

Changes in benefit entitlement and job finding, the Slovenian experiment

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Abstract

This paper investigates the effects of the substantial reductions in the potential benefit duration which occurred in 1998 in Slovenia and had characteristics of a “natural experiment”. We find that the change had a positive effect on the exit rate out of unemployment, both to employment and to other destinations.

Keywords: Unemployment Insurance, potential benefit duration, job finding rates

JEL-codes: C41, H55, J64, J65

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1 Introduction

Long potential benefit durations (PBD) can have strong disincentive effects. Katz and Meyer (1990) for example estimate for the US that one week increase PBD increases the average duration of the unemployment spells of UI recipients by about 1 day. Also based on an analysis of US data Card and Levine (2000) report a disincentive effect of about 0.5 day per additional week of PBD. Lalive and Zweimüller (2004) find a disincentive effect of about 0.4 day for Austrian benefit recipients. The PBD not only affects the duration of unemployment but also the pattern of the exit rate. Many studies find a sharp increase in the exit rate out of unemployment just before benefits expire. Katz and Meyer (1990), Card and Levine (2000), and Addison and Portugal (2004) find such “spikes” for US benefit recipients. Carling, Edin, Harkman and Holmlund (1996) find spikes for Sweden, not only in the job finding rate but also in the exit rate from unemployment to labor market programs. Roed and Zhang (2003) finds end-of-benefit spikes for Norway, and Lalive and Zweimüller (2004) and Lalive, Van Ours and Zweimüller (2004) for Austria. Several explanations have been put forward to explain such spikes. Mortensen (1977) provides a theoretical explanation based on a job search model with household production. If non-market time and market goods used in the household production process are substitutes the job finding rate shifts down after benefit expiration. If non-market time and market goods are complements there is an upward shift. Other suggested explanations are strategic timing of job starting dates and the existence of an implicit contract between unemployed workers and their previous employers to be hired around the traditional time of benefit expiration (Card and Levine, 2000).

This paper contributes to the empirical literature on UI benefits by providing a detailed explanation of how exit rates out of unemployment are affected by changes in PBD. For that purpose, we analyze the effects of the 1998 reform of the unemployment benefit system in Slovenia. This reform drastically reduced the potential duration of unemployment benefits. Because this reduction was not uniform for every category of worker it is possible to distinguish between effects related to the PBD reduction and effects caused by other potential determinants of unemployment duration, i.e. changes in the state of the labor market and policy changes concerning improved employment services offered to, and monitoring of, benefit recipients.

We exploit the “natural experiment” character of the reduction in potential benefit duration and find that it had a positive effect on the exit rate out of unemployment, both to employment and to other destinations. This conclusion applies at various durations of unemployment spells and for many categories of unemployed workers. We also identify clear spikes in the exit rate out of unemployment in the month when unemployment benefits expire.

The paper is set-up as follows. In the next section we give the details of the 1998 change of the Slovenian UI system. Section 3 presents our data. In Section 4 we present the results of our analysis while Section 6 concludes.

2 The 1990 change of the Slovenian UI system

Slovenia is a small country with about 2 million inhabitants and an unemployment rate of 6-7% since 1995. Slovenia is a former part of Yugoslavia that became independent in 1991 and joined the EU in 2004. Similar to OECD countries, Slovenia provides income support to the unemployed via a social insurance program consisting of a combination of unemployment insurance and unemployment assistance (UA). The program covers the majority of employed persons, irrespective of industry or occupation (the most notable exception are the self-employed). Under unemployment insurance, the benefits have been earnings related and the duration of entitlement is contingent on the length of work experience, with predetermined maximum and minimum levels. Benefits under UA are means-tested and offered to those who exhausted their eligibility to UI, and selected groups of other workers who do not qualify to unemployment insurance benefits. Benefits are mostly financed by the budget, with token contributions paid by employers and workers.

Faced by an increasing trend in the number of unemployed, including UI recipients and long-term unemployed, Slovenia in October 1998 reformed its unemployment benefit system. Arguably the most significant change was the reduction of the potential duration of benefits. Under the new system, the length of the UI entitlement period was shortened roughly by half for most groups of recipients. Before the reform, for example, workers with 5–10 years of work experience were eligible to 9 months, and workers with 10–15 years of experience to 12 months of benefits; in

contrast, after the amendments, both groups of workers have been eligible only to 6 months of benefits. But a notable feature of the reform was the different treatment of different groups of beneficiaries - a trait we take advantage of in testing the effects of the reform.

The amendments also called for improvements in employment services offered to benefit recipients and introduced other measures aimed at speeding their reemployment. They introduced obligatory preparation of a re-employment plan for benefit recipients and more frequent contacts between counsellors and recipients. Furthermore, the amendments broadened the definition of the suitable job (after 4 months, unemployed may be offered worse-paying jobs or jobs requiring substantial commute) and introduced stiffer sanctions for refusal of job offers. Moreover, the amendments called for stricter monitoring of continuing eligibility. Benefit recipients had to make themselves accessible for contacts by employment office counsellors several hours per day and a new inspection – a special arm of employment offices – was introduced. The task of inspectors is to check whether benefit recipients are in fact unemployed (among others, by paying home visits to UB recipients), and whether they actively search for a job.

Simultaneously with restricting access to UI benefits, the amendments made participation in active labor market programs more accessible and attractive. Public works participants were given a status of regular workers, thus enabling them to access many fringe benefits (such as vacation and pension coverage). A hiring program reimbursing employers for the payment of social security contributions was strengthened by broadening the target groups (to include long-term unemployed, first-time job-seekers, older workers, and recipients of unemployment benefits) and increasing the amount of reimbursement. And in the wake of the introduction of amendments, the government spent more on active labor market policies: the expenditures on these policies as a share of GDP increased from 0.40 percent in 1998 to 0.52 percent in 1999.

3 Data

The introduction of amendments to the UI law in 1998 had an influence on the inflow from employment to unemployment. The reduction in the potential duration of UI made it less attractive for workers to be unemployed. This caused a higher than ‘usual’ inflow into unemployment just before the new UI law was introduced, and a lower than ‘usual’ inflow into unemployment right after the new UI law was introduced (see for details Van Ours and Vodopivec (2004)). Apparently for some workers it was possible to influence the time at which they entered unemployment. To avoid biased estimates in our empirical analysis due to selectivity in the inflow into unemployment we took two periods of inflow that were not affected by this behavior. More specifically we used an inflow sample over the period August 1, 1997 – July 31, 1998 and an inflow sample over the period January 1, 1999 – December 31, 1999 (with censoring on December 31, 2001). Because both inflow samples cover a year of inflow we do not have to worry about seasonal differences in the composition of the inflow.

The data set we used concerns registered unemployed. For each spell, it contains starting and ending date of registered unemployment spell, destination of exit, and the information on the receipt of unemployment insurance benefits (starting and ending date of the eligibility and actual ending date of the receipt). Personal and family characteristics of recipients are also included. The data provides exceptionally rich and high quality information. First, they provide a complete coverage – all registered unemployed in the selected period were included. For the analysis, we selected a random sample of about 6 percent of spells. Second, being of administrative nature, the information is free of problems typically faced by the survey data (such as non-response and interviewer bias). Third, the information at our disposal not only covers the whole, not just the covered part of the unemployment spell, but it also contains accurate information about the timing of transitions from unemployment to employment. In contrast to many studies using administrative data on unemployment spells where information about the job-finding date is based on unreliable reporting of unemployed workers themselves (as they have little incentive to do so), we have independent information about the start of post-unemployment job reported by employers.

After removing individuals for which there is incomplete information we have information about 9,196 males and 10,853 females (See Van Ours and Vodopivec (2004) for details). Table 1 gives an overview of the unemployment dynamics in these samples. The table distinguishes the cumulative outflow probability to a job, to other destinations and total outflow after 3, 6, 9, and 12 months of unemployment, before and after the change of the unemployment benefits law. As shown for example the cumulative probability to have found a job within 6 months before the change in the benefit law was 45.8% for males. After the change in law this was 51.0%. Such an increase also occurs for other destinations. Here, the cumulative outflow probability after 6 months was 3.3% before the benefits change, and 12.0% after the benefits change. The increase in outflow probabilities occurs for males and females, at every durations and for both destinations of the outflow from unemployment. It may have to do with the reduction of the PBD, the change in the state of the labor market and the effect of other policy changes or the combination of these factors. To distinguish the effects of the reduction of the PBD from the other effects we create “twin groups”.

One feature worth exploiting in setting up the empirical analysis is the fact that the change in the Slovenian benefit law introduced different rules for different groups of unemployed. We therefore form five “twin groups” of benefit recipients. In each group, some unemployed started to collect benefits before the change of the law and some after the change, but the groups were formed so that - in the absence of the change of the law - all members of a group would be entitled to the same potential benefit duration. Because some of the recipients in a group registered after the change of the law, they in fact faced much reduced duration of entitlement. The five groups shown are different in terms of previous work experience, age, or both. For all such groups, ‘old’ and ‘new’ benefit entitlements are presented in Table 2. The first group has limited work experience (up to 18 months) and it is also the only group of which the potential benefit duration has not changed - it was kept at 3 months. For the second group, which has a work experience of 1.5-5 years, the maximum benefit duration has been reduced from 6 to 3 months. All the other groups are also confronted with a reduction of the maximum benefit duration. Implicitly, as indicated in Table 2, the formation of groups is also strongly correlated with age.

The older workers are, the more work experience they have and the longer their potential benefit duration when they lose their job.

From an empirical point of view it is not easy to establish how potential benefit duration affects the job-finding rate due to correlation between several personal characteristics. Individuals that are entitled to longer potential benefit durations have more work experience and are therefore usually older. So, the fact that individuals with longer potential benefit durations find jobs at a slower rate can be attributed not only to the longer duration of their benefit entitlement, but also to their higher age or the length of work experience. To disentangle these two effects we need variation in potential benefit duration across individuals uncorrelated with work experience or age. The Slovenian change in unemployment law provides such variation because potential benefit duration was reduced conditional on particular requirements concerning work experience (and age). If the reduction had been uniform we would still have a problem, because over time labor market conditions might change (as a consequence of business cycle, for example). It would be difficult if not impossible to disentangle the effect of the reduction in potential benefit durations from the effect of the change in labor market conditions. Here, too, the change in Slovenian benefit law is helpful because for some workers the potential benefit durations did not change. Information about these workers can be used as reference point because changes in their job-finding rate can be attributed to changes in labor market conditions only. The identifying assumption, which allows us to isolate the effect of the reduction in potential benefit duration, is that the relative effect of changes in labor market conditions on the job-finding rate is the same for all categories of workers.

By way of illustration Table 3 presents cumulative exit probabilities - after 6 and 12 months of unemployment - distinguished by destination for the different groups of unemployed. As shown for the first group of males of which the benefit entitlements has not changed, 54% finds a job within 6 months before the change of the law while 56% finds a job after the change of law. This could mean that there is a small effect of the cycle. Or, it could mean that the effect of the business cycle is compensated by a change in the composition of the group of unemployed. In other words: a deterioration of the labor market may have been compensated by an increase in the average quality of the unemployed workers. In the empirical analysis below we will

account for possible changes in quality of unemployed workers by using individual data. For the sake of argument we assume that the change in average job-finding probability after 6 months is caused by the effect of the cycle.

For the second group of males of which the potential benefit duration has been reduced from 6 months to 3 months there is an increase of job-finding rate after 6 months from 51 to 58%. So, the increase due to cycle and reduction of PBD is 7%. Since the effect of the cycle is 2%, the difference of 5% must be due to the reduction of the potential benefit duration. The bottom part of Table 3 shows the outcomes of the difference of differences exercises (for males and for females).

The second column of Table 3 shows similar patterns for the 12 months job-finding probability. For the categories of workers with short potential benefit duration the main effect seems to occur in the first 6 months of unemployment. For the categories of workers with longer potential benefit duration the positive effect on the job-finding rate remains. The other columns show similar results for other exits and for the total outflow from unemployment. The difference of differences exercise shows that there are potentially substantial effects of the reduction of PBD on the outflow from unemployment.

4 The analysis

4.1 Survival functions

Figure 1 shows the outflow from unemployment for the various groups in our sample. Presented are the survival probabilities as a function of the unemployment duration (in months). For each of the five groups there is a separate graph representing the survival probabilities before and after the change in the UI law. For all groups the survival probabilities after the change in the UI law are smaller than before indicating that after the change in the UI law unemployed leave unemployment more quickly. Figure 3a illustrates the effect of the change in labor market conditions since for this group the potential benefit duration has not changed. Here the two lines are not very far apart indicating that there is only a small effect of changing labor market conditions. For all the other groups there is a substantial difference between the two

lines indicating that the reduction in potential benefit period stimulated the outflow from unemployment. Another obvious pattern comparing the different groups is the positive relationship between potential benefit duration and survival probability. Groups a long potential benefit durations have a high survival probability. Finally, for many groups there is a substantial drop in the survival probability in the month when benefits expire.

4.2 Hazard rate models

In order to get a more detailed description of the way in which the reduction of PBD affects unemployment dynamics we analyze hazard rates, i.e. exit rates out of unemployment. Figure 2 presents monthly exit rates out of unemployment before and after the change of the UI law for all five groups. For the first group there is a clear spike in the exit rate out of unemployment after three months, the time when benefits expire. For the second group there are two spikes in the exit rate out of unemployment; one spike at 3 months which has to do with the drop of the unemployment benefit replacement rate from 70% to 60% and one spike at 6 months which has to do with the expiration of the unemployment benefits. Also for the other groups there are clear spikes at 3 months and the time of benefit exhaustion. In Figure 3 the job finding rates before and after the change of the UI law are presented. These are very similar to the total exit rates out of unemployment, which has to do with other exit rates being relatively small.

4.3 Quantifying the effects

In Van Ours and Vodopivec (2005) we present a detailed analysis of the relationship between PBD and the exit rates out of unemployment, both the exit rate to a job and the exit rate to other destinations. We find substantial effects. To give an idea about the size of the effects of the change of the law, we calculated the difference in exit rates before and after the change of the law for selected groups of unemployed workers. The reference group is male individuals, 30 years old, with no education, no dependent family members, of good health, and having a work experience of 5–10 years. This implies that the reference group had a 12-month benefit entitlement before and a

6-month benefit entitlement after the change of the law. The effects are dramatic (Table 4). Before the change of the law, 44 percent of individuals in the reference group found a job within 6 months of the start of their unemployment spell, and 6 percent left unemployment for other reasons. The corresponding percentages after 12 months are 59.4 (exit to employment) and 13.4 (exit for other reasons). After the change of the unemployment benefit law the exit rates out of unemployment strongly increased: 52.4 percent of individuals in the reference group found a job within 6 months of the start of their unemployment spell (8.4 percentage points increase in comparison to the before-the-change period), and 15.1 percent left unemployment for other reasons (9.1 percentage points increase in comparison to the before-the-change period). The overall probability for this group to have left unemployment after 6 months thus increased from 50 percent in the period before the law changed to 67.5 percent after the change. Faster exit from unemployment after the change of the law is shown also by comparing job-finding rates 12 months into unemployment spells; after 12 months about 65 percent has found a job and 21 percent has left unemployment for other reasons. The increase in outflow probabilities indicates an implicit elasticity of the exit rate with respect to the PBD of 0.9–1.0.

Table 4 also shows simulation results for 40 years old individuals, with other characteristics being the same as the reference group. In comparison to the younger group, job-finding probabilities for this group decrease, but a substantial increase of this probability due to the change in the unemployment law remains. Similarly, Table 4 shows simulation results for individuals of bad health but otherwise possessing the same characteristics as the reference group. In this case, the exit probabilities are substantially lower, and the effect of the change in unemployment benefit law much smaller. Finally, Table 4 shows the simulation results if the reference person is a female instead of a male. Then, both the job finding rates and the exit rates to other destinations are substantially smaller. Whereas of the male reference persons after the change in the UI law within 6 months 67.5 percent has left unemployment for the female reference persons this is only 53.2 percent. Here, the implicit elasticity of the exit rate with respect to the PBD ranges from 0.8 to 1.1.

5 Conclusions

The above analysis identified important and sizeable disincentive effects of the unemployment insurance system. What lessons can be learned from the Slovenian change of the unemployment benefit law? The law was certainly effective encouraging the benefit recipients to leave unemployment, contributing, most likely, to shortening of their unemployment episodes, thus reducing the severity of the moral hazard induced by the unemployment benefit system. These positive developments have to be weighted against possible additional hardship created by the curtailment of benefit entitlement, as well as worse quality of post-unemployment jobs in terms of their stability, type of appointment, and precariousness. A thorough assessment of the legislative changes would have to probe into these issues as well - an important area for future research.

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Table 1 Outflow to job and to other destinations before and after the 1998 change of law, by duration of unemployment; males and females (%)^{a)}

Duration	Before change of law			After change of law			Increase of outflow		
	Job	Other	Total	Job	Other	Total	Job	Other	Total
Males									
≤ 3 months	28.7	1.2	29.9	31.2	5.3	36.5	2.5	4.1	6.6
≤ 6 months	45.8	3.3	49.1	51.0	12.0	63.0	5.2	8.7	13.9
≤ 9 months	54.9	5.5	60.4	59.4	15.7	75.1	4.5	10.2	14.7
≤ 12 months	61.6	8.2	69.8	63.5	18.1	81.6	1.9	9.9	11.8
Females									
≤ 3 months	21.8	1.3	23.1	25.5	6.5	32.0	3.7	5.2	8.9
≤ 6 months	35.8	3.2	39.0	42.0	13.9	55.9	6.2	10.7	16.9
≤ 9 months	45.7	5.6	51.3	50.7	18.4	69.1	5.0	12.8	17.8
≤ 12 months	53.5	8.4	61.9	55.7	21.0	76.7	2.2	12.6	14.8

^{a)} The calculations are based on samples of 9,196 males and 10,853 females.

Table 2 Requirement for and potential duration of UI benefits before and after the 1998 change of law

Entitlement Group	Experience (years)	Max benefit duration (months)		Age group ^{a)}
		Before	After	
1	0-1.5	3	3	19-29
2	1.5-5	6	3	21-30
3	5-10	9	6	23-35
4	10-15	12	6	27-39
5	15-20	18	9	32-43

^{a)} The age boundaries are determined by the presence of at least 100 observations for a particular year of age.

Table 3 Probability to leave unemployment within 6 and 12 months before and after the 1998 change of law, by entitlement group; males and females(%)

Males Group	PBD (months)	Found a job after		Other exits after		Total after	
		6 months	12 months	6 months	12 months	6 months	12 months
1.	Before - 3	54	70	8	12	62	82
	After - 3	56	67	13	18	69	85
	Difference	2	-3	5	6	7	3
2.	Before - 6	51	67	3	9	54	76
	After - 3	58	69	12	18	70	87
	Difference	7	2	9	9	16	11
3.	Before - 9	47	66	3	8	50	74
	After - 6	51	61	14	21	65	82
	Difference	4	-5	11	13	15	8
4.	Before - 12	43	62	3	8	46	70
	After - 6	51	63	11	18	62	81
	Difference	8	1	8	10	16	11
5.	Before - 18	39	50	2	5	41	55
	After - 9	42	58	9	17	51	75
	Difference	3	8	7	12	10	20
Difference of differences males							
	2.-1.	5	5	4	3	9	8
	3.-1.	2	-2	6	7	8	5
	4.-1.	6	4	3	4	9	8
	5.-1.	1	11	2	6	3	17
Difference of differences females ^{a)}							
	2.-1.	3	2	0	-2	3	0
	3.-1.	5	0	2	3	7	3
	4.-1.	11	6	2	2	13	8
	5.-1.	6	14	-1	3	5	17

^{a)} The underlying numbers for females are not shown and are available on request.

Table 4 Simulation results; cumulative probability to leave unemployment (%)

Duration	Before change of law			After change of law			Difference		
	PBD = 12 months			PBD = 6 months					
	Job	Other	Total	Job	Other	Total	Job	Other	Total
Reference person ^{a)}									
≤ 6 months	44.0	6.0	50.0	52.4	15.1	67.5	8.4	9.1	17.5
≤ 12 months	59.4	13.4	72.8	65.1	21.3	86.4	5.7	7.9	13.6
If age = 40									
≤ 6 months	33.2	5.3	38.5	41.1	14.0	55.1	7.9	8.7	16.6
≤ 12 months	47.4	13.1	60.5	54.6	21.6	76.2	7.2	8.5	15.7
If ill health									
≤ 6 months	14.6	2.2	16.8	19.4	6.5	25.9	5.8	4.3	9.1
≤ 12 months	22.9	6.5	29.4	29.6	11.8	41.4	6.7	5.3	12.0
If female									
≤ 6 months	32.6	3.4	36.0	43.2	10.0	53.2	10.6	6.6	17.2
≤ 12 months	50.8	7.5	58.3	58.6	15.1	73.7	7.8	7.6	15.4

^{a)} A reference person is male, 30 years of age, has no education, 5–10 years of work experience, no dependent family members, and is in good health. Note that before the change in the benefit law this person was entitled to 12 months of unemployment benefits, while after the change of law this was 6 months. The simulations are based on the parameter estimates presented in Van Ours and Vodopivec (2005).

Figure 1: Survival in unemployment, before and after the change of law; distinguished by entitlement group

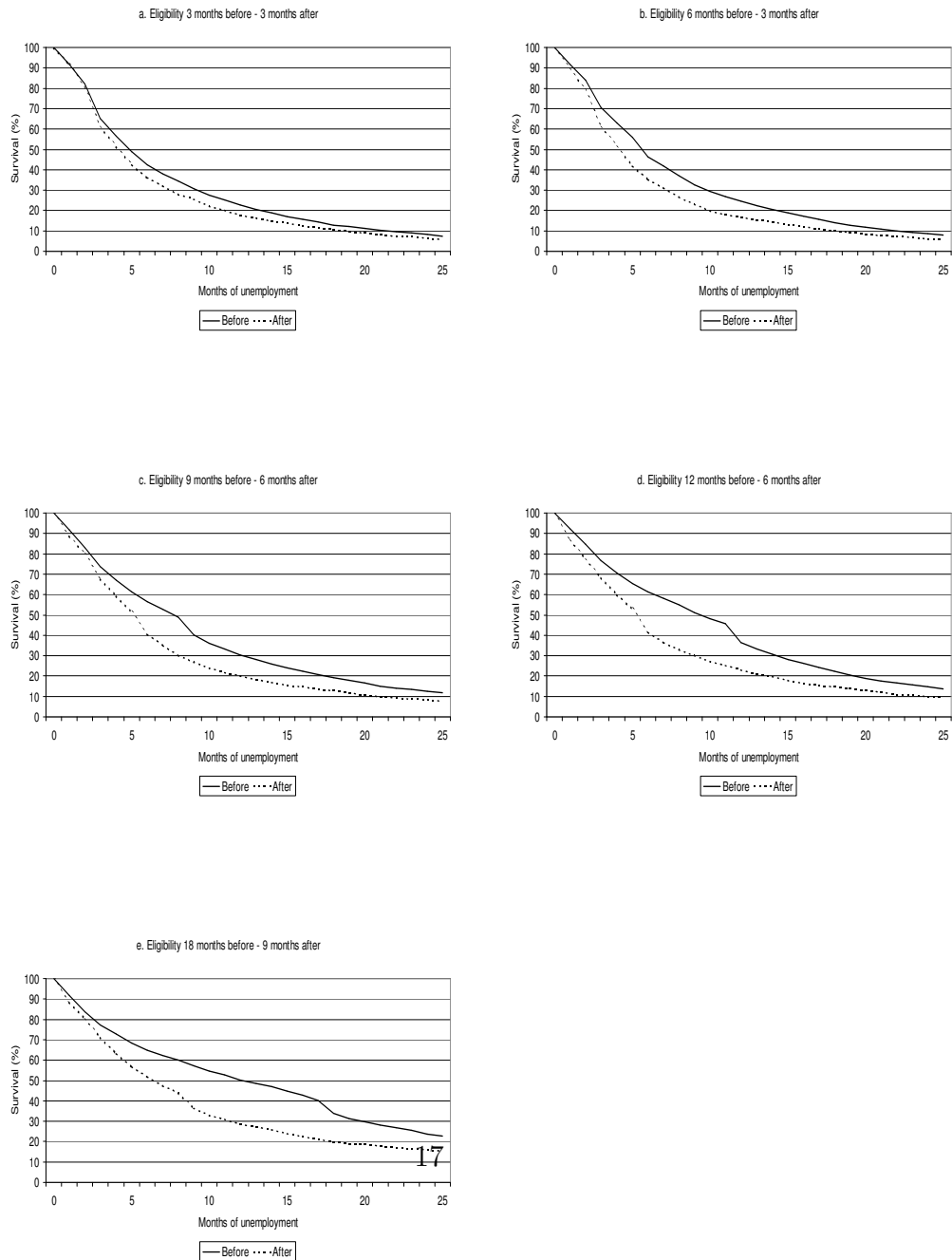


Figure 2: Monthly exit rates from unemployment, before and after the change of law; distinguished by entitlement group

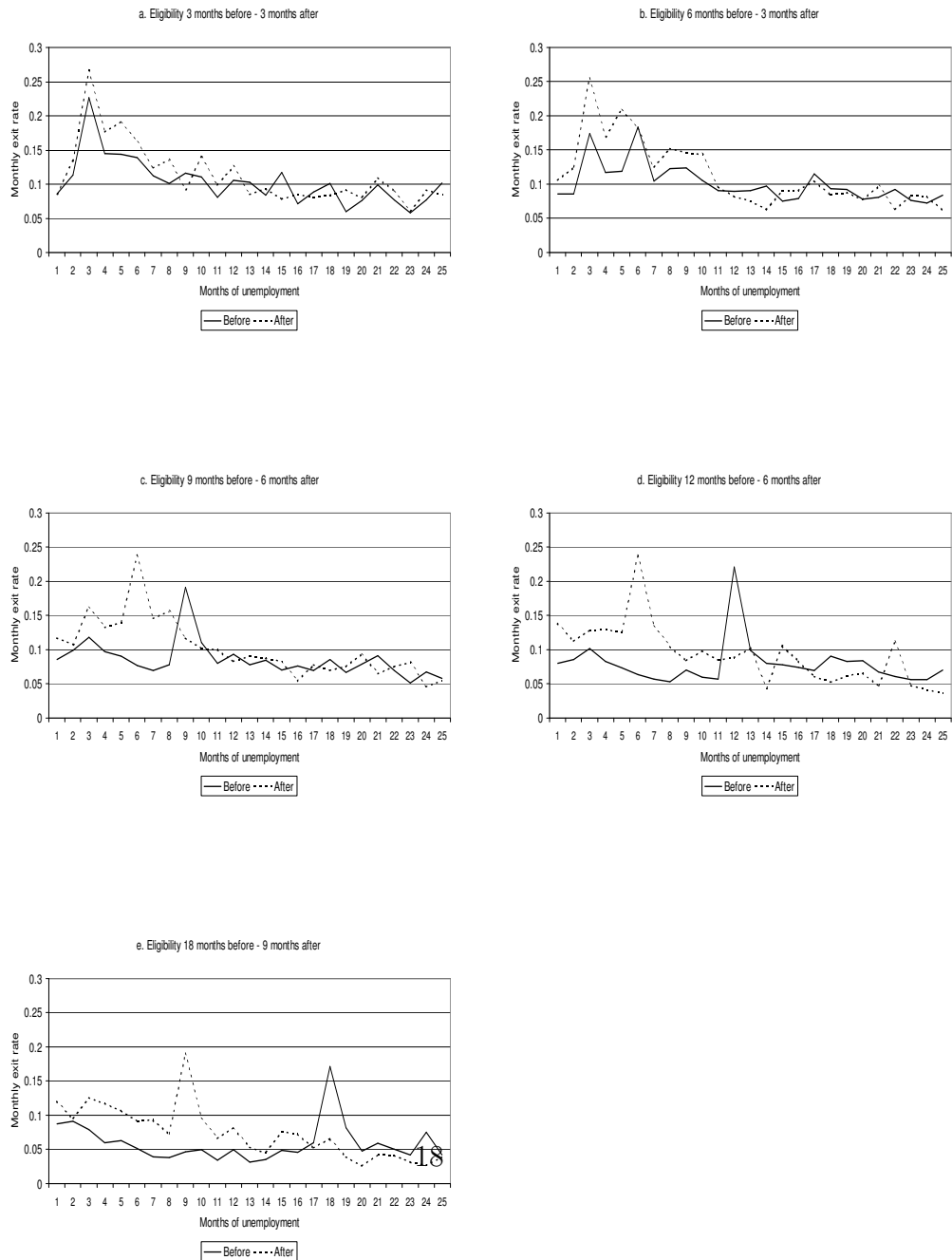


Figure 3: Monthly job finding rates, before and after the change of law; distinguished by entitlement group

