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RESEARCH

# The Value and Limits of Unemployment Insurance

### JONAS KOLSRUD D JOHANNES SPINNEWIJN D

\*Author affiliations can be found in the back matter of this article



#### ABSTRACT

This paper reviews some recent findings regarding unemployment and unemployment insurance in particular, drawing on comprehensive administrative data from Sweden. Firstly, it explores the value of unemployment insurance, revealing that individuals value UI more than previously thought. Secondly, it examines the nature of unemployment, demonstrating that long-term unemployment is predictable and challenging preconceived notions on how unemployment can be a trap. Lastly, it explores the possibility of providing choice in unemployment insurance, finding limited adverse selection. Based on these pieces of evidence, we draw implications for the expansion of UI coverage for non-standard workers.

#### CORRESPONDING AUTHOR: Jonas Kolsrud

Linnaeus University, Växjö, Sweden; NIER, Stockholm, Sweden

jonas@kolsrud.se

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#### **1. INTRODUCTION**

Economists have long concerned themselves with the moral hazard that comes from offering unemployment insurance. The dominant concern is that providing more generous unemployment insurance increases the likelihood that workers will be unemployed. In line with this, policy reforms and proposals over the past decade have sought to reduce the generosity of unemployment insurance, limit the unemployment benefits temporally, or further restrict eligibility [1, 2].

COVID-19 posed a challenge to this policy norm. In response to the largescale redundancies suffered globally, many governments increased the generosity or potential duration of unemployment benefits, as well as extending coverage to hitherto excluded groups [3]. In such a state of emergency, concerns about moral hazards faded into the background. In most countries, workers' participation in unemployment insurance is required, and there is no flexibility in the nature of any coverage. Despite this, not every person is covered. Many states require workers to satisfy minimum work requirements in order to be eligible for unemployment benefits.<sup>1</sup> These requirements often exclude precarious work. In addition, unemployment insurance typically covers only involuntary unemployment, tending to exclude the self-employed and gig-economy workers.<sup>2</sup>

Significant shifts in the labour market landscape are emphasising the need for reform, with traditional unemployment insurance falling short. A growing share of workers find themselves in non-standard employment relationships, which not only often lack the stability but also the social protection contained within traditional full-time jobs. As well as unemployment benefits, they lack entitlement to other social transfers, such as pensions and collectively bargained schemes. Within the modern economy, precarious work is increasingly prevalent, with a growing share of individuals on part-time or temporary contracts [4]. The composition of the self-employed has also changed, with a marked increase in the share of the solo self-employed - those who do not have any dependent workers on their payroll [5]. Gig work has notably experienced substantial growth, fuelled by the rise of digital platforms like Uber or Deliveroo, which connects workers with short-term, flexible jobs. These trends are sometimes argued to reflect a changing labour market where workers are seeking greater flexibility, independence, and control over their work lives [6]. But the response to this is that non-standard work arrangements are mostly falling on workers with a low degree of labour force attachment who have difficulties competing for traditional employment [7]. Overall, these trends raise concerns regarding job security and income stability and underscore the need for access to essential social protection and unemployment benefits [2].

This article will draw on findings emerging from our research on standard unemployment insurance in Sweden and reflect on its implications for expanding unemployment insurance to non-standard workers. The analysis will be structured in three parts. First, we focus on the value of unemployment insurance and how we can measure how much workers value the insurance that they are or could be getting. Recent estimates suggest that this value is higher than previously thought. The second part explores the nature of unemployment, focusing on the drivers of long-term unemployment. Recent work finds that the risks of long-term unemployment are predictable and that unemployment insurance coverage plays a limited role in whether people become long-term unemployed or not. These findings challenge the preconceived wisdom that by remaining unemployed for too long, individuals can get trapped in unemployment and that this trap is best avoided by taking any job in order to leave unemployment as soon as possible. Lastly, we consider the opportunity of providing choice in unemployment insurance, a factor particularly important in relation to self-employment. We find that for workers in standard employment, the selection of optional unemployment insurance is adverse, in the sense that people who face higher unemployment risk are more likely to buy additional unemployment insurance. But it is noted that the adverse selection is limited and, by itself, not sufficient to rationalise eliminating the option.

<sup>1</sup> Some countries (e.g., Austria, Germany, Sweden) apply an hours requirement, while other countries apply an earnings requirement (e.g., the US). Denmark, for example, mixes the two, requiring unemployed workers to have earned more than 40% of the average wage for the last 12 months to be eligible to start receiving UI, but adding an hours requirement in order to be eligible for a new benefit period.

<sup>2</sup> Rather than fully excluding those with voluntary layoffs or persons being dismissed, some systems use waiting periods for such applicants. For example, the waiting period is nine weeks in Sweden and three weeks in Denmark. See OECDs webpage, https://www.oecd.org/social/benefits-and-wages/, for additional information on each country in the organisation.

#### 2. SWEDISH CONTEXT AND DATA

In Sweden, unemployment benefits replace 80% of pre-unemployment earnings for workers, subject to a floor and a cap. Before 2001, UI benefits were constant during the unemployment spell. In subsequent reforms, limitations have been imposed on both the replacement rate and the maximum level [2]. To be eligible, workers need to have worked for at least 6 months prior to being displaced and to have contributed to the UI system for at least 12 months. To receive UI after a job loss, the system requires an employer report noting the number of hours worked and confirming that the termination was due to redundancy rather than dismissal or resignation. These requirements are problematic for non-standard workers who do not have a single employer or anyone to verify their unemployment as involuntary.

Aside from the reason for unemployment, Sweden is, with Iceland, Denmark, and Finland, one of the only four countries in the world to have a voluntary UI scheme administered by UI funds. Most funds are affiliated with a trade union and primarily cover the members of that particular trade union, even though it is possible to only join a UI fund and not the union. Workers who have not contributed enough to obtain comprehensive UI coverage receive a minimum benefit instead, although historically around 80–90% of workers have been covered by comprehensive UI. The premium for comprehensive UI coverage is heavily subsidised, but this subsidy was reduced in 2007, resulting in a roughly 10 percentage point drop in comprehensive UI coverage [8].

The empirical analyses we draw on in this paper all exploit the extremely rich data environment in Sweden. Most of the data come from population-wide administrative registers linked at the individual level. Central to this is the longitudinal dataset LISA, which merges several administrative and tax registers, containing exhaustive information on demographics, income, taxes, and transfers. LISA also contains a matched employer-employee register to obtain further information on workers' employers and their tenure prior to becoming unemployed [9, 10]. Two other important data sources are the data on unemployment spells from the Public Employment Service (PES) and the wealth register, which contains granular data on bank accounts, outstanding debt, and other financial and real asset holdings, which, together with information on asset prices, allows for the construction of a registry-based measure of consumption expenditures [11].

#### 3. THE VALUE OF UNEMPLOYMENT INSURANCE

What is the value of unemployment insurance? This simple question has been hard to answer since we typically do not observe individuals making unemployment insurance choices. People are mandated into the programme and generally do not decide on how much unemployment insurance to get. Thus, we cannot rely on people's choices revealing their preferences. Instead, what we have to consider is what resources people are willing to give up when they are employed so as to increase their resources when they are unemployed. In economic terms, we refer to this as a marginal rate of substitution, which captures how much higher the marginal utility of extra consumption is when unemployed rather than employed. This extra value should be compared to the extra cost of increasing the resources of the unemployed, due to the increased share of unemployed workers that it causes as a result of moral hazard. The policy recommendation is simple: if the extra value is higher than the extra cost, we can improve welfare by increasing the generosity of UI. This is known as the Baily-Chetty formula [12].

A significant amount of work in economics has gone into estimating the cost of UI, while much less work has been done on the value of UI, precisely because of the data challenge described above. The traditional approach to circumventing this challenge is to study the wedge in consumption between employment and unemployment. That is, how much one's consumption goes down when losing one's job, scaled with how averse one is to variation in consumption, allows for a measure of the value of unemployment insurance at the margin. Estimation of this value from further expanding unemployment insurance thus requires high-quality data on consumption for a large enough population. Such data are challenging to find in most countries, mostly because consumption data comes from small household budget surveys, which often suffer from attrition, have small samples, and lack precise information on UI eligibility. In Sweden, we have used a registry-based measure of consumption for all Swedish households to estimate substantial drops in consumption at unemployment of more

than 10% [2], even though the unemployment benefits themselves already replace up to 80% of lost labour earnings. These drops are thus substantial, but to translate them into a practical value of UI, we would need to make assumptions or require further information on individuals' preferences that may be hard to get by.

Recent approaches address this problem by focusing on responses in workers' behaviour instead. Even though we do not observe people's willingness to pay for extra unemployment insurance, we do observe their behaviour. For instance, how much they consume, how long they are unemployed, how much labour their partner supplies, etc., and how all these behaviours change when their resources change. For example, we can gauge how much people value unemployment insurance from their marginal propensity to consume out of an income shock, as we have shown in prior work [9]. The more you value extra income, the more you will spend that extra income when you get it. We therefore study the marginal propensity to consume out of extra income when people are unemployed and compare this to the marginal propensity to consume when they are employed. The higher the former relative to the latter, the more people will value extra resources when unemployed compared to when they are employed.

We have applied this approach in the Swedish context, using variation in the local transfers at the municipal level. There is quite some variation across municipalities, both over time and across household types. Figure 1 from Landais and Spinnewijn [9] shows on the horizontal axis changes in these local transfers that individuals receive from one year to the next. On the vertical axis, we show for these individuals how much their consumption increases or decreases over the same time period. This is done for the same set of individuals during years when they are employed and during years when they are unemployed. The figure shows positive and rather linear relationships between consumption and transfers, indicative of a large marginal propensity to consume out of transfers, both when employed and when unemployed. However, not only is consumption growth lower when people are unemployed, but the relationship between consumption and transfers is also stronger then, suggesting a significantly higher marginal propensity to consume for the unemployed compared to the employed.



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# **Figure 1** Δ*c* VS. Δ*y* BY EMPLOYMENT STATUS.

Notes: This figure re-prints Figure 3 from Landais and Spinnewijn [2021]. The graph is a bin-scatter plot of the relationship between the first-difference in residualized local government transfers and the first-difference in annual household consumption, splitting the sample between households observed prior to the unemployment shock and households who experience unemployment in the corresponding year. The transfers are residualized using a regression of a household local welfare transfers on a vector of households characteristics, plus time and municipality fixed effects. The graph shows a positive and quite linear relationship between consumption and transfers, indicative of a relatively large marginal propensity to consume out of transfers for both groups. The graph also displays a significantly steeper slope for the households in the unemployed group than for the households in the employed group, suggesting a significantly higher MPC for the former group compared to the latter.

Converting this into an estimate of the value of unemployment insurance, what we find is that people are willing to pay between 50% and even 125% extra to get additional resources when unemployed. That means that to get an extra pound of unemployment benefits, people are willing to pay between 1.5 and 2.25 pounds in expectation while employed. This suggests that the value of employment insurance is large, and in fact much larger than is supposed in the literature.

#### **3.1 IMPLICATIONS FOR NON-STANDARD WORKERS**

When it comes to the preferences of non-standard workers, the standard argument is that people who choose non-standard employment are less averse to risk [13] and thus are expected to value unemployment insurance less. The opposite argument is that workers can be forced into non-standard work by their employer or their individual circumstances. People who are in precarious work or in solo self-employment also often have fewer resources compared to those who are self-employed with dependent workers [5]. Some studies also find their subjective well-being to be considerably lower [14]. If selection into non-standard employment were voluntary, we wouldn't necessarily expect these patterns.

More tangible than differences in risk preferences is the fact that non-standard workers are exposed to greater income insecurity compared to regular employees. In regular employment, income variation is predominantly at the extensive margin; you're either employed or unemployed. But people in non-standard work also face income variation at the intensive margin; sometimes they earn less, sometimes they earn more. The accumulation of intensive and extensive margin income insecurity facing non-standard workers would increase their value of UI. The flip side is that moral hazards may be more pervasive at the intensive margin too. This issue also arises with part-time unemployment and side jobs. To deal with this, UI regulation often restricts the number of hours individuals can work while on UI.<sup>3,4</sup>

Ultimately, the question of whether the value of UI exceeds the moral hazard cost and, thus, whether an expansion of UI to non-standard workers is desirable remains an empirical question. But empirical evidence is lacking. For those workers who are currently ineligible for UI, researchers are unable to study how responsive their behaviour is to changes in unemployment benefits. Moreover, we often lack the data to even identify when non-standard workers are unemployed. UI registers only contain information on unemployed individuals who are eligible for UI. However, as the Swedish context allows us to link registry data to data from the Labor Force Survey on all unemployed, eligible, and ineligible workers, there should be further opportunities to explore the value and cost of expanding UI to currently ineligible workers.

Some recent work allows for a couple of indirect insights on the potential value of the expansion of UI to non-standard workers. First, unemployment benefits are often limited to the short-term unemployed, with the long-term unemployed receiving much less or nothing at all. In the US, for example, unemployment benefits are only paid for the six months following a job loss. The long-term unemployed experience much larger drops in consumption compared to the short-term unemployed [2]. This is intuitive. If they deplete their assets, they have to rely on less, and hence they will decrease their consumption. Therefore, the value of those transfers is much higher for the long-term unemployed, even though they are the ones who receive less of them.

Second, unemployment benefits are received conditionally on being unemployed, but there is evidence that the value of transfers after a job loss will extend beyond the unemployment spell. This is again reflected in the consumption patterns, which account for all potential transfers or benefits that people may be getting. There is a persistent drop in consumption in the years up to 5 years after losing a job, above and beyond the time spent unemployed, and this is not covered by standard unemployment insurance [9]. These long-term patterns in consumption are not surprising given the large and persistent drops of 20–40% in wages and labour earnings that those who become unemployed suffer [17, 18].

While we have tried to argue that there is a lot of value in using consumption patterns to see how much people are exposed to unemployment risk, these consumption patterns also reveal substantial behavioural biases that workers are subject to. Work in the US by Ganong and Noel [19] shows that when unemployment insurance benefits are exhausted after six months of unemployment, expenditures discontinuously drop, as if unemployed individuals do not anticipate

<sup>3</sup> In Sweden, it is possible to have a side job as long as the UI recipient earns less than six times the basic weekly UI benefit, currently about £60. It is also possible to be part-time unemployed and receive UI benefits for at most 60 weeks. Self-employed people who have run their firm on the side while having regular employment from which they have been laid off can keep working in their firm, provided that they earn less than £300 per week.

<sup>4</sup> Kyyrä, Parrotta, and Rosholm [15] find that being on part-time UI benefits lowers the exit rate out of unemployment for the part-time unemployed compared to the full-time unemployed, while McCall [16] finds that increasing the maximum amount that part-time unemployed workers can earn without getting their UI benefits reduced has a positive effect on hours and earnings.

this drop in resources. Gerard and Naritomi [20] studied Brazil, where, upon becoming unemployed, individuals get access to a liquid savings account. They show that the moment people become unemployed, their expenditures rise substantially, driven by this increased liquidity, even though their overall resources decrease. These behavioural patterns by themselves may justify corrections to the design of unemployment insurance, also for workers in standard employment [21].

#### 4. THE NATURE OF UNEMPLOYMENT

What is causing workers to stay unemployed? As mentioned, a central focus in the literature has been on moral hazards and the extent to which unemployment insurance itself discourages people from leaving unemployment. The rich data setting in Sweden allows us to test some of the preconceived wisdom in the economics literature regarding the long-term unemployed. First is the supposition that the longer one remains unemployed, the harder it is to find a job. Second is that unemployment benefits given to the long-term unemployed are especially costly due to the disincentives they provide. As these benefits supposedly push and keep workers into long-term unemployment, it has been argued that they should be lowered or limited in time.

In recent work, we have studied the predictability of long-term unemployment risk for Swedish workers using the wide range of data that was available to them at the start of the spell. Mueller and Spinnewijn [10] plot the distribution of the predicted probabilities and find striking heterogeneity (see Figure 1 in that paper). That is, we are trying to predict the probability of finding a job in the next six months for people who are at the start of their unemployment spell. The data suggest that people tend to find a job within the first six months of unemployment, with a probability of 70%. So 30% of people end up in long-term employment. But there is important heterogeneity in these predicted probabilities. A sizeable share of workers are almost certain to have found a job in the next six months, while there are also a lot of workers who have a very low probability of finding a job. Importantly, these different groups can be identified at the start of the spell.

The heterogeneity in employment prospects is also important, as it determines who is going to 'select' into long-term employment. With such a heterogeneous pool of unemployed individuals at the start of the spell, the employability of the pool of individuals who remain unemployed for longer is going to be very different from that pool at the start. Mueller and Spinnewijn [10] illustrates this graphically in Figure 4. We first plot how much the observed job-finding rate over a six-month horizon decreases as people remain unemployed for longer (see Figure 4 in that paper). The probability of finding a job is one-third lower for people who are 12 months into the unemployment spell compared to people at the start of the spell. Most of this difference is driven by so-called dynamic selection rather than by unemployed workers seeing their chances to leave unemployment dissipate. It is a selection of workers who become unemployed but who have much lower chances of finding a job from the outset. We illustrate this by showing the predicted job-finding probabilities at the start of the spell for the surviving sample of unemployed workers at different durations of the unemployment spell. The evidence suggests that long-term unemployment is not so much a trap that people get stuck in but a predictable risk falling on certain workers, something we can already see at the start of the spell. These results paint a different picture compared to the randomised resume audit studies, where fictitious applicants with longer unemployment spells on their CVs receive fewer callbacks [22, 23].

As a next step, we can study the characteristics and circumstances that help predict this risk of long-term unemployment. We find that variables beyond the socio-demographics that are standardly available in labour force surveys substantially increase the predictive power of our prediction model. People's employment history prior to becoming unemployed is particularly important. That is, workers who have had lower tenure at their prior firm, who have been in receipt of unemployment or disability benefits before, and thus have been in and out of employment prior to the present unemployment spell, are most at risk of long-term unemployment. This is, of course, reminiscent of the workers in precarious employment, on flexible or part-time contracts, who are perhaps facing the highest risks of long unemployment spells but who are not even covered at the onset of the spell. We also find that the generosity of unemployment benefits does very little to improve our predictions of who becomes long-term unemployed, even though there is quite some variation in benefits. Kolsrud and Spinnewijn LSE Public Policy Review DOI: 10.31389/lseppr.100

The statements above are not causal, but they challenge the idea that generous unemployment benefits push workers into or keep them in long-term unemployment. We have addressed this question more rigorously in Kolsrud et al. [24], exploiting variation in the benefits paid early vs. late in the unemployment spell. The findings lead to very similar conclusions. While we do find some anticipation effects, as the unemployed slow down their exit of unemployment in anticipation of generous benefits later in the spell, the overall unemployment responses to benefits paid later in the spell are substantially smaller than the unemployment responses to benefits paid early in the spell. Relatedly, the job-finding prospects of those who remain unemployed for longer are much less responsive to changes in unemployment benefits than the job-finding prospects of those at the start of the unemployment spell. This again confirms that the long-term unemployed are a specific sample of people and that financial incentives are neither the dominant cause nor the omnipotent cure for their situation.

#### 4.1 IMPLICATIONS FOR NON-STANDARD WORKERS

These perhaps unexpected findings regarding the nature of long-term unemployment and its relationship to unemployment benefits should make us cautious in making conjectures about the nature of non-standard employment as well. When considering the expansion of unemployment insurance to non-standard work, moral hazard is often used as a key counterargument. The existing evidence for the long-term unemployed suggests that the moral hazard argument is likely to be overstated for non-standard employment too and can probably not justify providing no coverage at all.

Of course, we do not want to undermine the practical concerns of expanding unemployment insurance. These concerns are important and are often closely related to moral hazard, or more generally to the issue that individuals for whom the benefits were not intended may still claim them. For example, standard unemployment insurance relies on an employer to verify job loss and to report earnings or even hours worked prior to unemployment. How should we determine what loss of employment or earnings triggers insurance benefits for non-standard work? In principle, eligibility could be determined using high-frequency data on labour earnings (i.e., monthly) from the tax administration. For instance, individuals earning more than a predetermined threshold each month during the last 6 months before unemployment before experiencing a drop in their earnings that exceeds another pre-determined threshold could be considered eligible for UI.<sup>5</sup> Similar arrangements are in place for specific occupations in some countries, such as for artists and musicians in Belgium. The thresholds can be adjusted as less third-party information is available to gauge an individual's earnings stream. Alongside this, potential moral hazard concerns could also be alleviated by introducing waiting periods between filing for UI and UI receipt. For the specific case of the self-employed, UI legislation in Sweden requires the self-employed to shut down their firms to become eligible for UI.

#### 5. CHOICE OF UNEMPLOYMENT INSURANCE

The final question we address is why do countries mandate individuals to participate rather than giving them the choice of acquiring unemployment insurance privately? This could be seen as a way to extend coverage to non-standard work as well.

A standard concern is adverse selection, meaning that high-risk workers will be the ones valuing insurance the most, but they are also the most costly to cover. This raises funding concerns and can undermine the efficient functioning of private markets. But it is also important to consider how to appeal to workers for whom the cost is low. We refer the interested reader to Hendren, Landais, and Spinnewijn [25] for an elaborate discussion of the conceptual issues and empirical findings. Within this research, its findings are limited by the fact that it is challenging to study selection empirically and to test for adverse selection when we do not observe people making insurance choices. While in most countries UI is mandated, there are a few exceptions, including Sweden. Like in other Scandinavian countries, the UI system has a two-tier feature. The first part of the UI system is mandated and provides basic coverage funded by a payroll tax. The benefit

<sup>5</sup> In Sweden, the Swedish tax administration gets monthly reports on employment earnings. The current eligibility requirement is that individuals should have worked at least 60 hours per month for the last six months, which amounts to about one-third of full-time employment. An income requirement could, for instance, be translated to earning one-third of the minimum wage for each of the last six months.

level that the unemployed receive with this basic coverage is non-contributory (i.e., does not depend on the unemployed earnings prior to displacement) and generally low (e.g., a median replacement rate of about 20% in Sweden). The second part of the UI system is voluntary. By paying an insurance premium to UI funds (on top of the payroll tax), workers can opt for more comprehensive coverage, replacing their pre-unemployment earnings proportionally up to a cap (e.g., a replacement rate of 80% in Sweden).

We have studied this choice in the Swedish context in Landais et al. [8] and tested whether workers who face higher unemployment risk are more likely to buy comprehensive UI. As we have extensively discussed, the reverse force is also at play: comprehensive UI increases workers' unemployment risk due to moral hazards. The challenge is to separate adverse selection from moral hazards. To do this, we have exploited a sharp and unexpected increase in the premium charged for comprehensive coverage in Sweden in 2007. As shown in Panel A of Figure 2 from Landais et al. [8], the surge in premium, which more than quadrupled, did generate a significant demand response, with around 10% of Swedish workers opting out of



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# **Figure 2** Selection of UI based on Unemployment Risk.

Notes: This figure reprints Figure 4 and Panel A from Figure 5 from Landais et al. [2021] respectively. Panel A reports the evolution of monthly premium for obtain comprehensive UI in Sweden. The Figure shows a large and sudden increase in the premia paid in 2007, following surprise ousting of the Social Democrats from government after the September 2006 general election. The Figure also shows the evolution of the take-up of the comprehensive UI coverage, measured as the sum of all individuals buying the comprehensive coverage divided by the total number of individuals aged 25 to 55 meeting the eligibility criteria for receiving UI benefits. Panel B reports the average realized unemployment risk in 2008 for three groups of individuals defined by descending order of willingnessto-pay. The left group buy comprehensive coverage both in 2006 and 2007: they have the highest valuation of comprehensive coverage. The middle group were buying the comprehensive coverage in 2006 but switch out in 2007 when premia increase. The right group were neither buying the comprehensive coverage in 2006 nor in 2007, and have the lowest valuation of comprehensive coverage. The difference in realized unemployment risk between the middle and right group shows the presence of adverse selection, controlling for moral hazard. The difference between the left and the middle group can be both driven by adverse selection and moral hazard.

the comprehensive plan as a result. The price change allows us to rank workers in three groups according to their valuations: those who continued to get coverage after the price increase, those who dropped out when the price increased, and those who never bought coverage. The nice feature of the latter two groups is that they received the same basic coverage in 2007, but they revealed different valuations for the comprehensive coverage in 2006: those who switched to basic UI after the reform were revealed to value the comprehensive insurance more than the low price, while those who have always been on basic insurance were revealed to value it less. Panel B of Figure 2 from Landais et al. [8] shows that among the former group, who value comprehensive insurance more, a larger share of workers were unemployed in 2008 compared to the latter group. This difference in unemployment shares cannot be attributed to moral hazard, as they were receiving the same coverage. It thus provides compelling evidence for adverse selection. The difference is, however, small, especially when comparing the shares with the much higher unemployment share of those who continued to be on comprehensive coverage and are thus subject to moral hazard too. We add more structure to separate the different forces and conclude that adverse selection by itself is not strong enough to mandate everyone into unemployment insurance. In particular, it is very costly, due to moral hazard, to provide unemployment insurance to those who value it very little.

An effective alternative to a universal mandate is to subsidise the prices and balance the value and cost of providing coverage to individuals with lower valuations. Research in Germany [26] even points to 'advantageous selection', i.e., that people with low risk are more likely to buy insurance, in the purchase of voluntary disability insurance, further challenging pre-supposed views on adverse selection in insurance markets.

#### 5.1 IMPLICATIONS FOR NON-STANDARD WORKERS

A similar argument can be made for the self-employed. Adverse selection may well be worse among the self-employed, but our evidence for workers in standard employment is that it is not as bad as it could have been expected and by itself provides no rationale for excluding them. The Swedish context again provides an opportunity for analysis, as the self-employed can opt in to the unemployment insurance system as well. Simply comparing self-employed to regular employees, we find a 10 percentage point lower take-up among the self-employed, but also a substantially lower unemployment rate [2].<sup>6</sup> As far as we are aware, this has not been rigorously studied.

There are two additional concerns when mapping the earlier insights to the expansion of non-standard work and self-employment in particular. First, one may argue that individuals who value social protection so much can still choose to avoid self-employment and look for standard employment instead. Despite this, the social protection received in standard employment distorts the decision to be self-employed, which governments often try to offset with specific tax treatments. A general intuition is that it is more efficient to separate the choice of the nature of work from the protection of the corresponding employment risks. Second, many individuals end up in precarious employment with temporary or part-time contracts, not as a result of their own choice. Their employers or suppliers may not be willing to offer them standard employment terms, and often so because of the specific tax incentives [2].

We again end with a word of caution, as making high-quality choices is hard. We have a growing evidence base that individuals are particularly bad at making insurance choices. At least as concerning is the most recent evidence that finds important socio-economic gradients in choice quality where highly educated, high-income individuals best manage to unlock the value of the choices offered to them [27].

#### 6. DISCUSSION

More and more workers around the world are in non-standard employment relationships. Yet, they risk being locked out of the protection offered by traditional social insurance programmes, including unemployment insurance. The difficulties of fitting non-standard workers into

<sup>6</sup> The incidence of registered unemployment among the self-employed in Sweden is less than 60% of that of regular employed (3.8% vs. 6.6% for the mid-2010s), while 60% of the self-employed were covered by comprehensive UI compared to 70% of the regular employed.

current unemployment insurance arrangements are both practical and conceptual, which are often intertwined. The desirability of overcoming the practical challenges hinges both on the value that unemployed, non-standard workers assign to UI and on the moral hazard costs of providing it to them. Above, we have shown that many of the concerns about moral hazards and adverse selection in UI may be overstated and thus point towards an extension of UI to non-standard workers being worthwhile.

At the heart of this issue is also whether non-standard work is considered to be a deliberate choice by workers or their only alternative when being denied regular employment. Individuals selecting non-standard work based on opportunity and preferences will assign a different value than individuals on the fringes of the labour market doing non-standard work out of necessity. Clearly, there is a need for more empirical evidence to be brought to the table. The Swedish context provides an opportunity to investigate these questions more, especially as the self-employed can opt in to the unemployment insurance system and coverage is not limited to involuntary separations. These are features that, as far as we are aware, have not been rigorously studied.

#### **COMPETING INTERESTS**

The authors have no competing interests to declare.

#### **AUTHOR AFFILIATIONS**

Jonas Kolsrud <sup>(D)</sup> orcid.org/0000-0002-0216-0038 Linnaeus University, Växjö, Sweden; NIER, Stockholm, Sweden Johannes Spinnewijn <sup>(D)</sup> orcid.org/0000-0002-7963-5847 London School of Economics and CEPR, United Kingdom

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