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Jara Tamayo, Xavier & Simon, Agathe (2024) A European unemployment benefit to protect atypical workers. *Social Indicators Research*, 171(3), 967 - 986.

<https://doi.org/10.1007/s11205-023-03276-6>

<https://researchonline.lse.ac.uk/id/eprint/121121/>

Version: Published Version

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A European Unemployment Benefit to Protect Atypical Workers?

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Accepted: 5 December 2023
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Abstract

This paper evaluates the potential of a common unemployment insurance scheme for the Economic and Monetary Union (EMU-UI) to improve income protection of atypical workers, namely those in part-time and temporary contracts. Our approach relies on simulating entitlements to national unemployment insurance and the EMU-UI to assess their effects on the household disposable income of atypical workers in the event of unemployment. Our results show that the introduction of an EMU-UI would reduce coverage gaps and increase net replacement rates, especially for atypical workers, and would protect a large share of the workforce against the risk of poverty. Extending eligibility for the EMU-UI to the self-employed would further improve income protection, reducing their risk of falling into poverty in the event of unemployment.

Keywords Unemployment insurance · European Monetary Union · Microsimulation · Income protection · Atypical work · Poverty

JEL Classification C81 · H55 · I38

1 Introduction

The idea of a supranational fiscal instrument in the EU based on risk sharing is not new, dating back to proposals by Marjolin (1975), MacDougall (1977) or Italianer and Vanheukelen (1993). The subprime and sovereign debt crises have revived the debate on the need for a common budgetary instrument for the EMU to make it more resilient to shocks. The Van Rompuy report (2012), the Five Presidents' Report (Juncker et al., 2015) and the Meseberg declaration (2018) put this project back at the heart of the debate. This fiscal tool is often described as an unemployment benefit scheme as it would have three main functions. It would provide geographical insurance between member states as the budget would

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be pooled and redistributed between countries, sharing risk between EMU member states (Alcidi et al., 2016; Dolls et al., 2018). Secondly, this scheme would allow for intertemporal insurance as most EMU-UI proposals include the possibility for the EMU fund to incur debt. The third function of this scheme, on which this paper focuses, is enhancing income protection in the event of unemployment. The introduction of an EMU-UI would establish common minimum standards in terms of the eligibility criteria and generosity of unemployment benefit systems. This could strengthen the counter-cyclical capacity of national systems by improving the replacement and coverage rates of unemployment benefits which as things stand, leave large coverage gaps between countries (Esser et al., 2013).

The recent debate regarding the value of a common unemployment insurance system for the EMU (EMU-UI) could also be considered in the context of the requirements of the European Pillar of Social Rights, which proclaims under principle 12, that ‘regardless of the type and duration of their employment relationship, workers, and, under comparable conditions, the self-employed, have the right to fair and equal treatment regarding working conditions, access to social protection and training.’ In practice, existing unemployment benefit systems differ greatly between EU countries in terms of accessibility and generosity, as noted by Esser et al. (2013). In particular, atypical workers are less likely to access national unemployment insurance benefits and are more exposed to the risk of poverty (Jara Tamayo and Tumino 2020).

As atypical work, specifically temporary contracts, part-time work and self-employment, has become more common in recent years in EU countries (European Commission, 2018), an EMU-UI could establish common minimum protection standards for all types of workers in the event of unemployment, to ensure atypical workers are protected. The EMU-UI project seems even more relevant in the aftermath of the COVID-19 pandemic that affected economies throughout the Eurozone and forced countries to implement emergency policies to protect workers from the downturn, for instance by relaxing eligibility conditions for unemployment benefits to cover vulnerable workers who would not otherwise meet the requirements. Providing income protection to part-time workers and the self-employed was crucial and most EMU countries implemented specific schemes to protect them. The COVID crisis highlighted the importance of making unemployment benefit systems more accessible to all workers. Rather than modifying national systems individually, how would a common system of unemployment benefits perform?

The aim of this paper is to assess the extent to which a common EMU-UI could enhance income protection for atypical workers in the event of unemployment. Regarding the design of the EMU-UI, two main proposals have been put forward. The first is a contingent system that triggers payments based mainly on deviations in the unemployment rate from long-run tendencies and which is better described as a re-insurance system (Beblavy & Maselli, 2014; Beblavy et al., 2015; Carnot et al., 2017). The other proposal is a genuine system, consisting of a common unemployment benefit system, as discussed by the European Commission (2013, 2014), Dullien (2014), and Andor (2016) among others. One of the most complete and widespread proposals is Dullien et al.’s (2014, 2017). They propose a basic Eurozone-wide unemployment insurance scheme for short-term unemployment. As a common unemployment insurance, it would imply minimal standards for all member states. This EMU-UI would support the income of the unemployed at 50% of gross earnings for up to 12 months and would require contributions for at least 3 months in the last 12. We base our analysis mainly on the latter proposal and assess the level of income protection it would offer. More precisely, we make use of EUROMOD, the EU-wide tax-benefit model based on household survey data, to simulate individual transitions from work to unemployment and assess the distributional implications of an EMU-UI by computing

the potential coverage, net replacement rates and risk of poverty under national and EMU UI systems. We run the analysis for all workers and separate out results for part-time workers, workers with temporary contracts, the self-employed and the 3% most at risk of unemployment. We complement our analysis by presenting the budgetary implications of these EMU-UI proposals. To our knowledge, this is the first paper that provide insights into the income protection role of an EMU-UI for the specific case of atypical workers.

Our results confirm the disparities of access to unemployment benefits between EMU countries, especially for atypical workers. The potential coverage of national UI systems tends to be lower on average for atypical workers, being less than 60% in seven EMU countries for part-time and temporary contract workers. The net replacement rates of national systems are similar on average across the EMU for the working population as a whole but are more variable for temporary contract workers. We find that introducing an EMU-UI would increase the potential coverage of UI systems and net replacement rates in all countries but to a lesser extent in countries such as France, Belgium and Austria, with relatively generous national systems. The EMU-UI would fill existing gaps between countries by increasing potential coverage rates to above 70% in all countries and increasing net replacement rates where national systems are currently less generous. This scheme would also protect a significant portion of workers from falling into poverty on becoming unemployed, especially in Italy, Estonia and Ireland.

The article is organized as follows. Section 2 provides a brief literature review. Section 3 discusses the design of an EMU-UI. Section 4 describes the data and the methodology. Section 5 analyses the extent to which atypical workers would be protected by the introduction of an EMU-UI. Section 6 presents the results of an alternative scenario in which the self-employed would be entitled to an EMU-UI. The article ends with a concluding discussion.

2 Related Literature

This paper contributes to two strands of the literature. First, it extends the literature on the implications of a common unemployment benefit system for the Eurozone countries. Second, it expands the literature on atypical employment, access to social protection and the risk of poverty. In this section, we first discuss the rationale for implementing an EMU-UI, followed by the literature on the potential effects of an EMU-UI. Then, we provide an overview of the literature on atypical employment and the risk of poverty.

2.1 The Rationale for a Common Unemployment Benefits System

The creation of the Eurozone in 1999 was a response to the need for a common currency in order to achieve greater economic integration of European countries. As underlined by, Emerson et al. (1990) creating a single currency in Europe would lead to greater market integration and macroeconomic policy coordination would be more effective in addressing common shocks, thereby decreasing the need for fiscal policy adjustments.

However, sharing a common currency raises other challenges to be addressed. As highlighted by Mundell's (1961) seminal work on the theory of optimum currency areas, an optimal currency area would be achieved if its member countries share similar economic structures and levels of development, as this reduces the risk of asymmetric shocks and minimizes disparities among member countries. The formation of a currency area can lead

to significant benefits, including increased economic integration (Emerson, 1990; Padoa-Schioppa, 1987). Nevertheless, the loss of monetary policy autonomy to manage economic fluctuations requires alternative mechanisms for addressing imbalances and shocks (Meade, 1957; De Grauwe, 2020; Dornbusch, 1997; Krugman, 2012). These mechanisms usually include fiscal transfers and shared budgetary tools, to mitigate the impact of economic divergences within common currency areas (Farhi and Werning, 2017). For the Eurozone more specifically, many studies underline the importance of having a common budget for the Eurozone, to reach more economic stability and convergence (Baldwin & Giavazzi, 2015; O'Rourke & Taylor, 2013).

The challenges of currency areas, particularly in the context of asymmetric shocks and the loss of monetary policy autonomy, highlights the need for a common fiscal stabilizing power within these zones (Arestis & Sawyer, 2000; Buiter et al., 1993). Drawing on the experience of fiscal unions such as the United States, it is apparent that fiscal integration could offer considerable advantages to a monetary union such as the Eurozone (Sala-i-Martin & Sachs, 1991). A common stabilizing tool can help absorb and manage the impact of asymmetric shocks, promote stability and resilience, and facilitate fiscal policy coordination among member countries (Acocella & Pasimeni, 2018; Feldstein, 1997).

Given the challenges and the need for a common fiscal stabilizing power in currency areas such as the Eurozone, and particularly after the Great Recession, the literature has explored various options for stabilization mechanisms.¹ One proposal that has garnered attention is a European Unemployment Benefit System or European unemployment insurance for the Eurozone (EMU-UI). In fact, the main rationale for such instrument is to provide a common macroeconomic stabilization function to address asymmetric shocks. By pooling common resources to cover short-term unemployment, this system could help mitigate the effects of asymmetric shocks. It would act as an automatic stabilizer by providing direct transfers to support those affected by unemployment (Beblavy et al., 2015; Claeys et al., 2014; Dullien et al., 2014), enhancing the economic resilience of the Eurozone as a whole. In addition to its primary function as an automatic stabilizer, an EMU-UI could also enhance income protection for individuals in case of economic shocks, a key aspect that will be studied in this paper.

2.2 Implications of an EMU-UI

Previous research on the EMU-UI has mainly focused on the stabilizing power or the budgetary feasibility of the scheme. Dolls et al. (2018) assess the income stabilisation effect of a European unemployment insurance and budgetary issues related to its introduction. They run simulations from 2000–2013 of a genuine system with the same characteristics as proposed by Dullien (2013) (i.e. a 50% replacement rate (RR) for 12 months max., without capping), and calculate a stabilisation coefficient based on the change of disposable income for the unemployed. Their results suggest that the scheme would have a significant intertemporal and interregional stabilizing effects without permanent transfers in the long run. Lelouch and Sode (2014) find that countries such as Belgium, Germany, Austria,

¹ Some studies have assessed the stabilising power of fiscal federalism in the US to draw lessons for the EMU such as Sala-i-Martin and Sachs (1991), Bayoumi and Masson (1995), Cottarelli and Guerguil (2014) or Nikolov and Pasimeni (2022) for instance.

Luxembourg would have benefited from EMU-UI during the 2000s and Greece, Spain and Portugal would have benefited in the aftermath of the financial crisis of 2008.

At the macroeconomic level, Enderlein et al. (2013) investigate the stabilizing power of a cyclical shock absorber for the EMU and find that the budget would not lead to permanent transfers and that all countries would benefit from and contribute to the fund. Moyen et al. (2019) evaluate the optimality of a common unemployment insurance in a two-country model in terms of the level of transfers that stabilise consumption in peripheral Euro-zone countries and find that the optimal replacement rate would have a high counter-cyclical effect overall.

Concerning the income protection role of EMU-UI, Jara Tamayo and Sutherland (2014) and Jara et al. (2016) conducted simulations of a genuine EMU-wide unemployment insurance using EUROMOD to estimate potential income protection effects for individuals. They compare the economic situation of unemployed individuals under national systems and under the considered EMU-UI (50% wage-replacement payments for 12 months, with maximum and minimum levels) and find that the introduction of such a scheme would increase coverage rates and thereby increase household income stability and reduce the risk of poverty.

Our work complements this strand of the literature by focusing on the implications of an EMU-UI across different types of workers. More precisely, we examine the effects of an EMU-UI for the specific case of non-standard workers, who we compare separately to all workers and to workers with the highest risk of job loss. This sheds light on the potential performance of such a system for the most vulnerable workers in the event of an economic shocks. We also complement the literature on the EMU-UI by assessing an alternative design where the self-employed would be entitled to the common scheme.

2.3 Atypical Employment and Poverty

The second strand of literature, to which this work is related, is that of non-standard or atypical workers and more specifically their risk of poverty and access to social security. Previous research has shown that both part-time and temporary employment are associated with a higher risk of poverty in Europe (Van Lancker, 2013, Horemans et al., 2016, Horemans, 2018). This type of workers tends to face the so-called ‘double penalty’ as they tends to work less and have lower hourly wages, usually called a ‘wage penalty’. Although the theoretical literature suggests that temporary jobs might benefit from wage compensation for the lack of employment security, empirical evidence tends to show that temporary contract workers suffer from a wage penalty after controlling for job characteristics (see Booth et al. (2002), Blanchard and Landier (2002), among other). This type of workers tends to have more limited access to social security, especially in the case of the self-employed. Indeed, several studies have shown that the household context and the welfare state play a key role in determining the poverty risk of individuals in general, but also of certain types of workers such as atypical workers. Esping-Andersen’s (1990) seminal classification of welfare state regimes offers valuable insights into how different welfare systems interact with labour market outcomes and inequality. Building on this foundation, Korpi and Palme (1998) examine how welfare state institutions can affect income inequality and poverty, and highlighted that earnings-related benefits, such as unemployment benefits, rather than means-tested basic benefits targeted on specific groups, would be more efficient. This result, called the ‘social security paradox’, implies that allowing vulnerable groups such as atypical workers to have access to earnings-related benefits such as unemployment benefits

would be crucial. Works such as Nelson (2004) confirmed the results of Korpi and Palme (1998) and highlighted the key role of social insurance program, including unemployment insurance, to alleviate poverty.

Thus, accessibility to unemployment benefits systems would play an important role in protecting atypical workers in case of job loss. However, Matsaganis et al. (2016) and Jara Tamayo and Tumino (2020) highlighted the strong gap in terms of access to unemployment benefits between standard and non-standard workers.

As Jara Tamayo and Tumino (2020), we also use microsimulation techniques to assess entitlement of atypical workers to national unemployment benefits. However, our study refines the definition of non-standard workers by providing separate analysis for part-time workers, temporary contract workers or the self-employed.² We further assess the additional income protection provided by the EMU-UI to this category of workers.

3 The Architecture of an EMU-Wide Unemployment Insurance

As mentioned above, different designs for the EMU-UI have been proposed and analyzed in the literature. They vary mainly in terms of their duration, typically from the 3rd month of unemployment to the 12th month of unemployment, as this corresponds to short-term unemployment (the most cyclical kind). They do not cover frictional unemployment (considered here as the first three months) and long-term unemployment (from the 12th month onward). Note that passing from a national to a supranational scheme in the third month of unemployment may be administratively complex and it may be easier to have supranational coverage right from the first month of unemployment, as suggested by Beblavy and Lenaerts (2017).

Regarding the level of benefits, the most common proposal is a replacement rate of 50% of previous gross wages as this has been shown to be a sufficient level of support without setting an unemployment trap (Krueger & Mueller, 2010). Capping at at 150% of national average earnings has been considered by Beblavy and Lenaerts (2017) among others. Jara et al. (2016) also considered a floor at 30% of average earnings. Delpla (2012) proposed a cap of 2000 euros per months in all countries. For eligibility, the rule is commonly 3 months of contributions over the past 12 months. This would presumably have important implications for the coverage rates of the benefit scheme.

Based notably on the proposals of Beblavy and Lenaerts (2017),³ we introduce an EMU-UI with the following characteristics: coverage from the **1st to the 12th month** of unemployment, a common replacement rate of **50% of previous earnings**, and an eligibility requirement of at least **3 months of contributions in the last 12**. Unemployment benefits are accessible for all employed individuals younger than 64 years old. We also consider an alternative scenario in which the EMU-UI also covers the self-employed. This alternative should have a strong effect on generosity levels as the self-employed are currently not covered in many countries.

² Jara Tamayo and Tumino (2020) identify non-standard workers in terms of individual work intensity based on number of hours and months worked over the year.

³ We based our EMU-UI reform on Dullien's (2013) proposal as well as on the V7 proposal among the 18 alternative programs in *Design of European Unemployment Benefit Scheme* by Beblavy and Lenaerts (2017).

The EMU-UI considered here is topped-up by national systems to avoid any decrease in benefits after implementation. The system is thereby designed to ensure workers in all countries benefit, with national systems providing any top-ups required where existing schemes are more generous. EMU benefits are otherwise treated in the same way as existing unemployment benefits in national tax-benefit systems. Here, we do not consider the potential mechanisms to finance this benefit but we provide an assessment of the budgetary cost related to it.

4 Data and Methodology

4.1 The European Tax-Benefit Model EUROMOD

To analyse the entitlement and income protection effects of the European unemployment benefit scheme, we run counterfactual simulations using EUROMOD.⁴ EUROMOD is the European tax-benefit microsimulation model based on EU-SILC data (European Union Statistics on Income and Living Conditions) from Eurostat. This tax-benefit model allows fiscal and social policies in place in all European countries to be simulated by calculating welfare entitlements and tax liabilities for each individual in each household. Based on nationally representative micro data, EUROMOD can be used to perform distributional analysis and assess the budgetary and work incentive effects of policy reforms. The underlying micro-data used for the simulations in this study come from EU-SILC 2016.⁵ Our simulations are based on the 2018 tax-benefit rules of European countries. Market incomes and non-simulated tax-benefit instruments in the data are adjusted to 2018 levels using source-specific updating factors.

Our analysis is static, in the sense that behavioural responses are not considered, for example, individuals' supply of labour, which may be affected by the reform. We assume full compliance with national policies and the EMU-UI and do not consider tax evasion or benefit non take-up.

4.2 Definition of Atypical Workers

We use the European Commission's (2016) definition of atypical work, namely self-employment and employment on uncommon types of contract including part-time work, temporary work, fixed-term work, and seasonal work. The definition of what constitutes atypical work is a matter of debate as the share of non-standard employment in total employment has significantly increased, and new forms of work have been observed over

⁴ The results presented here are based on EUROMOD version 11.0+. Originally maintained, developed and managed by the Institute for Social and Economic Research (ISER), since 2021 EUROMOD is maintained, developed and managed by the Joint Research Centre (JRC) of the European Commission, in collaboration with EUROSTAT and national teams from the EU countries. We are indebted to the many people who have contributed to the development of EUROMOD. The results and their interpretation are the authors' responsibility.

⁵ Our analysis relies on the simulations of transitions from work to unemployment for all individuals observed in work in the data. For this reason, a data year not affected by economic crises is the most suitable to capture the situation of the labour market in regular times. EU-SILC 2016 was the latest data available for EUROMOD simulations at the time of writing the paper.

the past years. Atypical or non-standard work is generally understood as opposed to “standard” work, considered as full-year full-time employment. In previous studies, notably by Jara Tamayo and Tumino (2020), atypical workers are defined in terms of work intensity as (i) employees with low work intensity or (ii) the self-employed. Work intensity is computed based on the number of months and hours worked during a reference year. However, this definition is potentially restrictive as the type of contract is not taken into account. We extend this analysis in ours by using a more precise definition of atypical workers.

We use information on contract types from the EU-SILC database on which EURO-MOD data are based. We separately analyze three groups of workers (i) All workers (ii) temporary contract workers, (iii) individuals on part-time contracts (based on hours worked per week) in line with the EU Commission’s definition of atypical workers, rather than using a proxy for work intensity as in Jara Tamayo and Tumino (2020).

In this paper, we investigate the effects that introducing an EMU-UI would have on income protection for all workers, including atypical workers, by grouping them precisely in terms of the characteristics that make them vulnerable (i.e. part-time and temporary contract work).

The prevalence of atypical workers according to this definition is fairly heterogeneous across the EMU. The share of part-time workers ranges from less than 10% of the working population in Slovenia and Slovakia to more than 30% in Ireland, Italy and the Netherlands. On average, 21% of the working population in the EMU works less than 35 h per week. The prevalence of temporary contract workers is less variable as they represent less than 10% of the working population in most countries. The share of temporary contract workers is nevertheless more than 10% of the working population in France and Spain. The share of the self-employed in the working population is more heterogeneous across the EMU, ranging from around 6% in Luxembourg to more than 30% in Greece (see Figure B1 in Online Appendix B for more information).

4.3 Simulating Transitions from Work to Unemployment

In order to assess the potential income protection provided by the EMU-UI, we move people from work to unemployment in the data (Figari et al., 2011; Fernandez Salgado et al., 2013, Jara Tamayo and Tumino 2020) and analyse UI effects for these ‘newly unemployed’ individuals.⁶ This allows us to compare disposable incomes in work and unemployment both with and without the EMU-UI. Simulating unemployment benefits for currently employed workers is extremely useful to understand how the UI system protects workers from income loss in case of unemployment. Information such as previous contributions or earnings are needed to simulate entitlements to UI and levels of benefits. This information is usually not available for the unemployed in survey data, as information on their work history is typically lacking. However, this information can be proxied by month in employment for individuals in work, when they are moved to unemployment.

Following Jara Tamayo and Tumino (2020) we simulate a transition from work to unemployment for each worker (see section A1 in Online Appendix A for methodological details). An important piece of information needed to calculate unemployment

⁶ As noted by Jara Tamayo and Tumino (2020) simulating transitions to unemployment for individuals currently in work in the data is particularly useful to study the situation of atypical workers in the event of unemployment because, in many countries, they represent a small fraction of the working population and a sufficiently large sample of observations is needed.

benefits is the length of unemployment periods. Previous studies by Jara Tamayo and Tumino (2020) simply assumed that the number of months in unemployment was equal to the number of months worked during the reference year preceding the simulated transition. This assumption seems restrictive and questionable. It seems unlikely indeed that individuals who have worked for longer in the preceding year should remain unemployed for longer than those who have worked less. In terms of capturing the effects of EMU-UI on very short-term unemployment (1–2 months of unemployment) furthermore, these individuals would never be covered under this assumption because of eligibility requirements (at least 3 months of work).

We improve on this approach in our simulation of transitions to unemployment by explicitly estimating the length of unemployment spells according to individual and job characteristics. We then use predicted unemployment duration in our analysis instead of taking the months of employment as done by Jara Tamayo and Tumino (2020) (see section A1 in Online Appendix A for methodological details).

4.4 Workers with the Highest Risk of Unemployment

As mentioned in the previous section, we focus on all atypical workers, make them unemployed and assign them an estimated unemployment duration. These workers may have different characteristics from the currently unemployed. In order to also understand the effect of EMU-UI on a population similar to the currently short-term unemployed we select individuals with the highest risk of losing their jobs, as done previously by Jara et al. (2016). Contrary to Jara et al. (2016), who use a 2% threshold, we select 3% of individuals, corresponding roughly to the average share of short-term unemployed under a large economic shock in the EU, to increase sample size (selecting just 2% of workers yielded too small samples in some countries) and obtain more robust results. A shock of this size is not unrealistic in the Eurozone, considering that the employment rate in Europe decreased by 2.5% from the first quarter of 2008 to the end of 2010 as a result of the subprime and sovereign debt crises. The decrease in employment from 2007 to 2011 was greater than 3% in eight Eurozone countries and up to 15% in Estonia. For more details, see Anderton et al. (2012).

In order to select this worker group, we estimate the probability of becoming unemployed for current workers in each country according to individual and job characteristics (see section A2 in Online Appendix A for methodological details).

5 The Effect of an EMU-UI

In this section, we present how national unemployment insurance systems perform in terms of protecting incomes of non-standard workers in the event of unemployment, and analyse the value added of the simulated EMU-UI in terms of additional protection. To measure income protection, we rely on the three key indicators: the potential coverage rate, the net replacement rate and the risk of poverty. For each indicator, we present separately the results for all workers, part-time and temporary contract workers, and the 3% at higher risk of unemployment. For part-timers, we also present results by gender, given the gendered dimension of this type of contract, in which women are over-represented.



Fig. 1 Potential coverage rate by worker type. Note: Countries ranked by the share of part-time workers. Official country acronyms used. (Source: Authors' elaboration using EUROMOD I1.0+ data)

5.1 Potential Coverage

One important indicator of UI systems is their coverage rate. Potential coverage measures the percentage of workers who would be covered by unemployment insurance schemes in the event of unemployment. This typically depends on work history-related eligibility conditions (number of months of work in the preceding year). We consider the potential coverage of the entire workforce, as opposed to actual coverage, which is based on unemployed individuals currently receiving benefits. Note that the potential coverage rates calculated here differ from UI coverage statistics. Standard statistics often include the long-term unemployed whereas in our case we focus only on the short-term unemployed (less than 1 year of unemployment). The non take-up of benefits is also not taken into account in our analysis and the current workers considered may not be representative of actual unemployed individuals.

We present the results separately for the working population as a whole, part-time workers, temporary contract workers and the 3% of workers with the highest risk of unemployment. Figure 1 shows the potential coverage rates of national UI systems by worker type as well as the additional coverage that would result from the introduction of an EMU-UI. The underlying data can be found in Online Appendix B (see Table B6).

Our analysis shows that the coverage rates of national UI systems vary considerably between countries, which is consistent with national coverage rate statistics and with previous findings (Jara et al., 2016). Part-time workers and temporary contract workers have lower than average coverage rates in general, and there is more variability between countries (as found by Jara Tamayo and Tumino, 2020). This is consistent with the fact that these workers tend to have shorter contribution histories and do not always meet the eligibility criteria of national systems.

Averaging over all workers, the potential coverage rates of national UI range from 43.29% for Malta to 93.42% for Luxembourg, with rates in most countries around 65–80%. According to these results, introducing EMU-UI would increase potential coverage in all countries (i.e. it would allow a larger proportion of workers to access unemployment benefits as the eligibility conditions are less restrictive than in all countries). The additional coverage is limited however, except in Malta where coverage would increase by 40.24 percentage points, and to a lesser extent in Lithuania, Estonia and Slovakia, countries that all have stringent eligibility conditions for national UI. In Estonia for example, the necessary contribution period is 1 year in the last 3, and in Slovakia, 24 months' contribution in the last 48 are required. The modest increase in coverage under EMU-UI in countries such as Greece, Italy, Luxembourg and France is explained by the less stringent eligibility conditions of their national UI schemes. In these countries, workers only need to have worked between 4 and 6 months in the preceding year to be eligible to UI.

Part-time workers, who typically have lower work intensity, have lower potential coverage rates as a result, as shown already by Jara Tamayo and Tumino (2020). The potential coverage of part-time workers is lower than average under the current systems in most countries. In Slovakia, Portugal, Malta, Latvia, Lithuania and Estonia, less than 50% of part-time workers would have access to unemployment benefits were they to lose their jobs. The introduction of an EMU-UI would increase the potential coverage rate for these workers more than it would overall, with increases ranging from 1.91 percentage points in France (which already has high potential coverage as the national system is relatively generous) to 32.25 percentage points for Slovakia. Under the the considered EMU-UI, the potential coverage of part-time workers would be above 65% in all EMU countries. Results by gender show that the low coverage of national unemployment insurance systems among part-time workers is mainly driven by the situation of women in part-time work (see Table B10 in Online Appendix B for more details). In all countries, there is a gap between men and women in terms of accessibility to unemployment benefits. The coverage rate for women is systematically lower than for men (except for Austria where it is almost similar). In half of the EMU countries (9 over 19), less than 50% of women in part-time have access to national unemployment benefits; this rate being particularly low in Finland, Malta and Slovakia. For men, the coverage rate is above 60% in all countries except for Finland and Slovakia. The gender gap in terms of coverage rate of UI is relatively high in Belgium, Spain, Cyprus, and Malta. The EMU-UI would increase more substantially the potential coverage rate for women than men. On average, the coverage rate would increase by 17% for women and 14% for men. The largest increases for women are observed in Spain, Latvia, Lithuania, Portugal and Slovakia.

Very few individuals were reported as temporary contract workers in our database so the sample sizes for this category of workers are small (or for Italy, zero). Potential coverage under national systems for these workers is much lower than it is for workers in general. The proportion of individuals on temporary contracts potentially covered by national systems in case of unemployment is only greater than 60% in eight countries. The introduction of EMU-UI would lead to a larger increase in potential coverage rates for these workers than in general, up to around 75–85% in most countries. Once again, the gain in coverage under EMU-UI would be relatively less substantial in countries with looser UI eligibility criteria such as France, Luxembourg and Cyprus.

For the 3% of workers at greatest risk of becoming unemployed, the coverage rate of national UI systems is lower than the average for all workers in some countries (Belgium Ireland, Malta and to a lesser extent, Italy and Slovakia), but close to average in others, which suggests that this part of the population seems to be representative of all workers.



Fig. 2 Net replacement rates by type of workers. Note: Countries ranked by the share of part-time workers. Official country acronyms used. (Source: Authors' elaboration using EUROMOD I1.0+ data)

The increase in potential coverage under the considered EMU-UI would be particularly high for Belgium, Estonia, Malta and Slovakia, and coverage rates would be above 80% in most countries after the reform. In other countries such as Austria, Germany, Greece and Portugal, where coverage rates for these workers are already high, the EMU-UI would increase coverage less than for other groups of workers. Note that since sample sizes were small for this worker category in some countries (Cyprus, Latvia, Ireland, and Belgium) these results should be interpreted with caution.

5.2 Net Replacement Rates

The net replacement rate (NRR) is an indicator of income protection that measures the proportion of income maintained by social benefits in the event of unemployment. NRR is also a measure of the incentives for unemployed individuals to re-enter the labour market. It is defined as household disposable income in unemployment, Y^U_i , divided by the disposable income in employment, Y^W_i :

$$NRR_i = \frac{Y^U_i}{Y^W_i}$$

NRRs are calculated for each earner in the household separately, assuming that household members do not change behaviour when another member of the household becomes unemployed.

Intuitively, NRRs should range from 0 and 100% but specific tax and benefit instruments can push NRRs above 100% as unemployment benefits can exceed disposable income in

work, especially for low earners and atypical workers. In our paper, if NRR is negative, we exclude the first percentile of the sample and if NRR is higher than 150%, we exclude the top percentile of the sample, in order to avoid that 'outliers' bias the results, especially for small sample groups.

Figure 2 shows the NRRs for all worker types under national UI systems along with the increases the considered EMU-UI would induce (see Table B7 in Online Appendix B for more details). Averaged over all workers, national NRRs range from 58.95% in Malta to 77.43% in Luxembourg, and are about 60–70% in most countries. Introducing the EMU-UI would increase NRRs by a small amount in all countries. The increases would be larger in Spain, Italy and Slovakia, possibly because replacement rates are currently quite low in Slovakia and the unemployed are only covered for 6 months with tapered benefits in Spain and Italy.

NRRs for part-time workers are much higher than for other types and EMU-UI would only lead to marginal increases. Although counterintuitive, this may be explained by the fact that the income lost when part-time workers are made redundant represents just a small fraction of household disposable income. This is in line with Jara Tamayo and Tumino (2020) who show that household members' income is a determining factor in the NRRs of these low-intensity workers. Table B10 in the appendix shows little differences in NRRs across gender, with NRRs slightly higher for women than men (except for Lithuania and Slovakia). The effect of the EMU-UI is in general small except in Spain for men and women, and Italy for men.

For workers on temporary contracts, Fig. 2 shows that NRRs are lower than average, with values ranging from 36.81% in Latvia to 69.18% in Luxembourg. Introducing the EMU-UI would increase NRRs for these workers in all countries, and lead to large increases in Spain, Ireland and Italy. The considered EMU-UI would therefore have a significant effect on this segment of the population, who are less likely to be eligible for UI and have more limited access to other forms of benefits than other groups of workers.

For the 3% of workers at greatest risk of becoming unemployed, we find that NRRs vary across the EMU but are in general lower than for other types of workers, with values under 60% in many countries. At baseline, under national systems, NRRs are only above 70% in Greece, Lithuania and Luxembourg. Under the considered EMU-UI scheme, NRRs for these workers would be increased by more than 10 percentage points in Italy, Spain and Estonia, but would remain below 60% in many countries and change little at all in Malta, the Netherlands, Portugal, Slovenia and Austria.

5.3 Risk of Poverty

In this section, we evaluate the role of the EMU-UI in protecting individuals from unemployment-related poverty. As becoming unemployed increases the risk of poverty, we analyze the risk of poverty for atypical workers before and after becoming unemployed. Poverty is defined here as disposable income less than 60% of the median equivalized disposable income in the baseline scenario (before entering unemployment). We calculate the share of all workers, part-time workers and temporary contract workers who would fall into poverty on becoming unemployed under national and EMU-UI systems.

Figure 3 shows, for both types of workers, the proportion of individuals in poverty while still in work, the proportion of individuals who would fall into poverty on losing their jobs even with EMU-UI, and the share of individuals protected from poverty by the EMU-UI system.

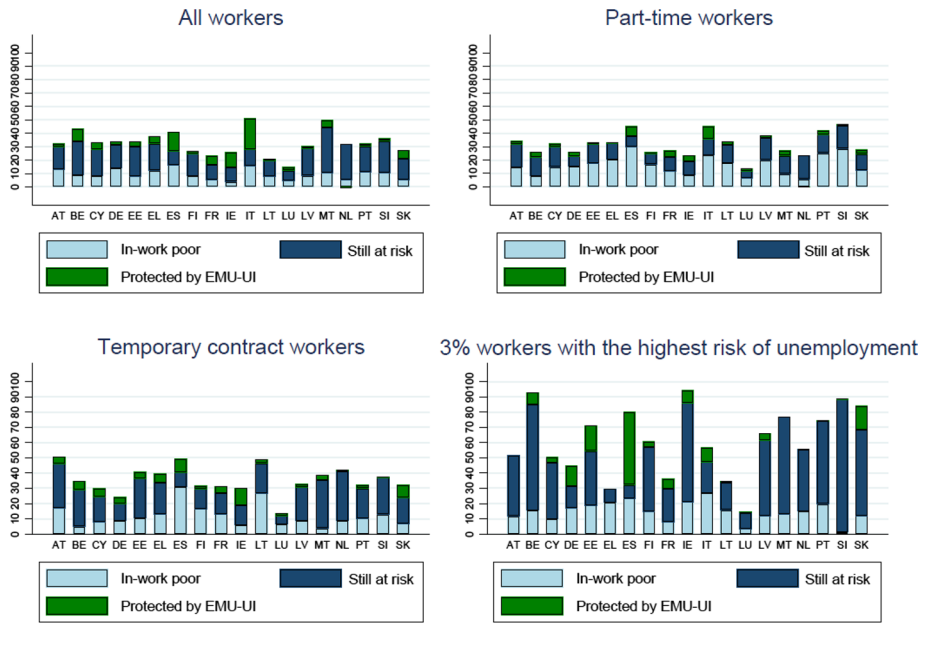


Fig. 3 Poverty rates by type of workers. Note: Countries ranked by the share of part-time workers. Official country acronyms used. (Source: Authors' elaboration using EUROMOD 11.0 + data)

The proportion of workers in poverty is around 8–10% in most countries, lower than 6% in France, Luxembourg, Ireland and Slovakia, and closer to 20% in Spain, Italy and Germany. Values range from 3.91% in Ireland to 16.35% in Spain. The introduction of EMU-UI would on average protect around 3% of workers from poverty in the event of unemployment. In Italy, where under national UI, the proportion of workers at risk of poverty on becoming unemployed is particularly high (around 35), the EMU-UI would reduce the unemployment-related poverty rate by 22 percentage points.

Part-time workers are more likely to experience in-work poverty, particularly in Spain, Germany, Portugal and Slovenia, meaning that the share at risk of entering poverty on becoming unemployed is lower than for workers in general. Their contribution to the household's disposable income is relatively small, thus, the job loss has little impact on household income. The average rate of in-work poverty for part-time workers across the EMU is about 18% and around 13% are at risk of poverty on becoming unemployed. The considered EMU-UI scheme would protect significant proportions of part-time workers from unemployment-induced poverty, particularly in Austria and Italy. In Austria, this is probably because replacement rates are less generous than in other EMU countries (55% of net previous income) and eligibility conditions stricter.

In general, in-work poverty is more prevalent among women in part-time work (see Table B10 in Online Appendix B). On average, 20% of women in part-time work are working poor, compared to 11% of part-time men. However, there are important differences in the prevalence of in-work poverty among women across countries. The share of working poor part-time women ranges between 13.1% in Belgium to 33.98%

in Slovenia. Only in Belgium, Germany and Estonia, the in-work poverty rate is higher among men than women in part-time work. Our results show that the EMU-UI would strongly decrease the risk of poverty (in case of job loss) for women in part-time, as the share of women protected by the EMU-UI in the event of unemployment is 3.15% on average for all countries and up to 12% in Luxembourg. The share of protected individuals is lower for men (2.6% on average). The EMU-UI could thus play a key role in protecting women working part-time in the event of unemployment.

The share of temporary contract workers at risk of poverty on becoming unemployed is high, in part because it is difficult for these workers to access UI systems, and the additional protection offered by the EMU-UI scheme is generally low. In Spain, Ireland and Slovakia however, countries with strict UI eligibility conditions, we find that EMU-UI would protect a considerable share of temporary workers.

For the last subgroup, the 3% of workers at greatest risk of unemployment, the proportion of individuals at risk of poverty is particularly high in comparison with other categories of workers, especially in Belgium, Ireland, Slovenia, Malta and Portugal. The rate of in-work poverty is 10–20% for most countries, except for Italy (above 20%) and Cyprus, France, Luxembourg and Slovenia (below 10%). While the EMU-UI would reduce the share of these workers at risk of unemployment-related poverty in some countries, notably Spain, Estonia and Italy, it would have no such effect in many others, even in those such as Malta, Slovenia, Portugal and the Netherlands where the proportion of at-risk individuals is high.

In summary, the overall effect of the considered EMU-UI scheme with respect to poverty would be to slightly increase protection for all workers, including part time workers, but to a lesser extent in countries such as France, Luxembourg, and the Netherlands, where poverty rates are low and existing unemployment benefit systems generous. See Table B8 in Online Appendix B for more details.

5.4 An Alternative Scenario: An EMU-UI Accessible for the Self-employed

Results for the self-employed have so far not been presented because the considered EMU-UI would have no effect on this group, as they are not entitled to the benefit (for more details on existing proposals, see Beblavy et al. (2017) who present 18 alternative EMU-UI schemes, none of which consider coverage for the self-employed). However, self-employment rates are increasing and are already high in some countries (see part 4.2). This group of atypical workers also has poor access to social protection, notably to unemployment insurance systems. In some EMU countries (Finland, Luxembourg, Slovenia and Slovakia) the self-employed are eligible to unemployment insurance under similar conditions as employees and this is also possible for certain categories of the self-employed in Ireland, Lithuania and Portugal. In Spain, Austria and Germany (under certain conditions), they can choose to participate in the UI system.⁷ Jara Tamayo and Tumino (2020) show that NRRs for the self-employed vary widely, and that they have higher rates of in-work poverty and less protection against poverty in the event of unemployment than other types of workers.

⁷ Information on the accessibility of national UI systems for the self-employed was collected from Jara Tamayo and Tumino (2020), the Mutual Information System on Social Protection database (MISSOC: <https://www.missoc.org/>) and the Euromod country reports (<https://www.euromod.ac.uk/using-euromod/country-reports>).

Given the low income protection of the self-employed, it seems relevant to consider alternative EMU-UI schemes better adapted to this form of work.

Here, we consider an EMU-UI system with the exact same characteristics as above but now with coverage for the self-employed. The eligibility conditions are the same, i.e. 3 months of (self-employed) work in the past 12, with a replacement rate of 50% of previous average monthly (self-employment) income. Figure B2 in Online Appendix B shows what effects opening the EMU-UI to the self-employed would have on potential coverage rates, NRRs, and the risk of poverty.

Regarding potential coverage rates, the self-employed are currently not covered at all in most countries, and introducing the proposed EMU-UI scheme would increase coverage rates to around 90%, except in Ireland where it would be under 80%. In Finland, Luxembourg and Slovenia, where the self-employed are already eligible to unemployment benefits under similar conditions as employees, coverage rates are already high and would not change.⁸

NRRs for the self-employed vary from 51.65% in Lithuania to 82.69% for Luxembourg, in line with the variability found by Jara Tamayo and Tumino (2020). In Estonia, Finland, Luxembourg, Slovenia and Slovakia, NRRs are already high (above 70%) without EMU-UI. In Greece, Spain and Italy however, introducing the EMU-UI for the self-employed, would substantially increase their NRRs. In the case of Greece indeed, even though the self-employed are covered in principle by UI, the strict eligibility conditions deny access in practice for most self-employed workers. In other countries, introducing this EMU-UI would also increase NRRs but to a lesser extent.

In-work poverty rates for the self-employed are relatively high, especially in Latvia, Slovenia, Italy and Spain, where more than 20% of the self-employed are poor. EMU-UI coverage would substantially reduce unemployment-related risk for the self-employed, especially in Germany, Greece, Spain, Lithuania and Portugal. The increases in the proportion of the self-employed protected from poverty would range from 0.57 percentage points in Austria to 22.63 percentage points in Greece. Note however that even with this type of EMU-UI, the share of the self-employed at risk of poverty in the event of unemployment would remain quite high, at 18.33% on average.

6 Budgetary Costs

We now consider the budgetary implications of the EMU-UI schemes. Based on Jara Tamayo and Tumino (2020), we calculate the associated percentage increase in average net transfers (all benefits including unemployment benefits minus taxes) paid to workers (both employed and self-employed) in the event of unemployment. Figure B3 in Online Appendix B shows that the basic EMU-UI scheme would lead to an increase in average transfers of more than 60% in Austria, Belgium, Spain and Slovenia, and more than 100% in Ireland and Malta. In contrast, net transfers would change very little under EMU-UI in Cyprus, Germany, Greece, Lithuania, Luxembourg, Latvia, Netherlands and Portugal.

⁸ In our analysis, national UI schemes are simulated for the self-employed only in those countries where this category is compulsorily covered by the general national UI scheme. The only exception is Greece, where the self-employed are compulsorily covered, but the stringent eligibility criteria cannot be simulated with the data. In countries where the self-employed can join national UI schemes voluntarily, we are unable to simulate their eligibility.

Regarding the additional cost of opening EMU-UI to the self-employed (the dark blue bars in Figure B3), the increase in transfers would be low (under 5%) in a majority of countries (11/19). The increase would be much higher however in Italy (37%) and Greece (28%), probably because of the high rate of self-employment in these countries (28.85% in Greece and 20.11% in Italy).

7 Concluding Discussion

This paper investigates the effects introducing an EMU-UI scheme would have on coverage rates, income replacement and poverty reduction in the EMU, with a focus on atypical workers. The EMU-UI scheme simulated in this paper is based on several proposals currently under discussion. The common standards and minimum requirement this implies for all countries reveals the gaps in current national UI systems and the need for more income support in some countries. The effects of this EMU-UI scheme are simulated for all individuals currently in work, as well as for individuals in part time work, on temporary contracts and for the 3% most at risk of unemployment. We also consider an alternative more inclusive scenario in which EMU-UI is also accessible for the self-employed.

Our analysis indicates that the prevalence of atypical workers and their access to benefits vary considerably between EMU countries. In addition, we emphasize the existing heterogeneity of access to unemployment benefits in the EMU and in terms of the share of income preserved in case of unemployment. Implementing an EMU-UI would increase coverage rates, especially for atypical workers, the most vulnerable in the labour market. The basic EMU-UI scheme considered would also provide a higher level of income protection in the case of unemployment. The increase in potential coverage and NRR varies between countries depending on how generous current national UI systems are. Moreover, the EMU-UI scheme would protect more workers from poverty in the event of unemployment, especially part-time workers. The situation for the self-employed varies widely between countries but they generally have lower access to UI systems and are at greater risk of poverty than other types of workers. Opening EMU-UI to the self-employed would substantially increase NRRs and would significantly reduce poverty rates among these workers.

In essence, this analysis highlights the uneven access to unemployment benefits across different types of workers in the EMU. The significant gaps in access to unemployment insurance for atypical workers reflect that existing social protection systems in Europe are still designed to suit mostly the traditional employment model, which typically involves stable, full-time employment over an extended period (Schoukens & Barrio, 2017). In fact, the inadequacy of unemployment benefit systems to protect all forms of employment became more evident during the COVID-19 crisis. Non-standard workers were not only more likely to be affected by the crisis but also less likely to have access to social protection. To face this unprecedented economic shock, countries had to take exceptional measures to give atypical workers access to unemployment insurance. The lack of access to unemployment insurance for self-employed workers proved to be a common problem. Many EU countries either opened access to UI systems to the self-employed, relaxed eligibility conditions, or created emergency support funds for the self-employed (Denk & Königs, 2022).

These gaps in social protection should, therefore, be addressed, especially given the continuing shifts from standard full-time and open-ended employment to more flexible

forms of employment that European labour markets have been experiencing. Since 2000, for instance, temporary employment has represented the majority of job growth in Europe (Vacas-Soriano, 2015). As such, there is a need to rethink unemployment insurance, and more generally social protection, in Europe taking into consideration the changing nature of jobs. The European Pillar of Social Rights already refers to the equal treatment of different types of work regarding working condition and access to social protection. Therefore, concrete proposals at the national and EMU level should be taken into consideration.

A common EMU-UI, such as that considered in this paper, would enhance social protection by improving coverage rates, increasing income protection, and reducing poverty rates, particularly for atypical workers and the self-employed. In this sense, it seems that an EMU-UI would represent a potential alternative to move towards a social protection systems which could provide equal treatment to different forms of employment and would enhance income protection and automatic stabilization in the event of economic shocks. In fact, as a response to the pandemic, the European Commission created the temporary Support to mitigate Unemployment Risks in an Emergency (SURE) (European Commission, 2020). This fund is designed to help the most affected countries strengthen worker protection, notably via short-term work schemes, but also any other policy aiming to preserve employment and limit income loss. The European Commission's statement that 'this temporary instrument should be seen as an emergency operationalisation of a European Unemployment Re-insurance Scheme in the specific context of the COVID-19 crisis, without prejudice to the possible subsequent establishment of a permanent instrument under a different legal basis in the TFEU,' has, as such, rekindled the debate on a common unemployment benefit system for the Eurozone as a permanent tool to face future crises.

In summary, addressing the gaps in access to unemployment insurance for atypical workers should be at the forefront of the EU agenda. The need to improve UI systems was already discussed before the COVID-19 crisis, but has become even more evident in its aftermath. Consequently, with a view to possible future economic crises, countries should be doted with UI systems that offer greater protection to all types of work, thereby ensuring better income smoothing in the event of an economic recession. Our analysis suggests that an EMU-UI with the characteristics that we considered would effectively address these requirements. Nevertheless, potential behavioural response of individuals to the introduction of an EMU-UI and macroeconomic effects should also be considered and represent directions for future research.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11205-023-03276-6>.

Funding Open Access funding provided by the IReL Consortium.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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