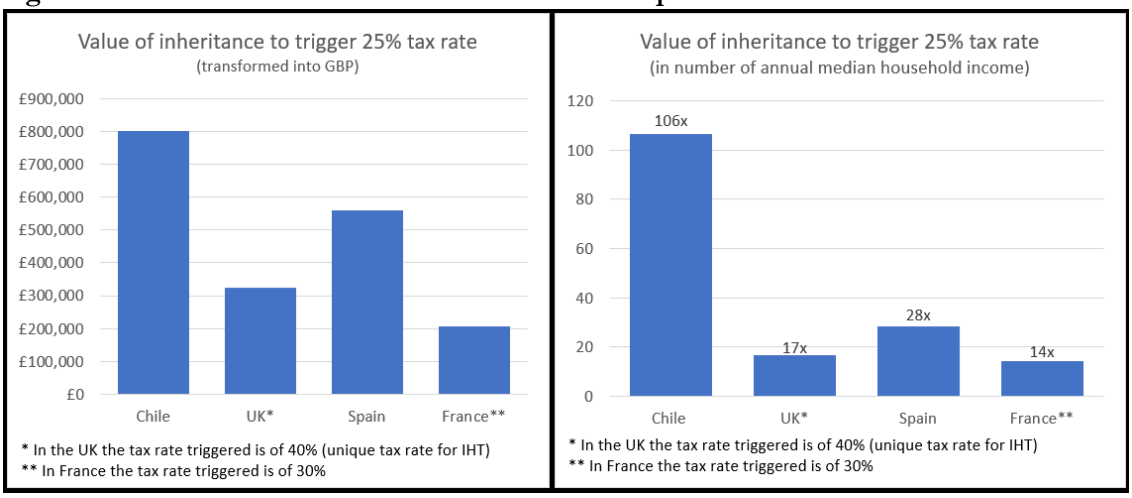
[36] This morally relevant distinction between "earned" and "unearned" income played a crucial role in the design of UK tax system in the early 20th century. On this topic see Daunton (2002, chapter 11) and Daunton (2001).

[37] For a good analysis of the different conceptions of luck egalitarianism that can be applied to inheritance taxation see Halliday (2018), chapter 4.

[38] 0%, 1%, 2.5%, 5% and 7.5%.

[39] The actual difference in the rate schedule is even more contrasting, as the UK inheritance tax is levied on the value of the estate of the deceased, not on the value of the inheritance received by each heir (which makes the name of the tax slightly misleading). Thus, unlike Chile's inheritance tax, the effective tax rate cannot usually be reduced by splitting the estate among several heirs.

Figure 20. Inheritance thresholds in Chile and developed countries.

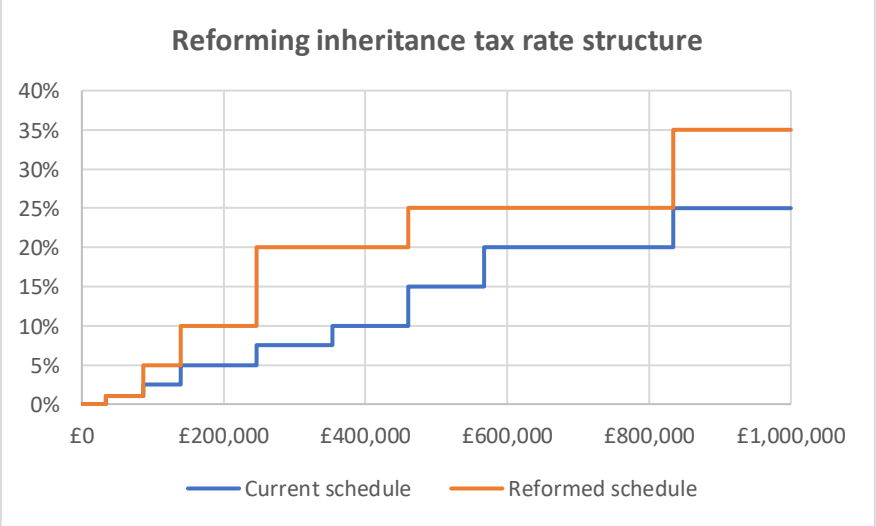


Source: own preparation.

Using median income values to analyse the threshold is also relevant given that, as mentioned in section III.A above, a proper inheritance tax (i.e. levied on the donee, not the donor) should treat inheritances similarly to income but accounting for the fact that they are lumpy sums received only once per generation. Thus, linking PIT thresholds and rates seems reasonable *provided* the lumpy and non-recurrent nature of inheritances is accounted for. So, multiplying PIT threshold for 25 (assuming typically 4 generations in a century) should be indicative of where the threshold for inheritance tax should be.

Thus, the rate structure of Chile's inheritance tax could be improved by (i) increasing the top tax rate to a similar level to that applied to income, (ii) removing some of the brackets both in the name of simplicity and to produce higher average tax rates, and (iii) lowering the thresholds to move them closer to the levels (relative to median income) we find in developed countries with functioning inheritance taxes. Based on the above, the rate structure could be reformed so that it looks as shown in the figure below.

Figure 21. Current and reformed inheritance tax schedule



Source: own preparation

Relative to median income, the new rate structure triggers the 25% tax rate at a level equivalent to around 60x annual median income, bringing this relative value closer to UK (17x), France (28x) and Spain (14x) but still being substantially higher. However, a more dramatic reduction of thresholds to a level comparable to those in UK, France or Spain might be challenging. Firstly, the PIT in Chile (and most developing countries) is triggered at higher levels (relative to median income) than in most developed countries, so if coherence with levels of taxation under PIT is desired we should also see higher level of IHT thresholds. Secondly, a more drastic changes is very likely to be politically unfeasible at least in the short term. Thus, a further reduction could be done at a later stage (simultaneously with further reductions of PIT thresholds) which would make the expansion of the tax base more gradual (and arguably fairer in terms of horizontal equity, by not treating dramatically different those inheritances received immediately before and after the proposed reform).

The tax base:

From the perspective of the tax base, there are two aspects that particularly narrow the values on which the tax base is applied: one of them is the availability of an exempted amount *per inheritor*, and the second one is the preferential treatment of real estate.

The fact that Chile has an inheritance tax rather than an estate tax means that relief from taxation is given at the level of the recipient of an inheritance through an exempted amount from inheritance tax. This seems suitable from a political philosophical perspective, as it can (in principle) strike a good balance between ideas of freedom/private property (the right to bequeath) and ideas of equality (inheritances can provide unfair advantages that should be limited).[40] But it also means that the tax liability can easily be reduced if the estate is divided among several inheritors. This can be particularly efficient for families with children, grandchildren or even greatgrandchildren. Indeed, a tax-free inheritance can be given to someone's children by giving it to their children (the giver's grandchildren), and then using such inheritance to pay for school fees and other expenses that would regularly be paid by the parents, thus freeing part of the parents' income to fund other expenses (or investments).

There are two ways for limiting the impact on the tax base of these personal exempted amount (without entirely removing the exempted amount, which is a necessary condition for claiming that - at least in principle- people have the "*power to dispose by will of his or her whole property*")[41]: first, the exempted amount could be given only to the children of the deceased, thus immediately reducing the potential for multiplying the exempt amount. Alternatively, the exempt amount could be given as a lifetime benefit, thus preventing someone from claiming the benefit each time she receives an inheritance. Between these alternatives, I argue the latter is a better option for two reasons: (i) quantitatively speaking it should impose a higher restriction on the benefit, as limiting only to the children would still allow the exempt amount to benefit inheritors twice (when each parent passes wealth on), and (ii) it does not place an incentive for wealth to remain in the family, thus removing constraints on giving inheritances to less advantaged people outside of (wealthy) families. On the other hand, from an administrative perspective, the first option is much simpler, as it would not require tracking receipts of inheritances over the lifetime of taxpayers.

The other effect of having an inheritance tax (levied on the recipient) instead on an estate tax, is that the effective tax rate can also be substantially reduced by splitting the estate in several inheritance (even if some recipients do not benefit from an exempted amount). On very large estates, in fact, this second effect is much more relevant that the first one (multiplication of exempted amount). It is possible to reduce this effect by establishing that inheritances received by distant family members (or unrelated persons) would be subject to the marginal tax rates applicable

[40] See section III.A above in which this is further explained (Mill, 2000, p. 256-257).
[41] Ibid.

to the children. Thus, splitting a large inheritance by giving a smaller inheritance to grandchildren would not be as beneficial, as the grandchildren's liability would be calculated by immediately applying the marginal tax rate applied to the larger inheritance left to the children of the deceased (with potentially a *de minimis* exempt amount).

The other aspect in which the tax base of inheritance tax can be enhanced is by removing the preferential treatment currently granted to real estate. This requires two steps. First, all real estate should be brought within the tax net of the levy. Currently, real estate that meets the (incredibly broad) definition of "economic housing" is exempt from inheritance tax, which means that the vast majority of the stock of residential property is left out of the tax net.[42] This has no convincing justification from a policy perspective: if the aim of the policy is to grant relief to poorer households from inheritance tax, the proper way of doing that is through a minimum amount exempt from tax, and not by negatively discriminating those that have wealth in assets different that real estate. Even if there is a perception that housing is a merit good that should be specially protected, a special exempt amount could be available for real estate *but conditioned* to those assets being the family house (so as not to extend the benefit to those holding real estate as investment). The proposal I suggest here is simply to remove this exemption, and maybe some of the additional revenues could be used to fund an increase in the minimum exempt amount.

Secondly, real property is valued at substantially reduced levels for the purpose of inheritance taxation, which furthers erodes the tax base. Indeed, the tax uses the assessed values for the purpose of property taxation, which, as mentioned earlier, are usually only around 50-60% of the market value for the properties. Switching this rule to a market value rule (which is the applicable rule for valuing all other assets) should result in a massive increase on the assessed values and would remove the distortion that inheritance tax currently produces on investment decisions.[43]

Lastly, a minor reform that seems advisable is to phase out the inheritance tax benefit currently granted to life insurance. Indeed, if a life insurance policy has a large saving component,[44] there is no strong argument for giving it a beneficial treatment. As mentioned, this has been removed for policies taken after February 2022, but it seems advisable to phase out this unjustified benefit more rapidly. An alternative can be to gradually reduce the portion of life insurance proceeds that benefit from the exemption in 10 years (first year 90% of proceeds are exempt and 10% are taxed, second year the proportion is 80% and 20%, and so on).

B. Enhancing revenues from property tax

As previously mentioned, there are three problematic aspects in the design of Chile's property tax: the rate-adjusting mechanism, the assessed value on which the tax is applied and the exemptions to the tax. The first of these relates to the rate structure and the latter to the tax base, so they will be addressed in that order.

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[42] According to statistics from the Housing Ministry, only 6% of current housing stock would not meet the definition of economic housing. Data available in: https://centrodeestudios.minvu.gob.cl/resultados/?_sft_categoria _repositorio=parque-habitacional, last accessed on 18 October 2023.

[43] It could be argued that using assessed values for property tax is convenient from an administrative perspective, as using readily available information saves administration costs. The argument seems unconvincing for at least 3 reasons: (i) the additional administrative costs seem justified as it will substantially increase the value of the tax base and will enhance horizontal equity between equally wealthy taxpayers with different wealth composition, (ii) unlike property tax, inheritance tax is levied only once a generation, so the valuation process would not be as recurrent as it is for property tax, (iii) current information technologies should substantially reduce the administrative costs of enforcing a market value rule, as data on market transactions could be shared with the tax authority almost instantly.

[44] This will be the cash value of the policy. Thus, term life insurance policies (which do not have a cash value) should not be subject to tax, but whole life insurance should on their cash value.

The rate structure:

The main problem of the rate structure is related to this automatic adjusting mechanism that is triggered when revaluation leads to more than a 10% increase in the revenues from the tax. As explained in the previous section, there is no convincing policy rationale for such mechanism, except some political economy obstacle. Thus, the recommendation would be to simply remove the mechanism, which would result in two welcomed outcomes: (i) it would restore the incentives for the tax administration (and government) for conducting periodic and accurate revaluations processes (which could now result in additional revenues to justify the allocation of administrative resources to the task and could also fund additional public expenditure to make worth taking the political cost of revaluations);[45] and (ii) it would ensure that effective tax rates do not drop as property becomes less affordable, which should enhance the equity of the tax system.

This automatic-adjustment mechanism has already reduced the rate of property tax from 1.4% (top rate) and 1.2% (basic rate) to 1.042% and 0.893%, respectively. This represents a 26% reduction in the rates in the period 2005-2021, so there is an argument to gradually reverse such reduction to bring the statutory rates to similar levels (1.4% and 1.2%), with the additional revenues from such increase available for funding an increase in the minimum exempt amount.[46] This would enhance the progressivity of the tax as it would remove modestly valued properties from the net while increasing the tax liabilities from high-value properties.

The tax base:

There are three features of the tax that narrow the base and seem hard to justify. The first, and most obvious, is the assessed values. It is broadly reported that the values on which the tax authority calculates the tax liability is far below any reasonable estimation of market value.[47] Even if this might have been a sensible option for minimising administrative costs of the tax (by reducing challenges and appeals to assessed values) in the past, there is no justification for it in the current age. Indeed, technological and information improvements mean that the tax administration could have real-life data on changes in property prices which could be applied to the revaluation of property values, leaving some small gap between estimated market values and assessed values to reduce challenges from taxpayers. For instance, the Land Registry is currently required to report to the tax authorities any transfer of real property, so it would be simply a matter of using the price for those transactions to estimate the changes in property values in different areas.[48] This could be automatically linked to assessed values under the property tax (or at least on a yearly or two-yearly basis) which would increase the revenues and also avoid abrupt changes in tax liabilities that usually occur when the period between revaluations is too long. In addition, moving towards market values

[45] As we mentioned, the history of property taxation in Chile suggests there is a strong political incentive to postpone the legally required revaluation processes, so there needs to be some political gains to resist such incentives, and funding for additional public expenditures could play that role.

[46] A possibility for this gradual increase would be to spread the increase throughout 5 years, so as to increase the top rate by 0.072% and the basic rate by 0.061% per year. This would substantially reduce the impact on household budgets and should therefore reduce political opposition.

[47] Estimations are usually around 50-60%.

[48] There is a risk of undervaluation which should be monitored. Several options can address this. First, values reported should determine the base costs for any future capital gains tax (thus reducing the incentives to the buyer to under report the value of the transfer). Secondly, values reported in property transfers could be matched with the advertised sale price by estate agents to detect mismatches. Alternatively, prices of properties could be linked to an index showing the change of prices in the area, instead of directly linked to the specific property (thus, the benefits of undervaluation would be diluted within the index, whereas the risk of sanction due to misreporting would remain the same). Lastly, third party reporting could be used: banks reporting valuations for credit purposes, etc.
An interesting (though probably unfeasible) approach to undervaluation was taken during Japan's wealth tax (post WWII): the tax authority could purchase assets at the value reported by the taxpayers, making undervaluing a very risky tax evasion mechanism (O'Donovan, 2021).

would also improve horizontal equity, as assessed values are *on average* around 50-60% of market values, but there is great variance between different properties.[49]

The expansion of the tax base following a move towards market value would be substantial: if current assessed values are on average 55% of market value, there is potential for almost doubling the tax base. It might be sensible to aim for something around 90% of market value so as to minimise the administrative costs related to handling challenges to assessed values,[50] which would produce an increase in the tax base of 64%.

The second feature that should be amended relates to the design of the minimum exempt amount from property tax. The current exempt amount leaves around 78% of residential properties outside the tax net. This proportion should be reduced if the assessed values move towards market value. However, there is another way of reducing the proportion of exempt properties that is not related to assessed values. Currently, the exempt amount is linked to the properties, not the taxpayers. Thus, a wealthy taxpayer could own multiple low and mid-value properties for investment purposes and not be liable to property tax for any of them. Even if she owns high-value properties, her tax liability would be reduced by the exempt amount for each of those property. From a distributional perspective, this is very problematic. The exempt amount is intended to remove from the tax net those low- and middle-income families that live in low-value properties. Similarly, it intends to mitigate the tax liability of middle-class families. These aims would be equally fulfilled if the exempt amount was linked to the households, and not to the properties. If the exempt amount was reformed to being available *per taxpayer,* this would bring into the tax net (or increase the tax liabilities from) all the properties that are second homes or that are held for investment purposes, increasing both the revenues and the progressivity of the tax.

What is particularly interesting about this proposal is that it is not actually new: this was the original design of the exempt amount on the original 1969 law on property tax, but the design was changed in 1998 through an executive decree without parliamentary discussion.[51] Moreover, the current property surtax enacted in 2020 does make use of a tax base that consolidates all the properties from taxpayers in order to determine whether the minimum amount for the surtax is reached, which means that the additional administrative burden of moving into a *personal* exempt amount is already in place to enforce the property surtax.[52]

This change in the nature of the exempt amount should also increase the tax base in a considerable way, as there is evidence that a large (and increasing) share of high-income households have properties as investment. For instance, Vergara-Perucich and Nuñez (2019) show that in the top decile of the income distribution almost 40% of households receive income from the rental of

[49] For instance, on a sample of 100 properties Eyzaguirre and Razmilic (2014) find that assessed values go from below 20% to above 100% of their market price. Similarly, Trivelli (2013) in a sample of a similar size also found assessed values as low as 13% and as high as 109% of market values.

[50] The legislation should incorporate incentives to avoid taxpayers opportunistically challenging assessed values. For instance, if a taxpayer appeals to assessed values, a professional valuation should be appointed, and the outcome of such valuation should determine assessed values. Thus if tax authorities are originally using a 90% of market value rule, opportunistic challenges to assessed values could result in an increase of assessed values as the professional valuation should reflect market price. In addition, taxpayers losing appeals to assessed values should be made liable to pay for the professional valuation costs (unless there were reasonable grounds for appealing).

[51] This change was done through the enactment by an executive decree of what is called a *consolidated text* of a law. Under the Chilean constitution, the President has the power to issue decrees containing a *consolidated, coordinated and systematised* text of a current law (mainly to reflect the current status of highly modified laws). However, in exercising this power there can be no *changes in the true meaning and scope* of the law (article 64 of Chile's Political Constitution). Thus, this change was arguable unconstitutional.

[52] Of course, the scope of the property surtax is quite narrow (only targeting the very wealthy) so the administrative burden might not be the same. However, given the cumulative tax base of the surtax, the only way of properly enforcing it is to allocate all properties to specific taxpayers, which is exactly what would be required in order to move towards a personal exempt amount.

properties, while that proportion in the 9th decile is of 24%. Moreover, these proportions are rapidly increasing among the richest households (from 2009 to 2015 the top decile share increased from 31% to 39%), and those households tend to have more than one rental property.[53]

Lastly, there are many specific exemptions from the property tax that seem unjustified from a public policy perspective. The most problematic is, again, connected to the very broadly defined concept of "economic housing", which are granted a 50% deduction in their property tax liability for a period between 10 and 20 years, as mentioned above. This is another benefit that is very badly targeted and thus should be removed. The proper way of providing relief should be through a *personal* exempt amount, as argued above.

Another exemption that seems problematic is that granted to sport institutions, as they are usually very regressive and result in substantial amounts of revenue forgone. For instance, in the most expensive location in Santiago, there is a very exclusive 18-holes private golf club, which is not open to the public.[54] It occupies around 50 hectares (roughly a third of Hyde Park). The land on which it sits alone is worth around £1.4 billion.[55] There are at least six clubs in Santiago with similar characteristics: extensive land in central and expensive locations, privately-owned and not open to the public. However, the fact that sport institutions are exempt from property tax means that the owners and members of these club are totally unburden by property tax from the benefit derived from the use and holding of such massively valuable properties. Together, these clubs occupy land of around 335 hectares (roughly the same as the combined area of Hyde Park, Regents Park, St James Park and Green Park) and the estimated combined value of their land is almost £4 billion. This represents around 1.6% of Chile's GDP. If this exemption would be removed, it would mean that these clubs would pay yearly a 1.4% property tax on the value of their property, which could generate around 3% additional revenues from property tax.

This is, of course, is only a very small sample of the revenue lost through this exemption, which is likely to represent a very large share of the current revenues from property tax. I have highlighted these particular cases because they seem to represent a particularly clear example of the regressivity and the substantial amounts involved in this exemption. They also seem to show the distortions that these exemptions can create. Indeed, it is striking that these vast portions of land in the middle of the city are currently used for these purposes, but it is possible that (at least part of) the explanation *is precisely because* they are exempted from property tax. Arguably, these clubs can afford not maximising the use of their properties (by not being open to the public to rent their sport facilities or by developing their properties) because they do not have to finance the large property tax bill they would be subject to in the absence of the exemption. If they were faced with the same financial cost than every property owner, it is likely they would either move out of these central locations (to reduce the value of the land on which the tax is levied) or they would open the facilities to the public. Both possible outcomes would be welcomed results of removing this exemption, as they would mean a more efficient use of the land (and would also increase the revenues from the tax).

An alternative to removing the exemption for sport institutions is to establish additional conditions so that the social benefits from the exempted properties justify the tax break. Currently, the Chilean tax code has a condition to this effect, but the threshold for meeting this condition is so extremely

[53] Indeed, a study to the real estate market in Chile (Unholster, 2023) founds that a 6% of individual property-owners have three properties, and 2.5% have six or more properties. In addition, as the number of properties owned by a person increases, so does its average value, suggesting a strong correlation between income level and number of properties owned.

[54] To become a club member you need a reference from a current member and to pay the incorporation fee and to purchase 3 shares in the club. The financial cost of this is reportedly around £150,000 (Diario Financiero, 2021), on top of which monthly fees are triggered.

[55] Estimation based on land values in the area advertised for sale online.

low that it produces negligible social benefits.[56] Indeed, the exemption for private sport institutions requires (very vaguely) that they maintain agreements with public schools for the free use of the facilities. However, the actual implementation of this requirement shows that any sort of agreement will be sufficient to satisfy the requirement. I have analysed two of such agreements (relating to the two clubs occupying the most valuable properties) and they provide minimal access to the sport facilities and they only provide the access on the days that the club is officially closed.[57] In terms of value, the benefit to public schools in both cases represent around 0.1% of the tax forgone, clearly showing the inefficiency of the tax break.

C. Is there a case for a wealth tax?

The last potential reform to taxes on wealth is to analyse the desirability of introducing a wealth tax. The attractiveness of a wealth tax is well recognised in the literature and mostly relates to its very progressive nature and to the potential to raise substantial revenues. The disadvantages are also well analysed in the literature in respect to the high administrative costs and skills required to enforce a wealth tax and the potential distortions it could create (the most relevant for developing countries being the threat of capital flight).

It is not easy to reach a conclusion on whether a wealth tax would be advisable for a developing country such as Chile. In theory, I share the view of many that a wealth tax has an important role to play in tax systems (Murphy, Moreno-Dodson and Zolt, 2017). However, when faced with the practical considerations that should inform this policy decision, it seems likely that most developing countries are not yet ready to successfully implement wealth taxes.[58] In addition, I strongly believe that introducing a tax which cannot be successfully enforced can generate serious harm to the overall tax system, as it undermines the confidence in the tax authority and the perceptions of fairness of the tax system (as it feeds the idea that honest citizens end up bearing a heavier tax burden than everyone else). It also weakens the credibility of the threat of sanctions for tax evasion, which weakens whatever level of quasi-voluntary compliance might exist in a country.

Notwithstanding the above, developing countries should work towards building the administrative capacity required to successfully implement wealth taxes in the future (or at least have the alternative of doing so if circumstances would justify it). This capacity-building exercise should not be understated, as it is a key step for moving towards a more optimal and just tax system. For example, one of the crucial disadvantages of levying a wealth tax is the incentives it creates for wealthy taxpayers to emigrate.[59] But this risk would disappear in the context of a coordinated international wealth tax (as being proposed by the G20 and Gabriel Zucman). In such scenario, developing countries should be ready to successfully enforce a global wealth tax, and administrative capacity is crucial for that goal.

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[56] The UK has a scheme for business rates relief that seems to more closely align the outcomes with the expected social benefits that justify the relief. The relief gives an 80% deduction on business rates to sport institutions that meet the criteria to be considered a community amateur sports clubs (CASC) which (among others) require (i) being open to the whole community and (ii) having affordable membership fees (not more than £31 per week, with support being provided for people who cannot pay if membership exceed £10 per week). I do not comment on the suitability of this scheme within the UK tax system, except to the extent that it seems (a) much better than the Chilean requirement to obtain social benefits from the institution, and (b) less expensive and less opaque, as these institutions still pay 20% business rates (which provides a clear measurement of the revenue forgone).

[57] Municipalidad de Las Condes (2019), Municipalidad de Vitacura (2006).

[58] The conclusion advanced here is restricted to a unilateral wealth tax. If a wealth tax is imposed at an internationally coordinated level, developing countries should most definitely join such policy as international coordination would remove many of the disadvantages of a unilateral wealth tax.

[59] And this risk is higher in developing countries that lack the capacity (and/or legal framework) to enforce anti-avoidance rules that would curb such emigration (e.g. exit charges on deemed disposals on departure -as found in Canada, US, Norway, etc.- or temporary non-resident rules, as found in the UK).

I will elaborate on the reasons for my conclusion below, addressing each of the main disadvantages of wealth taxes.

Administrative complexity:

Effectively enforcing a wealth tax requires both a sophisticated and well-funded tax administration and very extensive information reporting (and processing) (Batchelder and Kamin, 2019). It is arguable that neither of these conditions is currently present in most developing countries, and our case study does not seem to be an exception. As mentioned by Murphy, Moreno-Dodson and Zolt (2017), a good predictor of the likelihood of a country's success in administering a wealth tax is how effectively they raise revenues from capital income under their personal income tax, and developing countries tend to score quite poorly in this regard. Similarly, third parties' information reporting is not quite broadly established yet, and markets in many assets' types are not very deep or transparent to make valuation straightforward.

However, the reforms proposed here should be a step in the right direction to make those conditions a reality. For instance, experience with successfully implementing a relevant inheritance tax should give the tax authority (in the medium to long run) a good level of information regarding wealth holdings throughout the population, and particularly among the wealthiest. Similarly, updating assessed values for property taxes in line with market value would also provide essential information to make feasible the task of administering a wealth tax, as it would contribute to the valuation process which is one of the most challenging aspects of enforcing a wealth tax (Daly, Hughson and Loutzenhiser, 2021). In addition, I have argued in the previous section that exempted amounts for property taxes should be personal (not available for each property), which effectively requires allocating all real estate to taxpayers, which is also a key step in terms of the information required for imposing a wealth tax in the future (this should facilitate the construction of a taxpayer-level real estate wealth database, which is essential for a wealth tax). Effectively enforcing these reforms would also require an expansion of the tax authorities' resources (and revenues to fund such expansion), which is also something crucial to tackle the challenging task of enforcing a wealth tax.

Finally, it is also crucial for effectively enforcing a wealth tax in the 21st century to have both the legal and administrative infrastructure to access and process information about offshore assets and accounts held by domestic taxpayers. The legal framework for financial assets is already in place as most countries have introduced the OECD's Automatic Exchange of Information standard (AEOI). Indeed, 113 countries have either started or will start shortly sharing information about foreign taxpayers under the AEOI. However, the readiness of technical and administrative infrastructure to access and process information from AEOI is radically different. First of all, the AEOI symmetry for bilateral information exchanges to start. Indeed, in order to benefit from receiving information under the AEOI countries are required to effectively collect the information from its financial institutions and send it in *"in a timely manner, including by sorting, preparing, validating and transmitting it in accordance with AEOI Standard"*.[60] This can be particularly challenging for many developing countries, and might result in little benefit from AEOI in the short run, as highlighted by Knobel (2017).[61] Secondly, and maybe even more challenging, developing countries need to build the technical skills and administrative capacity to effectively process information they received

[60] OECD (2022, page 19).

[61] Knobel makes a really good argument criticising the equally-strict application of the "full reciprocity" requirement to developing countries based on a risk assessment criteria. He points out that the risk of offshore tax evasion from taxpayers from developed countries moving their wealth to developing countries is minimal (except for tax havens developing countries, which should be treated differently), whereas the risk of taxpayers from developing countries moving their wealth to developed countries is substantial.
Another difficulty for developing countries mentioned by Knobel (2017) and Hakelberg (2016) is the non-reciprocal way in which the US has implemented automatic exchanges of information under FATCA-type conventions.

under the AEOI to make it useful for enforcing domestic taxes, something most of them seem ill-equipped to properly do at the moment (Grinberg, 2016; Hearson, 2018).

Distortions of a wealth tax:

The other strong argument (both from and economic and, specially, rhetorical perspective) is in respect to the economic distortions that a wealth tax would create, which could possibly result in large capital flights. The empirical evidence to support the economic relevance of the argument is not particularly conclusive or abundant, but there are works that find very large behavioural responses to wealth taxes (Jakobsen *et al.*, 2020; Brülhart *et al.*, 2022) which do suggest there could be a relevant risk of reducing savings and capital flight.[62] Politically, this argument also seems strong in the context of developing countries, so it should be a key consideration even if the empirical evidence is not conclusive.

The international experience of wealth taxes strongly suggests that there is one alternative for designing wealth taxes that should considerably reduce the behavioural responses to wealth taxes.[63] Firstly, a (relatively) unannounced one-off wealth tax (Advani, Chamberlain and Summers, 2020a; O'Donovan, 2021). Such a wealth tax should considerably reduce behavioural responses for two reasons: (i) it would give limited time for restructuring tax affairs before the tax is imposed,[64] and (ii) it would remove all incentives to alter savings or location decisions in the future, as the tax would be a one-off so modifying the tax base in the future would not affect the liabilities under the tax. A one-off wealth tax can also be designed in a way that resembles a annual wealth tax, if the tax rate is set relatively high but it is payable in annual instalments over a long period of time.[65]

As international tax coordination is outside the scope of the thesis, I will focus on the first alternative (announced one-off wealth tax). To avoid the distorting effects of an annual wealth tax, however, a one-off wealth tax not only needs to be swiftly legislated (to make it relatively unannounced) but it also needs to be *credibly* one-off. Thus, not only the tax needs to be expeditiously legislated as a one-off, but the targeted taxpayers need to genuinely believe that governments would not renovate it or repeat in the short and medium term. Both conditions are very unlikely to be achieved in normal social circumstances, but as mentioned by Advani *et al.* (2020a) they could be obtained in the context of very unique crises. Indeed, if a discussion of a one-off wealth tax is introduced in very unusual circumstances (large economic crisis, pandemic, war, etc.) it is possible that the ordinary political obstacles to their introduction will be trumped by the immediate need to alleviate the critical circumstances. In addition, the fact that the tax is justified based on these very extraordinary circumstances make it more likely that the taxpayers will genuinely perceive it as a one-off, and therefore not change their savings behaviour as a result of the introduction of the tax.

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[62] Generalising these findings to developing countries is really problematic, however, as the context is very different. For instance, the Brülhart et al. (2022) paper shows mobility in a domestic context (between Swiss cantons) which would not be relevant in a national wealth tax. The capacity of tax administration is also likely to be very different, which should affect behavioural responses as it affects the probabilities of being caught if engaging in tax avoidance/evasion (as predicted by the Allingham and Sandmo (1972) model).

[63] There is also a second alternative, which is outside the scope of the thesis as it relies on international coordination: a global wealth tax would also remove the main the negative incentive that a unilateral wealth tax creates, given that the tax would not be avoided by emigrating (G20, 2024). Developing countries should join this initiative if it manages to gather political momentum internationally, trying to ensure that revenues from the global wealth tax are shared fairly among countries.

[64] Even better (from an economic perspective) would be to legislate the tax retrospectively. For instance, by setting the relevant date on which wealth will be assessed a few months in the past. This could, however, trigger constitutional problems in some jurisdictions.

[65] Probably the best example of this type of one-off wealth tax is the one imposed by West Germany after World War II, which was imposed at a 50% tax rate but payable over 30 years (the 1952 *Lastenausgleichsgesetz*). This is equivalent to a annual wealth tax at a rate of 1.66% over the value of wealth at the time of introduction of the tax. The West Germany experience seems to show that, under the correct circumstances, a one-off wealth tax can be a successful tax policy (O'Donovan, 2021)

The last aspect that is critical for analysing wealth taxes is that its redistributive potential is only realised in the medium to long run. Indeed, on a yearly basis the revenues raised by the tax (and the social spending they can fund) might not impact the distribution of income and wealth in a meaningful way, but the cumulative effect that the tax has on wealth accumulation can be substantial in the long run (Piketty, 2017). As a consequence, if the redistributive potential of a wealth tax is to be achieved, it needs to be accompanied by a sufficiently strong political consensus that ensures that the tax will not be repealed at the first change of governing coalition. In many cases, such a political consensus might only achievable during times of deep crisis. Or, in a more cynical view, framing a wealth tax as a necessary measure to overcome a particularly critical point of a country's history might be the only way of shielding it from the political power of economic elites.

As conclusion, I believe that the current circumstances in most developing countries are not quite appropriate for introducing wealth taxes that could be effectively enforced and relevant in terms of revenues. This in no way means that there is not a relevant role for wealth taxes in the future, and developing countries should build their administrative capacity and information reporting systems to make this possible in the future. If such conditions are met, the ideal time for introducing a wealth tax would probably be when countries are experiencing a particularly critical point in their history, whether this is a severe economic crisis, pandemics, wars, a foundational constitutional moment, etc.

There are secondary roles that can be played by a wealth tax which could help in building this administrative capacity and information systems, which could be interesting to further explore. One secondary role that seems attractive is that of an alternative minimum tax, which would only be paid when the taxpayer has been able to reduce its income tax liabilities beyond an acceptable level.[66] This could also justify the case for using public resources in building the administrative capacity for a wealth tax, as it would also be bringing (albeit minimal) revenues even before a proper wealth tax is legislated.[67]

VI. Estimating additional revenues from proposed reforms

It is not straightforward to accurately estimate the additional revenues that these reforms could bring, but this chapter seems incomplete without giving some sort of idea of the order of magnitudes involved. The data required to provide precise estimations is not entirely available, so the amounts here presented are based on a number of assumptions, which are always made conservatively. For instance, I have not had access to official information about details patterns of wealth holdings and some other relevant information. I have made used of aggregate data on wealth holdings and asset valuations and market studies data to fill gaps in official data. I have also used conservative assumptions to fill some other gaps where alternative evidence was not available.

The estimations show that these reforms should substantially increase the revenues from these taxes, in all cases by more than 100%. In absolute terms, the amounts involved are significant, but do not lead to a substantial increase of total tax revenues. The latter is not surprising, as the international experience shows that these fiscal tools are almost never a great source of revenues. But this should not, however, minimise the key role that these taxes have in tax systems. Indeed, the main role of these fiscal tools is not to raise revenue but to curb inequality in the middle to long run. And even if they do not lead to massive revenues, they bring them in the most progressive ways as their tax base is the most unequally distributed in current societies (much more than

[66] But there are several relevant considerations to make the design politically feasible, one of which is not to be seen as targeting old-age wealthy taxpayers with no sources of income, as correctly mentioned by Summers (2021).

[67] The justification, however, seems in place even in the absence of an alternative minimum tax. The information collected would actually be essential for properly enforcing an inheritance tax and property tax, and there would be substantial overlapping with the information required for taxing capital income under the personal income tax. Beyond this, information about wealth distribution would be key to inform policy decisions in several areas, most importantly to assess whether it is becoming more or less equally distributed.

income or consumption). Additionally, these taxes also have a symbolic value: developing countries will try to create the conditions for people to thrive and build wealth, but will ask a fair contributions from those that benefit the most from this conditions be becoming very wealthy.

In particular, I estimate that the reforms proposed to inheritance taxes would increase more than threefold the revenues from the tax. Revenues from inheritance tax, after the reform, would still only be around 1.2% of total revenues, but this is up from an original value of only 0.4%. The following table shows the increase of each of the reforms discussed in section V.A.[68]

Table 23. Additional revenues from reforms to inheritance tax

Original revenues from inheritance tax (IT)	0.37% of total taxes
Impact of removing "economic housing" exemption (% of original IT revenues)	+ 45%
Impact of market valuation of real estate (% of original IT revenues)	+ 54%
Impact of new rate schedule (% of original IT revenues)	+ 125%
Impact of limiting exempted amount (% of original IT revenues)	+ 8%
Total revenues from IT after reform	**1.23% of total taxes (331% of IT's original revenues)**

When it comes to property taxes, the effect relative to current revenues from the tax is lower (but still very substantial) but the outcome in terms of increase in total tax revenues is much more significant (as the property tax is currently -by far- the most relevant tax on wealth). The effect of the proposed reforms would be to more than double revenues from property tax, which translates in an increase in total tax revenues of around 4.6%. In addition, the reform would make the tax more progressive, as the increase in tax rates suggested (to bring them to the original rates of 1.4% and 1.2%) has been assumed to be done on a revenue neutral basis by increasing the minimum exempt amount.

Table 24. Additional revenues from reforms to property tax

Original revenues from property tax (PT)	3.91% of total taxes
Impact of market valuation (% of original PT revenues)	+ 64%
Impact of move to *personal* exempt amount (% of original PT revenues)	+ 39%
Impact of exemptions removal (% of original PT revenues)	+ 15%
Total revenues from PT after reform	**8.53% of total taxes (218% of PT's original revenues)**

These estimations (though limited in their precision) are encouraging. They suggest there are available ways for developing countries to substantially increase revenues from the most progressive taxes in the system, without either making radical tax reforms (such as introducing a wealth tax) or substantially increasing the statutory tax rates (except for the top rate of inheritance tax where they have been aligned with the rates of PIT). They also suggest that this is an area highly unexploited in developing countries, and that this should change if there is a genuine interest in increasing the progressivity of the tax systems.

There are two main limitations to these estimations, so they should be taken cautiously (more as showing the order of magnitudes involved in the proposed reform than for a precise budgeting

[68] The breakdown of the effect of each reform should be taken with caution, as the order in which each reform is analysed affects the relative weight of each of them. For instance, the change in the rate schedule results in the most significant increase in revenues for the inheritance tax, but this reflects the fact that it is the last reform analysed, so the increase in rates applies in an expanded tax base. The overall effect, however, should not be affected.

exercise). Firstly, they are based on a static basis, not considering any behavioural responses that the reforms might trigger. They also do not take into effect any change in the price of the assets from a capitalisation of the new tax burdens. This static approach, however, does not mean that there is any assumption that compliance will be perfect, as I have used current *effective* tax rates to estimate revenues arising from expansion of the tax base. Secondly, as mentioned there data constraints that reduce the accuracy of the estimations. But all the data gaps have been filled with conservative assumptions (e.g. considering that "economic housing" gets a property tax benefit for 10-20 years, I have assumed that only a 20% of current stock of "economic housing" gets the benefit). When data gaps were too large, I have not tried to make estimations. The overall revenue results, however, should be considered a lower bound as there are a number of small reforms that I have not tried to estimate (due to substantial data gaps) but which should increase the additional revenues (though not much).[69]

VII. Conclusion

After the analysis done in this chapter, a few conclusions seem clear. First, taxes on wealth seem to be an area underexplored in developing countries. Indeed, the analysis has shown that even without imposing radical reforms, the tax revenues from these taxes could increase substantially. As the tax base on which these levies are imposed is the most unequally distributed, any increase in revenues from these taxes should positively affect the progressivity of the overall tax systems.

Secondly, it seems clear that more attention should be paid to these taxes. Indeed, their importance should not be minimised merely because they are not currently a substantial source of public revenues. On the contrary, the limited revenues raised through these taxes seems to result from this lack of attention to these taxes, which has allowed political economy obstacles to exploit several ways of eroding the tax base from these levies. This pattern is not entirely surprising, as these are the most progressive taxes on the system, so economic elites will have greater interest in influencing political discussion to restrict the role played by these taxes. Their equalising potential should guarantee more attention from both governments and tax authorities.

The chapter has also shown that revenues from taxes on wealth can be massively expanded even without adopting radical reforms. Indeed, there are currently so many anomalies in these taxes (arguably due to the little attention paid by political actors) that by simply removing those anomalies revenues should increase substantially.

Lastly, I have not proposed adopting a wealth tax in our case study, but this is not a principled conclusion, but a practical one. Indeed, I support the idea that a wealth tax can play a relevant role in contexts of high inequality (as found in most developing countries), but this should not be adopted until the administrative capacity to effectively enforcing it is in place. The negative effects on tax compliance and tax morale of adopting a tax which will be largely evaded should not be minimised. Thus, I argue that developing countries should first focus on building the administrative capacity that will place them in a position to effectively impose a wealth tax in the future.

[69] On inheritance tax, I have not estimated the revenue gains from phasing out of the exemption on life insurance proceeds and limiting the incentives for splitting inheritance by applying marginal tax rates to distant inheritors. On property tax, I have not estimated the revenue gains from moving to updating the exempt amount by the change in the Consumer Price Index (instead of the change in value of real estate). I have also assumed that moving towards market value does not increase the share of properties subject to the tax.

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Conclusion

This thesis has taken Chile as a case study in the search of tax progressivity in developing countries. I have done an in-depth analysis of Chile's tax code to find potential tax reforms that could contribute at reversing the inequality/progressivity paradox. In that search, I have identified reforms throughout the tax system that can enhance progressivity at a limited efficiency cost, while also pointing to some key aspects of the political discussion that could improve the political feasibility of the reforms.

The outcome of the analysis can be summarised in three main points. Firstly, the work strongly suggests that the lack of tax progressivity in developing countries is far from inevitable as the analysis has shown that there are deliberative tax design choices that considerably curb the progressive potential of the tax system. Secondly, there seems to be a strong case for not limiting the search for tax progressivity to the personal income tax, as many have suggested. Lastly, the reforms proposed in this thesis show that substantial redistributive gains can be achieved even without radical tax reforms. I will address each of these points separately.

1. The lack of progressivity is not inevitable

One of the key lessons that this work suggests is that the lack of progressivity in tax systems in developing countries is far from inevitable. There is no doubt that these economies have some features that might affect the ability to effectively implement progressive taxes (large agriculture sector, informal economy, etc.) but the design of the tax system seems deliberately intended to deliver only minimal progressivity (if at all). The analysis has shown that, in the Chilean case (but with indications that the patterns identified are present more extensively in developing countries) there are deliberative tax policy choices that substantially limit the redistributive potential of the tax system.

This is very clear when analysing the VAT and PIT. In the former case, the tax has been designed with none of the usual features that address the regressivity concerns of VAT. This is a deliberative decision departing from international practice. What is more surprising, though, is that Chile's VAT does accept multiple VAT exemptions (cultural and sporting events, transport, health services, education, financial services, etc.) for various (and, at time, dubious) reasons, but none for addressing regressivity concerns of VAT. This is even more puzzling when we analyse consumption patterns by income level, where two things appear very clear: (i) there are several commodities that show patterns of consumption that drop with income, which make them strong candidates for zero-rating in the name of tax progressivity, and (ii) that most of the currently exempted commodities show a consumption that increases with income, indicating that base broadening reform would be progressive.

When it comes to the PIT, the deliberative policy choices to curb tax progressivity become shockingly clear when an in-depth analysis is done of its design. Even if PITs in many developing countries look similar to PIT in developed economies (e.g. progressive schedule with top rate of 40%), once a more detailed analysis is conducted this apparent similarity completely vanishes. Indeed, the rate schedule is designed with far too many and far too wide tax brackets, leading to very moderate average tax rates even at extreme levels of income. Exemptions and deductions are abundant, usually uncapped and untargeted. More contrastingly, capital income is seldomly taxed, and on the rare occasions that it is there are preferential regimes and exemptions that makes it taxation little more than nominal.

Beyond the VAT and PIT, the work also showed that this regressive bias was also present in 'secondary' taxes. Taxes on wealth are similarly designed to levy only modest revenues even from those holding very large wealth. When it comes to inheritance tax, a seemingly 'standard' schedule (progressive rates up to 35%) conceals a design that ensures extremely modest average tax rates on very high levels of wealth. Property taxes also suffer from the same array of multiple detailed design choices that substantially limit its revenue and redistributive potential.

The work also deliberatively analysed 'minor' taxes such as excises, to see to what extent has this regressive bias crept into the entire tax system. Unsurprisingly, the analysis of excise taxation also showed that policy choices have been made in (almost complete) disregard for their distributional implications. More problematically, very high taxes on tobacco and alcohol (which are only justified to help addicted consumers reduce their consumption – to tackle 'internalities'-) seem to be used simply as easy sources of revenues, in absence of any wider public policy to help addicted smokers and drinkers stop (or reduce) their consumption. Similarly, the regressive bias is evident as the more heavily taxed of the usual 'sin goods' is the one more heavily consumed by the worse off (tobacco), while the least taxed is the one where its consumption more directly correlates with income (fuel).

This first finding of the thesis is both good and bad, depending on the perspective from which we analyse it. From the perspective of tax design, it is welcomed news as it means that there are fiscal policies available to tackle what I called the "inequality/progressivity" paradox in Chapter 1. In most cases, developing countries will have available tax policies which should enhance significantly the progressivity of their tax systems at reduced efficiency costs. And this thesis has pointed at which are those policies, although effective implementation requires a country-by-country analysis to confirm that the findings of our case study are also present in each specific jurisdiction.

It is, however, a less encouraging finding from the perspective of political economy. The fact that we find in our analysis such a widespread 'regressive bias' suggest that there are strong political economy constraints that have prevented these tax systems from achieving more tax progressivity. And such constraints might also prevent implementation of reforms proposed here. A full analysis of the mechanisms through which political economy issues have shaped tax policy in developing countries is certainly outside the scope of this work, but I have offered some ideas that could improve the political feasibility of progressive tax reforms in Chapter 3. This is a very interesting area where further research could be incredibly valuable to help bridge the gap between the findings of this thesis and their successful implementation.

2. Search for tax progressivity should be comprehensive in developing countries

Another key argument that arises from this thesis is that the search for tax progressivity in developing countries should not be restricted to only a few taxes in the system (e.g. PIT or taxes on wealth). This is an area where the conditions of developing countries seem to markedly depart from developed countries, so tax policy advice should take those differences into account.

Unlike most advanced economies, in developing countries the tax revenues arise mainly from consumption. At the same time, developing countries have shown a generalised failure to deliver effective PIT that can raise substantial revenues to offset the regressivity of consumption taxes. As long as this failure continues, developing countries should also look into potential distributional gains in other areas of the tax system.[1]

[1] Of course, the distributional gains should be balanced against the efficiency costs they entail. They should not be pursued regardless of their efficiency costs. But no taxes should be written off beforehand from the possibility of having available reforms that can produce (efficient) distributional gains.

The other element that supports this argument is that consumption patterns along the income distribution seem to increasingly differ in contexts with high inequality. This, in turn, result in the availability of items of consumption that are more heavily consumed (both in relative and absolute terms) by lower-income groups, where tax exemptions can have positive distributional effects. Chapter 4 has shown that there are available reforms to indirect taxation (VAT) that have a significant effect on the distributional outcome of the fiscal system.

A similar outcome has been found in the analysis of excise taxation, where the absence of a tax equity perspective in its design have significantly bias these taxes in regressive ways. Highlighting the regressive nature that excises tend to have demand that excises be part of broader public policy addressing problematic consumption of 'sin goods'. Otherwise, the tax system is simply exploiting people's addictions for the purpose of raising revenue. As long as consumption of 'sin goods' is concentrated in lower-income groups (as tobacco usually is) this will have a negative impact on inequality.

Moreover, the finding of a widespread presence of a 'regressive bias' through the tax system strongly suggest that if tax equity is not a consideration informing the design of *all* taxes in the system,[2] the 'regressive bias' will creep into those areas where tax equity is neglected, negatively effecting the overall distributional impact of the fiscal system.

3. Substantial redistributive gains without radical reforms

The last and maybe most important finding of this thesis is that progressive tax reforms entailing only limited efficiency costs can deliver substantial redistributive gains in developing countries. The reforms proposed here can be seen as roadmap for policymakers seeking politically feasible progressive tax policies that can address the high levels of inequality of developing countries while limiting the negative effects on the economy.

I have proposed reforms to VAT, excises, PIT and taxes on wealth and have (roughly) measured their distributional effects. Crucially, I have purposedly tried to avoid (or reduce as much as possible) the usual 'equity-efficiency' trade off. As a consequence, none of the reforms proposed in this work could be described as radical. Similarly, the entire reform package could not be described as an overhaul of the tax system. The reforms proposed are deliberatively limited in their scope and mindful of the efficiency costs and political feasibility, as a response to the political economy constraints that seem to have successfully enabled the emergence of the "inequality-progressivity" paradox.

Indeed, a description of the tax system before and after adopting all these reforms looks surprisingly similar (or similarly progressive), as the following table shows.

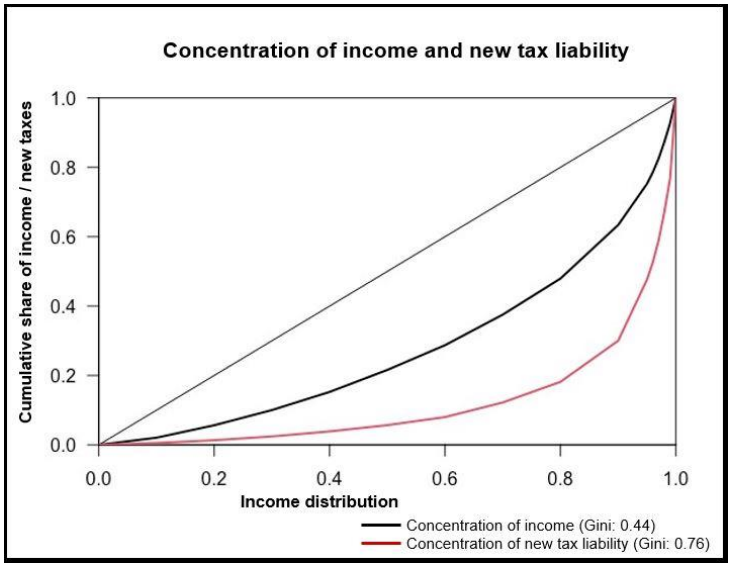
[2] The argument that tax equity should be a consideration in the design of *all* taxes does not mean that all taxes should be progressive in isolation. We are concerned about the progressivity of the overall fiscal system, not of individual taxes. But being aware of regressive elements in the tax system can help offset them through other fiscal interventions (both on the tax and the expenditure side). For instance: if tobacco consumption is concentrated in the worse off, it is pointless to try to make the excise on tobacco progressive. But being aware of its regressivity might highlight that we should use revenues to fund health programmes to help smokers reduce their tobacco consumption.

Table 25. Description of the Chile's tax system pre and post reforms

Tax	Current description	Description after implementation of proposed reforms
VAT	Single 19% rate, with limited exemptions	19% standard rate, with a very limited zero-rating regime and few exemptions
Tobacco	Combined 30% ad-valorem and £1.14 specific tax per 20-pack	Ad-valorem (62.3%) with specific floor tax. Specific tax of £1.94 per 20-pack and ad-valorem of 62.3%
Alcohol	20.5% tax on beer and wine and 31.5% for spirits	10% tax on beer, 36% tax on wine and 120% on spirits[3]
Fuel	£331 per m^3 of gasoline and £83 per m^3 of diesel	£530 per m^3 of gasoline and £249 per m^3 of diesel[4]
PIT (earned income)	Progressive rates from 4% to 40%	Progressive rates from 8% to 40%
PIT (capital income)	Progressive rates from 4% to 40%	Flat tax at 16% rate[5]
Inheritance tax	Progressive rates from 1% to 35%[6]	Progressive rates from 1% to 35%
Property tax	Progressive rates from 0.9% to 1.05%	Progressive rates from 1.2% to 1.4%
Wealth tax	No wealth tax	No wealth tax

Despite this absence of radical reforms, the distributional impact of the tax system is substantially improved, and the redistributive effect is large. Firstly, the estimations show that the reform package is very progressive, with a Kakwani index of 0.32. Details on how this estimation was done can be found in Appendix 5.

Figure 22. Kakwani index tax reform package



[3] Simplified legislative option for a progressive tax per unit of alcohol, applied at 2% per unit for beer, 3% per unit for wine and 4% per unit for spirits.

[4] Although these increases seem large, they are adopted from a Pigouvian and not redistributive perspective. The large increase is only due to the current under taxation of fuel in proportion to their externalities, so they are actually increasing the efficiency of the system. The new levels of taxation suggested are also consistent with international practice: the UK levies a £530 per m^3 on both fuel and diesel.

[5] With possible abatement system to give progressivity without undermining withholding of tax at source.

[6] Top statutory rate is 25% but it is increased by 20% (to 30%) for inheritances to distant relatives, and by 40% (to 35%) for inheritances unrelated persons.

Secondly, the adoption of all the reforms proposed in this work would reduce inequality to a significant extent. The effect of the tax reforms alone would reduce the Gini coefficient in Chile by about 4pp. This is a great outcome for a reform package that keeps efficiency costs to a minimum and does not propose any radical tax policies, as this suggest that these are politically feasible tax policies that could materially reduce the inequality of the country.

Table 26. Reynolds-Smolensky index tax reform package

	Gini (%)	Reynolds-Smolensky index
Original income Gini index	44.4	-
After VAT reforms	43.7	0.7
After Excises reforms[7]	43.8	-0.1
After Income tax reforms	41.7	2.1
After taxes on wealth reforms	40.7	1.0
Overall distributional impact		**3.7**

Furthermore, the reforms were suggested while being mindful of the need for revenues that developing countries have. Consequently, the reforms to all the taxes are revenue-enhancing. This further increases the positive distributional impact that the policy can have. I have estimated the distributional effect that a universal (equal) lump-sum transfer of all the additional revenues would have, and it is also large (decrease in Gini coefficient by a further 3pp.) Overall, the reform proposed here could reduce Gini coefficient by about 7pp.

Table 27. Reynolds-Smolensky index after lump-sum transfer additional revenues

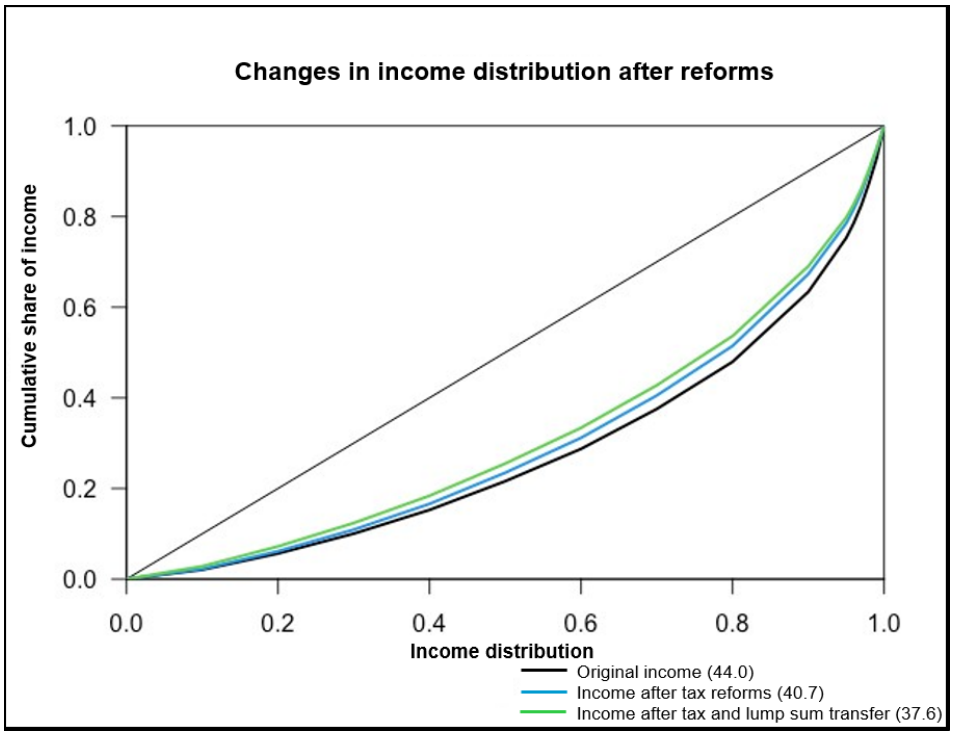
	Gini (%)	Reynolds-Smolensky index
Gini index income after tax reforms	40.7	-
After universal lump sum transfer[8]	37.6	3.1
Overall distributional impact of taxes and additional revenues		**6.8**

This is very large. As a reference, Atkinson (2015) defines as a salient change in inequality when the Gini coefficient increases or decreases by 3pp, so this would meet that definition by more than twice as much. The reduction is graphically represented in the Lorenz curves in the figure below.

[7] The excise reforms show a very slight regressivity, but this should not be problematic for 3 reasons. Firstly, I have not included in the estimations some of the most progressive reforms proposed in that area due to data constraints (I have not been able to estimate the effect of abolishing duty-free purchases of tobacco and alcohol). Secondly, all the regressive effect comes from the reform to fuel taxes which was based mainly on a Pigouvian perspective and on which we do not have the best data to estimate its potentially progressive effect (e.g. fuel consumption at the top percentiles). Lastly, since these are Pigouvian taxes we should ideally consider who would benefit from a reduction in consumption of the sin goods, which in most cases would be the lower-income households.

[8] I have also calculated the distributional effect of a lump sum transfer taking into account some inefficiency in the transfer of additional revenues back to households (the 'leaky bucket' analogy from Okun(2010)). Even assuming only 80% of additional revenue are transferred back in a lump-sum to households, the Gini coefficient of the lump-sum transfer is large (-2.5pp in Gini).

Figure 23. Lorenz curves for inequality before and after proposed reforms



Limitations of the work

Although this thesis has produced a broad tax reform package that could guide tax policy in developing countries, there are several limitations that must be kept in mind.

Firstly, tax policy is defined by its details. As such, a simple generalisation of this work to other developing countries is bound to be problematic and, most likely, unsuccessful. Consequently, caution should guide any application of this work beyond its case study. It should be taken as a road map that points to the likely shortfalls of tax systems in developing countries, but this needs to be confirmed with a thorough and detailed analysis of the tax code of specific countries. Furthermore, the reforms to address such shortfalls should also be designed after a detailed examination of the local tax code. The reforms proposed here emerged from such an analysis in our case study, and should be used as an indication of areas that may explain the general shortfalls of tax systems in developing countries, but which need to be assessed against the particular tax systems.

Secondly, the estimations of additional revenues and distributional effects presented here should not be taken as precise forecast of these outcomes. Instead, these should be taken as given an idea of the order of magnitudes that are involved in the analysis. The limitation on the estimates is mainly for two reasons: data availability and behavioural responses. Indeed, the available data is far from what one would ideally want to produce precise estimations. But it is sufficient to produce the sort of rough estimations that are required to understand the magnitude of the reforms analysed. Behavioural responses have not been tried to estimate, as it would make this work exceed its scope. This is not an economics work, and for that reason I have not engaged in discussions around the reasonable elasticities of tax bases that should be used to produce precise and reliable revenue estimates. But I have also not assumed perfect tax compliance, as I have started with the current tax revenues (which account for current tax evasion/avoidance) whenever possible. For example, the

proposal of reform of the fuel excise suggested increasing rate of gasoline tax by 60%. To estimate the additional revenues, I simply took the current revenues and applied the 60%. Other secondary sources of uncertainty of the distributional estimations arise from tax incidence assumptions and the impact that the informal economy can have on the analysis.

Third, this work has not analysed in detail the political constraints for adopting these reforms, as this would exceed the scope of the thesis. I do not underestimate the political side of tax policy by any means, and an in-depth political science or political economy work on such issues would be a very welcomed complement to this work. But the thesis has also not been completely indifferent to the political obstacles that tax reform face in developing countries. In particular, the thesis has refrained from analysing or proposing any 'radical' progressive tax reform as I recognise that political obstacles would almost certainly rule those out. Similarly, recognising the appalling record of developing countries in expanding the PIT, I have remained sceptical on whether it is feasible for these countries to turn the PIT into a significant source of revenue that can offset the regressivity of indirect taxes. This is the main reason why the thesis has started the search for tax progressivity within the indirect tax system in Part II.

Lastly, the thesis has focused the analysis on domestic tax policy, so the analysis should be complemented with other research focusing on the international dimension of taxation. Although the limitations imposed by international aspects of tax policy have been considered in the analysis and have been an implicit constraint to the suggested reform proposals (as mentioned in the Introduction) this dimension of tax policy requires a more in-depth analysis to ensure that the policy design appropriately interacts with the international tax system.

Final remarks

Despite the limitations abovementioned, I believe this thesis can be a key contribution to tackling inequality in developing countries through the tax system. Political obstacles will remain relevant, but this work will give willing politicians a clear road map of the alternatives available for progressive tax reforms and the substantial gains that can arise from them.

This thesis should also help vanish the idea that tax regressivity is an inevitable feature for developing countries. By showing the distributional potential of these reforms, it can convince politicians to spend political capital in progressive tax reforms. It also shows how substantial the additional revenues can be, which should act as an additional reason to spend the political capital required for adopting these reforms as the resulting revenues can fund much needed social programmes.

It can also inspire further research in this area. The thesis has used Chile as a case study, but most of the references to developing countries have been to Latin American countries. This means that there is a clear space for future research to test the findings in particular Latin American countries, African countries and beyond, and I very much look forward to such research.

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