

Getting Full-Time Job as a Part-Time Unemployed: How Much Do Context Matter?

Joel Karlsson* and Jonas Månsson†
Centre for Labour Market Policy Research,
Växjö University
SE-351 95 Växjö
Sweden

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Abstract

This paper investigate if, and how, individual characteristics and contextual factors influence the probability of exit from part-time unemployment for a full-time job. The results indicate that there is a contextual effect and context variables such as unemployment rate and economic power partly explain the context variability. Furthermore, the contextual effect is found to be especially large for individuals without a university degree.

1 Introduction

The aim of this study is to investigate if, and how, individual characteristics and contextual factors influence the probability of exit from part-time unemployment. The motivation for this study from a policy perspective is that the effect of contextual factors potentially can set limits for how successful the labour market policy can be. If contextual factors do affect the possibility to exit part-time unemployment for a full-time job policy makers need to look closer to the need of regionally adjusted labour market policy measures.

*e-mail: joel.karlsson@vxu.se

†e-mail: jonas.mansson@vxu.se

The view on part-time unemployment is closely related to the view on part-time employment and this has undergone changes over time. During the second half of the 1980s in Sweden, when there was an excess demand for labour, more flexible employment contracts were called for, and the importance of part-time employment, temporary jobs, trainee jobs, and fixed-term contracts was emphasized, since they were considered stepping stones to the core labour market. Labour market statistics indicate that this was also the case at this time: concurrently with a strong increase in employment, the number of part-time and fixed-term employees was strongly reduced. The dramatic increase in number of people on part-time unemployment and of those employed by the hour registered at public employment offices in the 1990s signalled, however, that workers had then become locked up in such employment. In the beginning of the 2000s, part-time unemployment has, certainly, been reduced, but it is still high and as regard fiscal costs, about 25% of the total payments of unemployment benefits represent payments to part-time unemployed. Further, according to the Swedish labour force survey, no less than 9% of the female and 4% of the male labour force is part-time unemployed. These figures motivate research on part-time unemployment, especially on what factors influence transitions out of it.

In contrast to other recent studies on transition out of part-time unemployment (see e.g. Månsson and Ottosson (2008) for an overview) our main focus is in this study on the effect of contextual factors, for example how much of the probability depend on the regional growth, local labour market competition? However instead of using a traditional econometric framework and include the variables as regional dummies related to the individual we will make use of a multilevel approach that enables identification of the contextual effects related to each individual characteristics. The main question for our research is thus; Does contextual factors influence the probability to exit part-time unemployment in favour for a full-time job?

The outline of the study is as follows: In section 2, our study starts with a brief discussion on the causes of transition to part-time employment and part-time unemployment. This is followed in section 3 by a presentation of the multilevel framework and the data used in the study. Our study concentrates entirely on persons who worked less than full-time and who were registered at public employment offices as job seekers looking for longer hours during. The results of the study, presented in section 5, indicate clearly that there is a

contextual effect and context variables such as unemployment rate and economic power partly explain the context variability. The contextual effect is found to be especially large for individuals without a university degree. Furthermore, the context variability of a university degree is relative large with, even, zero effect in some municipalities. Concerning immigrants, no context variability could be found.

The policy recommendations that come out of our results can be interpreted in different ways. Firstly, since there are contextual effects we need to address the question on the need of local labour market policy. That is, to adopt the most successful measures and policy interventions in each local labour market, in contrast to a uniform 'tool box' for the whole country. Secondly, instead of developing the policy to the local labour markets one way to decrease part-time unemployment would be to, at to a greater extent, demand that unemployed move to regions that have more favourable context. However, this also means that we will have a conflict of goals between labour market policy and regional policy. Finally, in section 6, conclusions and some final remarks are stated. Tables and Figures are presented in Appendix A

2 Part-time employment and part-time unemployment

Before we set about our investigation of factors that have an impact on the probability of leaving part-time unemployment, we will discuss functions of part-time work for individuals on the supply side of the market for part-time jobs, and for employers, representing the demand side.

2.1 Supply side

The supply of part-time work is, among other things, influenced by the tax system, the social insurance system, and the extent and regulation of publicly financed child care. Part-time jobs can serve as a means to gradually reallocate working time from the household to the labour market. By young people, part-time work can be seen as an entry to the labour market and/or a way of financing their education, whereas older workers can see part-time employment as a means of facilitating labour market exits. Therefore, a person who chooses to work part-time cannot simply be considered to be part-time unemployed.

However, such a decision, at some point of time, can be a source of part-time unemployment at some future date. Assume that a person, for some reason, chooses to work part-time in period t . In period $t + 1$, he or she would like to take up full-time work but due to restrictions on the demand side, this is not possible. Even though, in this case, the person will become part-time unemployed in period $t + 1$ due to demand side restrictions, the initial cause of part-time unemployment is connected to the supply side (see e.g. Bassi, 1995; Gallaway, 1995; Fagan and Rubery, 1996; O'Reilly, 1996; Joshi et al., 1996; Fitzenberger and Wunderlich, 2004)

In sum, the preferences of a person, which, to a greater or lesser extent, may be linked to institutional arrangements, can result in a deliberate choice, at some point of time in the course of his or her working life, to work only part-time. As time passes and circumstances change, the preferences can, however, be modified in favour of full-time work. When this happens, part-time employment has become involuntary and, if a job with longer hours is then not found, the person will be part-time unemployed.

2.2 Demand side

Also, with respect to the demand side, the institutional framework can give incentives for enterprises to use part-time work. The labour market's regulatory framework and the industrial relations environment are among the determinants of the utilization of part-time work. Part-time unemployment occurs when a person is hired on less than full-time but is searching for a full-time employment. One obvious reason for this is indivisibility—i.e. the solution to the employer's profit-maximising problem is not an integer solution. A reason for the existence of this indivisibility could, as pointed out by Friesen (1997), be related to fluctuations in demand over time. A deterioration of market conditions may be a rationale for using part-time work as a mode of adjustment. Also, firm characteristics can determine the flexibility options and the incentives to utilize short-time work. Especially in the service sector, the demand from customers for services does not correspond to normal working time. To meet customer preferences, firms therefore employ part-time workers. As pointed out by Ottosson and Lundequist (2005) part-time work in Sweden is most common in the service sector. Another demand-side aspect is that the utilization of part-time work can increase productivity and efficiency (see e.g. Atkinson and Meager, 1986). In such cases, it is more efficient to hire part-time workers since

their production output will be larger than that of full-time workers, given that the sum of full-time equivalents are the same for both groups. However, the productivity and efficiency aspects have been questioned (see e.g. Tilly, 2002). Part-time workers do not get the same amount of on-the-job training, and so investments in firm-specific human capital are less for part-time employed than for full-time employed. Overall, making use of part-time work can be seen as a means for employers to reduce labour costs, to operate the working staff more efficiently, and to achieve necessary flexibility.

2.3 Other factors

The regulations of the Swedish unemployment insurance system entitle persons who have lost a full-time job, and who work part-time, to partial unemployment benefit on condition that they register with a public employment office. This gives rise to a moral hazard problem on the supply side when those who are insured report themselves as part-time unemployed, even though they are not willing to work longer hours. It can be mentioned that, in connection with a Swedish experiment with the objective of decreasing part-time unemployment, a group of persons working less than full-time and registered at employment offices was asked in an enquiry about their working time preferences. Two groups were identified; those that had a part-time employment and were registered at an employment office as part-time unemployed and those part-time employed who were not registered at an employment office. From the arguments above, we would expect that persons in the first group worked part-time because of demand-side factors, while part-time work in the second group would be related to supply-side factors. Before starting the experiment, all part-time employed were asked whether they were interested in increasing their employment up to full-time. Both ‘yes’ and ‘no’ answers were received from both groups indicating a clear case of moral hazard (see also Stratton, 1996). The real reason for them to register at an employment office is to be eligible for unemployment benefit as a supplement to wage earnings.

To summarise; there are a substantial work done on the transition from part-time unemployment, however to our knowledge no study that explicitly focusing on the effect of contextual factors.

3 The model

Multilevel models are applied when there is hierarchical structure in levels of data ¹, with a single dependent variable measured at the lowest level and a set of variables on each of the levels. One of the main advantages of this kind of models are the capacity to define and explore variations at each level of the hierarchy after controlling for relevant explanatory variables. Multilevel regression models are particularly appropriate for analysis of contextual effects.

This study has data on *two* levels, individuals and municipality (the context). It is likely that the results differ across the *two* levels, but it is also clear that data are equal between levels. All individuals in one municipality will have the same context characteristics. An analyse on one level will therefore have two consequences: Firstly, since all information is common, the inter-correlation equals one, reducing the number of observations to the number at each level. For example, if we controlling for municipality characteristics using individual data all individuals in the same municipality will have the same value on each of the context variables. Secondly; if the information is not used we do not utilise all the information that exist in the data. The multilevel approach (ML) is a way of dealing with both these problems. ML also allow us to evaluate how much of the variability of the dependent variable is attributable to individual characteristics, and how much to the effect of context of, in our study, the home municipality.

In this study we are looking at the effect on the probability of leaving part-time unemployment in favour for a full time job. On individual level (Level 1) we are controlling for individual characteristics e.g. gender, age, immigrant background etc.. We then assumes that this probability also is influenced by context, here the local labour market condition. These variables will be denoted Level 2 variables.

The model is set as follows: Let subscript j reefer's to municipality groups ($j = 1, \dots, N$); subscript i here reefer's to the index for individuals within a the groups ($i = 1, \dots, n_j$). let x_{hij} represent all r ($h = 1, \dots, r$) variables of interest, both individual and context variables. To capture municipality heterogeneity we allow for not only a fixed overall mean of the contextual effect , β_0 but also

¹For a indepth discussion on the subject of multilevel statistical models, see e.g. de Leeuw and Meijer (2008)

a context specific random intercept, ζ_{0j} , that is assumed to follow a normal distribution with zero mean and constant variance, $\sigma_{\zeta_0}^2$. Furthermore it is possible that for both level one and level two variables that the slope vary with the context, i.e. heterogeneity of regressions across contexts. For example it is likely that the effect associated with university education is related to the supply of university educated persons.

Further, let the r explanatory variables, ($h = 1, \dots, r$), be ordered such that the first q variables have both fixed and random coefficients. ζ_{hj} represents the random part of the first q variables, where ζ_{hj} is assumed to follow a normal distribution with zero mean and constant variance, $\sigma_{\zeta_h}^2$. The $q + 1$ random coefficients ($\zeta_{0j} \dots \zeta_{qj}$) are assumed to be independent across municipalities, but are allowed to be correlated between groups.

Since we are interested in estimation the effect on the probability to leave part time unemployment for a full time job our dependent variable (y_{ij}) is binary and takes the value *one* if the part-time employed individual got a full-time job and a *zero* if the individual did not obtain a full-time employment. If $\pi_{ij} = \Pr(y_{ij} = 1 | x_{hij}, \zeta_j)$, hence following Snijders and Bosker (1999) the random coefficient model can be defined as following.

$$f(\pi_{ij}) = \beta_0 + \sum_{h=1}^r \beta_h x_{hji} + \sum_{h=1}^q \zeta_{hj} x_{hji} + \zeta_{0j} \quad (3.1)$$

$f(\pi_{ij})$ is the link function that ensures that predicted probabilities π derived from the fitted model will lie between 0 and 1. This paper apply a logit link.

4 Data

As explained above we will use data on both individual level (Level 1) and municipality level (Level 2). The level 1 data was obtained from the Swedish National Labour Market Board and comprises all registered part-time unemployed in Sweden at the 1 September 2002. We observe these individuals until the first September 2004 and record if they during our observation period leave the employment office for a full-time job. Since short part-time unemployed is registered as 'employed by the hour' we have in this analysis deleted them from the sample and are thus only focusing part-time unemployed that work more than 15 hours and less than 35 hours a week. At the employment offices one

category is cancelled out from the registers due to the fact that they do not report and one reason for this that persons get a job. It is not clear of what magnitude this is relevant for part-time unemployed however Lind (1995), that investigated full-time unemployed, reported that a substantial amount of those not showing up at the employment office did so because they got an employment. If this group is large we will have a problem since persons that get a job is in both groups and will bias the results. In this analysis they are thus deleted from the sample. One has to be aware of that this procedure also can bias the results if there exist a selection among those reporting that they got a job and those cancelling their appearance. However, since no data exist we have no way controlling for the problem and therefore assumes that the distribution from the both groups are the same. The data on municipality level has been collected directly from the municipalities and we have full information from 289 out of 290 municipalities.

[Table 1 about here]

In Table 1 the outcome is presented. More than 41 per cent of the population had got a full-time job during our observation period, while 59 per cent did not get a full-time job. However, this does not mean that they are still registered as part-time unemployed. Person might have left the part-time unemployment due to other reasons e.g. leaving the labour force for a shorter (e.g. parental leave) or a longer period (education) or entered active labour market policy measures. The dependent variable thus only captures what can be thought of as a success, i.e. getting a full-time employment.

4.1 Independent variables - Level 1

The average age in the sample is around 39 years and as much as 81 per cent of the part-time unemployed in our sample is female. A majority is registered for unemployment insurance. This variable is little problematic since belonging to the unemployment insurance system per definition do not mean that a person receives unemployment insurance payment. To do so a person has to fulfil the employment criteria which at the time for the study was around one year of full-time employment before entering part-time unemployment. However, there are few incentives for a person that is unemployed to pay the insurance fee if he/she does not qualifies for the benefit. We therefore interpret the effect as an effect of receiving unemployment insurance benefits.

[Table 2 about here]

When applying for a job at the employment office the unemployed has the option to state preference for upto four different job alternatives. These alternatives will, at least in the beginning of the unemployment period, be used as guidelines for the employment officers in assigning job proposals. The two variables ‘has relevant education’ and ‘has relevant work experience’ indicate if a person has the above characteristics for those jobs search for. 68 per cent in the sample has relevant education while only 10 per cent has relevant work experience. To some extent this point on the fact that many of the part-time unemployed has a job that not is their first choice. We have two educational levels, upper secondary school and university degree. 60 percent has a degree from upper secondary school as their highest and 20 per cent has a university degree. In the population 7 per cent has immigration background.

In the data we also have information on disability that relates to work. That is if a person has a handicap that makes it hard for him/her to take all sort of jobs. This variable will most likely reduce the probability to leave part-time unemployment for a full-time job. Since we are using a cross sectional sample there could be heterogeneity within the sample with regards to previous unemployment history. We therefore include two variables to capture this. The average days registered at the employment office during the 6 years before sampling (1st September 1996 – 1st September 2002) was 1315 days, i.e. almost 3.5 years. The reason for the long average time is probably a combination of moral hazard, implicit contracts and lack of service from the employment office. In discussions with employment officers it is said that part-time unemployed do not constitute a major problem and if there is a vacancy it will rather be directed towards a full-time unemployed. The second variable on unemployment history is number of spells. In the data the average is around 3.

4.2 Independent variables - Level 2

Generally context variables that effect employment and the unemployment rate are variables describing the local labour market situation. In this study we define the context a little bit broader. The variables we are using represent supply side competition, demand side shocks, municipality competitive power, political majority, service sector size and finally labour market size.

The first variable represents the competition on the local labour market here measured as the unemployment rate. We will argue that if the total unemployment rate is high a person is less likely to find a full time job, since the competition for full-time jobs is high. In the data the mean unemployment in percent is 3.07 per cent.

We will use numbers of plant closure due to bankruptcy as an indicator for demand shocks in the municipality. Here we expect that if the number of closures increases the competition for jobs will increase, and thereby reduce the probability for an unemployed to get a job. In 2002 the average number of plant closures due to bankruptcy was 2.27 per 1000 inhabitants in the municipality. Also observe that some municipalities according to the data did not have any closures due to the reason stated above. This however does not mean that plants did not close in these municipalities.

A third variable measures the economic power and relates to municipality competitive power. Here we use taxes paid by workers and firms to the municipality. Since taxes paid are directly linked to gross municipality product (GMP) this variable is a good proxy variable for the economic power of the municipality. We expect a positive effect relating to economic power. That is a municipality with strong economic power, i.e. a positive deviation from the mean, increases the probability for the individual to exit part-time unemployment for a full-time job. The economic power variable is normalised, i.e. measures deviation from the mean and divided with the standard error.

We use the political majority in the municipality as an indicator for political orientation in the municipality. Based on the number of votes in the 2002 election we computed an indicator that take the value 1 if the majority is left wing oriented and 0 if the majority is right wing oriented. The causal relation for this variable is a little problematic since a reason for voting for left wing parties might be high unemployment. To control for this we also use the voting results in 1998. We would expect that if the municipality is governed by left winged majority unemployment would be more targeted, increasing the probability for an exit from part-time unemployment. 73 per cent of the municipalities had a left wing majority according to the votes

Previous research has shown that part-time work is most common in the service sector, both private and public. The expectation concerning this variable is not that straight forward regarding transitions from part-time unemployment. On one hand a large service sector is a main cause for part-time employment, and thereby part-time unemployment. Therefore, if the service sector is large one

can argue that it is more likely a person could find an additional part-time job adding up to a full time. On the other hand if the service sector diminished and were replaced by other, not that part-time oriented sectors, one could argue that those that previously worked part-time either becomes full-time unemployed or full-time employed in another sector, e.g. in manufacturing. We use the share of service sector in the municipality to investigate the effect. The service sector is on municipality average around 14 per cent.

To control for local labour market size, we also include the normalised number of employed in the municipality.

On level 1, individual level, we utilise the full information presented in Table 2. While level 2 gives some options. According to equation 3.1 we can model both intercept and slope coefficients. However given the level 1 data at hand we choose to model the variation in the intercept utilising all level 2 data. Since we can expect that the effect associated with university education is related to the supply of university educated persons we model the coefficient related to university degree as random. Earlier studies, not using a multilevel approach has indicated that the effect of being a immigrant could vary over context due too both the context supply and demand therefore we test for this effect. Two models of interest can be stated as below;

Model One

$$\begin{aligned}
f(\pi_{ij}) = & \beta_0 + \beta_1 AGE_{ij} + \beta_2 AGE_{ij}^2 + \beta_3 FEMALE_{ij} + \beta_4 UNEMP.BENEFIT_{ij} \\
& + \beta_5 RELEVANT.EDU_{.ij} + \beta_6 RELEVANT.WORK.EXP_{ij} + \beta_7 SECOND.SCHOOL_{ij} \\
& + \beta_8 UNIVERSITY_{ij} + \beta_9 IMMIGRANT_{ij} + \beta_{10} WORK.RELATED.HANDICAP_{ij} \\
& + \beta_{11} TIME.EMPLOY.OFFICE_{ij} + \beta_{12} NUMBER.TIMES_{ij} + \beta_{13} UNEMP_j \\
& + \beta_{14} DEMAND.SHOCK_j + \beta_{15} ECONOMIC.POWER_j + \beta_{16} POLITICS \\
& + \beta_{17} SERVICE.SECTOR_j + \beta_{18} MARKET.SIZE_j + \zeta_{8j} UNIVERSITY_{ij} + \zeta_{0j}
\end{aligned}
\tag{4.1}$$

Model Two

$$\begin{aligned}
f(\pi_{ij}) = & \beta_0 + \beta_1 AGE_{ij} + \beta_2 AGE_{ij}^2 + \beta_3 FEMALE_{ij} + \beta_4 UNEMP.BENEFIT_{ij} \\
& + \beta_5 RELEVANT.EDU_{.ij} + \beta_6 RELEVANT.WORK.EXP_{ij} + \beta_7 SECOND.SCHOOL_{ij} \\
& + \beta_8 UNIVERSITY_{ij} + \beta_9 IMMIGRANT_{ij} + \beta_{10} WORK.RELATED.HANDICAP_{ij} \\
& + \beta_{11} TIME.EMPLOY.OFFICE_{ij} + \beta_{12} NUMBER.TIMES_{ij} + \beta_{13} UNEMP_j \\
& + \beta_{14} DEMAND.SHOCK_j + \beta_{15} ECONOMIC.POWER_j + \beta_{16} POLITICS \\
& + \beta_{17} SERVICE.SECTOR_j + \beta_{18} MARKET.SIZE_j + \zeta_{8j} UNIVERSITY_{ij} \\
& + \zeta_{9j} IMMIGRANT_{ij} \zeta_{0j}
\end{aligned} \tag{4.2}$$

5 Results

The results for Model One and Model Two (see 4.1 and 4.2) are presented in Table 3. For Model Two, we observe no significant context variability of being an IMMIGRANT, i.e. the effect of IMMIGRANT seems to be constant across municipalities. Since Model One is the favoured model, the rest of this section will focus on the results of Model One.

[Table 3 about here]

Before turning to the context variables we shortly discuss the findings with respect to level 1 variables treated as fixed effect variables. As seen from Table 3 the coefficients for age are significant and have the expected signs. That is age is positive and significant and age squared is negative and significant, i.e. the positive effect of age diminish with age. If a person has relevant education it will increase the probability to exit part-time unemployment. This is also the case for those that have upper secondary school as their highest educational degree. Note that the reference category here is below upper secondary degree. There a couple of variables that decreases the probability to exit part-time unemployment. Recall that we in model 1 treat immigrant as fixed and here we see that if a person has immigrated to Sweden, the probability to exit part-time unemployment decreases. Not surprisingly this is also the case for persons with work related disabilities. A reason for this is probably that the number of vacant jobs that can be adjusted for persons with this kind of disability is limited. Also the variables indicating unemployment history is negative and significant, i.e. a person that has longer unemployment duration and more spells are less likely to

exit part-time unemployment. Finally, and surprisingly, female, unemployment benefit and relevant work experience do not significantly affect the probability to exit part-time unemployment for a full-time job.

Our main focus is on the contextual variables (level 2) and to investigate if some of the variation in the coefficients and intercept can be explained by contextual factors. In model 1 we use a random intercept to capture contextual heterogeneity, and the results show that the random intercept have a significant context variation of $\sigma_{\zeta_0}^2 = 0.07$. This indicate that there exists favourable and unfavourable contexts. Municipalities with positive predicted values of the random effect provide a context that increases the probability to leave part-time employment for a full-time job. An unfavourable context that decreases the probability to leave part-time employment for a full-time job can be found in municipalities with predicted negative values of the random effect.

The average contextual effect of having a university degree is 0.3 and significant. The estimated standard error is relatively small, 0.03. The random coefficient of having a university degree has an estimated context variance of 0.03 equal a standard deviation of 0.17 and the average effect \pm two standard deviations range from -0.05 to 0.64 . This implies not only high a variability between municipalities but also that the effect of having a university degree is possible negative in some municipalities².

The total context variation varies from $\sigma_{\zeta_0}^2 = 0.026$ for individuals with no university education (UNIVERSITY = 0) to $\sigma_{\zeta_0}^2 + 2\sigma_{\zeta_0, \zeta_{sj}} + \sigma_{\zeta_{sj}}^2 = 0.026 + 2 * (-0.013) + 0.014 = 0.013$ for individuals with university education (UNIVERSITY = 1), i.e. there is greater municipality level variability in the probability to leave part time unemployment for a full time job for individuals without a university degree than for individuals with a university degree. Implying, where you live is more important for individuals without a university degree, compared to people with a university degree. Furthermore, since the negative correlation between the random intercept and slope, the effect of a university degree is more important in unfavourable contexts and has less importance (or even no effect) in favourable contexts.

²The context specific values of the random effect can not be obtained directly but can be predicted from the posterior distribution of the ζ_j given the estimated parameters (see e.g. de Leeuw and Meijer, 2008). Figure 1 in the Appendix presents the empirical Bayes predicted random effects of the intercept and slope (UNIVERSITY). We observe no negative effects of having a university degree but predicted slopes have a high variability from almost zero to over 0.6 (the predicted random effect slopes range from -0.296 to 0.327). The predicted random effects for the intercept are between ± 0.4 .

All of the context variables have the expected sign. If supply side competition increases it will lower the probability for a part-time unemployed to get a full-time employment. The sign for the coefficient of demand shocks is negative, however not significant. If the competitiveness in the municipality increases, measured as observed economic power it will increase the probability for a part-time unemployed to get a full-time job. This effect is however only significant at a 10 per cent level. The coefficient for politics, indicating the effect of a red winged municipality is positive, however not significant. The variable measuring the relative size of the service sector is not significant. Finally, labour market size has a negative effect, however with weak significance. To summarise although few of our second level variables influence the probability of exit part-time unemployment our results clearly shows that context matters.

6 Conclusions

The main question our study has been if the context, in this case municipality, have an effect on an individuals probability to exit part-time unemployment for a full-time job? The results indicate that there is a contextual effect and context variables such as unemployment rate and economic power partly explain the context variability. The contextual effect is found to be especially large for individuals without a university degree. Furthermore, the context variability of a university degree is relative large with, even, zero or negative effect in some municipalities. However the expected effect concerning immigrants' context variability could be found. This could partly be due to that we are using an aggregated indicator for immigrant, not taking country of origin into consideration. The lack of effect might be due to fact that the effect of different immigrant backgrounds are cancelling out.

The policy recommendations that come out of our results can be interpreted in different ways. Firstly, since there are contextual effects we need to address the question on the need of local labour market policy. That is, to adopt the most successful measures and policy interventions specially designed for each local labour market. It certainly implies that when comparing the effect of measures across municipalities some of the effect, or lack of effects, can be contributed to the context in which an unemployed person is settled. Our results imply this kind of regional heterogeneity. Secondly, instead of developing the policy to the local labour markets one way to decrease part-time unemployment

would be to, at a greater extent, demand or create incentives for unemployed to move to regions that have more favourable context. However, this also means that we will have a conflict of goals between labour market policy and regional policy with respect to labour supply.

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A Tables and Figures

Table 1: Outcome, dependent variable

Variable	Frequency	Percent
Not Full-Time Employment	32859	58.6
Full-Time Employment	23201	41.43
Total	56 060	100.0

Table 2: Summery Statistics

level 1 Covariates					
Variable	Mean	Std. Dev	Min	Max	N
Age	39.16	11.585	18	66	56060
Female	81%	0.396			56060
Receiving unemployment benefit	96%	0.194			56060
Has relevant education	68%	0.465			56060
Has relevant work experience	10%	0.293			56060
Upper secondary school	60%	0.490			56060
University degree	20%	0.396			56060
Born outside of Sweden	7%	0.248			56060
Work related handicap	2.1%	0.14319			56060
Days registered at the employment office 1 sept 1996 - 1 sept 2002	1315.34	665.526	0	2190	56060
Number of spells 1 sept 1996 - 1 sept 2002	3.04	1.682	1	9	56060
level 2 Covariates					
Unemployment rate in percent	3.07	1.0495	1.0	7.3	289
Plant closure per 1000 persons	2.27	2.41536	0.00	25.91	290
Economic power	0.00	1.00000	-1.43	7.49	289
Left in majority	73%	0.44597	0.00	1.00	290
Service sector share	13.82	6.59949	6.03	66.68	290
Labour market size	0.00	1.00000	-0.49	4.74	290

Table 3: Results

Variable	Model One			Model Two		
	Estimate	SE	dy/dx	Estimate	SE	dy/dx
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Individual Level						
AGE	0.0717	0.0059	0.0014	0.0718	0.0059	0.0174
AGE2	-0.0010	0.0001	0.0000	-0.0010	0.0001	0.0000
FEMALE	0.0257	0.0225	0.0054	0.0257	0.0225	0.0054
UNEMPLOYMENT BENEFIT	-0.0585	0.0468	0.0114	-0.0586	0.0468	0.0114
RELEVANT EDUCATION	0.1948	0.0200	0.0048	0.1948	0.0200	0.0048
RELEVANT WORK EXPERIENCE	-0.0385	0.0303	0.0073	-0.0387	0.0303	0.0073
UPPER SECONDARY SCHOOL	0.1359	0.0253	0.0061	0.1358	0.0253	0.0061
UNIVERSITY	0.2985	0.0337	0.0083	0.2982	0.0339	0.0083
IMMIGRANT	-0.0784	0.0363	0.0087	-0.0789	0.0369	0.0088
WORK RELATED HANDICAP	-0.4650	0.0662	0.0142	-0.4652	0.0662	0.0141
TIME AT EMPLOYMENT OFFICE	-0.0002	0.0000	0.0000	-0.0002	0.0000	0.0000
NUMBER OF TIMES	-0.0393	0.0058	0.0014	-0.0394	0.0058	0.0014
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Context Level						
UNEMPLOYMENT	-0.0739	0.0201	0.0049	-0.0740	0.0201	0.0049
DEMAND SHOCKS	-0.0011	0.0082	0.0020	-0.0013	0.0082	0.0020
ECONOMIC POWER	0.0430	0.0225	0.0054	0.0435	0.0225	0.0055
POLITICS	0.0637	0.0449	0.0108	0.0639	0.0450	0.0108
SERVICE SECTOR SHARE	0.0038	0.0033	0.0008	0.0038	0.0033	0.0008
LABOUR MARKET SIZE	-0.0676	0.0419	0.0101	-0.0697	0.0417	0.0101
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Constant	-1.1916	0.1388		-1.1911	0.1388	
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Random Effects						
σ_{ζ_0}	0.2610	0.0177		0.2605	0.0178	
$Corr(\zeta_0, \zeta_{8j})$:	-0.8037	0.1631		-0.8019	0.1557	
$\sigma_{\zeta_{8j}}$	0.1731	0.0450		0.1747	0.0443	
$\sigma_{\zeta_{9j}}$				0.0290	0.0726	
$Corr(\zeta_0, \zeta_{9j})$:				0.0290	1.5296	
$Corr(\zeta_{8j}, \zeta_{9j})$:				0.0290	1.5961	
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Log Likelihood	-37199.795			-37200.09		
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The marginal effects are evaluated at fixed effects only, i.e all random effects are set to zero.

Figure 1: Predicted Context Level Random Slopes versus Random Intercepts

