

The determinants of the time to leave the social assistance scheme: evidence for Belgium

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7th Annual Espanet Conference, Urbino (17-19 September 2009)

Work in progress
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Abstract

The interplay between individual heterogeneity and contextual and institutional effects regarding the duration in minimum income schemes, which are characterised by devolution, is largely uncharted territory. For this reason, this paper examines both between-persons and between-municipalities variation in the probability of leaving the minimum income scheme given the time in the scheme. The sample used covers one third of the 2004 entrants aged 25 to 55 for the Belgian social assistance scheme who were not entitled to the minimum income scheme for one year and a quarter. We address three questions in the paper: Firstly, what is the mean duration and the probability of leaving the minimum income scheme. Secondly, is there variability at the level of the welfare agencies? And finally, what are the determinants of the probability of leaving the minimum income scheme given the time in the scheme? We examine these questions on the basis of administrative records covering a 36 month observation window. Estimates were obtained by a multilevel discrete-time event history analysis which allows for multiple failures. We find that the Belgian social assistance scheme has a rather high turnover for entrants, namely a mean duration of 9 months. The probability of remaining in the social assistance scheme at least 1 year since entry at start time is 32%. Besides, the exit rates decline if time on welfare increases. As a result of the multilevel discrete time event history model we find that only 5% of the variability in the probability of leaving the welfare scheme is situated at the municipality level. Age, sex, household type and marital status have a significant effect on the probability of leaving the minimum income scheme. Furthermore, the unemployment rate and the mean amount of the supplementary benefit by municipality do not significantly contribute. By contrast, the evidence suggests that the region influences the probability of leaving and that a higher social employment participation rate of the welfare agency increases the probability of leaving the scheme.

Introduction¹

There is an extensive literature dealing with the outcomes in the short or medium-term and the effectiveness of specific employment and training initiatives (Heckman et al, 1999; Card et al, 2009). Furthermore, the transition to an active welfare state has also been well-documented, both at a national level and from the more general perspective of welfare state regime types (Esping-Andersen et al, 2002). In addition, literature on the probability of leaving the social assistance scheme given time in the minimum income scheme has explored the heterogeneity versus dependency hypotheses. However, still little is known about the interplay between individuals, institutions and their socio-economic context in shaping paths through social assistance in work based social assistance schemes. This has several reasons. Firstly, the impact of the local welfare agency policies has remained largely uncharted territory (Finn, 2000; Meyers, 1998). Yet such local differences in policy implementation are pertinent to the description of legal security and the degree of equal access to social rights within a national setting (Cox, 1998). Secondly, due to data restrictions, research usually focuses on a number of cities, so that only partial insight is acquired into the determinants of the observed

¹ I am grateful to my colleagues Karel van den Bosch, Joris Ghysels, Eva Lefevère, and Tim Goedemé for their comments and tips, and to Chris Brijs for his information on the data from the Data Warehouse Labour market and Social Inclusion. Furthermore, I should like to thank also Fiona Steele and Dimokritos Kavadias for their help with the multilevel modelling.

variation. The research results are, moreover, only partially transferable, due to the specificity of the social assistance schemes and their interconnectedness with the design of the social protection system in general. Therefore, in this paper, we wish to document and conceptualise between-persons and between-municipalities variability in the probability of leaving the Belgian social assistance scheme given the time in this scheme.. Hence, we estimate the hazard function. The duration of the average welfare spells, indicates (to a certain degree) the depth of the poverty conditions and shows to which extent the set of employment, family, and education policy measures adequately faces social risks (Leisering & Leibfried, 1999). The multilevel event history analysis is based on a sample of 2004 cohort entrants aged 25 till 55 covering a 36 months observation window who were not entitled to social assistance for at least one year and a quarter.

The outline of the paper consists of four sections. In the first part the qualities of the Belgian social assistance scheme are described. Firstly, the legal and administrative framework is discussed, focussing on decentralisation. Then, we describe the design of the universal cash benefit scheme. After that, we consider its evolution towards an individualised work based social assistance scheme, and finally we address the implications of these evolutions on local discretion. The second section addresses literature on explanatory mechanisms which account for variation in welfare spells and sets out hypotheses based on the prevailing literature. The third part deals with the empirical evidence. We start with a description of the data used at both individual level and welfare agency level. Furthermore, we present some key statistics. After that, we present the methodology used to estimate the probability of leaving the minimum income scheme given the time in the social assistance scheme. Then, we present some descriptive hazard and survivor function. Finally, we report on the estimated multilevel event history model. To conclude, we summarize the main findings.

1. The Belgian social assistance scheme

Belgium has, from a European perspective, what is traditionally considered to be a low percentage of social assistance claimants (0.8% of the adult population in 2004). A first explanation of this low percentage is that Belgium is a continental or corporatist welfare regime (Esping-Andersen, 1990), which addresses means-tested benefits as residual schemes. Moreover, the low number of generalized social assistance claimants needs to be seen in relation to the existing categorical social assistance schemes, and in relation to the design of the social security schemes. In Belgium school leavers can benefit from a flat-rate unemployment benefit after an initial waiting period has been completed. In addition, unemployment schemes in Belgium are in principle unlimited in time, as long as the claimants continue to fulfil the conditions. Within Belgium the percentage of social assistance claimants per municipality varies in 2004 from 0% to 8%.

The legal and administrative framework of the social assistance scheme

In Belgium the social assistance schemes were developed at the end of the sixties and the beginning of the '70s. In 1974 a generalised means-tested, cash benefit (Eardley et al, 1996a) was introduced to complement the earlier designed categorical social assistance schemes (for the elderly, for handicapped persons and for children). It was aimed at guaranteeing a

minimum income to those needy persons living in Belgium who had no right to social security benefits.

Since its creation in 1974, the Belgian social assistance scheme has been a shared responsibility of the federal government and local welfare agencies in line with historically developed local initiatives of poor relief. Social assistance benefits are regulated by a national statutory framework (Eardley et al, 1996a). Federal government lays down the conditions for entitlement, the benefit levels and the major conditions for administration (incl. the social inquiry, the means test, and the time limits that apply to decisions and payments). Local welfare agencies at the municipality level (called public centres for social welfare) administer the prevailing federal legislation². Local welfare agencies are autonomous organisations under public law, governed by politically composed councils appointed by the municipality (Eardley et al, 1996b)³. Local welfare agencies have a broad autonomy and a margin of appreciation. Besides administering the federal designed benefits, the local welfare agencies' task has, since 1976, been to take supplementary initiatives of a preventative or curative, or a material (cash or tied benefits) or non-material nature in line with their own judgement and according to local needs in order to ensure that people can live in human dignity. The local welfare agency (or, indirectly, the municipality) bears the full costs of the supplementary initiatives. With the exception of some categories, such as formerly homeless persons, federal tasks are financed partly (ranging from 50 to 65 percent according to the number of social assistance claimants in the municipality) by the federal government. The remaining percentage is supplied by the welfare agency and/or the municipality. Consequently, Belgian social assistance scheme can be seen as demonstrating evidence of the most far reaching type of decentralisation, namely devolution (Van Mechelen & De Maesschalck, 2009). Devolution involves the transfer of authority for decision making, finance and management to quasi-autonomous units of local government (Kaiser, 2006).

Benefit levels, and the conditions and duration of benefit receiving

The conditions for entitlement are: claimants must be 18-years-old (except when pregnant or when emancipated by marriage), living in Belgium, having Belgian nationality or able to satisfy criteria on their residence in Belgium. Furthermore, a claimant should be needy, have no right to other social security benefits and should be available for work, except when the availability for work is exempted on grounds of health or equity reasons, such as family circumstances. Entitlement to social assistance is conditional on a family-based means test. The level of benefit is low in comparison to other OECD countries (Van Mechelen & De Maesschalck, 2009) and covers, from 64% (for a couple) to 87% (for a lone parent having 2 children) of the national 60% poverty threshold in 2004 according to the household type. As mentioned earlier, local welfare agencies may complement this amount by a general or tied supplementary benefit. Benefit levels are indexed in line with to the health consumer price index⁴. Nevertheless, the benefit level is not linked to the evolution of real incomes. Consequently, increases in the benefit level are the result of a decision taken at the federal political level. With the introduction of the 2002 Social Integration Act the benefit level was increased by 4% (Cantillon et al, 2004). In principle benefit is unlimited in time, as long as

² Since 2006 the regional authorities have also defined the organisational responsibilities of the local welfare agencies that administer federal law, such as accountancy or relations with the municipality.

³ Belgium is composed of 589 municipalities, and as a result 589 welfare agencies.

⁴ This consumer price index excludes some goods like tobacco and fuel.

the conditions for claiming are met. Administratively, the entitlement for benefit is subject to revision after at most one year.

Towards an individualised work based social assistance scheme

The Belgian social assistance scheme has been explicitly transformed since 2000 from a traditional 'passive' to an active welfare scheme, in order to avoid that people should settle down into welfare dependency. Activation and responsabilisation – and to a lesser extent investment- gained importance, which may have served to both reinforce and undermine the original purpose of guaranteeing a minimum income. In 2000, the Spring Programme was introduced. This is an action plan which aimed at making welfare agencies increase their efforts to bring claimants closer to the labour market and/or to integrate them into the labour market. The Programme provides increased finance for existing general⁵ or specific social employment programmes and diversifies the available social employment programmes.

In October 2002 a major reform took place, which consolidated the evolution towards a work based social assistance scheme: namely, the introduction of a new act on universal cash benefits. Under this Social Integration Act social assistance can be provided as a cash benefit, in combination with a personal social integration project or in the form of a social employment.

The Act aims at creating maximum societal integration and participation, and self sufficiency through individualisation and through reinforcing the availability for the labour market as a condition for social assistance reciprocity. So, labour market integration is considered the way to realize these objectives. Although availability for the labour market has been a condition of entitlement since 1974, it has only since 2002 been interpreted strictly. Moreover, welfare agencies have been asked to encourage employment as well as to prove the availability of candidates for work” (Administratie Maatschappelijke Integratie, 2002). In addition, the focus on rights and duties is enlarged through the stricter interpretation of availability for the labour market, putting to the forefront the question ‘who gets what and why’ (Valkenburg, 2007). Individualisation is reinforced by both the strengthening of a tailor-made approach (which is explicitly stated as being a task of welfare agencies) and the reinforcement of the recipients as active participants. The main tool proposed to activate and individualise welfare is the generalisation of the personal social integration contract, formerly only obligatory for youngsters. The contract aims at bringing clarity to the rights and duties of both the welfare agencies and the claimants (and eventually, also of third parties). The contract is not obligatory for claimants older than 24, but can be activated at the request of the claimant or the social assistant. Nevertheless, once a contract is signed, not fulfilling the duties as described in the contract can result in a sanctioning of the benefits.

Seven employment programmes cover the main social employment programmes in which welfare beneficiaries may participate⁶. The social employment programme (called Article 60) is by far the most used programme. This programme accounts for 88% of the participants in

⁵ Since 1998 several activation measures, originally designed only for the unemployed, have been opened up for social assistance claimants. Gradually, access has also been given to persons applying successfully for the equivalent universal cash benefit. As these persons do not meet the conditions of residency on Belgian territory, they receive the same amount of the universal cash benefit under a different Act.

⁶ For more detailed information on the other employment programmes for welfare beneficiaries, we refer to POD Maatschappelijke Integratie (2006).

2004 (POD mi, 2008:4) in social employment programmes through welfare agencies. It is a programme which allows participants to acquire work experience during the number of days they lack for being entitled to an unemployment benefit. Welfare agencies may employ participants themselves or may have agreements with non-profit organisations or with organisations recognized as social economy organisations. Most participants are working in the welfare agency itself.

Increased local discretion in an individualised work based social assistance scheme

The evolution towards an individualised work based social assistance scheme has brought increased local discretion (although no explicit devolution of either additional competences or financing to the local level has taken place), both by the nature of the process and by the absence of a detailed federal framework. Conditions for entitlement to social employment programmes are federally designed. But, crucial notions for the implementation of getting welfare claimants into employment, such as ‘availability for work’ or ‘a suitable job’, are not clearly defined by federal law (Pieters, 2002). Methodologies for guiding decisions on the degree of availability for work, on the allocation to a type of training or work experience programme, and to assess the implementation of the duties that are defined in the social integration contract have neither been designed. In addition, general conditions on the organisation of labour market integration (incl. the budget allocation, the time spent, and the task specialisation of services) are subject to local competence⁷ and, the local welfare agency can take action as a structural player in the labour market, stimulating demand by local partnerships and/or providing jobs themselves. These elements contrast with the detailed regulation on the conditions for entitlement to the cash benefit, which includes a social inquiry and a family based means-test⁸.

Consequently, the welfare to work social assistance scheme is to a great extent shaped through local implementation, which is in Belgium mainly situated in the following elements as sketched out in Table 1: the generosity of the supplementary benefit, the organisation of the client processing, the criteria for both the evaluation of the availability for work and the exemption from the availability for work, the allocation of claimants to activation, social integration, and training and education programmes, the design of the social integration project, and the sanctioning of claimants.

As local welfare agencies decide fully on the means for, and ways of, implementation, they have developed a variety of labour market integration practices (De Meyer et al, 1998; Sannen et al, 2000; Hermans, 2005a⁹) besides of the considerable disparities between the levels of the

⁷ Nevertheless, a first step towards harmonising input means is launched with the Social Integration Act: a fixed amount of money for each social assistance claimant processed, according to the duration of processing, is granted by federal government. The yearly amount allocated for a social assistance beneficiary was 320 euro in 2007. This amount aims to minimise the substantial differences in the available budgets of local welfare agencies, but it is too low to cover real costs.

⁸ With the exception of a margin of appreciation concerning some of the types of means which can be included in means-testing and the assessment of the adequacy of the powers of recovering payments from family members who are liable to offer financial support; as well as the full decisional power that welfare agencies have relating to the provision of supplementary benefits

⁹ Hermans (2005a,b) distinguishes, by qualitative research, three types of activation policies for Belgian welfare agencies on the basis of seven output and throughput criteria; namely, the view on the final aim of integration, the degree of task specialisation implemented to activate clients, the degree of uniform processing within the

supplementary benefits awarded (Lammertyn et al, 1990; Van Mechelen & Bogaerts, 2008; Ashworth et al, 2002).

Table 1: Overview of local and federal competences

	Local level	Federal level
Design of conditions of entitlement to universal cash benefit		X
Level of universal cash benefit		X
Financing of universal cash benefit	X	X
Design of implementation conditions of universal cash benefit	X	X
Design of conditions of entitlement to supplementary benefit	X	
Level of supplementary cash or tied benefit	X	
Financing of supplementary benefit	X	
Design of implementation conditions of supplementary benefit	X	
Design of conditions of entitlement to labour market programmes		X
Allocation to labour market programmes	X	
Local partnership building and labour market demand creation	X	X
Financing of labour market programmes	X	X
Design of general conditions of social integration project		X
Design of social integration project	X	
Design of implementation of conditions of availability for work	X	
General conditions of sanctioning of benefit		X
Implementation of sanctioning of benefit	X	
Organisation of client processing	X	X
Budget for client processing	X	X

2. The literature on paths through welfare (towards paid labour)

2.1. The literature

Research into social assistance dynamics first took shape in the 1970s and 80s (incl. Bane & Ellwood, 1986; Blank, 1989), revolutionizing prevailing concepts on poverty, such as the emergence of an underclass or a culture of poverty, by showing that the majority of the poor were only poor for relatively short time periods. The development of this research tradition went hand in hand with the breakthrough of the panel study approach and a new statistical technique in the social sciences known as event history analysis. Since the 1990s, similar research into social assistance dynamics has been conducted in other European welfare states (incl. by Leisering & Walker, 1998 (UK, Germany); Leisering & Leibfried, 2001 (Germany); Cockx, 1997 (Belgium); Cordazzo, 2005 (France); Dahl & Lorentzen, 2003; Dahl & Lorentzen, 2005 (Norway); Hansen, 2008 (Norway); Ayala & Rodriguez, 2007 (Spain)).

The dependency versus the heterogeneity effect

In terms of content, this research tendency was using primarily the dependency versus heterogeneity thesis. The dependency theory predicts that the likelihood of exiting social assistance decreases as the entitlement period becomes longer. It assumes that time on welfare

welfare agency, the implementation of duration limits and of conditions for entitlement, the used employment programmes, the orientation of the welfare agency towards the demand or the supply side, and finally the local partnerships. On the basis of the combinations of these criteria Hermans (2005a,b) distinguishes inert, disciplining and integrating welfare agencies.

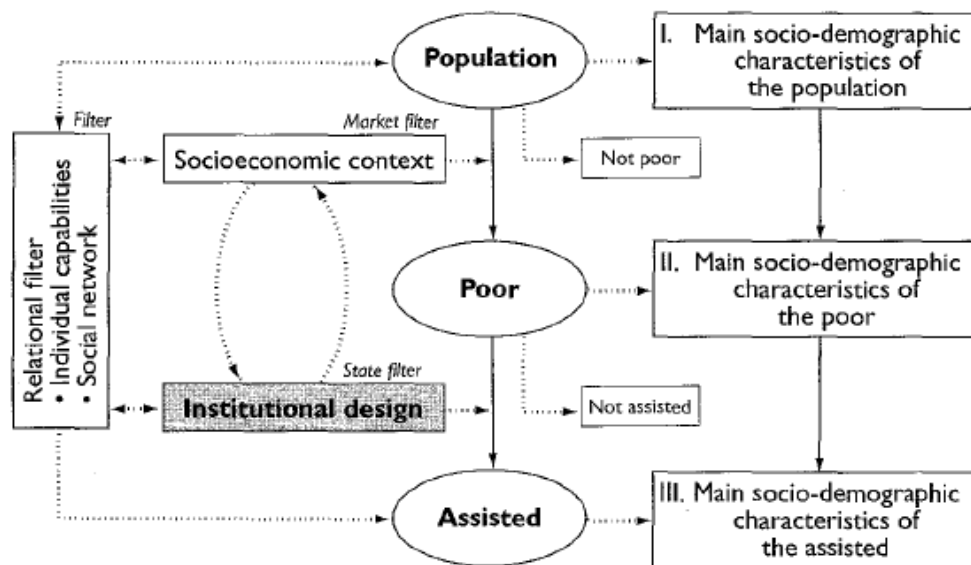
influences the probability of exit from welfare. By contrast, the heterogeneity hypothesis assumes that social assistance recipients differ in their personal and household characteristics. Three types of explanations for the impact of time on welfare have been put forward in the literature (Bane & Ellwood, 1994: 67-123), namely the rational choice model, the expectancy model and, the cultural model. Each of these models has different assumptions on behaviour, which may guide the interpretation of the duration findings (Bane & Ellwood, 1994: 67-68). The rational choice model focuses on choices and incentives, while the expectancy model emphasizes confidence and control. The (class) cultural model draws the attention to both values and culture. The rational choice model assumes that a person examines and evaluates the choices he/she faces according to his/her preferences and, that he/she chooses the option bringing with the most satisfaction. Consequently, both preferences and options should be understood in order to understand choices. Hence, the duration of welfare use is influenced by characteristics of the welfare scheme (the financial incentives), by the nature of the outside opportunities, by the labour market conditions, and by individual heterogeneity. Though, decay in skills over time in the minimum income scheme may account for dependency. By contrast, the expectancy model emphasizes the sense of control of a person over a given situation to obtain a desired outcome: An individual gains confidence, when having success experiences, while he/she loses confidence when he/she fails. Repeated failures may even bring a loss of motivation. As a result, the expectancy model focuses on the events which have led to welfare use (e.g. divorce). By contrast, the expectancy model assumes no major contribution of the labour market conditions as it focuses on the individual experiences. Furthermore, the expectancy model assumes both that persons who have had negative experiences may present dependency, and that heterogeneity may account for the differences in the time until failure. Finally, the cultural model claims that persons entitled to a minimum income over a long period manifest antisocial behaviour. Their values, attitudes and expectations are well outside the mainstream, and can be found in groups which are geographically and socially isolated. Bane and Ellwood (1994) tested these three hypotheses in the USA. Their findings suggest that the combined rational choice and expectancy theory capture reasonably well welfare dynamics. Nevertheless, they notify significant limitations due to widely diverging results when slightly varying assumptions are held.

This research perspective has been criticized for highlighting overwhelmingly individual characteristics, while neglecting the institutional and contextual impact. However, social assistance claimants do not live in vacuum space. Social assistance dynamics can be shaped also by contextual effects. So, let us now consider in a more detailed way the contextual and institutional effects. In the literature on contextual effects (Sampson (2002); Pechoux (2006); Musterd & Andersson (2006)) we find that the community in which people live may influence the lives of persons in several ways.

The labour market conditions effect

A first contextual effect in a work based welfare scheme is that social assistance claimants in a municipality target the same labour market. The qualities of these labour markets may vary substantially (in terms of, for example, the regional economic growth, the nature of the local industry, and the labour market conditions). Most studies examining the local economic context effect find a substantial to important effect of the local labour market conditions and the economic cycle (Hoynes, 2000) and a differential effect for different groups (Hoynes, 2000; Hansen, 2008, Van der Klauw & Van Ours). Hoynes (2000) finds on the basis of a longitudinal study on administrative records for families on the Aid to families with dependent children (AFDC) in California that a higher unemployment degree, a lower job growth, a lower activity rate and a lower wage growth are connected with longer welfare spells for most groups. Moreover, Hoynes finds that minorities, townsmen and couples with children are more sensible for changes in the local labour market conditions. Van der Klauw & Van Ours (2001) find only for young welfare recipients in Rotterdam that the exit rate to work is influenced by the neighbourhood employment rate. They do not find effects for the older Dutch welfare recipients and for non-Dutch welfare recipients. Hansen (2008:12) reports also a differential impact of the unemployment rate for different groups when studying the duration in the social assistance scheme for Norway on the basis of a 10 percent random sample for all individuals receiving social assistance in the period 1992-2002: Migrants are more subject to local labour market conditions.

Figure 1: Filtering of risks by institutional framework in a given socio-economic context



Source: Garcia & Kazepov, 2002: 128

The welfare agency composition effect

Those living in the same community may share characteristics, which may be the result of earlier selection mechanisms. This effect is known as the composition effect (Gustafson et al, 2002). This effect is broadly documented in studies of neighbourhoods, where the housing prices often function as a selection mechanism. Considering welfare agencies, we expect that the welfare agency population is shaped both through earlier section mechanisms (such as housing prices and labour market opportunities) and through filtering by the welfare agencies

themselves (e.g. degree of non take up). So, we consider a second order composition effect: the local population can differ in terms of age, sex, migration history, household composition, education level etcetera, resulting in different social assistance populations. To our knowledge, no quantitative research has studied the impact of the population composition on the welfare agency policies and outcomes.

The local welfare agency's policy mix effect

Moreover, social assistance recipients living in the same community will be exposed to the same services. Hence, social assistance recipients in the same area will direct¹⁰ themselves to the same local welfare agency. Mainly European research has identified the role of institutional factors (Kazepov, 1999; Garcia & Kazepov, 2002; Gustafson et al, 2002), which we will call the institutional effect. The starting point is that the local policy mix shapes local poverty phenomena and trajectories (Kazepov, 1999) within a specific socio-demographic and socio-economic context. This is however not a deterministic process, but rather one that limits the options horizon for individual behaviour. This starting point ties in with the research line into welfare state and life course regimes (Leisering & Leibfried, 2001) and considers the impact of the institutional frame. The variability in the institutional design (such as generosity and the number of type of social employment programmes available) pre-structures dynamics of dependency and exit, as social assistance schemes transform the risks in a specific socio-economic context into downwards or upwards mobility schemes by setting up institutional opportunities (Kazepov, 1999) (see Figure 2). The options and paths are structured by the set of policies, measures and instruments aimed at providing persons with a minimum income, at integrating persons into the labour market and at improving the societal integration. With regard to the evidence, Kazepov (1999) and Gustafson et al (2002) find considerable differences in the length of the total spell, and the first spell in welfare in the comparative ESOPO study of inflow populations followed during 42 months between cities in seven European countries. Milan, Bremen and Helsingborg presented relatively short-term recipient trajectories. Gothenburg, Turin and Vittoria showed medium term trajectories, while Lisbon and Barcelona presented a long term pattern.

According to Moreira (2008) this policy mix, the local crystallisation of the reconciliation of the fairness and effectiveness of a minimum income scheme, covers seven dimensions, namely the provision of an adequate level of income, the freedom to choose other activities than paid labour, the freedom to choose a job, the freedom from discretion, the additional opportunities offered to work, the opportunity to participate in education and training programmes, and the use of sanctions. These dimensions take shape by the use of positive and negative incentives at both demand and supply side (see figure 2). Nevertheless, in literature we have no insight on the existence and the magnitude of an institutional effect.

¹⁰ It is regulated by law that the municipality of the real living place of the person, which does not need to correspond to the municipality of the persons domicile address, is qualified.

Figure 2: Positive and negative incentives used in the activation of minimum income recipients

	Supply-side interventions	Demand-side interventions
Negative incentives	Activation requirements (work tests) Insertion contracts Sanctions Time limits Reduction/curb on growth of cash benefits	
Positive incentives	Job-search assistance programmes (counselling, job-search support and training) Training Incentives or subsidies to individuals	State obligation to provide activation offers Incentives or subsidies for employers Job creation schemes (traditional job creation, intermediate labour market incentives) Job sharing/ job rotation

Source: Moreira, 2008: 10, based by Moreira on Hanesh and Baltzer (2004:4)

2.2. Hypotheses

Based on the above described literature, we formulate a set of testable hypotheses on the duration in the minimum income scheme. We do not take into account the cultural model, as we do not have data to test for.

The socio-economic characteristics (individual level)

We expect according to both the rational choice model and the expectancy model a downward effect of having a stronger labour market history (as a proxy for distance to the labour market)¹¹ (=hyp 1), as the closer a person is to the labour market history, the more the person may potentially earn. The person may have had also some success experiences. By contrast we assume a longer duration in the social assistance scheme for persons (especially women) having children (=hyp 2) based on the expectancy and rational choice theory. Their preferences may be less oriented towards the labour market. Based on the expectancy model, we assume also that persons who divorced will show longer spells (=hyp 3), as they have had a negative experience, which may affect their sense of control over life. Considering age we expect a non-linear relationship (=hyp 4). With regard to the nationality at birth, we assume that persons with the Belgian nationality will stay less time in the social assistance scheme than persons who had another nationality at birth (=hyp 5), as they may have a better sense of control, more positive experiences and more skills asked in the Belgian labour market than persons who were not born in Belgium.

Welfare agency population composition effect (municipality level)

We consider the effect of the composition of the population. To our knowledge, no clear hypothesis has been formulated in literature on this subject. On the one hand, the population composition may shape the patterns of expectations held by the welfare agency's social workers. On the other hand, we might expect that welfare agencies develop specific policies towards overrepresented groups.

¹¹ Data on the highest educational level acquired are not yet included in the Data Warehouse.

The socio-economic context (municipality level)

With regard to the economic context, we expect to observe longer welfare spells in a less favourable socio-economic context (=hyp 6) in line with the rational choice theory.

Welfare agency policy (municipality level)

Concerning the amount of the supplementary benefit (subject to local discretion) we find some contradicting assumptions. Following the expectancy model, we do not expect a substantial effect of the supplementary allocations. Other elements (than financial incentives) are considered more important. On the contrary, the rational choice model predicts that the higher the amount to which one is entitled, the longer the duration of the welfare spell (= hyp 7), as persons face less financial incentives to change situation. Furthermore, according to the expectancy model, we assume also that other types of aid (such as health services) have a bigger impact than monetary aid. So, we expect to find a shorter duration for those who can benefit from the WIGW benefit (=hyp 8).

Another aspect of the welfare agency policy mix is the number of persons which are transferred to employment programmes. We expect a shorter spell for welfare recipients in a welfare agency transferring a higher number of persons towards social employment programmes (=hyp 9).

3. Empirical evidence

3.1. Data

Individual level data

The data used are monthly administrative records from the federal Administration on Societal Integration for the three regions of Belgium, which are integrated in the Crossroads Bank for Social Security. The database covers a 36 months observation window and consists of monthly payment records between the federal administration and the local welfare agencies which can be attributed to individuals. These social assistance payments (to claim subsidies) exclude advances on social security contributions¹². Administrative records have the advantage, in comparison to panel data, that no attrition occurs and that they capture well the local disparities. By contrast, the data represent an accountancy perspective between the administration and the welfare agencies, which does not always need to correspond to the real payments made between the welfare agencies and their clients. Under certain conditions a welfare agency can reclaim a benefit from the social assistance beneficiary, or may refrain from reclaiming a benefit. Welfare agencies may also develop their own (non legal) payment strategies. Nevertheless, we assume generally that the payments between the administration and the welfare agencies correspond to the payments between the welfare agencies and their clients. These monthly minimum income scheme data have been linked with quarterly data

¹² Except, when advances have not yet been regularised within a time span of 15 months after the entitlement to social assistance (which is the moment when a data picture is taken to include in the Data Warehouse Labour Market and Social Inclusion).

from other social security institutions (including old age benefits, unemployment benefits, working status, etc.) and, with yearly data of both the national register (e.g. household composition and sex) and the health insurance organisations about the right to the increased financial contribution when facing medical expenses (called ‘WIGW’).

The sample used¹³ consists of 5174 persons in 505 welfare agencies, aged 25 till 55, who entered in 2004 the minimum income scheme. These persons were not entitled to social assistance for at least one year and a quarter before entering the social assistance scheme (to control for left-censoring). Though, the spells of these persons may be right-censored¹⁴ as we observe persons during maximally 36 months and minimally 25 months. All persons benefit during their stay in the minimum income scheme only from a social assistance cash benefit under the Social Integration Act¹⁵. These first entrants may combine a status as both a benefit recipient and a worker or an unemployed person with a benefit lower than the minimum income scheme limit. Nevertheless, the persons that participate in an employment programme through the welfare agency are excluded from the sample. The number of welfare recipients by welfare agency is minimally 1 and maximally 444. On average, a welfare agency administers 10 beneficiaries. The standard deviation is 29. Nevertheless, a large number of welfare agencies administer only a few welfare recipients in our sample (see Table 2). Though, recipients in welfare agencies with few welfare beneficiaries are not excluded from the sample for two reasons. Firstly, we consider that they contribute to the model (as they are mainly persons in rural welfare agencies). Secondly, the used software, namely MLwiN can handle unbalanced design.

Table 2: Number of welfare recipients by welfare agency for the 2004 first entrant cohort sample for the month of entry

Number of welfare recipients	Number of welfare agencies	%	Number of persons	%
1-10 persons	416	82.4	1532	29.6
11-20 persons	49	9.7	716	13.8
21-50 persons	21	4.2	674	13.0
51-100 persons	11	2.2	713	13.8
More than 100 persons	8	1.6	1539	29.7
Total	505	100.0	5174	100.0

Source: Datawarehouse Labour Market and Social security, own calculations.

Table 3 sketches out some characteristics of the sample of the 2004 cohort. Women are overrepresented (55% of the sample) with regard to their population share. Concerning the age distribution, more than 40% is aged less than 35. The mean age is 37. Furthermore, nearly two third of the recipients had the Belgian nationality at birth. For the others, a little more than half of them have acquired since his birth Belgian citizenship and the others did not. This means that migrants are substantially overrepresented in our sample in comparison to the total Belgian population.

¹³ More information on the sampling method is provided in the annex. From the original 6177 persons, nearly thousand persons were left out presenting missings on the variables contributing to the described model. These persons are mainly individuals from which we lack the household type due to administrative reasons.

¹⁴ A right-censored spell is an episode which is not yet finished at the end of the observed period. So, we do not know exactly when the person leaves the welfare scheme. We know only that the duration in the welfare scheme for this person is longer than the period observed.

¹⁵ They do not benefit from an equivalent universal cash benefit which is a similar benefit for those who are registered in the register for foreigners (and not in the population register).

Table 3: Characteristics of the sample of 2004 cohort entrants (and the municipalities of the welfare agencies) ¹⁶

Sex on 1 January 2004 (National register)	N	Percentage
Man	2290	44.3
Women	2884	55.7
Age at year of entry		
25-34	2192	43.6
35-44	1788	34.6
45-55	1194	23.8
Nationality at birth		
Other nationality - Belgian nationality acquired before January 2007	1138	22.0
Other nationality	994	19.2
Belgian nationality	3042	58.8
Household type on 1 January 2004 (National register)		
Single person	1164	22.5
Couple (married or cohabitating) without children	639	12.4
Couple (married or cohabitating) with children	1783	34.5
Lone parent family	640	12.4
Child in a family ¹⁷	404	7.8
Other family	544	10.5
Official marital status at quarter of entry		
Single	1627	31.5
Married	2459	47.5
Divorced	983	19.0
Widower	105	2.0
Work intensity in the five years before entry		
0%	1703	33.0
1-25%	1081	20.9
26-50%	787	15.2
51-75%	647	12.5
76-100%	956	18.5
Region at entry		
Brussels region	1107	21.4
Walloon region	1820	35.2
Flemish region	2247	43.4
Number of inhabitants		
≤ 9999 inhabitants	446	8.6
10000 – 19999 inhabitants	849	16.4
20000 – 39999 inhabitants	1120	21.7
40000 – 99999 inhabitants	1311	25.3
≥ 100000 inhabitants	1448	28.0
Total	5174	100.0

Source: Data Warehouse Labour Market and Social security, own calculations.

¹⁶ If a person received payments from several municipalities during the first month, the person is attributed to the municipality which receives the highest payment from the administration.

¹⁷ This category may include a son (e.g. aged 40) living together with his mother/father.

The population in our sample consists mainly of persons living as a couple with children, followed by lone persons and by those in couples without children. More than 1 out of 5 lives in the Brussels region, which is a substantial overrepresentation, namely more than twice the population share. Furthermore, the persons in our sample are also overrepresented in (big) cities. In addition, one third of the sample has not been working during the five years before his/her entry in the welfare scheme. Nearly one third has a work intensity which exceeds 50%. Regarding the entry month in the minimum income scheme in 2004, we find that the percentage of the sample entering in a month varies between 11% (in January) and 7% (e.g. in June) (see Table 8 in Annex). Furthermore, we know if a person benefits from the WIGW-statute. The WIGW statute represents for the Belgian social assistance beneficiaries a substantial element contributing to the inactivity trap. This statute is awarded to persons receiving for at least three months uninterrupted a social assistance benefit. It opens the right to an increased financial contribution by the health insurance fund when facing medical expenses. Lots of other advantages (at local level or for all of Belgium) have been linked to this statute (e.g. a free public transport season ticket). We find that only 4% of the social assistance beneficiaries (216 persons) in our sample benefit from this statute, which is surprisingly low. Hence, we assume that the non-take up is high.

Furthermore, as individuals may move in and out of the minimum income scheme multiple times over the observation period (known as ‘cycling’ in the literature), we consider repeated events. Table 4 shows the number of events for the beneficiaries in our sample. More than 75% of the beneficiaries experience only one episode in the minimum income scheme. Respectively 18% and 4% of the social assistance beneficiaries has two and three episodes in the observed period in the social assistance scheme. Only one percent faces more than four spells.

Table 4: Percentage of recipients by number of repeated spells

	Number of recipients	Percentage of recipients
1	3953	76.4
2	944	18.2
3	228	4.4
4	38	0.7
5	9	0.2
6	1	0.0
7	1	0.0
Total	5174	100

Municipality /welfare agency level data

We dispose of a number of characteristics of the (municipality of the) welfare agency at the time of entry in the minimum income scheme coming from various administrative databases (and surveys). The mean over municipalities of the mean age is 39 years and is a little higher than the average age at individual level. The standard deviation of the mean age is rather low. The mean percentage of time worked over municipalities (34%) is similar to the mean by individuals, but the dispersion is lower than at the individual level. Furthermore, welfare agencies’ population may vary substantially as regards nationality. The mean of the welfare agencies population having another nationality is much lower (6%) than the overall individual mean. The same holds for the persons who acquired the Belgian nationality. Consequently, we find a high standard deviation for nationality at birth. As regards sex, we find a higher mean percentage of women and a rather substantial standard deviation.

Table 5: Descriptive statistics of welfare agency and municipality characteristics¹⁸, 2004

	N	Mean	Std	Min	Max
Population composition - welfare agency (in our sample)					
Mean age	505	38.7	4.9	25	54
Mean percentage of time working during the former 5 years	505	34.2	23.0	0	100
<i>Nationality at birth</i>					
Percentage with other nationality - Belgian nationality acquired before January 2007	505	13.5	20.2	0	100
Percentage with other nationality	505	10.9	17.7	0	100
Percentage with Belgian nationality	505	75.5	27.2	0	100
<i>Sex</i>					
Percentage of men	505	39.7	29.0	0	100
Percentage of women	505	60.3	29.0	0	100
<i>Household type</i>					
Single person	505	17.4	22.9	0	100
Couple (married or cohabitating) without children	505	8.9	16.1	0	100
Couple (married or cohabitating) with children	505	35.6	30.5	0	100
Lone parent family	505	12.2	20.2	0	100
Child in a family ¹⁹	505	7.3	14.8	0	100
Other family	505	8.9	17.5	0	100
<i>Marital status at entry</i>					
Percentage singles	505	29.2	27.8	0	100
Percentage married	505	45.6	31.2	0	100
Percentage divorced	505	23.3	26.5	0	100
Percentage widowers	505	1.6	6.6	0	100
Socio-economic context of the municipality					
Unemployment rate ²⁰	505	10.3	4.8	3.8	34.8
Welfare agency policy for all welfare recipients²¹					
Yearly mean amount of supplementary benefits by welfare recipient ²² (€)	505	1758.9	1578.1	0	9678
Percentage of persons guided towards the social employment Programme Article 60	505	12.5	7.7	0	50

Source: Data Warehouse Labour Market and Social security, own calculations.

With regard to the marital status, the mean of the welfare agencies population by category is quite similar with the overall individual mean. Nevertheless, Table 5 notifies substantial deviations from the means with regard to the percentages with a particular marital status.

¹⁸ The variables are calculated on the basis of all 2004 cohort entrants in welfare agencies (including those with missings on other variables). The sources of the data are described in the technical annex.

¹⁹ This category may include a son (e.g. aged 40) living together with his mother/father.

²⁰ The unemployment rate does not represent the exact values by municipality (due to privacy reasons). Their values have been attributed on the basis of the mean values of the 169 groups, formed by the combination of the number of inhabitants (5 categories), the socio-economic cluster (35 categories) and the urbanisation category (5 categories). The constructed groups seem to capture well the total variability.

²¹ All variables characterising the welfare agency policy are based on calculations for the welfare recipients of all ages having the Belgian nationality or not.

²² The amount of the entitled supplementary benefit is intrinsically at individual level variable. Nevertheless, we calculated the amount at the welfare agency level (due to data limitations). The amount has been calculated on the basis of the number of welfare recipients at the end of 2004. Therefore, this amount may be affected by the number of turnover in the welfare agency. In addition, supplementary benefits may be attributed to all persons living in the municipality which have a need which is considered as necessary to live a life according to human dignity.

Table 5 describes also the variation with regard to the socio-economic context. The unemployment rate varies between 4% and 35% (although we did not account for the full variability at municipality level), with a mean of 10%. The mean yearly amount of supplementary benefit attributed to welfare recipients is 1759 €. In addition, the amount of the supplementary benefit varies substantially over municipalities: it ranges from 0 € to 9678 € a head. Furthermore, we find also substantial variation on the percentage of persons (calculated on the basis of all persons entering or staying in the welfare scheme during 2004) participating in the Article 60 social employment programme. The percentage guided towards the social employment programme ranges from 0 to 50%. Though, the average percentage is 13%. Table 6 sketches also the region and the number of inhabitants of the welfare agencies. More than two thirds of the welfare agencies are situated in municipalities having less than 20000 inhabitants. Less than 2% of the welfare agencies is situated in a municipality with more than 100000 inhabitants. All welfare agencies in Brussels are covered (N=19). Though, they represent only 4% of all welfare agencies in the sample. More than half of the welfare agencies is situated in the Flemish region. Over 40% is located in the Walloon region.

Table 6: Characteristics of the municipalities of the welfare agencies

	N	Percentage
Municipality size (2004)		
≤ 9999 inhabitants	187	37.0
10000 – 19999 inhabitants	183	36.2
20000 – 39999 inhabitants	100	19.8
40000 – 99999 inhabitants	27	5.4
≥ 100000 inhabitants	8	1.6
Region		
Brussels Capital region	19	3.8
Walloon region	216	42.7
Flanders region	270	53.5
Total	505	100

Source: Data Warehouse Labour Market and Social security, own calculations

3.2. Multilevel discrete-time event history

The questions addressed are: What is the mean and the median duration of a spell in the social assistance scheme for the entrants cohort in 2004, taking into account repeated events? What is the probability to leave the social assistance scheme given that they remain a particular time in the welfare scheme? Does it matter which welfare agency administers the minimum income recipients? How much of the variability can be explained by the welfare agency level? And which predictors of both the welfare recipients and the welfare agencies have an effect on the probability of leaving the scheme given the time in the scheme?

We estimate a multilevel event history model to address the questions mentioned above and to test the hypotheses sketched out in part three. Multilevel analysis has the advantage that it accounts for non independency of observations, which may have an impact on the estimated standard errors. Furthermore, multilevel event history analysis allows to account for unobserved heterogeneity at both individual level and municipality level, by introducing a random effect. Event history analysis²³ is an appropriate technique to consider the timing of

²³ Event history analysis is also known as survival analysis or duration analysis.

events and to handle right-censoring by using the information of those persons for which we do not observe failure in the observation period²⁴. The duration of 926 individuals (18%) in our sample is right censored when considering more than one episode. The event considered is the unspecified exit from the minimum income scheme²⁵. We defined mutually exclusive exit states by focussing on the changes in the receipt status of claimants (cf. Cappellari & Jenkins, 2008); namely, a person receives, or fails to receive the (equivalent) universal cash benefit. Combinations of both the (complementary) universal cash benefit and the participation in a social employment programme during the same month are not counted as spells in the minimum income scheme. As people can move in and out the minimum income scheme more than once over the observation period, we consider recurrent events. When observing the repeated events, we model the duration of each episode. An episode is defined as the period during which the person is at risk of experiencing the event. Furthermore, for each episode time starts from zero. We model unspecified exit in a multilevel discrete-time event history analysis. We estimate a multilevel model to account both for persons having repeated spells in the social assistance scheme and for the clustering of persons in welfare agencies. Hence, our model covers three levels, namely the time, the individuals and the welfare agencies. Firstly, repeated spells of individuals are uniquely nested in persons. As several spells of individual might be similar²⁶, multilevel analysis accounts for the eventual correlation between episodes. Secondly, the social assistance beneficiaries are nested in unique welfare agencies (and by consequence in unique municipalities) at the moment of entry. Hence, we model strict hierarchies. We do not account for cross-classification of welfare agencies, as several welfare agencies can administer the benefit over the observation period. We estimate a discrete-time multilevel event history analysis. The choice of a discrete-time framework has two reasons. Firstly, the data are recorded on a monthly (interval) basis (cf. Jenkins, 2007; Steele, 2008). Though, the underlying process takes place in the continuous time as beneficiaries can, and do, leave on any day of the year. Secondly, the use of the discrete time is appropriate for multilevel event history analysis (Steele, lecture notes). We did not consider both the time-varying individual and municipality characteristics. Characteristics are considered at the moment of the first entry in the observed time period. But, before starting with the multilevel event history modelling, let us first address some descriptive event history statistics.

3.3. Survivor function and hazard rate

We find that the mean duration of a welfare period (considering more than one episode) for the persons aged 25 to 55 in our sample is 9.3 months, while the median duration is 7 months.

To gain further insight in the probability of leaving social assistance we look to Figure 3. This figure represents the Kaplan Meier survivor function of a social assistance spell. Kaplan-Meier estimates are non-parametric estimates of the survivor function. The survivor function represents the probability of remaining in the state (claiming social assistance) at least until time t since entry at start time ($t=0$). On the basis of figure 3 we diagnose a sharp decline in

²⁴ We assume that censoring is random.

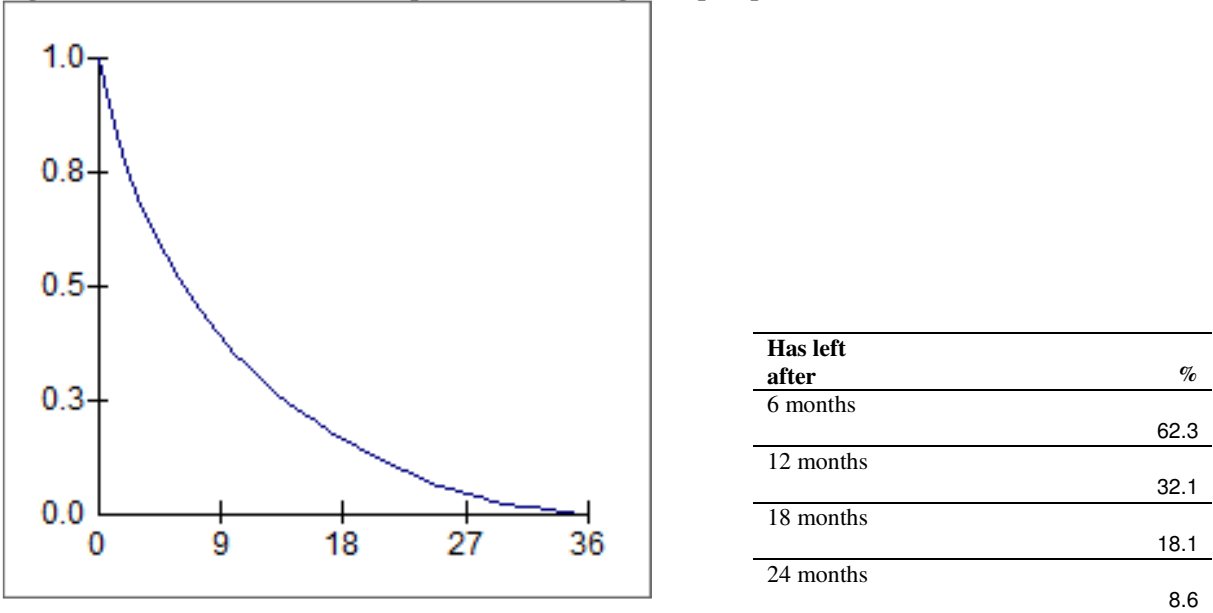
²⁵ In further research we may consider competing risks (if an episode can end in several types of events (eg. participation in an employment programme, work in normal job circuit, or entitled to an invalidity benefit) to gain further insight in the transitions.

²⁶ Though, we do not know if it is the first episode ever, which we can assume to be different.

the first months, while the turnover slows down as time on welfare increases over one year. Only 38% remains after 6 months. 68% has left the welfare scheme after 12 months. Besides, between the 12th and 24th month an extra 16% of those remaining in welfare after a year leave the welfare scheme in the coming year. We consider this rate as a substantial turnover rate in an international perspective. In addition, we find that exit rates decline slightly as time on welfare increase. Let us consider now the hazard rate (Figure 4).

Research from Delathouwer et al (1998) found in 1994, on the basis of a retrospective design taking into account the stock population, that 19% left social assistance after one year, while in 1996, 33% had left social assistance after one year. In 1996 respectively 43% and 29% remained for at least 24 months and 36 months in social assistance. These findings differ somewhat with our results, showing a lower turnover rate for the total stock population, which is according to the expectancies: Generally, persons having long spells of social assistance are overrepresented in the stock population. In addition, our findings are in line with Cockx' results. For a sample of entrants for the period of June 1987 to November 1990, Cockx (1997) finds a median duration for women and men respectively of 4.5 and 6 months. Our evidence shows a slightly higher median and mean duration. Though, we consider also all spells in the 36 months observation window. When considering only the first spell (including breaks of two months), we find similar results. Cockx finds 7% of the men and 12% of the women remained on welfare after 42 months.

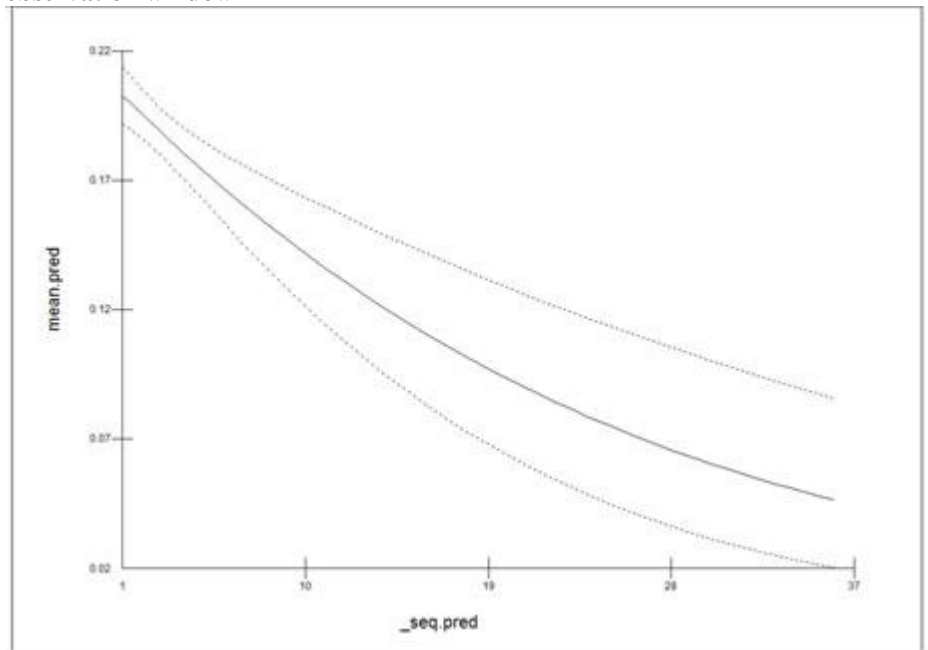
Figure 3: Survivor function for an episode (considering multiple episodes) for the 2004 entrants²⁷



Source: Data Warehouse Labour market and social security, own calculations.

²⁷ The survivor function is estimated by MLwin 2.02 according to Yang & Goldstein (2003).

Figure 4: Hazard rate for the first entrants cohort 2004 with 95% confidence intervals in a 36 months observation window



Source: Data Warehouse Labour market and social security, own calculations.

Figure 4 presents the hazard rate which indicates whether transitions become more or less likely over time. It is the transition rate on time t , conditional on survival to time t . A declining hazard rate can be seen as support for the dependency hypothesis (Dahl & Lorentzen, 2003: 536). The hazard rate is clearly declining when considering more than one episode. For the latest months in the observation window, we find a broader confidence interval as few failures take place. We find no support for a bell-shaped hazard rate, as found by Dahl & Lorentzen (2003) and Hansen (2008). Though, we find evidence for a bell-shaped hazard rate when examining the first spell (including breaks of two months).

3.4. Predictors of the probability of leaving the minimum income scheme conditional on time

We estimate a logit regression for a binary response (leaving the scheme or not)²⁸ according to Rasbash et al. (2009) and Browne (2009). The models are estimated by MLwin 2.13 through MCMC (=Markov Chain Monte Carlo). The chain has run each time for 50000 iterations. The comparison of the nested models is based on the DIC (=Deviance Information criterion). The DIC is a measure for the goodness of fit of the model. As the DIC takes into account the number of parameters estimated, we may compare models directly by the DIC. The lower the DIC, the better the model fits the data. The change in the DIC has been studied for nested models (when adding an extra variable). Though, we present in Table 7 only the results of the estimates after having introduced groups of variables. In addition, MCMC statistics have been explored. All covariates have been centred on their sample mean.

To start with, we estimate the empty random intercept model. In the empty random intercept model the mean odds of leaving is allowed to vary across welfare agencies. The random intercepts model gives information on the shared variance at the level of municipalities. We

²⁸ In fact we estimate a logit regression of the odds, namely the ratio of the probability of success to the probability of failure (Snijders & Boskers, 1999:211).

find that the probability of leaving the minimum income scheme differs significantly between welfare agencies²⁹. The intra class coefficient for the null model is 0.048³⁰. Consequently, nearly five percent of the variability of the probability of leaving the minimum income scheme is situated at the municipality level³¹, which is not so substantial. After that, we include the time variable (*_seq*). The model (Model 1 in Table 7) has the following form:

$$\begin{aligned} \text{rc_end}_{ijk} &\sim \text{Binomial}(\text{cons}_{ijk}, \pi_{ijk}) \\ \text{logit}(\pi_{ijk}) &= \beta_{0jk} \text{cons} + -0.037(0.004) \text{_seq}_{ijk} \\ \beta_{0jk} &= -1.522(0.040) + v_{0jk} + u_{0jk} \end{aligned}$$

$$\begin{bmatrix} v_{0jk} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 0.194(0.034) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 0.545(0.071) \end{bmatrix}$$

$$\text{var}(\text{rc_end}_{ijk} | \pi_{ijk}) = \pi_{ijk}(1 - \pi_{ijk}) / \text{cons}_{ijk}$$

$$\text{Deviance(MCMC)} = 32728.081 (53722 \text{ of } 53722 \text{ cases in use})$$

We find no evidence for modelling time as a quadratic function. However, we find that a longer time in the social assistance scheme reduces the probability of leaving. After that, we go on with including individual level predictors in the random intercept model (see Table 7). The goodness of fit achieved at the various stages of the modelling process is represented at the bottom of Table 7. Firstly, we include the individual socio-economic characteristics (Model 2). We notify that age, sex, household type, working intensity in the former 5 years and marital status present effects which are significantly different from zero³². By contrast, the contribution of the nationality at birth is significantly different from zero but does not improve the goodness of fit of the model. Hence, nationality at birth is not included. Besides, we report no better fit for the model when including the squared age. We find neither evidence for an interaction effect between household type and sex. Secondly, we test for the impact of population composition variables at the welfare agency level, but we find no significant contribution of these (not represented in Table 7). Thirdly, we examine the impact of the unemployment rate (Model 3, including also region). According to the DIC the unemployment rate does not improve the goodness of fit of the model. Though, the estimate for the unemployment rate is significantly different from zero (which is not the case when we include also region) and significant effects have also been found in literature. Hence, as the unemployment rate constitutes an important variable to control for the socio-economic context of the municipality, we keep the unemployment rate in our modelling process. Fourthly, we test for both the contribution of the number of inhabitants of the municipality and the region of the welfare agency. Only the contribution of the region is significantly different from zero and improves the goodness of fit (Model 3). This finding is in line with Dahl & Lorentzen (2003:11), who find neither a significant effect of the number of inhabitants in the municipality when studying the exit to work. Fifthly, we diagnose the

²⁹ We find also no outliers when plotting the residuals for the welfare agency variance.

³⁰ The ICC is calculated according to the theoretical approach, which assumes that the variance at level 1 equals $(\pi^2)/3$.

³¹ If we do not exclude the municipalities which cover less than 5 persons in our sample, 8% of the variability is situated at the municipality level for the empty random intercept model.

³² The estimate/ standard error > 1.96.

impact of the variables representing the inactivity trap (Model 4). The DIC increases both for the mean amount of the supplementary benefit and for the WIGW-statute (not represented). Moreover, the parameter estimate for the WIGW statue is not significantly different from zero. Though, it is significant for the mean amount. Nevertheless, we do not retain the variables covering the inactivity trap in the modelling process as the goodness of fit of the model is not improved. Sixthly, we include the degree of participation in the Article 60 employment programme by the welfare agency³³. The social employment participation rate improves (slightly) the goodness of fit of the model and the coefficient is significantly different from zero.. Finally, we test for random coefficients for the individual socio-economic characteristics. The random coefficient for lone parents improves the goodness of fit. Though, the estimate is not significantly different from zero. Hence, we consider Model 5 to be the most appropriate model.

Let us start with the interpretation of Model 5 by describing an average welfare recipient in an average municipality, as the intercept represents the estimated log odds for leaving the minimum income scheme for such an average person in an average municipality. This person is a married woman of 37 years old who lives in a couple with children. Furthermore, she was working 34% of the five years before her entry in the welfare scheme and does not benefit from the WIGW statute. She lives in an average municipality, where 10% of the population is unemployed, social assistance beneficiaries benefit from a yearly amount of supplementary benefit of 1760 € and 13% of the 2004 cohort entrants aged 25 to 55 participates in the Article 60 social employment programme. The odds of leaving for an average recipient in an average municipality is 0.2. The corresponding probability is 0.16. If we assume that the other variables remain constant and the age increases with one standard deviation (8 years) then the probability of leaving decreases slightly³⁴. Furthermore, the odds of the transition for an average men is 0.9 times the odds of the transition for a similar women. So, a men has a higher conditional probability of leaving the minimum income scheme than a similar women, as we expected (mainly for persons with children)³⁵. Moreover, only singles, lone parents and children in a family present estimated odds which are significantly different from those for the persons living in a couple with children. Singles and lone parents reduce the odds of leaving by 1.2 in comparison to similar persons with a partner and children. This finding is contra-intuitive for lone parents, though expected for singles. Regarding the marital status, we do not find that divorced persons differ significantly from married persons, which contradicts the expectancy model. This can be because for some persons the official marital status of the quarter of entry does not correspond to the real situation. In addition, an increase with one standard deviation of the work intensity (35.5%) increases the odds of leaving only really slightly with 1.01. With regard to the international literature, the findings on sex and age are consistent with Hansen for Norway (2008:11). The estimates for nationality at birth differ however. Dahl and Lorentzen, when studying the exit to work for first entrants in Norway, do not find a significant effect for gender, but do also report a substantial impact of the nationality at birth and of age.

Let us now consider the contribution of the variables at the municipality level. We find no support that an increase with one standard deviation (5%) of the unemployment rate

³³ This variable can be endogenous. Though, we include this variable for all welfare agency beneficiaries (including those who are no first entrants).

³⁴ As the parameters present logits, we transform them in $\exp(\beta)$, which represent the conditional transition rates. $e^{-0.058} (=age)=0.94$.

³⁵ But, as the interaction effect between sex and household type is not significant and reduces the DIC not, we excluded the interaction effect from the model.

significantly changes the odds of leaving (after including region). Though, we expected a more substantial effect of the socio-economic context. This can be both because we study unspecified exit and not only exit towards paid labour and because we did not account for all variability between municipalities. However, we find that for a beneficiary in the Brussels region the odds of leaving decreases with 0.5 in comparison to a similar recipient in the Flemish region. We report a similar pattern for the beneficiary in the Walloon region. Though, the odds of leaving are slightly less decreased. Moreover, we find no effect of the amount of the supplementary benefit, which contrasts the rational choice theory. Though, an increase with one standard deviation (8%) of the social employment participation rate by welfare agency increases only slightly (1.03) the odds of leaving.

Table 7: Variance coefficients and the goodness of fit achieved at various stages of the modelling process³⁶

	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE	Model 6	SE
Fixed Part												
cons	-1.522	0.040	-1.817	0.049	-1.518	0.075	-1.614	0.088	-1.598	0.073	-1.598	0.073
Time	-0.037	0.004	-0.034	0.004	-0.036	0.007	-0.037	0.008	-0.035	0.006	-0.035	0.006
<i>Individual socio-economic characteristics</i>												
Age			-0.024	0.003	-0.023	0.003	-0.023	0.003	-0.023	0.002	-0.023	0.003
Man			0.259	0.042	0.257	0.043	0.257	0.043	0.256	0.042	0.255	0.042
Work intensity			0.008	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	0.001
Child in a family			-0.328	0.081	-0.309	0.081	-0.307	0.079	-0.317	0.080	-0.318	0.079
Other household type			-0.078	0.068	-0.092	0.067	-0.086	0.067	-0.089	0.068	-0.089	0.067
Lone parent			0.190	0.068	0.179	0.068	0.177	0.068	0.191	0.069	0.194	0.076
Couple without children			-0.028	0.061	-0.019	0.061	-0.013	0.059	-0.013	0.061	-0.012	0.060
Single person			0.146	0.058	0.146	0.059	0.150	0.057	0.149	0.057	0.148	0.057
Not married			0.188	0.052	0.178	0.052	0.175	0.051	0.177	0.051	0.176	0.052
Widower			0.317	0.137	0.305	0.133	0.311	0.132	0.315	0.134	0.303	0.136
Divorced			0.036	0.056	0.020	0.055	0.018	0.056	0.021	0.055	0.018	0.055
<i>Socio-economic context (municipality)</i>												
Unemployment rate					0.003	0.007	0.003	0.007	0.006	0.007	0.006	0.007
Brussels region					-0.805	0.138	-0.677	0.143	-0.706	0.125	-0.702	0.123
Walloon region					-0.512	0.080	-0.394	0.094	-0.511	0.075	-0.505	0.073
<i>Welfare agency policy</i>												
Mean amount of supplementary benefit							0.000 ³⁷	0.000				
Employment programme participation rate									0.029	0.004		
Random Part												
Welfare agency level	0.194	0.034	0.153	0.027	0.052	0.015	0.048	0.015	0.025	0.010	0.030	0.013
Lone parent / cons											-0.026	0.025
Lone parent /lone parent											0.139	0.079
Individual level	0.545	0.071	0.430	0.058	0.406	0.104	0.390	0.111	0.429	0.094	0.416	0.084
DIC	34351		33989		34000		34012		33961		33953	
Units: ocmw_t1	505		505		505		505		505		505	
Units: insz	5174		5174		5174		5174		5174		5174	
Units: time	53722		53722		53722		53722		53722		53722	

Source: Data Warehouse Labour market and social security, own calculations.

³⁶ Reference categories are the largest categories, namely women, couples with children, married and no WIGW-statute.

³⁷ The estimate is 0.000058 and the standard error is 0.000028.

Consequently, that the probability of leaving decreases with time supports the dependency hypothesis. Though, we find also that individual heterogeneity (age, sex, household type and marital status) accounts for quite some variability in the probability of leaving. Hence, we report mixed evidence for the dependency and heterogeneity hypothesis.

With regard to the expectancy and the rational choice model, we find also mixed evidence. We found small support for the expectation that persons with a stronger labour market history have increased probability of leaving. Moreover, we found no significant effect for an increase in a better socio-economic situation of the probability of leaving. We find neither support for an effect of the supplementary benefit. With regard to the expectancy model, we find no support that divorced persons show longer spells, which was assumed by the expectancy model, and we find no contribution of the nationality at birth.

We estimated the probability of leaving the welfare scheme. Though, we should keep in mind that an exit out of the social assistance scheme does not necessarily signify a meaningful improvement in the claimant's living standard as an exit does not necessarily mean the end of a condition of need or of a poverty situation (Kazepov, 1999; Hansen, 2008). An unspecified exit, as defined, may cover a variety of realities. A person may be participating in a labour market programme or a person may be benefiting from another social security contribution (e.g. an invalidity scheme) or another social assistance scheme (e.g. one for handicapped persons). A person may also experience a change in the household situation which has the result that he/she satisfies no longer the conditions to be entitled to the means-tested benefit. Furthermore, the payment of the social assistance benefit can be suspended due to a stay in a foreign country for more than one month (with an exemption when the local welfare agency accepts the displacement due to circumstances of an exceptional nature), or due to the admission of a person into an institution covered by the state (e.g. when the claimant is deprived of liberty). In addition, administrative sanctions may also affect social assistance claimants. When claimants have not declared all their means of subsistence to the benefit claiming unit, when incorrect declarations have been made that affect the amount of benefit received, or when the obligations following an individualised contract have not been met, the payment can be partly or totally suspended without legal argument (Praktijkboek Sociale Zekerheid, 2008). Furthermore, a short time on social assistance cannot be seen as an indication of a good welfare policy (Kazepov, 1999). Various explanations may impact on the duration and the probability of leaving, as sketched out above, and similar durations may be the result of different mechanisms or different interactions between mechanisms. Nevertheless, the duration of the welfare spells and the probability of leaving, shows (to a certain degree) to which extent the set of employment, family, and education policy measures adequately faces social risks (Leisering & Leibfried, 1999).

4. Conclusion

The interplay between individual heterogeneity and contextual and institutional effects regarding the time to leave the minimum income schemes (given the time in the scheme), which are characterised by devolution, is largely uncharted territory. For this reason, this paper examined both between-persons and between-municipalities variation in the hazard of leaving the social assistance scheme for a sample of one third of the 2004 entrants aged 25 till 55 for the Belgian social assistance scheme who were not entitled to social assistance during at least a year and a quarter before entry. We addressed three questions in the paper: Firstly, What is the mean duration and the probability of leaving for the Belgian welfare scheme. Secondly, is there variability at the level of the welfare agencies? And finally, what are the determinants at both individual level and municipality level of the conditional probability of leaving? We examined these questions by a multilevel discrete-time event history analysis on the basis of administrative records from the Data Warehouse Labour Market and Social Security covering a 36 month observation window.

We found that the Belgian social assistance scheme has a rather high turnover for first entrants, namely a mean duration of 9 months. The probability of remaining in the social assistance scheme at least 1 year after entry at start time is 32 %. Moreover, the exit rates decline if time on welfare increases. This is also what we find when including time as predictor of the hazard rate. Furthermore, the multilevel model showed that only 5% of the variability in the probability of leaving is situated at the municipality level. Age, sex, household type and marital status had a significant effect on the probability of leaving the minimum income scheme. Local discretion by welfare agencies was measured through both the generosity of the supplementary benefit and the participation rate to the most common social employment programme. We found that the unemployment rate did not contribute significantly and do not improve the goodness of fit of the model. By contrast, the effect of the region and the percentage of the 2004 entrants which participated in the social employment programme is significant and improves the goodness of fit. Moreover, we found no support that the number of inhabitants and the population composition of the welfare agency play a role. Hence, we found mixed evidence for both the expectancy and rational choice model and the dependency and heterogeneity hypothesis.

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Technical Annex

A. Individual level data

Sample description

Our 1/3 sample is proportionally stratified according to the following criteria: sex (two categories), age (three categories), province (11 provinces), and the number of inhabitants of municipalities (five categories). The administrative data base reflects non-negative payment records between the federal administration and local welfare agencies. We only consider those records for which the sum of the payments exceeds zero. Social assistance claimants are attributed to one social welfare agency at the moment of their first entrance in the social assistance scheme, according to the welfare agency which administers the benefit or employment. This municipality may differ for some persons from their domicile address, as social assistance regulations take into account the real living situation, instead of domiciliation, as a general rule. Persons recorded by several local welfare agencies during this first month are attributed to the welfare agency with the highest payment amount. The sample is a 1/3 proportionally stratified sample according to the following stratification variables: legislation (2 categories), province (11 categories), number of inhabitants of the municipality (5 categories), sex (2 categories) and age (3 categories). Individuals have been attributed to the municipality of the welfare agency (and not to the municipality of domiciliation when differing). To allocate a person to a unique welfare agency the person is attributed to the welfare agency presenting the first positive sum of payments in 2004.

Table 8: Month of entry in minimum income scheme (2004)

Month	N	%	Months of observation
January	567	10.9	36
February	501	9.7	35
March	472	9.1	34
April	399	7.7	33
May	374	7.2	32
June	371	7.2	31
July	392	7.6	30
August	382	7.4	29
September	435	8.4	28
October	476	9.2	27
November	378	7.3	26
December	427	8.3	25
Total	5174	100	

Source: Data Warehouse Labour Market and Social security, own calculations.

B. Municipality level data

We describe only the sources for those data which are not integrated in the Data Warehouse Labour Market and Social Inclusion.

Table 9: Sources and description of municipality level data

Name	Description	Source	Year
Unemployment rate	Unemployed working population at working age/working population at working age	Employment accounts	2004
Mean amount of supplementary benefits by welfare recipient	Yearly annual amount of supplementary benefit/ the number of persons receiving an equivalent cash benefit	Annual accounts (Dexia survey for Wallonia & Brussels, VLaams agentschap voor Binnenlands bestuur-Flanders)	2004

The unemployment rate was attributed on the basis of the mean of the grouping of Dexia socio economic cluster (35 categories), number of inhabitants (5 categories) and urbanisation degree (5 categories), which created 169 groups, capturing quite well the variance between the 589 municipalities. The socio-economic clusters were identified as the result of a factor analysis of some 150 indicators by region, and then a cluster analysis by region (Dexia, 2007). The socio-economic clusters represent mainly disparities in the living standard, the socio-economic position of the population, the degree of urbanisation, the morphology (buildings) and function (incl. centre function, and attraction), the type of economic activity (incl. industry, tourism, and the tertiary sector) and the demographic dynamic (migration and ageing).