The Value and Limits of Unemployment Insurance

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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 traps. 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 to non-standard workers.

I Introduction

A long literature in economics has focused on the moral hazard costs of unemployment insurance. The concern is that providing more generous unemployment insurance increases the likelihood that workers will be unemployed. This concern is reflected in policy reforms and proposals over the past decennia to reduce the generosity of unemployment insurance, limit the unemployment benefits in time, or further restrict the eligibility (Fredriksson and Holmlund [2001], Kolsrud et al. [2018]). At the same time, policy responses to the Covid crisis represented an important exception, as many countries increased the generosity or potential duration of unemployment benefits and extended coverage to groups who would otherwise not have been covered (Farrell et al. [2020]) Of course, this was a period during with clear shocks to labor demand and limits to labor supply, making moral hazard less of a concern.

In most countries the participation into unemployment insurance is mandated and there is no choice on how much coverage to get. This doesn't mean that everyone is covered. Unemployment insurance is often contributory in the sense that people have to satisfy some minimum work requirements prior to becoming unemployed to be eligible for unemployment benefits.[1] These requirements often exclude precarious work. In addition, unemployment insurance

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[1]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.

typically covers only involuntary unemployment, where the separations are confirmed by the prior employer. This tends to exclude the self-employed and gig workers.[2]

Significant shifts in the labor market landscape are emphasizing the need for reform as traditional unemployment insurance is 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 offered to traditional full-time jobs. This is not just the entitlement to unemployment benefits, but also the entitlement to other social transfers like pensions and access to collectively bargained schemes. Precarious work has become increasingly prevalent, with a growing share of individuals in part-time or temporary contracts OECD [2018]. The composition of self-employed has changed as well with a marked increase of the share of the *solo* self-employed – those who do not have any dependent workers on their payroll (Boeri et al. [2020]). Gig work in particular has experienced substantial growth, fueled by the rise of digital platforms connecting workers with short-term, flexible jobs. These trends are sometimes argued to reflect a changing labor market where workers are seeking greater flexibility, independence, and control over their work lives through self-employment (e.g., Benz and Frey [2008]). But there is also the argument that non-standard work arrangements are mostly falling on workers with a low degree of labor force attachment who have difficulties competing for traditional employment (e.g., Abraham et al. [2018]). Overall, these trends raise concerns regarding job security and income stability, and underscore the need for access to essential social protections and unemployment benefits in particular (e.g., Kolsrud [2018]).

This article will draw on findings emerging from our research on *standard* unemployment insurance in Sweden and reflect on implications for expanding unemployment insurance to *non-standard* workers. The analysis will be structured in three parts. First, we will focus on the value of unemployment insurance and how we can can measure how much workers value the insurance that they are or could be getting. Recent estimates suggest that this value is high, higher than previously thought. The second part will explore the nature of unemployment and the drivers of long-term unemployment in particular. Recent works finds that risks of long-term unemployment are very much predictable and that unemployment insurance coverage plays a limited role in whether people become long-term employed or not. These findings challenge the preconceived wisdom that by remaining unemployed for too long individuals can get trapped in unemployment and that everyone can avoid this trap by leaving unemployment early. Lastly, we are going to be looking at the opportunity of providing choice in unemployment insurance - this is important especially in relation to self-employment. We find that for workers in standard employment relations selection into unemployment insurance is adverse, in the sense that people who face higher unemployment risk are more likely to buy unemployment insurance. But the adverse selection is rather limited and is by itself not sufficient to eliminate the choice to get coverage.

[2]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 organization.

II 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. Downward steps have been introduced in subsequent reforms for both the replacement rate and the maximum level (see Kolsrud et al. [2018]). To be eligible, workers need to have worked for at least 6 months prior to being displaced and have contributed to the UI system for at least 12 months. To receive UI after job loss the worker needs to hand in a report from the employer stating how much in terms of hours the individual has worked before claiming UI and also a confirmation that the termination of the contract was due to shortage of work and not due to dismissal or a voluntary quit. These requirements become problematic for non-standard workers as they do not have an employer, rather clients, and there is no one to verify that unemployment is 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, which is administered by UI funds. Most funds are affiliated with a trade union and mostly 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 to obtain the comprehensive UI coverage receive a minimum benefit instead. Historically, around 80-90 percent of workers have been covered by comprehensive UI. The premium for comprehensive UI coverage is heavily subsidized, but the subsidy was reduced in a reform in 2007 leading to about a 10 percentage point drop in comprehensive UI coverage (Landais et al. [2021]).

The empirical analyses we draw on in this paper all exploited the extremely rich data environment in Sweden. Most of the data come from population-wide administrative registers that are linked at the individual level. Central 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 (see Landais and Spinnewijn [2021] and Mueller and Spinnewijn [2023]). Two other important data sources are the data on unemployment spells from the Public Employment Service (PES) and the wealth register, containing granular data on bank accounts, outstanding debt and other financial and real asset holdings, which allows together with information on asset prices, for the construction a registry-based measure of consumption expenditures (see Kolsrud, Landais and Spinnewijn [2020]).

III The Value of Unemployment Insurance

What is the value of unemployment insurance? This simple question has been hard to answer since we do not observe individuals making unemployment insurance choices. People are mandated into the program and generally do not decide on how much unemployment insurance to get. Thus, we cannot rely on people's choices revealing their preferences. Still, conceptually, what we are after is how much resources people are willing to give up when they are employed 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 increase 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 increase welfare by increasing the generosity of UI. This is known as the Baily-Chetty formula (Chetty [2009]).

A lot of work in economics has estimated 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 circumvent 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 percent (see Kolsrud et al. [2018]), even though the unemployment benefits themselves already replace up to 80 percent of lost labor 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 relax this problem by focusing onresponses in workers' behavior instead: even though we do not observe people's willingness to pay for extra unemployment insurance, we can observe how much they consume, how long they are unemployed, how much labor their partner supplies, etc., and how all these outcomes change when their resources change. For example, we can get 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 (Landais and Spinnewijn [2021]). The more you value extra income, the more you will spend that extra income. We therefore study the marginal propensity to consume 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 will people 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 on the municipal level. There is quite some variation across municipalities, both over time and across household types. Figure 1 from Landais and Spinnewijn [2021] shows on the horizontal axis arguably exogenous changes in these local transfers that individuals receive from one year to the other. 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 the 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.

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 dollar of unemployment benefits people are willing to pay between 1.5 and 2.25 dollars in expectation while employed. This suggests that the value of an employment insurance is really large, and in fact much larger than is supposed in the literature.

Implications for Non-standard Workers When it comes to the preferences of non-standard workers, the argument is put forth that people who choose non-standard employment are less averse to risk (e.g., Ekelund et al. [2005]) and thus are expected to value unemployment insurance less. The opposite argument is that workers are being forced into non-standard work, by their employer or their individual circumstances. People who are in precarious work or in solo self-employment often have fewer resources compared to self-employed with dependent workers (Boeri et al. [2020]). Similarly, some studies find their subjective well-being to be considerably lower as well (e.g., Johansson Sevä et al. [2016]). If selection into non-standard employment is 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 more income insecurity compared to regular employees. In regular employment, income variation is pre-dominantly 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 hazard may be more persavive 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 being on UI.[3,4]

Ultimately, the question whether the value of UI exceeds the moral hazard cost which would make an expansion of UI to non-standard workers desirable remains an empirical one. However, empirical evidence is generally lacking. Of course, for currently ineligible workers we tend to lack variation in benefits they would be eligible for to estimate behavioral responses. We often even lack data as UI registers only contain information on unemployed individuals who are eligible for UI. However, as the Swedish context allows to link registry data to data from the Labor Force Survey on all unemployed, registered and non-registered, there should

[3] 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 part-time unemployed and receive UI benefits for at most 60 weeks. Self-employed who have run their firm on the side while having a regular employment from which they have been laid off can keep working in their firm provided that they earn less than £300 per week.

[4] Kyyrä, Parrotta and Rosholm [2013] finds that being on part-time UI benefits lowers the exit rate out of unemployment for the part-time unemployed compared to full-time unemployed, while McCall [1996] 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.

be further opportunities to explore the value and cost of expanding UI to currently ineligible workers.

Recent work allows for some indirect insights regarding the potential value of the expansion of UI to non-standard workers. The next section reflects more on the potential moral hazard costs. 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 six months after job loss. The long-term unemployed experience much larger drops in consumption compared to the short-term unemployed. 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 employed, even though they are the ones they who receive less of them. Second, unemployment benefits are received conditionally on being unemployed but what we see is that the value of transfers after a job loss will extend beyond the unemployment spell. This is again reflected in their 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 of up to 5 years after losing a job, above and beyond the time spent unemployed, and this is not covered by standard unemployment insurance. These long-term patterns in consumption are not surprising given the large and persistent drops of 20-40% in wages and labor earnings that those who become unemployed suffer (Couch and Placzek [2010] and Jarosch [2023]).

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 behavioral biases that workers are subject to. Work in the US by Ganong and Noel [2019] shows that when unemployment insurance benefits are exhausted after six months of unemployment, expenditures discontinuously drop, as if unemployed individuals do not anticipate this drop in resources. Gerard and Naritomi [2021] 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 increased liquidity, even though their overall resources decrease. These behavioral patterns by themselves may justify corrections to the design of unemployment insurance, also for workers in standard employment (Spinnewijn [2015]).

IV The Nature of Unemployment

What is causing workers to stay unemployed? As mentioned, a central focus in the literature has been on moral hazard and the extent to which unemployment insurance itself discourages people from leaving unemployment. Moral hazard has also been key in the development of theoretical arguments why unemployment benefits should be declining over the unemployment spell (Shimer and Werning [2008]). Prior work has shown that the implied fiscal cost of moral hazard is high, but as the value of unemployment insurance is expected to be high as well, the question is whether it is high enough to for example justify giving lower benefits to the long-term unemployed? The rich data setting in Sweden allows us to test some of the pre-conceived wisdom in the economics literature regarding the long-term unemployed. A first one is that workers who remain unemployed for too long can get stuck into unemploy-

ment – the longer one remains unemployed the harder it is to find a job. A second one is that unemployment benefits given to the long-term unemployed are especially costly due to the disincentives they provide. These disincentives emerge already early in unemployment spells and thus push people into long-term unemployment.

In recent work (Mueller and Spinnewijn [2023]) we have studied the predictability of long-term unemployment risk for Swedish workers using the wide range of data that is available for them at the start of the spell. Panel A of Figure 2 repeats the distribution of predicted probabilities from Mueller and Spinnewijn [2023]. We are trying to predict the probability of finding a job in the next 6 months for people who are at the start of their unemployment spell. On average people find a job in the next 6 months 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 basically certain to have found a job in the next 6 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 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. Panel B of Figure 2 from Mueller and Spinnewijn [2023] illustrates this. The red dots show how much the observed job-finding rate over a six-month horizon decreases as people remain unemployed for longer. 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 a dynamic selection, rather than unemployed workers seeing their chances to leave unemployment dissipate. It is a selection of workers who become long-term unemployed and who have much lower chances of finding a job already from the beginning of the spell. The blue triangles illustrate this as they show 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. Long-term unemployment is not that much of a trap that people get stuck into, but it is a predictable risk that falls on a few workers, and something we can see already at the start of the spell. These results paint a different picture compared to the randomized resume audit studies where fictitious applicants with longer unemployment spells on their CVs receive fewer callbacks (Kroft, Lange and Notowidigdo [2013], Eriksson and Rooth [2014]).

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 labor 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 receiving 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 are not even covered at the start of the spell. We also find that the predictive power of

unemployment benefits received is very limited, even though there is quite some variation in Sweden, depending on prior earnings and contributions. But when it comes to how much unemployment benefits you can receive, this factor does not add much to the predictive power of whether someone is going to be long-term unemployment.

The statements above are not causal, but they challenge the idea that generous unemployment benefits push workers into long-term unemployment. We have addressed this question more rigorously in Kolsrud et al. [2018], 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 more 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. Related, the job finding chances of those who remain unemployed for longer are much less responsive to changes in the unemployment benefits than the job finding chances 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 to their situation.

Implications for Non-standard Workers We believe these perhaps unexpected findings regarding the nature of long-term unemployment and how it is affected by unemployment benefits should make us cautious in making conjectures about the nature of non-standard employment as well. When considering expansions of unemployment insurance to non-standard work, moral hazard is often used as a key counter-argument. The existing evidence suggests that the moral hazard argument is likely to be overstated and cannot justify providing no coverage at all.

Of course, we do not want to undermine the practical concerns when expanding - e.g., how to determine exactly what loss of employment or earnings triggers insurance benefits. These concerns are important and often closely related to moral hazard, or more generally the issue that individuals may claim benefits for whom they were not intended. For example, standard unemployment insurance relies on an employer to verify job loss and to report earnings or even hours worked prior to unemployment. In principle, the eligibility requirement could be implemented instead by using high-frequency data on labor earnings (i.e., monthly) from the tax administration. For instance, individuals having earned more than a pre-determined threshold each month during the last 6 months before experiencing a drop in their earnings that exceeds another pre-determined threshold could be considered as eligible to UI.[5] Similar arrangements are in place for specific occupations in some countries, like 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. In Sweden the self-employed are required to shut down their firms to become eligible for UI. Still, potential moral hazard concerns could also be alleviated by introducing waiting periods between filing for UI and UI receipt.

[5] 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 6 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 6 months.

V Choice of unemployment insurance

The final question we address is why countries mandate individuals to participate rather than give them the choice of getting unemployment insurance and paying for it? 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 also from an efficient planning perspective the question whether by offering choice one can reach not only workers for whom the value is high, but also workers for whom the cost is low as well is relevant. We refer the interested reader to Hendren, Landais and Spinnewijn [2021] for an elaborate discussion of the conceptual issues and empirical findings. Of course, it is challenging to study selection empirically and 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 as mentioned and Sweden is one of them. 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 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. [2021] 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 hazard. The challenge is thus to separate adverse selection from moral hazard. To do this, we have exploited a sharp and unexpected increase in the premium charged for the comprehensive coverage in Sweden in 2007. As shown in Panel A of Figure 3 from Landais et al. [2021], the surge in premium, which more than quadrupled, did generate a significant demand response, with around 10% of Swedish workers opting out of the comprehensive plan as a result. The price change allows 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, even when the price was low. 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 revealed to value the comprehensive insurance more than the low price, while those who have always been on basic insurance revealed to value it less. Panel B of Figure 3 from Landais et al. [2021] shows that among the former group - who value the comprehensive insurance more - a larger share of workers is unemployed in 2008 compared to the latter group. This difference in unemployment shares can not 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 subsidize the prices and balance the value and cost of providing coverage individuals with lower valuations.

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, 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 (Kolsrud [2018]).[6] 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 to non-standard work and self-employment in particular. First, one may argue that individuals who value social protection so much can choose to avoid self-employment and look for standard employment instead. Still, 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 and 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 often may not be willing to offer them standard employment terms, and often so because of the specific tax incentives (Kolsrud [2018]).

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 in making insurance choice. At least as concerning is the most recent evidence that finds important socio-economic gradients in choice quality where highly educated, high-income individuals manage best to unlock the value of choices offered to them (Handel et al. [2020]).

VI Discussion

More and more workers around the world are in non-standard employment relations. Yet, they risk being locked out from the protection offered by traditional social insurance programs, including unemployment insurance. The difficulties of fitting non-standard workers into current unemployment insurance arrangements are both practical and conceptual, which are often intertwined. The desirability of over-coming 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 of moral hazard and adverse

[6] 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.

selection in UI may be overstated and thus point towards an extension of UI to non-standard workers being worthwhile investigating.

At 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 into non-standard work based on opportunity and preferences will assign a different value to unemployment insurance than individuals on the fringes of the labor market doing non-standard work out of necessity. Clearly, there is high value of bringing more empirical evidence to the table. The Swedish context provides an opportunity to dig more into this questions, 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.

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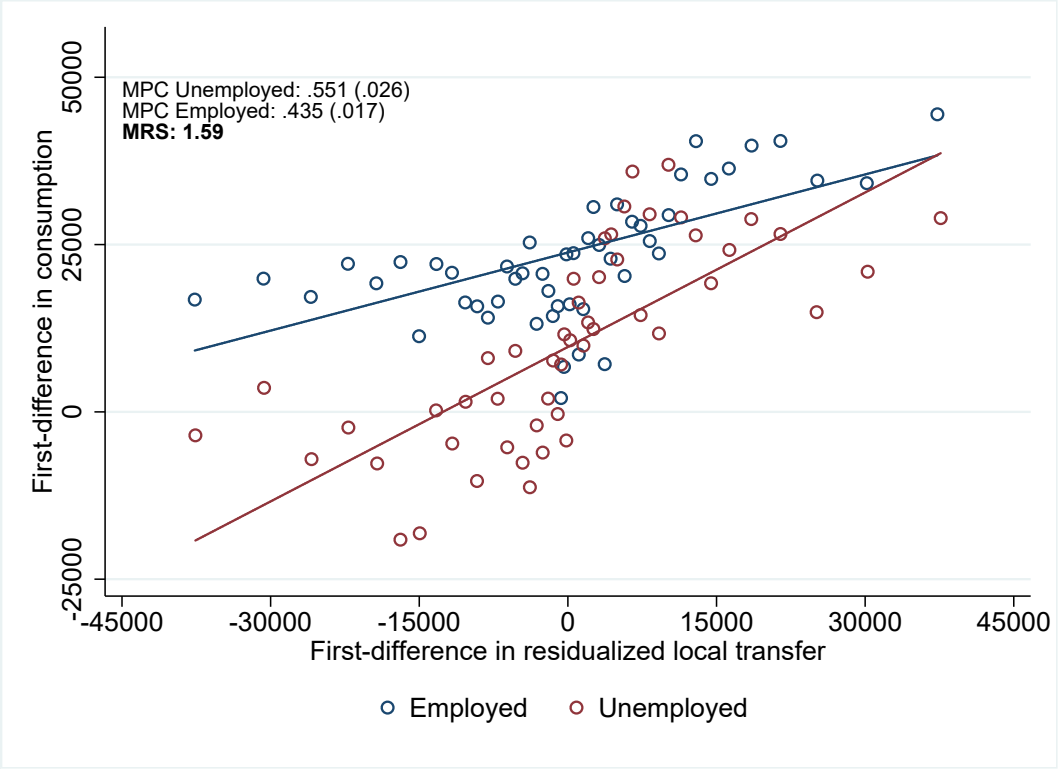
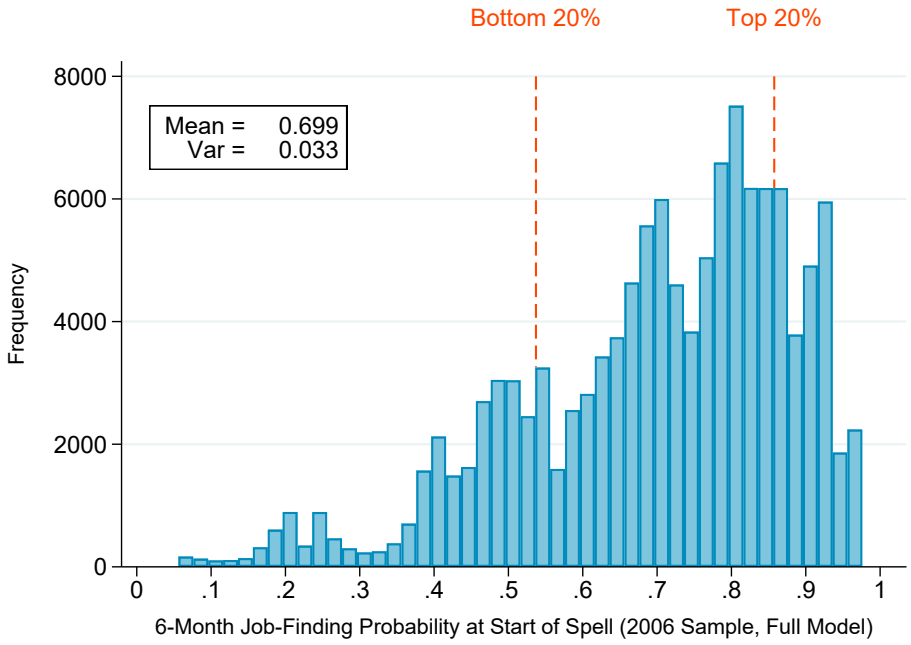
Figure 1: Δc VS. Δy BY EMPLOYMENT STATUS



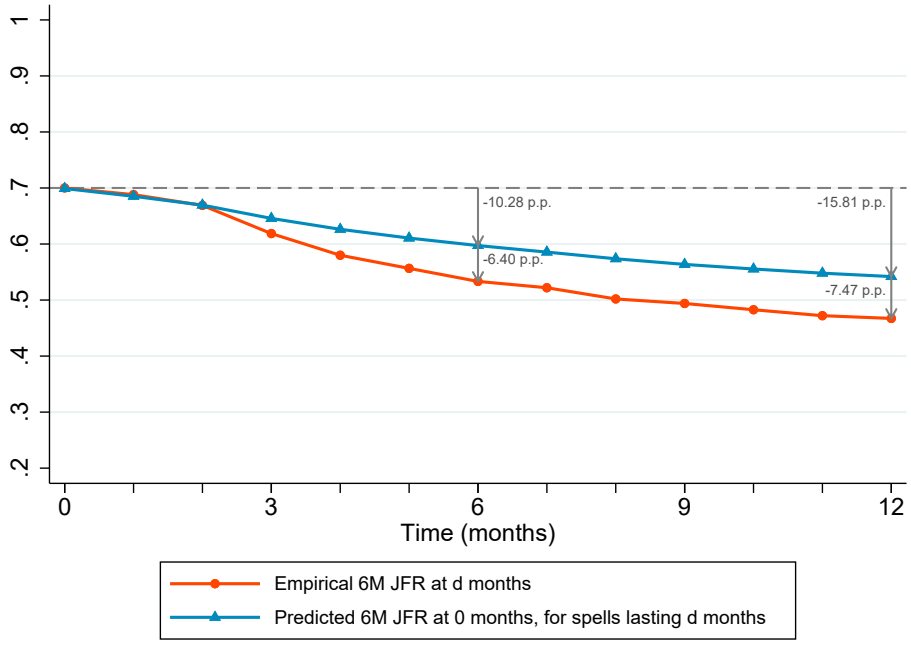
Notes: This figure re-prints Figure 3 from Landais and Spinnewijn [2021]. The graph is a bin-scatter plot of the relationship between the first-difference in residualized local government transfers and the first-difference in annual household consumption, splitting the sample between households observed 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.

Figure 2:

A. Distribution of Predicted Job-Finding Probabilities



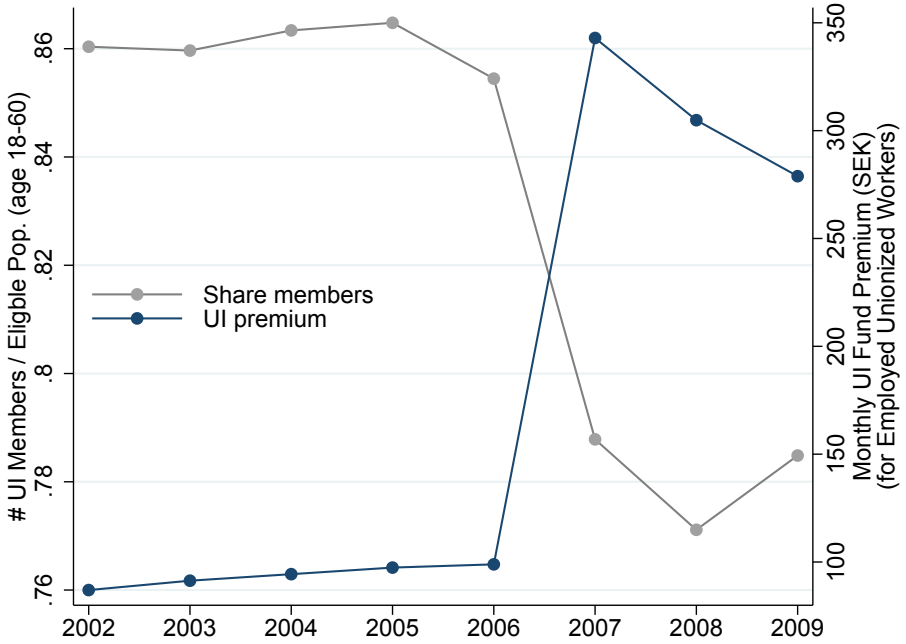
B. Observed vs. Simulated 6M JFR by Time Spent Unemployed



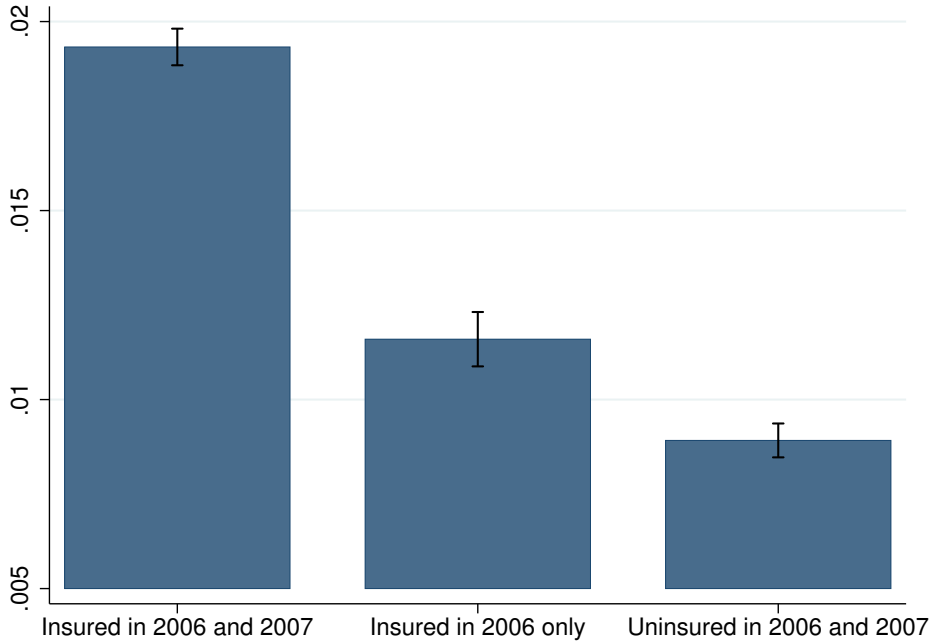
Notes: These figures reprint Panel B of Figure 1 and Figure 4 from Mueller and Spinnewijn [2023] respectively. Panel A shows the distribution of predicted job-finding probability at the start of the spell over the next six months, based on a prediction model trained in 2006, but shown for a hold-out sample. Panel B compares the evolution of the empirical 6-month job-finding rate x months into the spell with the predicted 6-month job-finding rate at the beginning of the spell for individuals who reach the x-th month of unemployment, again in the hold-out sample for the year 2006.

Figure 3:

A. Time Series of UI premium and UI take-up



B. Displacement Rate in 2008



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 willingness-to-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.