Labour Market Transitions of Individuals in Eastern and Western Europe

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Chapter 3

The duration of unemployment in Russia

3.1 Introduction

By now, the use of reduced-form duration analysis to study unemployment durations is widespread. Such analyses identify the statistical effect of explanatory variables, such as personal characteristics, on the exit rate out of unemployment. This in turn enables one to identify groups of individuals with high expected durations. Devine and Kiefer (1991) provide a survey. Virtually all of the empirical literature is based on data from OECD countries. In the present study we investigate to what extent the tools of reduced-form duration analysis can be fruitfully applied to Russian data, by analysing unemployment duration data from Russia.

Unemployment officially became legal in Russia in 1991. Despite the formidable economic problems in Russia in the 1990's, the official unemployment rate has remained lower than that in most of Western Europe. For example, the level of registered unemployed in Russia was only 1.5% of the labour force in 1993–94 (Standing (1996a)). Unfortunately, such registered unemployment statistics are not very informative. Many jobless do not bother to register and as such choose not to search for jobs by way of the state employment agency. In addition to the de jure jobless, there are perhaps 10–15 times as many individuals who are formally employed but who do not have gainful employment and do not report for duty.\footnote{Estimate of the World Bank advisory to the Russian Ministry of Labour, March 1998.} Others work
regularly but do not receive remuneration on a regular basis. The determination of the labour force status of individuals is compounded by the perverse effect of policy incentives on firms. These incentives encouraged firms to keep "ghost" employees at extremely low wages or to send employees off on unpaid leave (see Section 2). Finally, many individuals do not desire a formal job because they are engaged in under-the-table entrepreneurial work or other activities in the informal sector of the economy.

The definitions of unemployment as designed by the International Labour Organisation (ILO) were deliberately intended to be universally applicable, i.e. not only in OECD countries but also in developing countries outside the OECD (see ILO (1982) and Rao and Mehran (1985)). The most commonly used ILO definition states that an individual is unemployed if he or she reports to be without employment, to be seeking employment, and to be currently available for employment (see ILO (1982)). However, it is clear that a mechanical application of this definition to Russian labour market participants at best only captures part of the unemployment problem. For example, it excludes individuals who are formally employed but do not earn a wage from this, whereas it may include individuals who earn a substantial amount of income in the informal sector.

We deal with this by performing empirical analyses with different definitions of what constitutes a spell of unemployment. In particular, we consider spells of "no work", "no pay", and "no job", as well as spells of unemployment as defined by the ILO, and we estimate duration models for each of these. If a certain explanatory variable (personal characteristic or labour market feature) has a similar effect on the lengths of all of these spell types, then this identifies an important indicator of the expected duration until regular employment. In such a case, policies addressed at the reduction of the duration until work may focus on the corresponding types of individuals. Since the explanatory variables we use are readily observed, it should not be difficult for government-related institutions to identify these types either. All of this should enhance the understanding of the unemployment and underemployment problems of Russia.

The data we use are from the Russian Longitudinal Monitoring Survey (RLMS). To construct spell durations, we use self-reported information on events between the previous interview and the current interview, for a number of consecutive interviews. Unfortunately, this information does not
always enable a precise reconstruction of (the dates of) all transitions. Again, to deal with this, we perform empirical analyses using different rules to deal with imprecise information. It turns out that the results of interest are not sensitive to this.

The chapter is organised as follows. Section 3.2 discusses the institutional context. Section 3.3 introduces the RLMS data and discusses unemployment definitions. We explain why we consider four different types of unemployed and underemployed workers. In section 3.4 we briefly discuss specifications of the reduced-form duration model. Section 3.5 is devoted to the results. Conclusions are drawn in section 3.6.

3.2 Some institutional aspects

In this section we discuss some institutional aspects of the Russian labour market in the 1990's. We mainly focus on issues that are of particular importance for the present study, as there are many existing studies in which the general institutional context of unemployment in Russia is outlined (see e.g. Desai and Idson (1998), Earle and Sabirianova (1998), Lehmann et al. (1999), Lippoldt (1997), Roxburgh and Shapiro (1996), and, in particular, Standing (1996a)). From 1988 onwards, the economy of the USSR was in dramatic recession (see for example Ellman and Kontorovich (1992)), and the Soviet regime recognised that unemployment was inevitable. The 1991 “Employment Act” in the USSR led to the development of a Federal Employment Service (FES). By the end of 1994 there were 2300 labour exchanges in Russia (Standing (1996a)). Firms are obliged to register all vacancies with the FES, and to make use of the FES in recruitment. In practice, they seldom do. In the 1991 Russian Labour Flexibility Survey (RLFS), 2/3 of firms use advertisements to recruit workers, and only 14% rely directly on the FES for the filling of their vacancies. According to Standing (1996) and the 1994 RLFS, only 2/3 of firms register their vacancies with the FES in 1994, and this is less than in 1991. Few of the workless register as unemployed. Standing (1996) explains several reasons for this. Despite their rapid emergence, FES offices are still few and far between. Many firms fail to inform dismissed workers of the need to register, because that way they can avoid severance pay. Also, there is a low probability of getting a job via the FES. In section 3 we provide some empirical evidence for the latter.
Registration is necessary to receive unemployment benefits. However, there are strict criteria for receiving any benefits, and any benefits received are very low (Standing (1996) estimates them at about 10% of the funds necessary for survival, in 1996). Moreover, there is a substantial arrear in the payment of unemployment benefits. For example, in March, 1998, the average arrear is nine months, although it is not so high in 1994–1996. Since the beginning of the transition in Russia, various forms of “Excess Profit Taxes” have existed. The excess profit tax is calculated as a portion of the average wage bill of the firm. For example, the 1994 form of this tax states that if the wage bill divided by the number of employees exceeds more than four times the statutory minimum wage, the firm would be subject to a 35% tax. This encourages firms to keep employees on at extremely low wages, or to send them on long unpaid leave. Roxburgh and Shapiro (1996) provide evidence for this. Lowering real wages (i.e., raising nominal wages with less than inflation) also encourages individuals to leave voluntarily, in which case firms do not have to pay severance payments.

3.3 The data

3.3.1 Work history information in the RLMS

In this investigation we use the second RLMS panel, which is also used in Chapter 2. For an introduction to the RLMS survey, the reader is referred to section 2.2.1.

Recall that the first RLMS panel covers the years 1992 to 1994, and the second panel covers the years 1994 to 1996. Interviews are carried out in the fourth quarter of each year. Thus, the individuals in the sample of the second panel are contacted for interviews in 1994.IV, 1995.IV and 1996.IV. We restrict attention to individuals between age 19 and the normal retirement age (55 for women and 60 for men). This results in 3306 individuals, some of whom experience no work interruptions before the 1996 round.

Attrition from the panel is low. Between the 1994 and 1996 interview,

\footnote{Thanks to the World Bank Advisory to the Ministry of Labour, Moscow, for this information. The arrear is to some extent due to the fact that funds for benefit payment are collected by levies on local employers. Thus, regions with high unemployment and low activity have relatively little funds to be allocated amongst a relatively large number of individuals.}
465 of the 3306 individuals are lost to attrition. We account for spell interruption due to attrition by treating the corresponding durations as independently right-censored durations. This independence assumption is rather strong, because individuals may have moved residence for the reason that they found a job in another city. In a study of unemployment durations in the Netherlands, van den Berg, Lindeboom, and Ridder (1994) found that the independence assumption was innocuous. However, it remains to be seen to what extent this carries over to Russia.

We mostly restrict attention to spells with a starting date after the 1994 interview. This sampling scheme results in random samples of the inflow into the corresponding state, and as such it precludes the initial conditions problems that have to be addressed if one would include all spells that cover the date of the first interview (see Lancaster, 1990). Note that as a result, we have detailed information on the individual's economic activities at the date of the latest interview prior to the spell. An unemployed (to be defined below) individual is asked to state the elapsed time since he entered this state, as well as whether he registers at the employment office and receives benefits, and his current job search strategies. There is also information on the duration (both elapsed and completed) of unpaid leave spells or the elapsed duration of non-payment by the employer. The construction of spell durations from answers to RLMS questions is described in detail in subsection 3.3.4 below. Those who are working are asked to state their job tenure. Wages are corrected with the CPI for the month prior to the interview.

3.3.2 Definition and observation of ILO-unemployment

As noted above, registration at a FES office is not a reliable indicator of whether one is unemployed in any sense. Table 3.1 indicates the low and declining registration at the FES amongst the RLMS 1994–1996 respondents. It also shows that females are far more likely to be registered than males, and that individuals who are registered have a relatively low likelihood of benefits entitlement. As noted in section 2, unemployment benefits generally do not provide a large incentive to register. Note however that women both have a higher registration rate and a higher rate of benefits entitlement. Table 3.2 shows that the FES does not constitute the dominant channel by way of which unemployed (to be defined below) respondents search for jobs.
The matching of firms and workers also often occurs by way of friends and direct applications to enterprises.

Table 3.1: Percentages of non-workers registered with the state employment agency (FES), and receiving benefit

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(M=male, F=female)</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>registered non-worker</td>
<td>6.7</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>registered/receiving benefit</td>
<td>54.1</td>
<td>64.5</td>
<td>49</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data.

Unfortunately, the data do not allow us to distinguish between unemployment spells of individuals who are registered and receive benefits and spells of individuals who are not registered or do not receive benefits. This is because information on registration and benefits is absent for spells in between two consecutive interview dates.

Table 3.2: Job search strategies of the unemployed. Proportions using each method in month prior to RLMS interview

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>applied to state agency</td>
<td>.42</td>
<td>.46</td>
<td>.48</td>
</tr>
<tr>
<td>applied to private agency</td>
<td>.13</td>
<td>.12</td>
<td>.11</td>
</tr>
<tr>
<td>friends</td>
<td>.56</td>
<td>.55</td>
<td>.69</td>
</tr>
<tr>
<td>relatives</td>
<td>.26</td>
<td>.26</td>
<td>.43</td>
</tr>
<tr>
<td>at enterprise</td>
<td>.47</td>
<td>.42</td>
<td>.50</td>
</tr>
<tr>
<td>advertising</td>
<td>.26</td>
<td>.30</td>
<td>.37</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data.

Now let us turn to the ILO unemployment definitions. As noted in the introduction, the three criteria of the ILO's standard definition are that an individual is without work, currently available for work, and seeking work at the time of interview. The application of this definition results in the first type of unemployment we consider. We refer to this type as "ILO-unemployment" or simply "unemployment".

The first question of the interview, "Tell me please, do you work now?",
can be answered with “yes”, “maternity leave or leave for caring for a child under three”, “other paid leave”, “unpaid leave” or “no”. This is the question we use to determine if an individual is without work. In order to separate the individuals without work who would like a job from those without work who are non-participants, we use responses to the question “Did you go anywhere or see anyone looking for a job in the past 30 days?” The respondents who report “yes” to this also report “yes” to the question “Would you like to find a job?”. Together, these constitute the ILO-unemployed at the date of the interview.

Tables 3.3 and 3.4 provide summary statistics of the answers to the above-mentioned questions and some explanatory variables, for all three interviews. There is a larger fraction of working males than working females, although the gap declines to only 6.4% during the sample period. The female jobless are less likely than the males to have searched in the month prior to the interview, although there is no gender difference in the proportion of workless who report that they would like a job.

The proportion of non-workers who are uninterested in obtaining jobs remains at about 25% over the course of the panel. The distribution of individuals amongst various labour market states is relatively stable in the sample period.

At each interview, respondents were actually asked three times about their employment status, in questions placed at the start, middle and end of the interview. In the middle of the interview, individuals were asked if they “currently work”, with the possible answer being yes or no. Individuals who report to be without work at the first question answer “no” to the second question. At the end of the interview, individuals were asked to label one “main time occupation at present” from a choice of fourteen. However, it is not unlikely that respondents prefer to call themselves “housewife”, “retired”, or “disabled” when in fact they are willing to take a job, because

3One of the following responses (besides non-response) was possible: High school or vocational school student; university or technical school student; unable to work for health reasons, disabled; retired and not working; on maternity leave; on official leave for taking care of children under age three and not interrupting employment; a housewife, caring for other family members, raising children temporarily not employed for other reasons and looking for a job; temporarily not employed for other reasons and don't want to work; farmer; entrepreneur; working at an enterprise, organisation, collective farm, state farm or cooperative; working at other than an enterprise, organisation, collective farm, state farm, or cooperative; other (specify).
Table 3.3: Individual characteristics and unemployment in the RLMS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>females</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>males</td>
<td>7</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td><strong>age group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>age 19-20</td>
<td>12</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>age 21-29</td>
<td>10</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>age 30-39</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>age 40-49</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>age 50-59</td>
<td>3</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>university/institute</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>technical/Medical</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>vocational/ sec.</td>
<td>9</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>factory school</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>professional courses</td>
<td>5</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>primary</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td><strong>overall</strong></td>
<td>6.5</td>
<td>6.6</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data.

Table 3.4: Percentages of different labour force categories who would be considered "ILO-unemployed" individuals under our definition

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>higher education student</td>
<td>21</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>disabled, unable to work</td>
<td>16</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>retired, not working</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>maternity leave</td>
<td>.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>on leave for caring for small children</td>
<td>.33</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>housewife</td>
<td>15</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>temporarily not working, looking</td>
<td>56</td>
<td>60</td>
<td>57</td>
</tr>
<tr>
<td>temporarily not working, don't want to work</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data. Note: age groups are 19-55 for females, 19-60 for males.
of possible stigma effects of being unemployed in Russia. Such stigma effects could be particularly large in a country where unemployment was unheard of before 1991. Table 3.4 illustrates just how important the difference is between individuals who consider themselves unemployed according to this question at the end of the interview, and those who would be considered unemployed according to our ILO-style definition above.

The ILO-style definition allows for the inclusion of students, housewives, and other non-working groups, provided they meet the corresponding criteria. Note that many females who are unemployed according to the ILO-style definition report at the end of the interview that they are housewives. Foley (1997) in an earlier study of Russian unemployment, uses the individual's self-classification at the end of the interview to determine who was unemployed in the 1992–1994 rounds of the RLMS. According to Foley's definition, only those who describe themselves as "not working, looking" are considered unemployed. In fact, as Table 3.5 shows, many such people did not search for a job in the month prior to the RLMS interview.

Table 3.5: Stock of working-age individuals in various states at date of RLMS interview, 1994-1996

<table>
<thead>
<tr>
<th>labour market status</th>
<th>1994</th>
<th>1995</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>currently working</td>
<td>79</td>
<td>68</td>
<td>78.1</td>
</tr>
<tr>
<td>maternity leave/caring leave, child≤3</td>
<td>-</td>
<td>6.3</td>
<td>-</td>
</tr>
<tr>
<td>paid leave</td>
<td>1.1</td>
<td>.7</td>
<td>.8</td>
</tr>
<tr>
<td>unpaid leave</td>
<td>.6</td>
<td>.8</td>
<td>.35</td>
</tr>
<tr>
<td>not working</td>
<td>19.6</td>
<td>24.3</td>
<td>20.8</td>
</tr>
<tr>
<td>proportion of not working who would like a job</td>
<td>74.9</td>
<td>74.9</td>
<td>70.6</td>
</tr>
<tr>
<td>proportion of searchers amongst those wanting work</td>
<td>53.1</td>
<td>44.6</td>
<td>56.2</td>
</tr>
<tr>
<td>no. of obs.</td>
<td>2758</td>
<td>2760</td>
<td>2905</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data. Note: age groups are 19-55 for females, 19-60 for males.

Keeping this in mind, it may still be of interest to compare unemployment in the 1994–1996 rounds of the RLMS to Foley (1997) results for the 1992–1994 rounds of the survey. He observes that unemployment is very high amongst under-21s, and relatively high amongst the 21–29 age group. Gender differences in unemployment do not seem important, although women have longer expected unemployment durations. While unemployment among the higher educated is lower, they have higher than average durations. Our
data concurs with this in finding relatively high unemployment amongst the young, and lower-than-average unemployment amongst the most highly educated (see Table 3.5). Due to differences in the observability of individual transitions and the construction of spell durations between interviews, our results concerning (expected) durations are not directly comparable. We return to this below.

In the remainder of this study, we do not use the information from the question at the end of the interview.

### 3.3.3 Definition and observation of other unemployment types

The ILO (1982) also states that: “In situations where the conventional means of seeking work are of limited relevance, where the labour market is largely unorganized or of limited scope, where labour absorption is inadequate, or where the labour force is largely self-employed, the standard definition of unemployed may be applied by relaxing the criteria of seeking work.” (Rao and Mehran, 1985). Obviously, the Russian labour market meets the premise of this statement. We adopt three different approaches, taking into account (i) important features of the Russian labour market, and (ii) what can be observed from the RLMS data.

First of all, we extend ILO-unemployment by including discouraged workers. These are individuals who have become discouraged after non-successful search, but who are still ready and available for work. They are assumed to answer “no” to the question “Did you go anywhere or see anyone looking for a job in the past 30 days?” but “yes” to the question “Would you like to find a job?”. The importance of including discouraged workers in the analysis is evident from the fact that 85% of non-workers who did not search in the month before the 1995 interview report that they want a job. In the 1996 interview, the proportion was 83%. Together, the ILO-unemployed and these discouraged workers constitute the “No Job” type of unemployed, which is our second type of unemployment.

The ILO (1982) guidelines state that unemployment in general should not include individuals who are temporarily absent from their jobs, with the exception of laid-off workers without certain recall to their positions. According to their 1954 definition of unemployment, however, individuals who are temporarily laid-off without pay may be considered to be unemployed. Given that it is widely believed that unpaid leave has been applied as a
substitute for unemployment in Russia (see for example Standing (1996)), we attempt to account for this by developing a third definition of unemployment: “No Work”, which merges “No Job” with “unpaid leave”.

The RLMS asks individuals whether they are on unpaid or partially-paid leave. Spells of unpaid leave are determined by responses to the question “How many calendar days, without a break, did this leave last or has it lasted?”. There is no similar question on partially-paid leave, so we cannot determine durations of partially-paid leave, and for that reason we do not include individuals on partially-paid leave in the “No Work” definition.4

The RLMS questionnaire does not distinguish between short-term unpaid leave and unpaid leave with an undetermined length. Even if it is known whether a completed spell of unpaid leave results in a separation, return to the old job, or transition to a new job, we have no information about how individuals viewed their lay-offs during the unpaid leave spell. In the current economic situation, many workers who are told that they can return at a specified date most likely do not expect this to occur. Given the impossibility of distinguishing between the “temporarily” and “permanently” laid-off, we treat all unpaid leave spells alike.

Finally, we briefly discuss a fourth type of unemployment or underemployment. The ILO (1982) unemployment definition was designed to complement the definition of employment. According to the employment criteria, being “at work” explicitly involves remuneration in cash or kind during the reference period.5 Thus, individuals who work but have not received wages during the reference period do not strictly comply with either the

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4 It should be noted that partially-paid leave is more prevalent amongst respondents in the RLMS surveys than unpaid leave. At the time of the 1995 survey, 0.7% of workers are on unpaid leave, while 1% are on partially-paid leave. Many of those on partially-paid leave are owed substantial sums of money from their enterprise. This suggests that many actually have not been receiving payment during leave. As an example, in the Kamaz truck factory in Nabersheny Chelny, workers officially earn 2/3 of their salary when on leave. However, this salary exists on paper only. Instead of receiving payment, part of the debt to workers is paid as coupons for the company store. This store stocks little more than bread rolls, milk, and sour cream, at prices three times that of the local market.

5 According to ILO (1982), employed persons are those “above a specified age” who, during the reference period are either: (i) At work, performed some work for wage or salary during the reference period. (ii) Generally work, but were ill or injured; on holiday; on strike; on training, maternity, or parental leave; (iii) Persons who performed some work for profit or family gain (in cash or goods) during the reference period (iv) Working with an enterprise but temporarily not at work during reference period for a specific reason.
ILO-employment or the basic ILO-unemployment criteria. To some extent, having a wage arrear indicates hidden unemployment. For this reason, we define a fourth type of unemployment by including (into “No Work” unemployment) workers who are formally at work but have a wage arrear. We refer to this as “No Pay” unemployment.

Lehmann et al. (1999) use the RLMS and a supplement to the March 1996 Russian Labour Force Survey to analyse wage arrears and other aspects of job insecurity in Russia. They find large regional and sectoral variation in the extent of wage arrears. In the 1994–1996 period, arrears are more prevalent than forced leave and short-time work. Wage arrears affect 43% of the employed in the 1994 RLMS round, and 62% of the employed in the 1996 round. Using RLMS data matched with information on employers, Earle and Sabirianova (1998) find substantial intra-firm variation in wage arrears. There seems to be a large range of discretionary practices in the payment of owed salaries. Earle and Sabirianova (1998) find that having a wage arrear reduces the probability of a job-changing transition, and increases the probability of transitions into self-employment and non-employment.

It should be noted from the outset that an empirical duration analysis of this fourth type of unemployment or underemployment is rather speculative. This is, first of all, because it is difficult to assess whether a worker really has not had any kind of payment, in money or in kind. Secondly, the duration of a spell of having a wage arrear is difficult to determine. The question “How many months has this money not been paid to you?” is used to determine the elapsed duration at the interview date. But there is strong evidence that this question is interpreted otherwise, namely as the cumulative number of unpaid monthly wages independent of the timing of the non-payment (see Earle and Sabirianova (1998)). For these reasons we do not go into great detail when discussing the results for this fourth type of unemployment.

We finish this subsection by briefly discussing some issues related to the informal sector of the Russian economy. According to a strict interpretation of the ILO definition of unemployment, individuals who engage in informal activities for remuneration should not be considered unemployed. In Russia, this would likely be a very large portion of those “without a job”, because of the effective absence of unemployment benefits. However, we do not exclude individuals on the basis of informal sector activity, for two reasons. Firstly, the likely underreporting of the activity makes the relevant variables in the
RLMS unreliable. Secondly, and perhaps more importantly, it is impossible to know whether these activities are a choice in the face of formal sector opportunities, or simply short-term survival measures taken by those who would strongly prefer a formal workplace. A desire for enterprise attachment might be particularly strong amongst Russian workers, who have spent most of their working lives attached to all-providing enterprises. In the 1994 sample, 14% of non-working individuals of working age reported engaging in individual economic activity in the month prior to the RLMS interview.

We realise that our groupings of unemployed and underemployed are not exhaustive. Other types of underemployment are suggested by administratively-reduced work hours and consistently low remuneration, as well as by the forced unpaid leave and non-payment considered here. However, these issues cannot be addressed in the framework of a duration analysis based on household survey data.

3.3.4 Observation of spell lengths

In the previous section we determined whether a respondent is in a certain unemployment spell at the moment of an interview. In this section, we determine the length of this spell. Recall that we only use spells that start after the 1994 round and before the 1996 round of the RLMS survey. The recovery of spells and their lengths is complicated by the fact the RLMS does not systematically inquire about all individual labour market transitions that were made in the year since the previous interview (and does not even ask about the total number of weeks worked in that year). If this information would have been available, then we could construct an uninterrupted labour market history consisting of transitions between states and the lengths of the spells in between two consecutive transitions. Instead, we have to rely on information concerning the elapsed time spent in the state that is occupied at the date of the interview, and we only know about at most one event occurring between interviews. The information is often not sufficient to determine the exact date of the relevant transition.

Suppose an individual is unemployed (of a certain type) at the second interview. In principle, we know the elapsed duration of this spell of unemployment. We have to determine the remaining duration by using the information on the elapsed time spent in the state occupied at the date of the third interview. If the individual is still unemployed at the third inter-
view then the spell duration is right-censored. Suppose that the individual is employed at the date of the next interview. Then we know that the spell of unemployment ends somewhere between the date of the second interview and the date at which the individual starts to work in the job he has at the third interview. This is a situation in which we have an “unobserved period”.

Now suppose an individual is employed at two consecutive interviews. Spells of non-work that start and end between these interviews can be recovered to some extent by examining whether the length of the time period between the interview dates exceeds the reported elapsed job duration at the latest interview. In that case it is assumed that a work interruption took place, and that the individual spent at least some time in unemployment. Given that the non-work spell ends in employment, it is not unreasonable to assume that job search has occurred. Again, there is an “unobserved period”, and it is impossible to determine exactly how much of it is actually spent not working.6

There is a substantial empirical literature in which imperfect retrospective observation of past events is taken into account when estimating unemployment duration models and more general models. Most of this literature focuses on the imperfect observation at survey interviews of individual labour market transitions that occurred close to the previous interview. This includes imperfect observation of the transitions themselves as well as their timing. For examples, see van den Berg (1990a), van den Berg (1990b), Magnac and Robin (1994), Magnac et al. (1995), Magnac and Visser (1995), and van den Berg and van der Klaauw (1998). The data used in these studies are typically from yearly survey interviews, and the mean unemployment duration varies from half a year to one year, which is similar to our context. The studies lead to the conclusion that, in general, the estimated effects of the explanatory variables on the exit rate out of unemployment are not heavily biased if one uses simple and reasonable rules of thumb to approximate the values of the imperfectly observed variables. However, the estimated duration dependence of the exit rate (i.e., the way in which the exit rate

6Note that we cannot observe spells of wage arrears that start and end between two consecutive interviews. The corresponding sample is therefore not a genuine inflow sample. This is an additional reason for why the results on the duration of “No Pay” unemployment should be viewed with caution, especially the results on the average level of the exit rate and the way it varies over the elapsed duration of the wage arrear.
changes as a function of the elapsed duration) may be biased under certain rules of thumb, like a rule which states that there cannot be many unobserved transitions within a very short time interval, or a rule which states that unobserved periods are spent in unemployment.

In the present study, we follow this literature by applying some rules of thumb, and by performing extensive sensitivity analyses to validate the empirical results. In particular, we estimate several different specifications to assess the sensitivity to assumptions about what individuals did during unobserved periods. These include: (i) zero time spent in unemployment, (ii) $x\%$ of the time is spent in unemployment, for different values of $x \in (0,100)$, (iii) all time spent in unemployment, and (iv) randomisation across individuals of the percentage of time that is spent in unemployment. Under specifications (ii) and (iv), we assume that the time interval consists of two consecutive parts: the period spent in unemployment and the period spent in employment. The rules of thumb that underlie these specifications are more reasonable than the rule which simply excludes all spells between interviews, because in the latter case short spells are underrepresented in the sample. It is possible that several short unobserved spells occur during unobserved periods, but following the literature we abstract from this possibility.

When we estimate models for ILO-type unemployment then we ignore the possibility of transitions to and from being a discouraged worker. We assume that spells that start and end between two consecutive interviews are spells of ILO-type unemployment. The "No Job" type of unemployment of course merges the ILO-type unemployment with being a discouraged worker, so the results for this group (as well as the "No Work" and "No Pay" group) do not depend on these assumptions.\footnote{The 1992-1994 RLMS data used by Foley (1997) do not contain information on elapsed job durations of employed respondents. This makes it basically impossible to observe spells between interviews at all. Concerning the spells that are observed because they include an interview date, Foley (1997) assumes that when (in subsequent rounds) they are observed to have ended, then they actually ended exactly midway between their minimum and maximum possible durations.}

As we will see in Section 5, the results regarding the effects of explanatory variables (like personal characteristics) are robust with respect to the assumptions concerning unobserved periods, for each unemployment type. The results for duration dependence are more sensitive. This is in agreement to the above literature. Because of the lack of robustness of the duration de-
pendence estimates, we do not focus on them in great detail.

It is possible that unemployed respondents report an elapsed duration which is inconsistent with the response on the labour market state or elapsed duration at the previous interview. Amongst the ILO-unemployed at the 1995 (1996) interview, only 6 out of 64 (8 out of 86) display such inconsistencies. Most of these inconsistencies concern differences in elapsed duration that are less than one month in magnitude, and as such the observations were retained.

It is possible for individuals to have more than one spell in the data. When this occurs, we randomly choose one of the spells. Amongst the ILO-type unemployed as well as amongst the “No Job” unemployed, there are 72 individuals with multiple spells. In the “No Work” group, which includes those on unpaid leave, there are an additional 8 multiple spells. The results on ILO-type unemployment are based on 516 uncensored spells plus 130 right-censored spells. For the “No Job” and “No Work” types, these numbers are 550 + 206 and 745 + 240, respectively. Many individuals have multiple spells of wage arrears or both a wage arrear spell and another unemployment-type spell. We construct the sample of “No Pay” spells by randomly selecting one spell for such individuals. This implies that this sample does not contain the other samples as subsets. The “No Pay” sample contains 864 uncensored spells plus 237 right-censored spells.

3.4 Reduced-form duration models

Consider a spell of a certain type of unemployment. The duration of the spell is stochastic and is denoted by $T$, and realisations of $T$ are denoted by $t$. The cumulative distribution function of $T$ is denoted by $F$, so $F(t) = \Pr(T \leq t)$, with $F(0) = 0$. The survivor function of $T$ is defined as one minus the distribution function and is denoted by $\bar{F}$, so

$$\bar{F}(t) = 1 - F(t)$$

For convenience, we take $T$ to be a continuous random variable, and we denote a probability density function of $T$ by $f$. The exit rate out of unemployment $\lambda(t)$ is the rate at which the spell is completed at $t$ given that it has not been completed before,
\[
\theta(t) = \lim_{\Delta t \to 0} \frac{\Pr(T \in [t, t + \Delta t] \mid T \geq t)}{\Delta t} = \frac{f(t)}{1 - F(t)}
\]

As a function of \( t \), this is the hazard function of the distribution of \( T \). It is said to be duration dependent if its value changes over \( t \). Positive (negative) duration dependence means that \( \lambda(t) \) increases (decreases) with \( t \). The hazard function provides a full characterization of the distribution of \( T \), just like the distribution function, the survivor function, and the density function. All of these can be expressed in terms of one another. Notably,

\[
F(t) = 1 - \exp\left(- \int_0^t \theta_0(u) du\right), \quad t \geq 0
\]  

(3.1)

Duration analysis is concerned with the estimation of the hazard function from duration data. Reduced-form duration models specify the hazard as a simple function of explanatory variables \( x \) and the elapsed duration \( t \) itself. For detailed overviews of reduced-form duration analysis, see Kiefer (1988), Lancaster (1990), and van den Berg (1999). The proportional hazard model, which was also used in Chapter 2, constitutes by far the most common reduced-form duration model framework. It specifies the hazard as a multiplicative function of \( t \) and \( x \),

\[
\theta(t \mid x) = \exp(x, \beta) \theta_0(t)
\]

where, of course, \( \beta \) are our parameters of interest. It is important to allow the exit rate out of unemployment to vary over the elapsed duration, in order to capture that the individual’s environment and behaviour may change over time (van den Berg (1990a) ). In this study we take the duration dependence function \( \theta_0(t) \) to have a piecewise constant specification, which is the most flexible specification used to date,

\[
\theta_0(t) = \exp\left(\sum_{j=1,2,\ldots} \psi_j I_j(t)\right)
\]

where \( j \) is a subscript for time intervals and \( I_j(t) \) are time-varying dummy variables that are equal to 1 in consecutive time intervals. Note that with
an increasing number of time intervals any duration dependence pattern
can be approximated arbitrarily closely. By now it is well known that many
alternative duration dependence specifications with only one or two param-
eters (like a Weibull specification) are overly restrictive (see e.g. Lancaster,
1990). In the applications we assume that, during the first year, the exit
rates are constant within each quarter, while thereafter they are constant
(so \( j \in \{1,2,\ldots,5\} \)). The likelihood contribution of an observation of \( T|x \) is
straightforwardly derived from the above equations.

In section 3.5 we also estimate a model that takes account of unobserved
heterogeneity, which means that some of the \( x \) variables are allowed to be
unobserved. If such unobserved determinants are present in reality then it
is important to take account of them, because otherwise the estimates are
inconsistent. This is particularly true for the estimates of the duration de-
pendence \( \theta_0(t) \). The covariate effects \( \beta \) of the observed \( x \) variables are typi-
cally all biased as well, but often the signs of the elements of \( \beta \) are correctly
estimated (see the previously-mentioned literature). To deal with this, one
may estimate a model that allows for unobserved determinants as a random
multiplicative effect \( v \) in the hazard, so \( \theta(t|x,v) = \exp(x'\beta)\theta_0(t)v \), with \( x \)
now fully observed. The distribution of \( T|x \) (and the likelihood contribution)
is then obtained by integration over \( v \).

We take the unobserved heterogeneity distribution to be discrete with
two unrestricted mass-point locations \( v_a \) and \( v_b \), so \( \Pr(v = v_a) = 1 - \Pr(v = v_b) \).
This is often regarded to be a sufficiently flexible specification (van den
Berg (1999)). This treatment of unobserved heterogeneity in the data was
also used in Chapter 2.

3.5 Estimation results

The results regarding the effects of explanatory variables (like personal char-
acteristics) were found to be robust with respect to the way we deal with
the imperfect observability of spell lengths and transitions, for each unem-
ployment type.\(^8\) In what follows, we focus on results in which the work-
unemployment division of unobserved periods is 10/90 (so 90\% is unem-
ployment). This division rule gives mean durations that are closest to those
reported by Goskomstat (1996) for the unemployment durations that start

\(^8\)The full set of results of the sensitivity analyses is available upon request.
3.5. ESTIMATION RESULTS

after 1994, for the different age and gender groups.

Table 3.6 provides the parameter estimates, and Table 3.7 reports the
implications of these for the covariate effects on the mean duration. Due to
the piecewise constant hazard assumption, the mean duration is straightfor-
dwardly calculated from the duration distribution. The sign of the covariate
effect on the mean duration is necessarily always opposite to the sign of the
effect on the individual exit rate (van den Berg (1999)).

Table 3.6: Piece-wise constant hazard specification of distribution of ob-
erved durations

<table>
<thead>
<tr>
<th></th>
<th>ILO</th>
<th>No Job</th>
<th>No Work</th>
<th>No Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>s.e.</td>
<td>( \beta )</td>
<td>s.e.</td>
</tr>
<tr>
<td>female</td>
<td>.259**</td>
<td>(.14)</td>
<td>.285**</td>
<td>(.16)</td>
</tr>
<tr>
<td>married</td>
<td>.101</td>
<td>(.13)</td>
<td>-.0347</td>
<td>(.16)</td>
</tr>
<tr>
<td>higher ed.</td>
<td>.358**</td>
<td>(.18)</td>
<td>.422**</td>
<td>(.18)</td>
</tr>
<tr>
<td>Moscow St.P.</td>
<td>.331**</td>
<td>(.15)</td>
<td>.340**</td>
<td>(.15)</td>
</tr>
<tr>
<td>reference age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>age 19-24</td>
<td>-.055</td>
<td>(.14)</td>
<td>-.0274</td>
<td>(.52)</td>
</tr>
<tr>
<td>age 25-29</td>
<td>-.197</td>
<td>(.20)</td>
<td>-.239</td>
<td>(.19)</td>
</tr>
<tr>
<td>age 40-retir.</td>
<td>-.394**</td>
<td>(.20)</td>
<td>-.601**</td>
<td>(.20)</td>
</tr>
<tr>
<td>town ( \leq 2500 )</td>
<td>.071</td>
<td>(.14)</td>
<td>.0136</td>
<td>(.11)</td>
</tr>
<tr>
<td>piece-wise constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hazards, months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 ((v_1))</td>
<td>.0360</td>
<td></td>
<td>.0322</td>
<td></td>
</tr>
<tr>
<td>3-6 ((v_2))</td>
<td>.0611</td>
<td></td>
<td>.0559</td>
<td></td>
</tr>
<tr>
<td>6-9 ((v_3))</td>
<td>.151</td>
<td></td>
<td>.1336</td>
<td></td>
</tr>
<tr>
<td>9-12 ((v_4))</td>
<td>.319</td>
<td></td>
<td>.2400</td>
<td></td>
</tr>
<tr>
<td>( \geq 12 ) ((v_6))</td>
<td>.0516</td>
<td></td>
<td>.0500</td>
<td></td>
</tr>
<tr>
<td>unobserved heterogeneity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( v_u, v_s )</td>
<td>-.25</td>
<td>-5.3</td>
<td>-2.6</td>
<td>-5.1</td>
</tr>
<tr>
<td>prob.</td>
<td>.91</td>
<td>.09</td>
<td>.95</td>
<td>.05</td>
</tr>
<tr>
<td>LL</td>
<td>-.568</td>
<td>-.852</td>
<td>-.867</td>
<td>-.972</td>
</tr>
<tr>
<td>no. of obs.</td>
<td>646</td>
<td>756</td>
<td>985</td>
<td>1101</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data. ** significant at 5% level, * significant at 10% level.

Females have significantly shorter unemployment durations than males.
Recall from Subsection 3.2 that their unemployment rates do not differ much
from the male rates during the sampling period. This suggests that their un-
employment incidence (i.e., the rate at which they become unemployed) is
higher than the incidence for males.\(^9\) Katz (1998) shows that, in the rounds

\(^9\)In equilibrium, the unemployment rate equals the product of the inflow rate and the
of clerical and administrative staff reductions that initially accompanied the
collapse of the USSR, an estimated 70–80% of those laid off were women.
The phrase “The female face of Russian unemployment” was widely used
amongst Russian social scientists. Our results suggest that this phrase needs
some qualification for the period since 1994, as female unemployment dura-
tions are smaller than male durations.

In a sensitivity analysis (not shown here), models with an interaction
term between gender and marital status were estimated. Of female respond-
ents in the 1995 RLMS survey, 74% are married. It turns out that married
females have longer durations than married males, whereas unmarried fe-
males have shorter durations than unmarried males. Apparently, unmarried
females search more intensively than married females, or they have lower
reservation wages, or being married counts against females in recruitment.

We find that highly-educated workers who became unemployed after Oc-
tober 1994 have shorter unemployment than their less educated compatriots.
Using the 1992–1994 RLMS data, Foley (1997) finds relatively high dura-
tions for those with completed higher education. While keeping in mind that
the duration variables and empirical methodology are different from ours, it
seems that the jobs situation appears to have changed over time in favour of
better educated workers. The finding that individuals with higher education
have higher exit rates from unemployment concurs with evidence from other
transition economies. Lubyova and van Ours (1997) find that Slovaks with
higher education or vocational training have relatively high rates of moving
from unemployment to a job in 1995. Ham et al. (1998) find that, amongst
men in the Czech and Slovak republics, the older and less educated have
significantly longer jobless spells.

Individuals who live in Moscow and St. Petersburg have significantly
higher exit rates than individuals in other areas. This result is consistent with
other labour market studies (see for example Earle and Sabirianova, 1998)
which find that individuals in these areas are less likely to be in marginalised
labour market positions than in other areas of Russia.

We find no significant age differences in the exit rate out of ILO-style
unemployment. Although we saw earlier (in Table 3.5) that the unemploy-
ment rate among individuals under 29 is relatively high, their spells are not
longer than for other age groups. Such findings are common in the inter-

---

mean duration; see e.g. Layard et al. (1991)
national literature on unemployment durations (see for example Leighton and Gustafsson (1982)). This suggests that these young individuals have a higher incidence (inflow) than the others. Specifications which include the discouraged unemployed, those who experience unpaid leave, and those who experience wage arrears, suggest that workers aged above 40 find it significantly more difficult than younger workers to exit the corresponding marginalised labour market positions.

For “No Work” and “No Pay” unemployment, we observe longer durations amongst residents of small towns. This suggests that unpaid leave and non-payment spells are relatively lengthy in communities of less than 2500 individuals, and this concurs with Lehmann et al. (1999), who find large geographical variation in the extent of wage arrears.

One of the most important empirical findings concerns the fact that the covariate effects are qualitatively very similar across our four types of unemployment. The sets of characteristics with the strongest (significant) effects on the duration are remarkably similar, and the same is true for the signs of the effects. This enables the identification of groups of individuals with problematic prospects who are in some sort of unemployment. Groups that have problematic prospects in one particular type of unemployment also have problematic prospects in other types of unemployment. To put this differently, whether a group has problematic prospects does not depend on the particular definition of unemployment used.

Now let us turn to the estimated mean durations. The mean durations in Russia appear to be short for the individuals who lost their jobs after October 1994. The predicted mean completed spell length amongst unemployed searchers is 8.5 months. Two comments are in order. First, mean durations can only be calculated under the assumption that the duration dependence of the exit rate extrapolates to duration values outside the sample range. In our case, this amounts to assuming that there is no duration dependence after two years of unemployment duration. This assumption is by definition untestable with our data. Secondly, our result should not be taken to mean that the average duration among the individuals who are unemployed at a given point of time (i.e., in the stock) is also so low. Both in our data and in the Goskomstat (1996) data, the average elapsed duration in the stock is much higher. In general, if a hazard function displays negative dura-

\[10\] For example, 52% of the jobless at the 1994 interview date were already unemployed
tion dependence (even only at durations exceeding two years), then stock samples may overrepresent high durations relative to inflow samples and the population distribution (Lancaster (1990)). In addition, in our case, the stock presumably contains many individuals who were hit disproportionally hard by the economic transition in the early 1990's. The mean completed duration of the individuals in the stock is even higher (Lancaster (1990)).

Table 3.7: Expected durations, piece-wise constant hazard specification of distribution of observed durations

<table>
<thead>
<tr>
<th></th>
<th>ILO</th>
<th>No Job</th>
<th>No Work</th>
<th>No Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>expected duration in months</td>
<td>8.53</td>
<td>9.06</td>
<td>7.38</td>
<td>6.68</td>
</tr>
<tr>
<td>percentage change in expected durations due to change in covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>-10.5</td>
<td>-11.2</td>
<td>-12.0</td>
<td>-12.1</td>
</tr>
<tr>
<td>married</td>
<td>-4.1</td>
<td>1.35</td>
<td>12.0</td>
<td>14.1</td>
</tr>
<tr>
<td>completed higher education</td>
<td>-14.8</td>
<td>-16.6</td>
<td>-29.2</td>
<td>-25.6</td>
</tr>
<tr>
<td>Moscow St. Petersburg</td>
<td>-13.4</td>
<td>-13.4</td>
<td>-19.6</td>
<td>-14.1</td>
</tr>
<tr>
<td>reference age group 30-39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>age 19-24</td>
<td>2.3</td>
<td>1.1</td>
<td>9.15</td>
<td>11.5</td>
</tr>
<tr>
<td>age 25-29</td>
<td>8.0</td>
<td>9.1</td>
<td>-.42</td>
<td>.09</td>
</tr>
<tr>
<td>age 40-retir.</td>
<td>15.9</td>
<td>21.8</td>
<td>29.0</td>
<td>25.6</td>
</tr>
<tr>
<td>resident of town of ≤ 2500</td>
<td>-2.9</td>
<td>-.53</td>
<td>15.0</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Source: authors' calculations using RLMS 1994-1996 data.

The estimated mean duration is somewhat smaller in “No Pay” unemployment than in the other types of unemployment. This is due to the fact that the wage arrear spells are on average shorter than the other spell types. The mode of the distribution of wage arrears is at one month. This suggests that many transitions into and out of having a wage arrear may be unobserved and unaccounted for in the analysis, which casts further doubt on the analysis for the “No Pay” group.

We now briefly discuss the estimation results for the duration dependence of the exit rates. The estimated exit rates are highest between 6 for more than a year. Note that we do not use these spells in our analysis.

11 Only 27% of the individuals in the stock at the 1994 interview date complete their spell before the last interview of the panel. Note again that we do not use these spells in our analysis.
3.5. ESTIMATION RESULTS

and 12 months, and within this interval they are highest between 9 and 12 months. These results are sensitive to the rules of thumb that we use to deal with the imperfect observability of spell lengths and transitions.\textsuperscript{12} Thus, the estimated duration dependence is to a certain extent spurious. From analyses with subsamples it appears that the duration dependence is the same for individuals with different $x$, which confirms the proportional hazard model specification. Note that as the probability of not leaving unemployment before 10 months is about 15\%, the assumptions concerning "unobserved periods" that affect higher durations are not likely to affect the estimated covariate effects much. To shed more light on this, we also performed estimations on a modified data set in which a fraction of the individuals with 9 to 10 month durations is assumed to have a duration equal to the median duration of the completed spells which include an interview date. The signs, orders of magnitude, and significance of the coefficients are very close to those reported here.

In a working paper version (Grogan and van den Berg (1999)) we also report estimation results for models with more restrictive specifications for the duration dependence function $\psi(t)$, notably Weibull and log-logistic specifications. Those results support the findings reported here.

Furthermore, alternative specifications which include in $x$ a wider range of regional dummies and/or the wage prior to the unemployment spell failed to increase the explanatory power of the model. This is in accordance to our estimation results for the distribution of unobserved heterogeneity. The null hypothesis of no unobserved heterogeneity cannot be rejected in any of the four groupings of marginalised workers. This concurs with Foley (1997), who finds that unobserved heterogeneity is not of significant importance in the 1992-1994 rounds of the RLMS. Recall that we do not use unemployment spells that are ongoing at the date of the first interview. In Grogan and van den Berg (1999) we also estimate models with an alternative sample

\textsuperscript{12}If an individual reports at the three consecutive interviews that he works, has just become unemployed, and has just started in a new job, then the assigned unemployment duration is about 10 months. If he reports at the interviews that he works, is unemployed for a year, and is employed for a year, then the assigned duration is about 11 months. If we use as an alternative rule of thumb that 50\% of an unobserved period constitutes unemployment then the assigned durations of such individuals (and individuals with similar responses) are smaller, and the function $\psi(t)$ does not peak at the 9-12 month interval. Note that individuals who report short elapsed job durations may in fact have made several transitions since the previous interview.
that only includes individuals who are unemployed at that date. As noted in section 3.1, this requires certain assumptions to deal with the initial conditions problem, notably assumptions on the inflow rate into unemployment before the date of the first interview (see also Lancaster (1990)). It turns out that the qualitative results on the effects of the explanatory variables are in agreement to those reported here.

3.6 Conclusions

In this study we used longitudinal survey data to assess factors affecting the duration of unemployment in Russia. We faced two formidable obstacles. First, a mechanical application of the unemployment definitions that are used in studies with data from OECD countries at best only captures part of the Russian unemployment problem. Secondly, the data do not always enable a precise reconstruction of the lengths of the spells of unemployment and underemployment. We examine four types of marginalised labour force participants, according to ILO guidelines and survey responses, and we estimate duration models for each type. In addition, for each type, we estimate models using different sets of rules to deal with imperfectly observed spells.

It turns out that the duration effects of explanatory variables (like personal characteristics) are qualitatively very similar across the different types of unemployment. For our sample of individuals who lost their jobs between 1994.IV and 1996.IV, the sets of characteristics with strong duration effects are remarkably similar. In addition, the results regarding the effects of the explanatory variables are robust with respect to the way we deal with imperfectly observed spells, for each unemployment type, it is possible to identify groups of unemployed individuals who are likely to have problems re-entering employment. Groups that have a high expected duration until regular employment in one particular type of unemployment also have high durations in other types of unemployment. To put this differently, whether a group has problematic prospects does not depend on the particular definition of unemployment used.

In this study, it has been found that durations of unemployment which began after 1996.IV in Russia were relatively short, and that the "average" unemployed individual would not join the long-term unemployed. It is of interest to consider these finding in the context of the international com-
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Comparison of long-term unemployment statistics discussed in Chapter 1 (See Table 1.3). Clearly, large portions of the unemployment pools of all Eastern European countries had been unemployed for more than one year by the mid-1990's. These results can be reconciled with the proposition that those who managed to weather the initial 1992 mass layoffs (and lost their jobs after 1994.IV) have relatively strong attachments to the labour market, or the proposition that labour demand improved substantially after the initial shock of liberalisation. The data used in this analysis does not allow these propositions to be investigated.

Analysis of unemployment durations of individuals provides useful information for the implementation of policies that are directed towards the reduction of high durations until regular employment (like regular job search advice, job application training, and other training programs), as such policies may focus on these problematic groups of individuals. Employment agencies may screen individuals and subsequently allocate those with unfavourable characteristics to certain training programs. Our results suggest that it could be particularly useful in this respect to focus on (unmarried) men, individuals with low education, and individuals living outside of the largest cities.