Immigrant Welfare Dynamics in the Netherlands

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Synopsis

Motivated by the growing interest in economic integration of immigrants in academic and policy debates concurrent with the lack of relevant scientific evidence, this thesis seeks to complement the missing link between the rhetoric and complex immigrant welfare realities. This thesis comprises three self-contained papers with respective focus on various stages and facets of the welfare cycle. Through analyzing the immigrant-native difference in welfare utilization and assimilation patterns, trajectories and determinants across generations in the Dutch context, this thesis seeks to better understand the determinants that boost or hinder economic integration of immigrants and their children, which shall serve as an important basis for developing better policy response to mitigate welfare dependency and promote self-sufficiency especially among immigrant welfare recipients.

To understand the extent to which the process of welfare assimilation is segmented and its underlying mechanism, Chapter 2, *Segmented Paths of Welfare Assimilation*, estimates the welfare assimilation trajectories of first-generation immigrants over the working-age life-course vis-à-vis selected reference groups from the native populations representing different economic segments of the host society. Extending the discussion in Chapter 2, Chapter 3, *Pathways to Intergenerational Welfare Assimilation*, assesses the extent to which segmented welfare assimilation pertains to second-generation immigrants by examining the welfare assimilation patterns and determinants of second-generation young adults. Built upon the findings of Chapter 2 and 3, Chapter 4, *Precarious Welfare-to-work Transitions*, focuses on the welfare transitions of second-generation young adults and examines the extent to which the propensities of welfare dependency, indicated by welfare persistence and welfare recidivism, are influenced by employment in the secondary labour market and ethnic penalty.

Through bridging the economics and sociology literatures on immigrant integration, this thesis provides new empirical evidence for intra-generational and inter-generational welfare dynamics of first-generation and second-generation immigrants in the Dutch context. The findings bring insights into the effectiveness of integration, immigration, social protection and labour market policies in the Netherlands and may serve as a reference for other immigrant-receiving countries upon contextualization. The findings also highlight the great heterogeneities in welfare dynamics among the migrant and native populations over the life course and demonstrate the relevance of such evidence base for academic and policy debates on immigrant welfare participation and economic integration.

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Anny Yu

Bangkok, September 18, 2021

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Chapter 1

Introduction

1.1 Background and Motivation

The enduring controversy about immigrant welfare participation has similarly dominated the public, political and academic discourses across immigrant-receiving countries. The focal point of the debate is whether immigration will take a toll on the host economy and society notably through draining public resources and incurring excessive welfare costs. Such concerns have only been exacerbated by the 2007/8 global financial crisis and the so-called refugee crisis in 2015, as recession and refugee surge put further strains on countries' absorptive capacities.

Welfare utilization is frequently associated with moral hazards, dysfunctional behaviours and cultural deficiencies, rather than poverty or needs. The welfare magnet hypothesis further reflects the speculation that immigration decisions are driven by welfare generosity of the destination country. Such perception of a large body of "undeserving poor" have directly or indirectly set off a series of policy changes and reforms. As in many European countries, conflated by the rise of radical right-wing parties, the immigration and integration policies in the Netherlands have become increasingly restrictive with the main aim to strengthen migrants' "own responsibility" (Hoogenboom, 2015). Recent welfare reforms oriented toward activating welfare recipients in the call for a participation society are seen as attempts to reduce if not replace the welfare state by shifting responsibility of social security provision from the state to individuals (Delson, 2012). An implicit assumption underlying all these movements is that economic integration is a matter of individual initiatives and choices.

Such perceptions and narratives, nevertheless, have appeared more effective in stoking hostility, stigmatization and xenophobia than finding unambiguous scientific support. Not only is the magnet hypothesis hardly substantiated (Giulietti, 2014), mounting evidence also shows that both migrants and refugees can bring economic gains to the host community. International migration promotes economic welfare and growth (e.g. Loschmann, Bilgili & Siegel, 2019; Boubtane et al., 2013; Ortega & Peri, 2013; Ratha, Mohapatra & Scheja, 2011; Kim, Levine & Lotti, 2010; Yang, 2009; Dustmann, Frattini & Glitz, 2008) via channels such as enhancing productivity (Boubtane, Dumont & Rault, 2016; Mitaritonna, Orefice & Peri, 2016), innovation and entrepreneurship (Hunt, 2010) and trade between countries of origin and destination (Genç, 2014; Genç, Ghesasi, Poot and Nijkamp, 2013). With regards to wage and employment effects on natives, the literature has yet to confirm any strong impact of such (OECD/ILO, 2018; Carrasco, Jimeno & Ortega, 2008; Kahanec et al., 2013). Despite concerns over the fiscal burden of immigration, the literature generally finds the net fiscal impact to be minimal for both high and lower-middle income countries (Hennessey & Hagen-Zanker, 2020; Rowthorn, 2008) if not positive (Nyman & Ahlskog, 2018; Dustmann & Frattini, 2014; Liebig and Mo, 2013; Collado, Ilturbe-Ormaetxe & Valera, 2004), and even more so the larger the share of high-skilled migrants (Lee & Miller, 2000; Auerbach & Oreopoulos, 1999). In particular, for developed economies such as Europe, labour mobility is seen

to offer unique economic opportunities through addressing labour market imbalances and strengthening labour market adjustment capacities to asymmetric shocks in the face of looming demographic crises (Zimmermann, 2017; OECD/European Union, 2014; Jauer et al., 2014) – an aging population, stagnant if not negative population growth, shrinking labour force, rising dependency ratio, and projected unsustainability of the pension system. The extent to which such potentials could be translated into economic and fiscal gains, as OECD/ILO (2018) suggest, relies on integration, the channel through which available human resources can be tapped and utilized efficiently.

Conversely, immigrant welfare utilization could be closely intertwined with the extent of labour market inclusion (Zimmermann et al., 2011). In 12 EU countries, considering all types of support programmes, first-generation immigrants, defined as foreign-born populations, are found less likely to be in receipt than comparable natives, despite a higher risk of poverty especially among non-EU migrants (Zimmermann et al., 2011). In 13 OECD countries, it was found that migrants are more likely to be unemployed and hit harder by economic recession (Drinkwater, 2017). The 2019 Dutch Integration Report further reveals that, even among second-generation immigrants, the children who were born in the country to at least one foreign-born parent, youth unemployment remains more pronounced, despite an almost equal share of higher education holders as the Dutch natives. Alongside these findings is an overwhelming body of evidence of labour market discrimination against migrants and ethnic minorities (e.g. Lippers et al., 2020; Wrench, Rea & Ouali, 2016; Zegers de Beijl, 2000). In light of these signs of horizontal inequalities and limited positional mobilities of immigrants and their children vis-à-vis natives, a question fundamental to the entire debate arises: *Do individual efforts suffice to overcome the obstacles to integration? Or are migrants' prospects for welfare and economic assimilation conditioned if not segmented by structural constraints?* If the latter is true, the observed immigrant-native gap in welfare use might not be an outcome of the policy failure of excessive welfare spending on migrants, to say the least, as much as the policy failure of integration. Integration is defined by the International Organization for Migration (2019) as a "two-way process of mutual adaptation between migrants and the societies in which they live, whereby migrants are incorporated into the social, economic, cultural and political life of the receiving community" that "entails a set of joint responsibilities for migrants and communities, and incorporates other related notions such as social inclusion and social cohesion".

As Ryan (1984) puts it, segmentation is "the failure of the labour market to treat its participants even-handedly, in that it accords significantly different opportunities and rewards to otherwise comparable people". The consequences could be alarming – if certain groups of immigrants and their future generations are more prone to low mobility and poverty traps, the emergence of ethnic segregation in the labour market could trigger a self-reinforcing vicious cycle by

aggravating discrimination from the public and government policies, which in turn further cuts off their route to mobility and forgoes, if not reverses, their potential contributions to the society.

Realities beyond the often oversimplified, if not baseless, rhetoric about welfare recipients are important for evidence-based policy making and welfare reform. Scientific research on this domain, however, remains strikingly inconclusive and insufficient. *The answer as to how the government should position its welfare system depends substantially on the welfare dynamics uncovered for the immigrant populations*. "If welfare is predominantly a short-term aid, with people moving quickly into private sources of support, then welfare is best understood as a transitional program. 'Dependency' becomes less of a worry and policies designed to move people from welfare to work might be unnecessary, potentially even counterproductive. Relatively simple policies to help people find jobs more quickly might be as much as is needed. But if welfare lasts a very long time, then the nature and the reasons for long-term use become important, and policy responses more complex." (Bane & Ellwood, 1994). Another source of complication is the great heterogeneities among immigrant welfare recipients, which have rarely been sufficiently reflected in existing statistics. *Effective targeting cannot take place unless there is in-depth understanding of how welfare use is distributed unequally among different immigrant groups and of the underlying determinants beyond the immigrant status*.

The primary motivation of this dissertation is to disentangle the myths about welfare recipients with particular regards to the immigrant-native difference in welfare participation. Through analyzing the welfare dynamics of immigrant and native recipients in the Netherlands, this thesis seeks to better understand the determinants that boost or hinder economic integration of immigrants and their children, which will serve as an important basis to develop policy solutions for reducing welfare dependency and fostering self-sufficiency especially among immigrant welfare recipients. Whether group-based obstacles exist will indicate the potential necessity of targeted measures complementary to the existing poverty alleviation and activation strategies. In a broader context, research findings of this dissertation shall provide implications for the social protection, labour market, integration and immigration policies that are directly applicable to the Netherlands, and may also be generalized to other immigrant-receiving societies upon contextualization.

1.2 Research Questions

Immigrant assimilation refers to the process in which immigrants come to resemble pre-existing populations in the destination country. This term remains controversial owing to its association with the often-contested idea of one-directional cultural assimilation by migrants, whereas terms such as immigrant integration which emphasize the two-way process of adaptation by both

migrants and host societies are much more widely accepted. The focus of this dissertation, however, is on the economic dimension of such process, in which context the term dominates in the economics literature and refers specifically to the extent and pace of catch-up with the native populations in terms of economic outcomes. In this sense, welfare assimilation refers to convergence to the level of welfare utilization of the native populations. In this dissertation, participation in social welfare programmes related to a lack of income is employed as a negative indicator of economic integration. Welfare programmes covered in this thesis will be described in Section 1.5.

With extensive literature focused on labour market integration, existing evidence on immigrant welfare use in the Netherlands remains scant and is predominantly of descriptive, retrospective, static and cross-sectional nature. On one hand, static analysis of human behaviour which is dynamic in nature is known to be subject to estimation biases, as it disregards time dependence and lifecycle fluctuations. On the other hand, a well-known identification problem exists as to identifying the effects of aging, period and cohort from the effect of assimilation, which is difficult if not impossible to tackle in cross-sectional analysis. A dynamic life-course approach counters such limitations by refocusing on the dynamic and long-term development over the life-course of immigrants with the use of longitudinal data. Based upon a life-course perspective, studies on economic and welfare assimilation in the economics literature conventionally assume that, over time, immigrants will converge towards average natives in the host society in terms of economic outcomes such as income, employment propensity and welfare use propensity. It relates, to a large extent, to the traditional emphasis of the literature on the role of individual attributes, especially years since migration and human capital. While these factors might well explain the success of assimilation, they appear inadequate in explaining the lack of assimilation empirically observed to concentrate among certain migrant groups.

In light of the lack of explanatory power of existing guiding models in the economic and welfare assimilation literature, this dissertation draws on theoretical approaches from the state-of-the-art of economics and sociology, with particular reference to segmented assimilation theory and labour market segmentation theory. In line with a growing body of evidence for the existence and persistence of structural barriers, segmented assimilation theory from sociology offers an alternative explanation by describing immigrant assimilation as a structurally segmented process. According to this theory, the modes of incorporation in the receptive context, which refers to the extent of receptiveness towards immigrants in terms of government policies and public attitudes in the host society, determine the direction and outcome of assimilation. Such structural barriers, however, can be buffered by resources at the group and family levels. Access to additional resources might be facilitated through membership to a common ethnic or cultural group, whereas family attributes, especially the socio-economic status and family structure, affect the

accumulation of resources. While some may reach parity with or even outperform natives in terms of labour market performance, the most disadvantaged groups faced with the most unfavourable modes of incorporation possessing the least of such kinds of resources are predicted to be segregated from the mainstream of the host society and cut off from chances of socio-economic mobility. Such immobility might not only persist over one's lifetime, but also be passed on to (the) future generation(s).

Another theory from economics which emphasizes segmentation of the opportunity structure is labour market segmentation theory. It puts forward that the labour market structure has become increasingly bifurcated and is composed of a primary sector and a secondary sector, which demonstrates stark contrast in every aspect in terms of job quality and rewards while offering limited intersectoral mobilities. The positioning of workers in such a segmented labour market hence becomes deterministic of their ultimate economic position.

The conceptual insights gathered from these remotely connected strands of literatures point to a divergent path from conventional assumptions by shifting the starting point of the entire discourse to be fully embedded in the interconnectedness of the broader structural context and micro-level dynamics. The objective of this dissertation is therefore to fill the knowledge gaps by investigating the patterns and determinants of intragenerational and intergenerational welfare assimilation in the case of the Netherlands, the context of which will be described in the following subsections. The main research questions are identified as follows:

(1) To what extent do first-generation immigrants [Chapter 2] and second-generation immigrants [Chapter 3] in the Netherlands converge to Dutch natives in terms of the level of welfare use over time?
   (1.1) What are the trajectories of welfare assimilation for different subgroups?
   (1.2) Are there differential prospects for intragenerational mobility?
   (1.3) Are there differential prospects for intergenerational mobility?
   (1.4) What are the drivers of welfare utilization?

(2) To what extent do second-generation immigrants and Dutch natives differ with regard to the risks of welfare persistence and welfare recidivism? [Chapter 4]
   (2.1) What are the risks of welfare persistence and welfare re-entry in the medium-to-long run?
   (2.2) Are there differential prospects of sustaining self-sufficiency?

1.3 Data: The System of Social Statistical Datasets

Population-wide registry data between the years 1995-2015 from Statistics Netherlands (CBS) will be used for all empirical analyses in this dissertation. The dataset comes from two databases, namely, the System of Social Statistical Datasets (SSD) and the Municipal Population Registers (GBA). The SSD records precise starting and end dates of all benefit spells for the Dutch resident population over the years 1999 to 2015, and the GBA provides information on the personal and household characteristics of the Dutch resident population. Every individual in the register has a unique person-identifier for merging the datasets.

The use of administrative and specifically CBS data has important advantages over the use of survey data which predominates in existing analyses in the literature. First of all, while CBS data has full population coverage and representativeness, survey data might be prone to migrant selectivity from issues such as the willingness of certain migrants to be interviewed and disclose information, the relevance of interviewer or researcher or more broadly social and power structures on response rate, the accessibility of certain groups, and representativeness of sampling which takes place in certain locations (National Academies of Sciences, Engineering, and Medicine, 2019). Secondly, although both CBS data and survey data can be longitudinal in nature, the attrition rate is much higher in survey data, whereas in the case of administrative data attrition occurs mostly due to major life events such as death and emigration. Moreover, the CBS data provides a sufficiently long duration of observation for life-course analysis. Thirdly, the use of administrative data benefits from relatively reliable data quality and data mass, which are particularly crucial when, as in the case of this dissertation, an aggregate analysis of all migrant groups is intended. Even in a large-scale survey, it is often difficult to achieve sufficient coverage of small migrant groups for rigorous analysis. Last but not least, the CBS data contains extensive and valuable information which might not be easily collected via surveys, such as intergenerational data from which parent-to-children transmission can be traced without misreporting due to time lapse, and the breadth of data and variables which allow for addressing estimation biases such as omitted variable bias and endogeneities. The strengths of administrative data make possible all these methodological advances which are otherwise difficult to achieve with the use of survey data.

It is worth noting that there are certain limitations associated with the use of administrative and specifically CBS data, especially regarding the availability of data. While administrative data collects an extensive scope of information, survey data remains the main source of subjective indicators, such as public attitudes and aspiration, individual narratives, social drivers and in-depth characteristics (National Academies of Sciences, Engineering, and Medicine, 2019). It is also relatively lacking in self-identified or retrospective data, such as ethnicity and migration history. Moreover, in the search of proxy indicators to operationalize certain theoretical concepts, the

ideal choices indicated from the literature might not overlap with data availability. For example, although the occupational level of individuals can serve as a proxy for one's relative position in the labour market, only the sector of employment is available in the CBS data. As such, operationalization of theoretical concepts can only be as precise as what is practically available, unlike in the case of survey data which could be tailored to the needs of research. Another aspect concerns the duration of observation. Most migration-related information is not available before 1995 in the CBS data, such as the year of immigration and entry category for first-generation immigrants. Some more variables are only available as of 2003 or 2006, such as income, welfare receipt and job characteristics. The sample selection, period of observation and completeness of information are also contingent on these conditions. For example, only second-generation young adults up to a certain age can be observed when family-level variables during adolescence need to be incorporated in the analysis. Moreover, missing records of certain information, such as education and entry category variables for a large number of migrants, require additional tests to prove that measurement error or missing information does not generate bias or restrain the reliability of results. Finally, administrative data intrinsically excludes undocumented migrants, which limit the generalizability of findings to documented migrants. These are all issues that have affected the research design, empirical analyses and interpretation in this dissertation. While these caveats are to be considered as one interprets the results, it is shown in the following sections that, when dealt with carefully, these limitations do not necessarily outweigh the advantages of using administrative data.

1.4 Historical Context: Immigration to the Netherlands

In 2019, over 4 million people with a migration background, defined by the CBS as individuals with at least one of the parents or individuals who were born abroad, were residing in the Netherlands, comprising 23% of the total population. Trends and patterns of immigration to the Netherlands have evolved tremendously as of the latter half of the 20th century. Post-war developments, such as decolonization and reconstruction, have led to continuous migration to the Netherlands. Since the 1960s, immigration began to outnumber emigration, marking the transition of the Netherlands from an emigration country to an immigration country which persists until today.

The immigrant composition in the Netherlands is substantially heterogeneous. According to the origin of major immigration flows, there are four main categories of migrants: colonial migrants, labour migrants, family migrants, and refugees and asylum seekers. Colonial migrants include Moluccans, Antilleans and Surinamese, whose migration to the Netherlands mostly occurred before the independence of these countries from Dutch colonization.

Labour migrants, who are often referred to as 'guest workers', historically come mainly from the Mediterranean region. After World War II, the process of reconstruction led to acute demands for unskilled labour (Hartog and Vriend, 1989). Southern Europeans such as Italians, Spanish, Portuguese and Yugoslavian arrived in the 1950s, followed by Turkish and Moroccans who came on recruitment agreements and were hired mostly in low-skilled sectors. The closing of borders to labour migrants in 1980 halted the influx of labour migrants from Turkey and Morocco, yet immigration from these countries continued mainly in the form of chain migration, as many came for the purpose of family reunification after the introduction of the law on family reunification (1974). Another common source of labour migration is from EU countries as a result of free movement guaranteed by EU regulations. Since the EU enlargement in 2004, migration from new EU countries such as Poland and Bulgaria have also increased.

Last but not least, the category of migrants that has increased sizably especially since the 1990s is asylum seekers and refugees. In the 1990s, many migrated from former Yugoslavia, Iraq and Afghanistan to the Netherlands. In the early 2000s, asylum seekers and refugees predominantly came from Middle Eastern countries such as Afghanistan. The outbreak of the so-called refugee crisis in 2015 marks yet another surge in the inflow of asylum seekers mainly from Syria and to a lesser extent Afghanistan and Eritrea.

These causes of migration and characteristics of each migrant groups will serve as an important basis for making sense of current integration patterns. While it is mentioned above that permanent settlement of migrants had taken place at an extent beyond expectation of the Dutch, recent CBS statistics highlight the predominantly temporary nature of most immigration – 70% of labour migrants and 40% of asylum seekers who arrived in the Netherlands in 2009 had left within 10 years (CBS, 2020). It is essential to take into consideration the scale of remigration when interpreting any finding about immigrant integration.

1.5 Institutional Context: The Dutch Welfare State

The Dutch welfare system comprises three pillars: social insurance, social assistance and old-age pension (Blommesteijn & Mallee, 2009). Among welfare programs available for the working-age populations, of the largest scale are social assistance (bijstandsuitkering) and unemployment benefit (WW uitkering), the latter of which falls under the category of social insurance. Under these two programs are three specific income support schemes for the older unemployed. While official categorization places the Older Unemployed Workers Income Scheme (IOW) under the social assistance category, Income Provisions for Older Unemployed or Partly Disabled Workers (IOAW) and Income Provisions for the Older Unemployed or Partly Disabled Self-employed

Persons Income Scheme (IOAZ) are part of the unemployment benefit category. In the context of this thesis, most analyses will focus on participation in these welfare programmes which indicates a lack of sufficient incomes, either due to (a) low-paid job(s) or no employment.

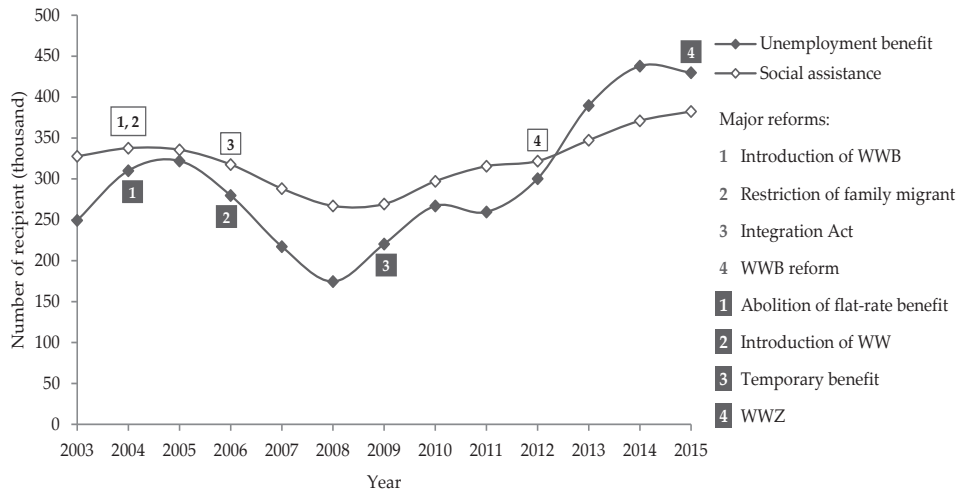
A series of fundamental reforms have been carried out in the 2000s, marking the shift of the Dutch welfare state from welfare to workfare, with the central objectives to reduce inflow to welfare and increase outflow to employment (Delson, 2012). Figure 1.1 and 1.2 below show the number of recipients in each program, and the timing of major policy changes concerning the working-age populations. The general eligibility criteria, relevant reforms, and their potential impacts on each program during the period from 2003 to 2015 will be discussed with respect to their accessibility and duration. This sub-section will conclude by considering the effects of immigration policy and integration policy on welfare state arrangements.

Accessibility and duration of unemployment benefit have become increasingly stringent over the past decade. As of January 2004, to promote activation of unemployment benefit recipients and old-aged workers, the short-term flat-rate benefit for unemployment benefit recipients within two years after the end of the earning-related unemployment benefit and for old-aged workers who lose their job at 57.5 to claim for a maximum for 3.5 years was abolished. In 2006, the Unemployment Insurance Act (Werkloosheidswet, WW) reduced the maximum duration of unemployment benefit from 5 years to 38 months, depending on the length of employment history, and tightened the eligibility criteria to having worked 26 out of the preceding 36 weeks, instead of 39 weeks. Such contributory nature indicates that younger people, newly arrived immigrants, and refugees who have newly relocated out of the reception center would have no access to unemployment benefit. In response to the financial crisis, from January 2009 up to July 2011, the Ministry of Social Affairs and Employment temporarily allowed firms confronting a sharp reduction in the volume of trade to reduce working hours of its employees, who could receive a temporary part-time unemployment benefit.

The Work and Security Act (WWZ) concerning the flex law, dismissal law and unemployment law came into effect as of the beginning of 2015. The maximum duration of unemployment benefit was further reduced from 38 to 24 months. After receipt for six months, which was initially a year, acceptance of any suitable job is compulsory, while income compensation would be provided for those who accept a job with salary lower than the unemployment benefit.

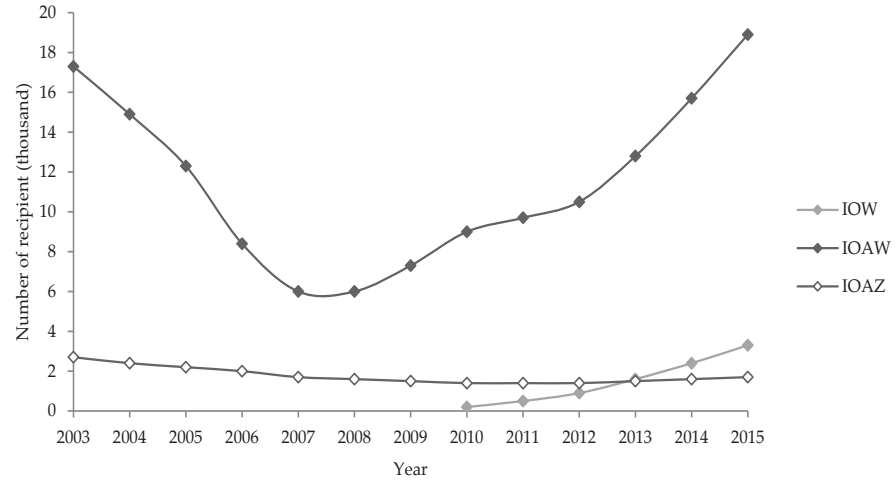
IOW, IOAW and IOAZ are three types of benefits for the older unemployed before the retirement age. IOAW and IOW are for those aged 50 and 60 years old or above respectively after termination of their unemployment benefit (WW) or sickness benefit for the partially disabled (WGA). IOAZ is for older self-employed persons who have to stop working because their company lacks sufficient revenue.

Figure 1.1: Major reforms and size of social assistance and unemployment benefit programs



Source: Author. Adapted from CBS Data Portal (2018).

Figure 1.2: Size of IOW, IOAW and IOAZ programs



Source: Author. Adapted from CBS Data Portal (2018).

Only individuals who are ineligible for or have exhausted the unemployment benefit and disability benefit may have access to social assistance, a means-tested program which serves as a safety net. The Work and Social Assistance Act (WWB) introduced in 2004 grants a minimum income to all eligible individuals aged above 18 whose incomes or assets are insufficient to meet essential living costs. Two features of the WWB are particularly relevant to the accessibility and

duration of social assistance: decentralization and its focus on activation. Municipalities have become financially responsible and thus incentivized for controlling the volume through activating social assistance recipients and restricting inflow. They can define their own target groups for special policies on exemptions and extra allowance. To note, the norms for social assistance payments are centralized to mediate the inter-municipal variations in payment levels. In 2012, a few activation-focused amendments have been made to the WWB. Income assessment was tightened up to apply to the entire household. Stricter requirements apply for single parents to be exempted from job search with a maximum duration of five years. The WIJ scheme (Investing in Youth Act) intended for young people aged between 18 and 27 and the WWIK (Work and Income Act for Artists) were abolished and merged with WWB. Municipalities have the right to ask recipients of WWB, IOAZ and IOAW to do unpaid work in return. In 2015, the Participation Law further integrates WWB, WSW (Sheltered Employment Act) and WAJONG (Disablement Assistance Act for Handicapped Young Persons). WSW was terminated, and access to WAJONG was restricted to only young people who are permanently disabled with no potential for work capacity.

Access of immigrants to social assistance has been further limited indirectly due to changes in immigration and integration policies. The Linkage Act (1998) specifies that only immigrants with a regular residence permit for an indefinite period of time can receive social assistance, and those with a temporary permit could risk losing their residence if they apply for social assistance. A new restriction on family reunification and formation was introduced in 2004 requiring those who wish to bring a non-Dutch family member to the Netherlands to prove to have sufficient incomes and long-term employment. The Integration Act in 2006 specifies that earlier non-EU immigrants who are dependent on social assistance must pass integration tests to be entitled to permanent residence. In the same year, a new limitation was added to restrict the access of EU immigrants to social assistance within the first three months of stay in the Netherlands.

1.6 Outline of the Dissertation

This dissertation comprises three self-contained papers with respective focus on various stages and facets of the welfare cycle. Chapter 2 and 3 are interlinked – Chapter 2 examines the life-course welfare assimilation trajectories of first-generation immigrants, and Chapter 3 shifts the focus to welfare assimilation trajectories of second-generation immigrants in their early years of labour market participation. Results of these two chapters are designed to be directly comparable to glean insights into the intergenerational progress. Built upon the findings of Chapter 2 and 3, Chapter 4 focuses on the welfare transitions of second-generation young adults.

Chapter 2: Segmented Paths of Welfare Assimilation

The objective of Chapter 2 is to examine whether the process of welfare assimilation is segmented among first-generation immigrants and its underlying mechanism. It estimates the life-course trajectories of welfare utilization of working-age first-generation immigrants in the Netherlands vis-à-vis those of two groups from the native populations representing different economic segments of host country, namely: average Dutch natives and Dutch natives with low education level. A dynamic correlated random effects (CRE) probit model is used to project the assimilation profiles of first-generation immigrants by their ethnic origin, reason for migration, education level and gender. The estimation results suggest that welfare assimilation is not a uniform process for all first-generation immigrants. While it is predicted that assimilation to average Dutch natives is the destination for many, certain groups marked by structural and human capital disadvantages at most assimilate to Dutch natives with low education level. Intragenerational mobilities however show to be notable even among the most disadvantaged groups.

Chapter 3: Pathways to Intergenerational Welfare Assimilation

As an extension of the discussion in Chapter 2, Chapter 3 assesses whether segmented welfare assimilation pertains to second-generation immigrants, with the goal to identify pathways to intergenerational welfare assimilation. Intergenerational data is retrieved during adolescence of native and second-generation young adults whose school-to-work transition is followed from 2011 to 2015. The hypotheses of persistent disadvantage and second-generation decline are evaluated by comparing second-generation young adults to four reference groups: average Dutch natives, Dutch natives with low education level, their own parents, and first-generation immigrants. The effects of ethnic penalty, human capital, family socio-economic backgrounds and intra-ethnic and inter-ethnic social capital are simultaneously studied. Also using dynamic correlated random effects (CRE) probit model, the estimation results allow for comparability between first-generation and second-generation immigrants. While the results deviate from second-generation decline hypothesis as intergenerational mobilities are found to be prevalent and inclusive of relatively disadvantaged groups, there is evidence for second-generation disadvantage hypothesis especially among young adults faced with structural, human capital and family disadvantages.

Chapter 4: Welfare Cycling

Chapter 4 focuses on specific stages of the welfare cycle: welfare persistence and recidivism, which the author argues to be dominant forms of economic vulnerabilities under the work-first model in the context of labour market segmentation. Welfare reforms in recent decades have shifted the focus of welfare to workfare, with the underlying assumption that labour market attachment is the route to self-sufficiency – yet existing evidence has revealed that while welfare

recipients can be activated out of the system, a non-ignorable portion of them return some time in the future. In the meanwhile, more and more economists have expressed concerns over the signs and consequences of labour market segmentation, which is expected to further restrain the economic prospects of less skilled workers and disadvantaged groups by limiting their options to precarious jobs. To assess the effectiveness of the work-first model, this paper investigates the extent to which the propensities and determinants of welfare persistence and cycling are differential for native and second-generation young adults located in the opposite ends of labour market structure. Simultaneous effects of labour market segmentation and ethnic penalty are modelled using a first-order Markov transition model that accounts for endogeneities from initial conditions and unobserved heterogeneity. The results suggest that there are differential prospects for achieving and sustaining self-sufficiency among Dutch native and second-generation young adults. Welfare persistence in the medium term and return to welfare in the long term are found to be common, and especially so for second-generation young adults with non-western backgrounds positioned in the secondary sector of the labour market.

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Chapter 2

Segmented Paths of Welfare Assimilation

2.1 Introduction

Immigration has emerged as one of the defining themes in the 2017 Dutch election where an unprecedented surge in populist parties materialized. Despite contentious public discourse on the extent of the immigrant-native gap in welfare utilization, which has profound policy implications with respect to the economic consequences of immigration and the effectiveness of socio-economic integration of immigrants and their children, relevant scientific knowledge remains scant (Van de Beek, 2010). On one hand, the lack of disaggregation in existing evidence has obscured the vast heterogeneities of the immigrant populations. On the other hand, the documentation of over-representation of non-western immigrants in welfare figures (e.g. CBS, 2016; Zorlu, 2013; SCP, 2009; SCP, WODC & CBS, 2005) and the attribution of migrants' fiscal burden on the host country to their welfare costs (Roodenburg, Euwals & Rele, 2003) have been based, exclusively, on cross-sectional and/or static analysis.

The shortcomings of such methodologies have been well documented in the literature. On one hand, cross-sectional analysis of welfare use is subject to estimation biases, as identification of the effects of aging, cohort, period and selective remigration from assimilation effect is difficult if not impossible (see e.g. Borjas, 1994). On the other, initial labour market outcomes of migrants have been shown to be a poor approximation of their ultimate position in the future (Chiswick et al., 2005). Even with panel data, static models fail to capture dynamic processes (Akay, 2016) although they are used in most economic assimilation studies. The dynamic life-course approach, while avoiding such severe biases, brings to attention a question pivotal to the understanding of immigrant welfare use: Does immigrants' welfare utilization level converge to that of natives over time? If their utilization level will change with time spent in the country, the initial costs of welfare should therefore not be used alone to infer the lifetime welfare costs of immigrants (Hansen & Loftstrom, 2003).

Existing research on welfare assimilation, as part of the broader process of economic assimilation, has yet to provide a uniform and conclusive answer to this question. With the majority of studies conducted in the American context, evidence on welfare assimilation is scarce for Europe and absent for the Netherlands. Most existing studies, guided by the immigrant assimilation hypothesis (IAH), dedicated almost exclusive attention to the effects of years since migration (YSM) (Chriswick, 1978) and human capital (Borjas, 1985) for explaining post-migration experiences. The intuition behind this reasoning is that the longer immigrants reside in the host country, the more they accumulate skills, knowledge and experience specific to the destination country to improve their labour market position and lessen the use of social benefits. In other words, welfare and economic assimilation, meaning a trend of upward mobility towards average natives, is a natural process that should take place over time. However, empirical evidence seldom aligns with such predictions, as persistent differences in the economic integration

outcomes of non-western immigrants has been consistently observed across country contexts even after 20 years of residence (e.g. Akay, 2016, 2007; Hansen & Loftstrom, 2003). While successful economic and welfare assimilation achieved by western immigrants in host countries can be quite well explained, the theory appears insufficient for explaining the lack of assimilation.

Segmented assimilation theory, first put forward by Portes & Zhou (1993), offers new perspectives pointing to the potential diversity of the assimilation process. Diverting from the traditional view of a uniform assimilation process, it stresses that the relationship between YSM and assimilation depends on which segment of the stratified host society immigrants are incorporated into. For the first generation, differences in modes of incorporation in the receptive context and human capital are deemed decisive to whether assimilation to the middle class is achievable. This can perhaps extend our current understanding of welfare and economic assimilation and make sense of the empirical findings, especially regarding the observed divergence from average natives and the role of factors other than duration and human capital.

Three research questions will be investigated. *First*, do first-generation immigrants undergo segmented paths of welfare assimilation over the working-age life course instead of a uniform path of mainstream assimilation? *Second*, are the prospects of upward mobility exclusive of the disadvantaged groups? *Third*, to what extent do structural and human capital disadvantages, namely a negative mode of incorporation and a low level of human capital, predict marginalization in spite of migrants' aspiration to integrate?

According to the classification of persons with a foreign background (CBS, 2001), first-generation immigrants are defined as those who are born abroad with at least one parent born abroad, and Dutch natives are those with both parents born in the Netherlands. This chapter makes use of unique longitudinal administrative data (2007-2015) based on the entire Dutch population from Statistics Netherlands (CBS) to simulate the welfare assimilation trajectories for the immigrant populations by their area of origin, entry category, education level and gender.

In this chapter, the analysis of assimilation is confined exclusively to the economic domain due to the explicit focus of this research on predicting and explaining welfare assimilation. Economic assimilation and welfare assimilation refer to the speed and extent of reduction in the immigrant-native gap in economic outcomes and welfare utilization propensity respectively. The base groups for different assimilation outcomes will be discussed in Section 2.2.3.

This research provides the first longitudinal evidence on welfare assimilation for the Netherlands. From a theoretical perspective, it provides an alternative means of operationalization and empirical evidence on the first generation for segmented assimilation theory when most, if not all, studies of segmented assimilation have focused on the children of immigrants. Moreover, through bridging the economics and sociology literatures on immigrant integration, it

complements the descriptive and explanatory functions of conventional welfare and economic assimilation models. From a methodological perspective, through undertaking a dynamic life-course approach, it addresses the shortcomings of static and snapshot analysis of welfare use.

This chapter is structured as followed: the institutional background will be first outlined, followed by literature review and conceptual framework. Data description, methodology and empirical results from the data analysis will then be presented. The chapter will conclude with robustness check and discussions on the findings.

2.2 Literature Review

2.2.1 Conceptual Framework: Bridging the Theoretical Approaches

Various approaches have been advanced from economics and sociology to study immigrant adaptation in the host country, from which I have identified three competing models for the study of welfare assimilation. Similarities and differences in their descriptive and explanatory functions will be discussed, with the goal to incorporate insights from existing models to formulate our hypotheses. Table 2.1 summarizes the main theories of the models.

Table 2.1: Competing models on economic assimilation

Competing model	Discipline	Major determinant(s)	Predicted patterns of assimilation
Classic assimilation theory	Sociology	YSM	Straight-line, or at most bumpy, assimilation to the mainstream of host society
Immigrant assimilation hypothesis (IAH)	Economics	YSM, conditioned by human capital	Immigrants with higher human capital assimilate more quickly to average natives
Segmented assimilation theory	Sociology	Modes of incorporation	Upward assimilation to the middle-class or downward assimilation to the underclass

Source: Authors' compilation.

As pioneer of assimilation theories in the sociology literature, the "classic assimilation model" dates back to the 1920s as sociologists of the Chicago School sought to understand the incorporation of European immigrants and their descendants in the U.S.. The model focused on the role of *Years Since Migration*, and the theory predicted a uniform straight-line process of upward assimilation towards the mainstream over time (Park & Burgess, 1925). Convergence was assumed an inevitable destination for all immigrants and their children (Waldinger & Perlmann, 1998).

However, fundamental changes in the American society have brought the classic model into question regarding its applicability to the contemporary world (e.g. Greenman & Xie, 2008; Portes & Rumbaut, 2001; Rumbaut, 1997; Portes & Zhou, 1993). On one hand, the composition of immigrant inflow to the U.S. before and after the WWII substantially differs. White European immigrants, who share relatively similar characteristics and skill levels as the native population, have been increasingly replaced by migrants from markedly diverse backgrounds – they are different not only in ethnicity, but also the type and amount of human capital they possess. On the other hand, economic restructuring gave rise to an hourglass economy with a bifurcated labour market, which has become arguably less receptive to immigrants (Portes & Fernández-Kelly, 2008; Portes & Zhou, 1993). The model has been mainly criticized for its inability to explain the widening gap in the levels of opportunities and disadvantages between recent immigrant cohorts and the natives. Recent development of the theory (e.g. Alba & Nee, 2003) has come to recognize that the assimilation path is not a straightforward one, and could be bumpy and lengthy for some but could nonetheless ultimately converge to the mainstream.

The second model, the immigrant assimilation hypothesis (IAH) from the economics literature, also emphasizes the effect of YSM on economic adaptation, but that such effect is conditioned by the amount of human capital (Chiswick, 1978), in particular destination-specific human capital (Chiswick, 2002). Upon arrival, an initial immigrant-native wage gap is anticipated, since their pre-migration skills, such as language and qualifications, are not directly transferable to the host country. As time passes, immigrants improve their host-country-specific skills and close the wage gap from natives. The immigrant-native gap might not be closed, however, if a relevant knowledge deficiency, namely under-investment in destination-specific human capital, or discrimination against non-natives persists in the host country. In other words, the role of factors other than human capital, including structural or societal factors, can at best influence the extent of upward assimilation. In the words of Wilkinson (2013), these influences are viewed as "transient aberrations in an essentially competitive market" and "distinctly secondary in comparison to variations in ability". In this perspective, the role of YSM is decisive to economic assimilation insofar it influences the accumulation of destination-specific human capital.

Despite variations, these two models share two similar assumptions: a positive relationship between YSM and assimilation, and the prediction of mainstream assimilation via upward mobility. However, with the increasing availability of data on the offspring of recent immigrants, the empirical observations of persistent differences in assimilation outcomes concentrated among certain immigrant groups have cast doubts on the descriptive and explanatory power of these models (see e.g. Hirschman, 2001; Gibson, 1997; Waters, 1996). Given equal residential duration as the children of natives, second-generation immigrants are supposed to achieve comparable levels of education and labour market outcomes. Why do some groups of immigrant children tend to have worse education outcomes, and why, even given the same level of education, some groups of immigrant children have worse labour market outcomes than the children of natives?

This points to the possibility that more complex societal and structural mechanisms underlie the process of economic assimilation.

Segmented assimilation theory, an alternative theoretical perspective, confronts the classic models with the fundamental challenges that assimilation might not a uniform process for all immigrants and their children, and that the relationship between YSM and assimilation is not necessarily positive depending on the segment of society to which immigrants assimilate (Bankston & Zhou, 1997; Zhou, 1997). As immigrants arrive at the host society, which is stratified into segregated and unequal segments thanks to increasing labour market bifurcation, assimilation is essentially the process in which they are absorbed into these different segments. The path of assimilation thus divides not only in terms of the extent and pace of assimilation, but also the direction and destination. While some migrant groups will follow the rosy route of upward assimilation and join the middleclass, the more disadvantaged will however be cut off from economic mobility and experience downward assimilation into the underclass.

Instead of asserting a deterministic role to individual-level dynamics as in the classic models, segmented assimilation theory posits that it is the interplay between structural, societal and individual factors that will decide the fate of immigrants and their children. For first-generation immigrants, structural factors particularly the modes of incorporation are the most deterministic, which refer to the reception by the government and host community. If unfavourable policies and/or prejudice towards certain minorities exist(s), their upward mobility is likely to be hindered. On the contrary, favourable reception, well-crafted inclusive integration policies, and capital spillover could promote the emergence of new communities where participating minority groups become resilient, thus offering a middle-range pathway to mainstream assimilation for those facing negative modes of incorporation (Nimeh, 2012).

On one hand, the segmented assimilation theory offers a new perspective to our descriptive understanding of the immigrant adaptation process by differentiating between the destination of assimilation and the path of assimilation. The current understanding about how much and how fast assimilation takes place can be broadened to take into account "assimilation into which reference population" (Tran, 2016). On the other hand, although it sheds lights on the importance of opportunity structure on immigrant integration, it comes with the deficiency of neglecting the agency of immigrants. As Lutz (2017) puts it, immigrant integration is a product of immigrant capacity and immigrant aspirations. While the institutions will determine the amount of opportunities available, personal aspirations or incentives will decide the extent to which such opportunities are utilized and translated into actual and observable progress of economic and welfare assimilation.

2.2.2 Evidence on Welfare Assimilation

In the following section, existing evidence on the patterns and explanatory factors of welfare assimilation will first be presented, followed by an outline of the research gap that this study intends to fill.

Developed upon the literature on earning assimilation of immigrants in the U.S. pioneered by Chiswick (1978), alongside studies on other economic assimilation outcomes such as employment and occupational level (e.g. Kaushal et al., 2016; Waters Gerstein Pineau, 2016), the estimation of immigrant welfare assimilation in the destination countries became popular in recent decades, primarily due to increasing data availability. With the majority of welfare assimilation studies conducted in the American context, the literature has yet to identify a consistent pattern. Jensen (1988) shows that, once individual and family characteristics which shape the needs and eligibility for public assistance are controlled for, immigrant households are significantly less likely to receive cash benefits than native households. However, Borjas & Hilton (1996) draw the opposite conclusion when other means-tested non-cash benefits such as housing subsidies, food vouchers and Medicaid are also considered. Such diverse conclusions shed light on the heterogeneities in the nature, eligibility and receipt patterns across welfare programs, and hence the importance of welfare definition according to one's research purpose.

To the best of our knowledge, there has been no study on welfare assimilation in the Dutch context. Although the subject of welfare assimilation has not received the same degree of academic attention in the Netherlands, a descriptive report has touched upon the issue. The 2016 and 2020 Integration Report (CBS, 2020, 2016) measures the proportion of people among selected refugee groups and immigrants from new EU member countries in receipt of social assistance by years since migration. For refugees, the utilization rates tend to increase until 6 years of stay and decrease with longer stay. For non-refugee immigrants from new EU member countries, an increasing trend with years since migration is observed. To draw reference from the limited European literature on immigrant welfare assimilation, empirical evidence has been provided for Sweden, Finland, Denmark, Norway, and Germany as shown below. The general finding is a decreasing trend of welfare utilization over time among first-generation immigrants, particularly salient among refugees who arrived with higher initial levels, although parity with the predicted levels of natives is a rare case. Such patterns found in the European context provide a tentative indication of potential segmentation among first-generation immigrants.

In the case of Sweden, Hansen and Lofstrom (2003) examine whether immigrants assimilate into or out of welfare and find a decrease in immigrant social assistance participation propensity with time spent in the country, although immigrants use social assistance to a larger extent than natives. Refugees decrease their social assistance utilization at a faster rate than non-refugee immigrants,

but neither groups were predicted to reach parity with natives within the 20-year observation period.

For Finland, Sarvimäki (2011) examines assimilation patterns in terms of receipt of income transfers (social assistance, housing allowance, unemployment benefits and other), annual earnings and employment outcomes. High initial immigrant-native differences in earnings and employment are found among female immigrants and immigrants from non-OECD countries. Convergence to the native level is found in the use of social benefits after 20 years of residence in the country, despite persistent differences in employment and earnings.

In the Danish case, Blume and Verner (2007) examine the welfare dependency rate of immigrants, which is measured by the amount of public transfers received including pensions, social assistance, unemployment insurance benefits, child benefit and public housing support as a share of one's total income. While assimilation out of welfare is observed, such reduction is stronger for migrant men than women, who are also more sensitive to the effects of business cycle. Immigrants from later arrival cohorts show higher welfare dependence, partly due to the large variations in cohort qualities.

For Norway, Ekhaugen (2005) specifically takes into account the possibility of selective re-migration and benefit substitution. Considering the potential sensitivity of results to an overly narrow definition of welfare due to the likely presence of program substitution, this study examines receipiency of social assistance, unemployment benefit, disability pension, sickness benefit and rehabilitation benefit. By comparing refugees and other non-western with western immigrants, the author finds that welfare assimilation is observed for refugees but the opposite for other non-western immigrants.

For Germany, Riphahn, Sander & Wunder (2013) compare the probabilities of receiving social assistance and unemployment benefits between Turkish immigrants and the natives. After controlling for individual and household characteristics, only the second generation of Turkish immigrants remains significantly more likely to use welfare.

While existing studies have provided an important base for understanding the welfare assimilation process, much of the knowledge gap remains. First of all, existing evidence for the Netherlands are purely descriptive. Potential biases cannot be appropriately accounted for, such as the effects of selective re-migration, business cycles, aging and cohort quality changes. Second, the observation period of existing Dutch studies is too short to shed light on the long-term assimilation trend. Third, the focus on refugees and the broad distinction between western and non-western immigrants leave the aggregate picture of welfare assimilation of all first-generation immigrants unknown. This study thus aims to complement the research gap by disentangling intra-group differences.

2.2.3 Operationalization: Defining base groups for segmented assimilation

According to Portes, Fernandez-Kelly & Haller (2007), to disapprove the segmented assimilation theory one has to demonstrate the non-existence or insignificance of downward assimilation. One common approach is to select indicators of downward assimilation and compare the distribution among immigrants by their countries of origin. If the differences in the downward assimilation indicator, which is welfare utilization in our case, are randomly distributed among immigrant groups regardless of their average human capital and background characteristics, the number of success stories and failures in each group should approximate and thus there is no need to worry about downward assimilation. However, if such differences are concentrated in some groups, we cannot reject the existence of (an) alternative path(s) to upward assimilation.

There are two problems concerning such operationalization. Given that this methodology was designed to test segmented assimilation among second-generation immigrants, it has limited applicability to first-generation immigrants, among whom differences are expected due to substantial variations across YSM. The second problem is that it lacks specificity with regards to testing the core theoretical assumption, namely, the existence of downward assimilation into the underclass. While concentrated differences can be observed, the comparison is being made only among statistically similar migrants, but not with any reference group from the native population. The consequent lack of solid empirical evidence led to widespread skepticism centered on two issues: (i) the existence of an alternative assimilation process, which is the first thing to be tested in this research, and (ii) whether the reference group for the alternative path is the underclass, which remains controversial as to whether it exists, whether it is relevant to societies outside of the American context, and whether it is possible to define such a class.

Such a methodological loophole is fundamentally embedded in the elusive nature of the underclass concept. From a broader perspective, class per se, as Bourdieu (1987) puts it, is not an actual group, but rather a construct or a 'probable group' characterized by similar positions, conditions and interests, and consequently similar stances and practices. Not to mention underclass, which is an even more vague concept considering the highly mixed perspectives of what constitutes an underclass. In the American context where the theory originates, the underclass concept was directly associated with a group of African-Americans living in ghettos who are cut off from upward mobility, live in poverty, or even involved in criminal activities. Many argue that such an underclass concept may not be relevant to other societies, such as Europe where religion appears a more prevalent social divide than race (see, for example, Song, 2004). As for the Netherlands, Roelandt & Veenman (1992) conclude that there is no clear proof for the existence of an ethnic underclass, although marginalization is observed for ethnic minorities who might be at risk of becoming an underclass. It is therefore important to reflect on

what an underclass means as a concept as well as in the context of segmented assimilation theory, and whether it remains relevant to contemporary societies and to the Dutch context.

Two aspects require attention with regards to the definition. First, while many sociologists associate underclass with dysfunctional behaviours, we agree with Aponte (1990) that the definition of underclass should be based on deprivation, not behaviour, primarily due to the conceptual undesirability to differentiate between 'deserving' and 'undeserving' poor, and secondarily due to the methodological flaw of endogeneity between behaviour and outcome. As such, we follow Aponte (1990) in defining underclass as the economically marginalized who remain at the bottom end of the socioeconomic ladder with dim prospects for intragenerational and intergenerational upward mobility. In light of the conceptual controversy and empirical ambiguity of whether an underclass exists, we will refer to this segment of the society and economy specifically as the marginalized segment.

The literature of social stratification has provided two main options for measuring socio-economic status: composite and proxy measures, the choice of which depends largely on data availability and purpose of research. Common proxies and indicators include income, wealth, education, occupation, and area-level indicators. While income and wealth appear at first glance tempting due to their popularity in the definition of upper-, middle-, and lower-class, they are not feasible options in the context of our research. Besides the apparent disadvantages that they are highly subject to underreporting and substantial variations across one's life-course, they are endogenous to welfare utilization. While use of welfare is heavily dependent on income or wealth, they may also influence the decision of welfare utilization, such as via influencing the number of hours worked.

After eliminating the option of monetary measures, we have three other options of proxy measures: education, occupation and area-level indicators. An example of area-level indicators is average income in the neighborhood. It can be particularly useful in highly segregated societies such as the U.S., but not necessarily to the Dutch context. Adding to that, the definition of neighborhood is an arbitrary choice, difficult to operationalize and focuses on the community level. Without precise measurement of occupational level, we deem education a preferable option in the context of this research, firstly due to data availability on the highest level of education obtained, secondly due to its higher consistency throughout the life course, and thirdly due to its function as a proxy also for occupational qualification and income. Across disciplines, education has been uniformly perceived to be a good proxy for socio-economic status through its major influence on occupation and consequent amount of economic resources. In the theory of Bourdieu in the sociological literature, there is a strong relationship between educational attainment and occupational outcome which in turn determines one's social class. In the human capital theory (see Becker, 1964) from economics, education is a critical form of human capital that determines

one's earning. While the existence of labour market mismatch and depreciation of human capital in the job market are recognized as valid concerns particularly for individuals with higher levels of education as well as heterogeneous returns to human capital, the focus of this chapter is to utilize low level of education as a proxy for economically marginalized position. In the Dutch statistical definition, low education level refers to incompletion of basic compulsory education. That is, incompletion of level 2 of MBO (secondary vocational education), incompletion of HAVO (senior general secondary education) or VWO (pre-university education), or any level below.

A final point to note is the conceptual difference between mobility and assimilation. We refrain from using the terms downward and upward assimilation in this research as they tend to stir up confusions about two distinct concepts: mobility and assimilation. Mobility is in relation to one's initial position. Upward mobility does not necessarily equate achievement of mainstream assimilation – one can arrive with a high initial gap from natives and manage to reduce it substantially over time yet remain marginalized, and vice versa. Therefore, we treat destination of assimilation and mobility path as two distinct elements in the analysis of this chapter which would complement our understanding of the assimilation process from different angles.

Taking these into account, the following descriptive and explanatory hypotheses are formulated based on our conceptual framework: in terms of patterns, the welfare assimilation process is segmented into two paths: assimilation into the mainstream and assimilation into the economically marginalized segment. We define assimilation into the economically marginalized segment of the host society as convergence towards Dutch natives with low level of education. Assimilation to the mainstream of the host society is defined as convergence towards Dutch natives with an average level of education.

With regards to the determinants, the interplay between structural, societal and individual factors will commonly decide their welfare assimilation outcomes. Mainstream assimilation can occur due to, at the macro level, positive modes of incorporation in the receptive context, which can be captured by the variables area of origin and entry category, as they respectively reflect attitudes towards immigrant groups with varying degrees of ethnic and cultural distinctions, and differential immigration policies towards various types of migrants. Specifically, immigrants with a western background and economic/skilled migrants (i.e. labour migrants and education migrants) are predicted to receive the most favourable reception.

At the meso level, ethnic spillover through the presence of co-ethnics at the local level would support their economic and consequently welfare assimilation in spite of negative modes of incorporation. At the micro level, human capital and the aspiration for integration would contribute positively to welfare assimilation. The former will be captured by their education level, and the latter will be proxied by whether the immigrant has naturalized. Since we have no data on their Dutch language skills and cultural attitudes, naturalization can serve as a proxy for the

willingness to become integrated into the Dutch society. Although the requirements for naturalization stated in the Dutch Nationality Act of 1985 had changed from rather lenient to strict since 2003, one requirement that applied during most of the time is that to claim Dutch citizenship one's foreign nationality has to be renounced if possible. Since 2003, passing a naturalization test is required to demonstrate a sufficient level of integration through knowledge of the Dutch language and society. The training courses are costly and the naturalization test is not free of charge. Such stricter requirements were "meant to eventually improve immigrants' integration into Dutch society" (Peters, 2018). As such, citizenship acquisition not only indirectly reflects the Dutch language proficiency and knowledge about the Dutch society, but also efforts to stay and integrate into the Dutch society.

The last part of this section concerns definition of the dependent variable – *welfare use*, i.e. whether an individual has received welfare (social assistance or unemployment benefit) in that year. Given the research objective to test for existence of an alternative path to mainstream assimilation, this dependent variable is seen as an indicator of economic marginalization. These programs are selected due to their indication of a lack of self-sufficiency. Other welfare programs available for the working-age populations such as disability benefit and universal schemes have been ruled out due to their incompatible nature.

We recognize that the nature of social assistance and unemployment benefit is not equivalent, with the former as a safety-net measure and the latter a social insurance. In view of this, regression outputs will be presented separately for the following dependent variables: (i) receipt probability of both social assistance and unemployment benefit (will be referred to as welfare receipt hereafter) and (ii) social assistance receipt probability. For the assimilation profiles, we focus on the composite welfare measure to ensure robustness of the results for several reasons. Firstly, this avoids estimation problems arising from over-concentration of zeros in the dependent variable. This is the case when unemployment benefit receipt alone is used as the dependent variable although not for social assistance receipt. Secondly, it is important to take into account the possibility of benefit substitution (Ekhaugen, 2005), which could lead to misleading conclusions disregarding the complementarity of welfare programs. Among programs of similar nature, switching from one to another is found to be a common practice in Norway (Nordberg & Røed, 2002). Thirdly, it is known that the distribution of recipiency varies across programs in the Dutch context where migrants, compared to natives, are usually found to overrepresent in social assistance receipt but vice versa in unemployment benefit receipt. For example, by December 2015, the percentage of Dutch natives among social assistance recipients below the state pension age is 39% and 68% among unemployment benefit recipients below the state pension age (CBS StatLine, 2021). Since the predicted assimilation outcome is completely dependent on the native utilization level in that particular program, the comparison would give an overly, and falsely, pessimistic estimation when considering social assistance alone.

2.3 Data and Methodology

2.3.1 Sample and Variable Description

The dataset comes from the System of Social Statistical Datasets (SSD) of Statistics Netherlands (CBS) (Bakker et al, 2014). The SSD, constructed mainly from register data and complemented by survey data from Labour Force Survey (EBB), covers everyone legally residing in the Netherlands. The samples consist of random 20% of all first-generation immigrants (354,400 individuals and 1,768,361 observations) and random 1% of all Dutch natives (85,786 individuals and 580,834 observations) aged 18-64 who were registered at the municipality in the period between 2006 and 2015. The decision to draw such random subsamples is due to the enormous number of observations across the nine-year observation period if the original dataset comprising over 10 million people per year is to be covered in the estimation sample. The final sample excludes individuals aged above 60 to avoid contamination from usage of welfare programs as an early retirement pathway. The use of unbalanced samples allows selectivity of remigration to be controlled for (Dustmann & Gorlach, 2015). Descriptive statistics of key variables can be found in Table 2.2 below.

The ethnic origin of first-generation immigrants is grouped into seven areas, namely, EU, Other Europe, the MENA region, Sub-Saharan Africa, Asia, Americas & Oceania and Suriname & Caribbean. The list of countries classified in each area of origin can be seen in Appendix 1. Information on other migration characteristics such as YSM and entry category is only available for migrants who arrived as of 1995, who account for approximately 40% of the sample. As the maximum observable YSM is 21+ and the maximum age in the sample is 60, the variable age at migration which is calculated from age minus YSM can only be deducted by 21 for immigrants with YSM above 21 years. Since entry category is fixed but the type of residence permit is changeable, its interpretation retains to whom they enter as and for those arriving after 1995.

Ethnic capital is summarized by the share of the highly educated among co-nationals in the year 2007. The average income of co-nationals, another common measure of ethnic capital, cannot be used in this research due to potential collinearity with the dependent variable welfare receipt. Considering that for half of the migrant population information on their education level is missing, we checked whether such missingness is concentrated among migrants from specific regional origin and found the proportion of migrants with missing education level is quite evenly distributed across regional origin (below 5% difference). Ethnic concentration is measured as the share of co-nationals in the municipality in 2007. We have tried to vary its definition by measuring it through the log-transformed number of co-nationals at the municipality level, and also at higher geographical units, namely at regional and provincial levels. Our decision is based on three considerations: (i) the literature generally agrees that the lower the geographical unit the

Table 2.2: Mean values of dependent and independent variables by regional origin

	All migrants	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean	Dutch natives
Social assistance receipt status	0.130	0.033	0.135	0.235	0.262	0.063	0.050	0.135	0.023
Unemployment benefit receipt status	0.039	0.037	0.041	0.032	0.048	0.029	0.029	0.048	0.029
Lagged welfare receipt status	0.158	0.064	0.167	0.255	0.292	0.085	0.071	0.172	0.047
Initial welfare receipt status	0.143	0.009	0.006	0.022	0.055	0.008	0.004	0.011	0.001
Area of origin									
EU	0.212								
Other Europe	0.157								
MENA	0.195								
Sub-Saharan Africa	0.068								
Asia	0.113								
Americas & Oceania	0.039								
Suriname & Caribbean	0.216								
Entry category dummies (as of 1995)									
Family migrant	0.185	0.118	0.255	0.253	0.204	0.226	0.268	0.097	
Asylum migrant	0.065	0.002	0.051	0.156	0.221	0.026	0.002	0.038	
Labour migrant	0.118	0.376	0.044	0.022	0.057	0.098	0.155	0.026	
Education migrant	0.043	0.048	0.027	0.018	0.049	0.117	0.096	0.021	
Share of highly educated co-nationals (%)	8.956	12.325	6.006	7.198	5.727	12.344	13.320	7.646	
Number of co-nationals at municipality (log)	6.676	5.862	7.876	7.097	4.749	5.595	4.861	7.723	
YSM	16.538	13.612	17.678	17.499	15.599	15.586	14.402	19.431	
Age at migration	23.797	26.631	23.073	22.239	22.945	25.989	24.964	22.663	
Naturalization dummy	0.617	0.242	0.637	0.742	0.594	0.597	0.501	0.899	
Remigration dummy	0.083	0.141	0.058	0.045	0.109	0.095	0.143	0.060	
Entry cohort									
Before 1995	0.555	0.376	0.606	0.537	0.442	0.506	0.419	0.802	
1995-2000	0.113	0.079	0.125	0.191	0.130	0.096	0.097	0.075	
2001-2005	0.121	0.108	0.146	0.155	0.181	0.124	0.143	0.061	
2006-2010	0.119	0.243	0.074	0.071	0.165	0.154	0.187	0.041	
2011-2015	0.092	0.194	0.048	0.046	0.083	0.120	0.153	0.021	
Female dummy	0.526	0.550	0.517	0.463	0.474	0.573	0.603	0.543	0.493
Education level									
Low	0.213	0.106	0.282	0.288	0.309	0.160	0.118	0.212	0.106
Middle	0.198	0.176	0.156	0.203	0.200	0.151	0.177	0.271	0.268
High	0.114	0.145	0.081	0.096	0.081	0.136	0.178	0.109	0.196
Unknown	0.475	0.573	0.481	0.414	0.410	0.553	0.528	0.408	0.430
Household type									
Single-person	0.229	0.285	0.133	0.183	0.338	0.220	0.259	0.252	0.165
Unmarried couple without kids	0.083	0.149	0.040	0.038	0.080	0.083	0.133	0.081	0.100
Unmarried couple with kids	0.074	0.085	0.048	0.043	0.094	0.065	0.077	0.106	0.085
Married couple without kids	0.103	0.128	0.111	0.072	0.055	0.162	0.139	0.081	0.145
Married couple with kids	0.380	0.276	0.563	0.540	0.219	0.387	0.286	0.271	0.428
Single-parent	0.108	0.063	0.091	0.090	0.182	0.066	0.090	0.184	0.064
Other household	0.014	0.010	0.009	0.026	0.015	0.011	0.009	0.013	0.006
Institutional household	0.009	0.006	0.005	0.009	0.018	0.006	0.007	0.013	0.008
Observation year									
2008	0.118	0.103	0.123	0.119	0.113	0.122	0.118	0.125	0.127
2009	0.121	0.110	0.124	0.121	0.118	0.125	0.117	0.126	0.127
2010	0.123	0.116	0.125	0.124	0.123	0.127	0.120	0.127	0.127
2011	0.125	0.122	0.126	0.125	0.127	0.127	0.123	0.127	0.126
2012	0.127	0.128	0.126	0.126	0.128	0.127	0.128	0.126	0.125
2013	0.127	0.134	0.126	0.126	0.129	0.125	0.130	0.124	0.124
2014	0.128	0.140	0.125	0.128	0.130	0.123	0.133	0.123	0.123
2015	0.131	0.148	0.124	0.131	0.132	0.122	0.138	0.121	0.122
Province									
Groningen	0.022	0.028	0.017	0.015	0.025	0.026	0.022	0.024	0.039

Friesland	0.014	0.016	0.007	0.013	0.017	0.021	0.012	0.014	0.042
Drenthe	0.010	0.012	0.007	0.010	0.014	0.013	0.009	0.009	0.033
Overijssel	0.042	0.037	0.077	0.041	0.037	0.042	0.032	0.025	0.073
Flevoland	0.034	0.021	0.018	0.036	0.035	0.034	0.030	0.059	0.022
Gelderland	0.073	0.075	0.096	0.074	0.070	0.081	0.058	0.052	0.129
Utrecht	0.070	0.056	0.068	0.111	0.065	0.061	0.067	0.054	0.077
North-Holland	0.237	0.223	0.215	0.251	0.236	0.244	0.342	0.232	0.146
South-Holland	0.320	0.264	0.323	0.295	0.346	0.283	0.297	0.411	0.189
Zeeland	0.016	0.036	0.010	0.008	0.011	0.015	0.009	0.010	0.023
North-Brabant	0.111	0.136	0.123	0.102	0.111	0.130	0.082	0.081	0.159
Limburg	0.051	0.098	0.039	0.045	0.034	0.051	0.040	0.028	0.068
Provincial unemployment rate (%)	5.771	5.827	5.699	5.728	5.800	5.705	5.810	5.819	5.581
Number of observations	1,768,361	374,998	276,774	344,368	120,657	200,638	68,652	382,174	580,834
Number of individuals	359,778	94,313	48,509	61,077	24,778	45,261	16,749	69,153	85,786

better the measurement; (ii) municipality is an optimal level in our research context since neighborhood and street levels are too small to capture the local economic opportunities offered by co-ethnic contact, such as co-ethnic employment in ethnic businesses, whereas regional and provincial levels are too large; and (iii) pseudo R-square of the model using the share of co-nationals at the municipality level is higher.

The education level variable comprises four categories: low, middle, high and unknown. The 'unknown' category accounts for about 50% of the observations for the migrant population, due to the collection method for such information. While measurement error is known to exist in this variable and the use of it is said to be potentially problematic for migrant populations, we have identified the limited extent of such problems in two steps. Firstly, the correlation of such missingness with characteristics such as education level, ethnic origin and specific age groups, is low. Secondly, after applying weighting, there are only minor changes in the estimates.

2.3.2 Identification Problem and Other Controls

The well-known identification problem in the literature of immigrant assimilation lies in identifying the effects of aging, the cohort and the period from the effect of assimilation. Several ways have been proposed to identify the model. The most straightforward solution is to assume either equal period effects for immigrants and natives (Borjas, 1985) or equal cohort effects. However, empirical findings have consistently contradicted these assumptions by showing that, globally as well as in the Dutch case, economic downturn has had differential impacts on immigrants and natives (CBS, 2009), and immigrants from different entry cohorts display differential degrees of welfare participation (Zorlu, 2013).

Although it has long been established that the economic assimilation potentials differ greatly by immigrant cohorts (Borjas, 1985, 1995), as again pointed out by Borjas (2013), the source of cohort effect can be multiple, including changing origin composition of immigrants cohorts, changing cohort qualities, changing macro-economic conditions, differential distribution of geographical settlement, changing amounts of investment in destination-specific human capital, and changing destination country immigration policies. Most of these hypotheses were based on the Mincer-Becker human capital framework (Becker, 1962; Mincer, 1974). For example, many studies suggest that cohort effect mainly stems from differences in cohort composition and characteristics (Blume & Verner, 2007; Borjas, 1985), whereas Borjas (2013) identifies the growing size of certain national origin groups as one factor associated with the declining rate in English language skill acquisition and economic assimilation among recent cohorts in the United States. In the Dutch case, the likelihood of welfare utilization is found to be the highest for the 1990-1995 cohort, and much lower for more recent as well as older cohorts (Zorlu, 2013).

The relevance of period effect has been highlighted as empirical evidence shows that welfare participation is highly sensitive to changes at the macro level. The entry gap and pace of economic assimilation are affected by arrival year effect (Clark & Lindley, 2006), and immigrants are more negatively affected by macroeconomic conditions than natives (Crossley, McDonald & Worswick, 2001). Period effect can also stem from introduction of policy changes.

Another concern is settler bias. Selectivity might be present in the choice of return migration or remigration (Beenstock et al., 2010; Duleep & Dowhan, 2002). Estimates of the economic integration of immigrants would be upwardly biased if the least successful have a greater propensity to remigrate, or downwardly biased if the most successful are more likely to leave (Chiswick, 2000). For example, Ekhaugen (2005) finds remigration to concentrate among western immigrants who are less likely to use welfare. Many studies have also found that certain groups of refugees tend to move to other countries where they have family or clan ties after obtaining citizenship, such as the high number of onward mobility to the U.K. among Somalis from the Netherlands (Heelsum, 2011).

In line with common practice of more recent research, we group the entry cohorts into five-year intervals and include regional unemployment rate suggested by Barth et al. (2004) in the model. Although the wage-curve approach was initially proposed to relax the equal period effect assumption among immigrants and natives, it helps account for the differential sensitivities to local labour market conditions even among immigrants from different regions and countries (Akay, 2008). By doing so, the provincial unemployment rate accounts for differential welfare use propensities among immigrants through the direct effect on employment prospects and through the indirect effect on acquisition of destination-specific human capital via on-the-job learning. This has been supported by empirical evidence for the Dutch case: after 10 years of residence, the chance of receiving social assistance is lower among asylum migrants who have been placed under the settlement policy in regions with better job prospects; sensitivities to local labour market conditions among asylum migrants also differ by individual characteristics such as age, gender, country of origin, and education level (CPB, 2018). In addition to the provincial unemployment rate, different sources of local variations will be controlled for through the province variable due to data limitations. We also control for age at migration instead of age. Settler bias is accounted for through inclusion of a remigration dummy. To identify migrants who remigrate, including both onward international migration and return migration, an assumption is made that attrition from the sample before the last observation year 2015 is due to remigration if it is not because the individual has passed the maximum sample age of 60 or died. 109,928 individuals (24.25%) have remigrated in our sample.

2.3.3 Model specification

In spite of the fact that an overwhelming proportion of welfare utilization and assimilation studies work with a static model, Akay (2015) proposes the use of a dynamic employment assimilation model to avoid biased estimates of assimilation profiles through taking into account the dynamic nature of such processes. Built upon this basis, this research employs a dynamic correlated random effects (CRE) probit model to study immigrant welfare assimilation.

The basic dynamic random effects model is demonstrated in equation 1 below. Y refers to the latent probability of welfare receipt. Y_{it-1} is the lagged status of welfare receipt, and γ can be interpreted as the degree of structural state dependence (Heckman, 1981). Only one lag of the dependent variable is and can be used when controlling for initial conditions (Wooldridge, 2005, p. 42). X is a vector of covariates. μ captures the individual-specific unobserved heterogeneity. ε is the error term. These two error terms are assumed to be uncorrelated and normally distributed with mean zero. The observation period is 2008-2015, with 2007 as the initial period. Two problems are to be solved: the endogenous covariates problem and initial conditions problem. The endogenous covariates problem arises if there is correlation between the unobserved heterogeneity and the covariates. The initial condition problem occurs if the unobserved heterogeneity is correlated with Y_{i0} and thus with lagged status, unless the initial condition is exogenous. For example, if the first wave of observation for all individuals starts at the age of 18, the first year eligible for welfare, there is no initial conditions problem. Otherwise, we need to use specific estimators that deal with this problem.

$$Y_{it} = \alpha + Y_{it-1}\gamma + X_{it}\beta + \mu_i + \varepsilon_{it}\,, \qquad t = 1, \dots, 8 \qquad (1)$$

In the econometrics literature, three common approaches have prevailed in the setting of dynamic binary choice models – Heckman's reduced-form approximation (1981), Wooldridge's conditional maximum likelihood estimator (2005), and Orme's approach (2001). Instead of modelling the initial state as in Heckman's and Orme's methods, Wooldridge proposes to model $\mathrm{D}(Y_1 + \cdots + Y_T \mid X_t, Y_0)$ by specifying $\mathrm{D}(\mu \mid Y_0, \bar{X})$. Wooldridge's approach approximates the specification of the Chamberlain-Mudlank's correlated random effects (CRE), which deals with the endogenous covariates problem by relaxing the strict exogeneity assumption of random effects between μ and X through $\bar{X}$. To do so, the values of time-varying covariates across the observation period are used – either by including the time-averaged values (often used to save on degrees of freedom), or the lags and leads of time-varying covariates (Wooldridge, 2007). We include the time-averaged values of time-varying covariates as demonstrated in equation 2 below.

$$Y_{it} = \alpha + Y_{it-1}\gamma + X_{it}\beta + Y_{i0}\theta + \bar{X}_i\tau + \mu_i + \varepsilon_{it}\,, \qquad t = 1, \dots, 8 \qquad (2)$$

Most welfare and economic assimilation studies have applied Wooldridge's approach partly due to its implementarity given existing programs in statistical softwares. Cappellari & Jenkins (2008) demonstrate that similar results are provided by the three estimators on both balanced and unbalanced panels that are sufficiently long. Arulampalam & Stewart (2009) also find that, for T>3, similar insubstantial bias is produced across Wooldridge's and Heckman's approaches. Akay (2009) even suggests that, for panels with longer durations (5-8 periods), the Wooldridge method outperforms the Heckman's approach. Wooldridge's approach was developed to be implemented on balanced panels, but it may be applied to unbalanced panels if attrition is random (Cappallari & Jenkins, 2008). Its application in unbalanced panels by Cappellari & Jenkins (2008) and Akay (2009) did not suggest presence of a substantial bias.

2.4 Estimation Results

2.4.1 Life-cycle Welfare Assimilation Profiles

Based on results from dynamic CRE probit regressions estimated separately for first-generation immigrants from each area of origin (which will be described in detail in Section 2.4.2 below), we first predict the average probability of welfare utilization over the working-age life-course for immigrants by their areas of origin, entry category, education level and gender. After estimating a similar dynamic CRE probit regression for the native sample excluding all migration characteristics for the native sample (full regression output in Appendix 2), the same predictions have been estimated for two reference groups from the native sample: average Dutch natives who represent the mainstream, and Dutch natives with low education level who represent the economically marginalized segment of the Dutch society. An assumption is made that everyone enters the labour market at 18. For first-generation immigrants, age at migration is thereby assumed to be 18, which corresponds to YSM=0, so that the life-course trends between immigrants and natives of the same age are directly comparable. Given that the maximum YSM observed is 21+, the corresponding maximum age range observed is 39-60. Other characteristics take the values as observed for each individual.

Dutch natives with low education level at ages 39-60 serve as the benchmark, and statistical significance test is performed for determining which of the assimilation paths migrants are predicted to undergo. Specifically, we compare the ultimate probability of each migrant subgroup at YSM=21+ to that of Dutch natives with low education level at age=39-60 (0.120). Divergence from average natives and assimilation into the working class is deemed to occur if the null hypothesis and the lower-tailed alternative hypothesis are rejected by t-test, and either the two-tailed alternative hypothesis or the upper-tailed alternative hypothesis is not rejected by t-test (i.e.

the ultimate probability is either not significantly different from 0.120 or is significantly higher than 0.120). Convergence to average natives and thus assimilation into the middle class is achieved if t-test shows that the ultimate probability is significantly lower than 0.120.

Table 2.3 summarizes the following results for first-generation immigrants by their area of origin, entry category, education level and gender: (i) predicted probability of welfare utilization at YSM=21+, (ii) corresponding assimilation outcome, (iii) intragenerational mobility pattern, and (iv) whether parity with average natives is reached. The life-cycle welfare assimilation trajectories of male immigrants by their area of origin, entry category and education level are shown in Figure 2.3 - 2.28 in comparison with predicted welfare receipt probabilities for average Dutch natives and Dutch natives with low education level. The 95% confidence interval is shown in gray.

Concerning the assimilation outcomes, the results suggest that, after more than 20 years of residence, assimilation into the mainstream is not a common path for all, and the risk of marginalization is present for the majority of first-generation immigrants without higher education. A closer look at those with predicted probability levels above that for Dutch natives with low education reveals an even more concerning picture, as some have more than double. This might indicate not merely a risk of assimilation into the working class, but essentially, no assimilation. Observing this pattern led us to draw an additional threshold to identify whether some groups do not even come close to assimilating into the working class. No assimilation is deemed to occur if t-test shows that the ultimate probability at YSM=21+ is either not significantly different from or is significantly higher than 0.240, which doubles the predicted probability for Dutch natives with low education level at age=39+.

Education & Labour

In relative terms, education migrants and labour migrants are predicted to have the most favourable assimilation outcomes, as the majority are predicted to assimilate into the mainstream. Furthermore, most of them with high and unknown education levels as well as EU migrants, who, regardless of their education levels, are predicted to achieve comparable levels or even outperform average Dutch natives in terms of welfare utilization propensity after more than 20 years of residence. Meanwhile, the risk of marginalization exists for (i) most of those with low education level, and (ii) those with middle education level from the MENA region and Sub-Saharan Africa. The risk of no assimilation is present for low-educated education migrants from the MENA region, and low-educated female education migrants from Sub-Saharan Africa and Suriname & Caribbean.

Family migrants do not perform as well as the above groups of economic migrants. Almost all family migrants with low-to-middle education levels are at risk of segregation from the mainstream, except those from EU countries and those with middle education level from Asia

and Americas & Oceania (men only). Disadvantages are concentrated among family migrants from the MENA region and Sub-Saharan Africa; hence higher education as the route to mainstream assimilation no longer applies to those from these regions, and such migrants with low education level are at risk of no assimilation. Only highly educated family migrants from EU countries as well as family migrants with unknown education level from Asia and Americas & Oceania are predicted to reach parity with average Dutch natives after more than 20 years of residence.

Most asylum migrants predicted to remain on the margins, despite notable upward mobility achieved. Exceptions are those with high education level from Suriname & Caribbean and those with high or unknown education level from Asia. The majority of them with low education level are at risk of no assimilation. In the case of asylum migrants from the MENA region, Sub-Saharan Africa and other Europe, who comprise over 80% of asylum migrants in the sample, higher education fails to serve as the ladder to mainstream assimilation as it does for all other types of migrants, though it helps alleviate their levels of disadvantage. None of the asylum migrants are foreseen to reach parity with average Dutch natives.

In sum, an education gradient manifests in the welfare assimilation patterns of all types of first-generation immigrants. Higher education opens door for mainstream assimilation except for asylum migrants with the following backgrounds: the MENA region, Sub-Saharan Africa and other Europe. In relative terms, economic/skilled migrants, including education and to a lesser extent labour migrants, are more advantaged than non-economic migrants. Among non-economic migrants, family migrants are better off than refugees. Such patterns remain consistent when only social assistance receipt is considered, except that even highly educated education migrants and labour migrants from the MENA region would in that case be predicted to be at risk of marginalization.

Gender & Aspiration to Integrate

The gender perspective also sheds lights on its interaction with human capital. In general, female migrants are in relative terms worse-off than their male counterparts. Such gender difference in welfare utilization propensity is much more pronounced among non-economic migrants (family migrants and asylum migrants) than economic migrants. However, almost all highly educated female migrants are better-off than their male counterparts, regardless of their entry categories and regional origin.

An additional simulation exercise is performed to see whether the disadvantaged position of migrants could be compensated by their aspiration to integrate, indicated by the decision to naturalize (see Appendix 2). The results show that the "citizenship premium" mainly applies to uplifting disadvantaged migrants from Asia and Americas & Oceania as well as economic migrants to mainstream assimilation, but it changes little such prospect for non-economic migrants.

Intragenerational Mobility

Lastly, to identify the patterns of intragenerational mobility, we compare the initial and ultimate welfare receipt probabilities predicted for each migrant group in relative terms with Dutch natives with low education level of the same age. Three types of relative mobility patterns are discerned: upward mobility, stagnation, and downward mobility. Upward or downward mobility occurs as vertical movement across segments takes place, and stagnation occurs if one remains in the same segment. The results show that, although the initial gap from Dutch natives is sizeable for most first-generation immigrants, upward movement from no assimilation or working-class assimilation to mainstream assimilation is the dominant trend that occurs through their working-age life course. The diversity in mobility patterns even for immigrants with the same predicted assimilation destination suggests the importance of focusing not only on the ultimate assimilation outcome, but its comparison with their initial conditions. Substantial progress has been made for many, even among those who are predicted to remain on the margins. Such results also align with our initial thought that the terms 'downward assimilation' and 'upward assimilation' should be handled with caution in that mobility is relative while assimilation outcome is absolute.

2.4.2 Determinants

The full regression results of dynamic CRE probit model mentioned in Section 2.3.4 for all first-generation immigrants and by their areas of origin for the dependent variable welfare receipt probability can be found in Appendix 4. Estimation results for social assistance receipt probability, which show to be consistent with results for the composite welfare measure, can be seen in Appendix 5.

Table 2.4 below shows the average marginal effects of key determinants. After controlling for YSM, education level and other characteristics, each category of the regional origin and entry category variables remain strongly correlated with the probability of welfare utilization. Compared with EU migrants, migrants from all other areas are more likely to receive welfare.

Table 2.3: Predicted welfare assimilation path by regional origin, entry category, education level and gender (Assuming age at migration: 18)

=		Labour migrant				Education migrant				Family migrant				Asylum migrant			
		Low	Mid	High	Unknown	Low	Mid	High	Unknown	Low	Mid	High	Unknown	Low	Mid	High	Unknown
EU	M	0.09 (+++)	0.06 (+++)	**0.03 (+++)**	**0.01 (=)**	**0.05 (+++)**	**0.03 (+++)**	**0.01 (++)**	**0.00 (++)**	0.09 (+++)	0.05 (+++)	**0.03 (+++)**	0.01 (+++)				
	F	0.12 (+)	0.07 (+++)	**0.04 (+++)**	**0.01 (=)**	0.07 (+++)	**0.04 (+++)**	**0.02 (+++)**	**0.00 (+++)**	0.11 (+++)	0.06 (+++)	**0.03 (+++)**	0.01 (+++)				
Other Europe	M	0.09 (+++)	0.05 (+++)	**0.03 (+++)**	**0.01 (=)**	0.14 (+)	0.08 (+++)	0.06 (++)	0.06 (++)	0.19 (+)	0.12 (+)	0.09 (+++)	0.08 (+++)	0.25 (=)	0.18 (+)	0.14 (+)	0.13 (+)
	F	0.11 (+++)	0.06 (+++)	**0.03 (+++)**	**0.01 (=)**	0.18 (+)	0.11 (+++)	0.07 (+++)	0.08 (+++)	0.24 (+)	0.15 (+)	0.10 (+++)	0.12 (+)	0.30 (=)	0.20 (+)	0.15 (+)	0.16 (+)
MENA	M	0.25 (=)	0.13 (+)	0.11 (+++)	0.14 (+)	0.24 (=)	0.13 (+)	0.10 (+++)	0.13 (+)	0.30 (=)	0.17 (+)	0.14 (+)	0.17 (+)	0.36 (=)	0.21 (+)	0.18 (+)	0.21 (+)
	F	0.30 (=)	0.14 (+)	0.11 (+++)	0.17 (+)	0.29 (=)	0.13 (+)	0.11 (+++)	0.17 (+)	0.35 (=)	0.18 (+)	0.15 (+)	0.21 (+)	0.41 (=)	0.22 (+)	0.19 (+)	0.26 (=)
Sub-Saharan Africa	M	0.22 (+)	0.10 (+)	0.07 (+++)	0.13 (+)	0.22 (+)	0.10 (+++)	0.07 (+++)	0.12 (+)	0.34 (=)	0.19 (+)	0.14 (+)	0.21 (+)	0.43 (=)	0.26 (=)	0.20 (+)	0.29 (=)
	F	0.33 (=)	0.15 (+)	0.08 (+++)	0.19 (+)	0.32 (=)	0.14 (+)	0.08 (+++)	0.18 (+)	0.45 (=)	0.24 (+)	0.15 (+)	0.28 (=)	0.54 (=)	0.32 (=)	0.21 (+)	0.35 (=)
Asia	M	0.17 (+)	0.09 (+++)	**0.05 (++)**	**0.04 (++)**	0.16 (+)	0.08 (+++)	**0.04 (++)**	**0.03 (++)**	0.19 (+)	0.10 (+++)	0.06 (++)	**0.04 (++)**	0.24 (+)	0.14 (+)	0.09 (+++)	0.06 (+++)
	F	0.18 (+)	0.09 (+++)	**0.05 (++)**	**0.04 (++)**	0.16 (+)	0.08 (+++)	**0.04 (++)**	**0.04 (++)**	0.19 (+)	0.10 (+++)	0.06 (+++)	**0.05 (++)**	0.24 (=)	0.14 (+)	0.09 (+++)	0.07 (+++)
Americas & Oceania	M	0.15 (+)	0.09 (++)	0.06 (++)	**0.02 (=)**	0.10 (+++)	0.06 (++)	**0.03 (=)**	**0.01 (=)**	0.16 (+)	0.10 (+++)	0.06 (++)	**0.02 (=)**				
	F	0.19 (+)	0.12 (+++)	0.06 (++)	**0.03 (=)**	0.14 (+)	0.08 (++)	**0.04 (=)**	**0.02 (=)**	0.21 (+)	0.13 (+)	0.07 (++)	**0.04 (=)**				
Suriname & Caribbean	M	0.21 (+)	0.10 (+++)	**0.04 (++)**	0.07 (+++)	0.21 (+)	0.10 (+++)	**0.04 (++)**	0.07 (+++)	0.27 (+)	0.14 (+)	0.06 (+++)	0.10 (+++)	0.35 (+)	0.21 (+)	0.11 (+++)	0.14 (+)
	F	0.26 (=)	0.12 (+++)	**0.04 (++)**	0.07 (+++)	0.25 (=)	0.11 (+++)	**0.04 (++)**	0.07 (+++)	0.32 (+)	0.16 (+)	0.06 (+++)	0.10 (+++)	0.41 (+)	0.23 (+)	0.11 (+++)	0.15 (+)

Destination of assimilation (in colour)
Assimilation to the middle class: Average natives (pr<0.120)
Assimilation to the working class: Natives with low education level (pr>0.120)
No assimilation: Above predicted probability for natives with low education level (pr>0.240)

Parity with average natives (in bold): pr<0.052

Relative mobility (in bracket)
Upward mobility:
– From no assimilation to middle class: +++
– From working class to middle class ++
– From no assimilation to working class: +
Stagnation: =
Downward mobility: —

Note: Average probabilities of welfare utilization assuming age at migration at 18 are reported up to 2 decimal points. All predicted probabilities are statistically significant at 1% level. T-tests have been performed to compare each predicted probability against specific thresholds mentioned in the legend.

Figure 2.3: Assimilation profile for male EU labour migrants by education level (Age at migration: 18)

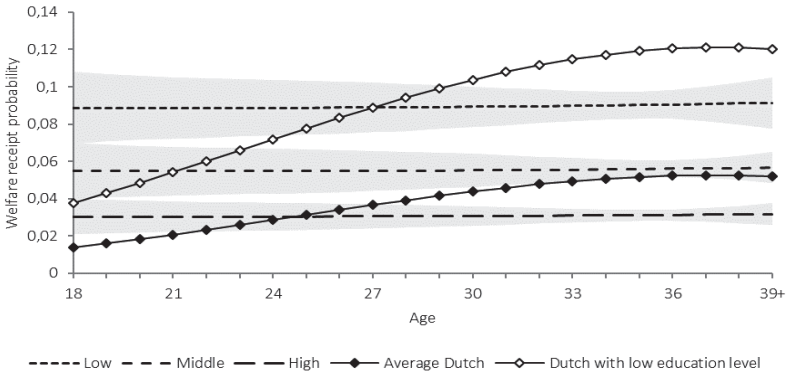

Figure 2.4: Assimilation profile for male EU education migrants by education level (Age at migration: 18)

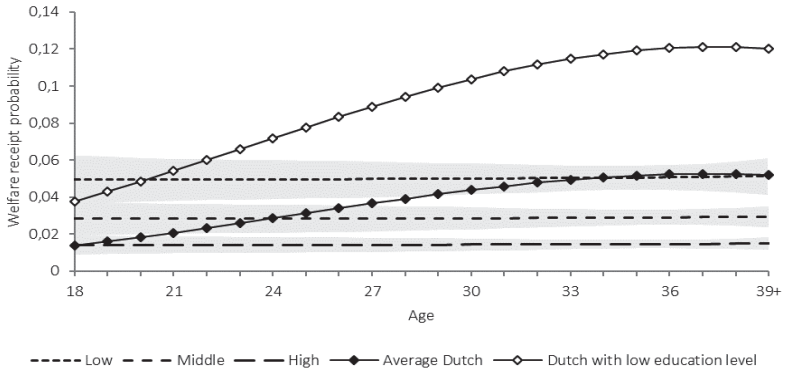

Figure 2.5: Assimilation profile for male EU family migrants by education level (Age at migration: 18)

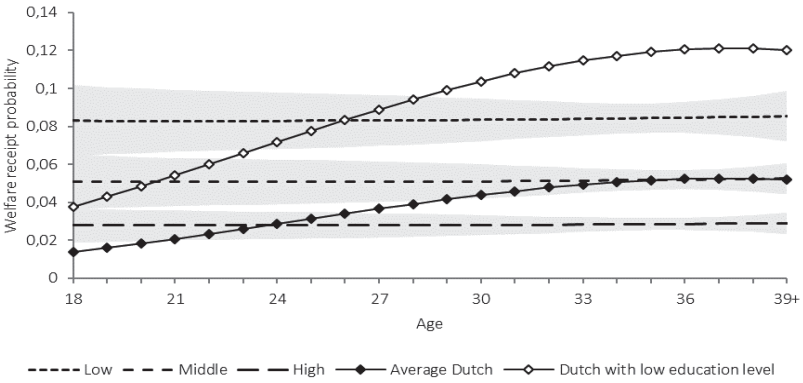

Figure 2.6: Assimilation profile for male labour migrants from other Europe by education level (Age at migration: 18)

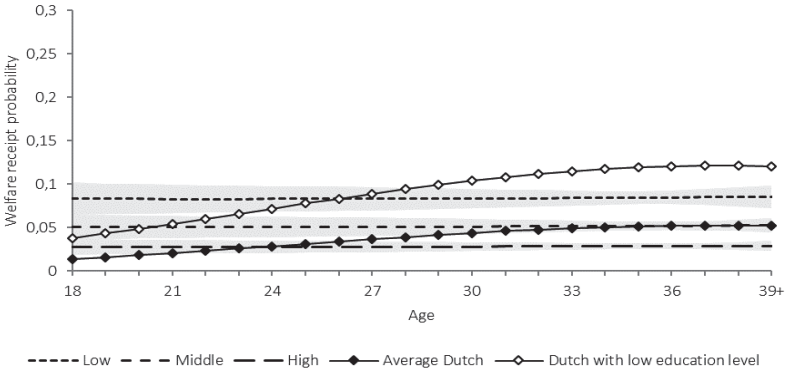

Figure 2.7: Assimilation profile for male education migrants from other Europe by education level (Age at migration: 18)

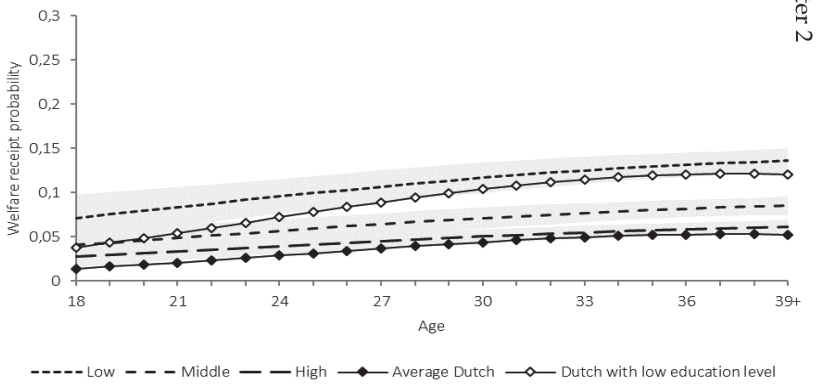

Figure 2.8: Assimilation profile for male family migrants from other Europe by education level (Age at migration: 18)

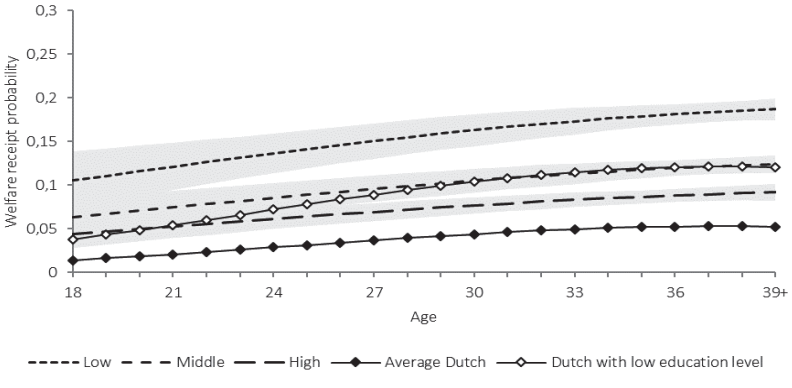

Figure 2.9: Assimilation profile for male asylum migrants from other Europe by education level (Age at migration: 18)

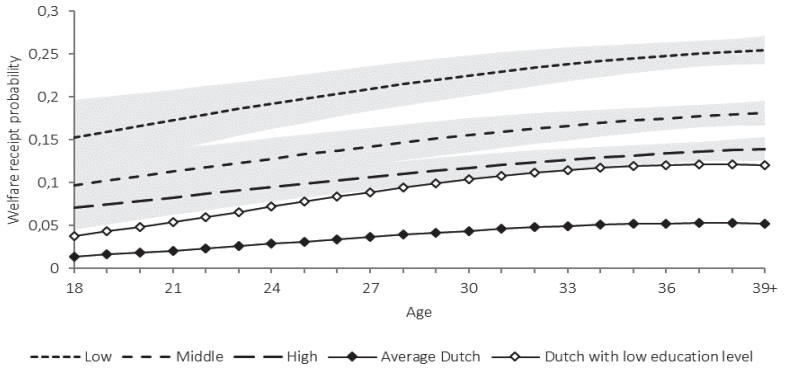

Figure 2.10: Assimilation profile for male labour migrants from the MENA region by education level (Age at migration: 18)

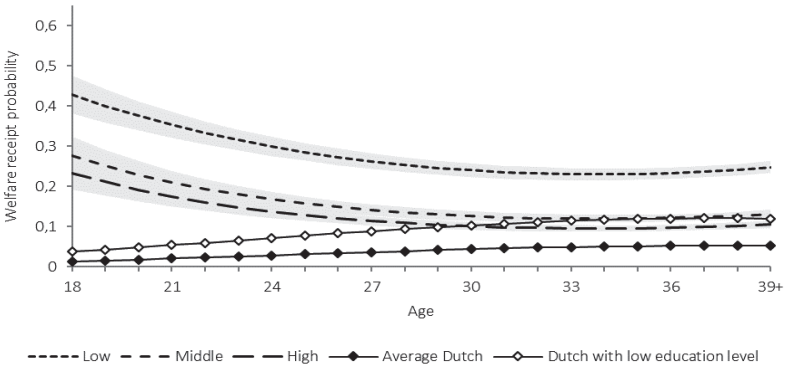

Figure 2.11: Assimilation profile for male education migrants from the MENA region by education level (Age at migration: 18)

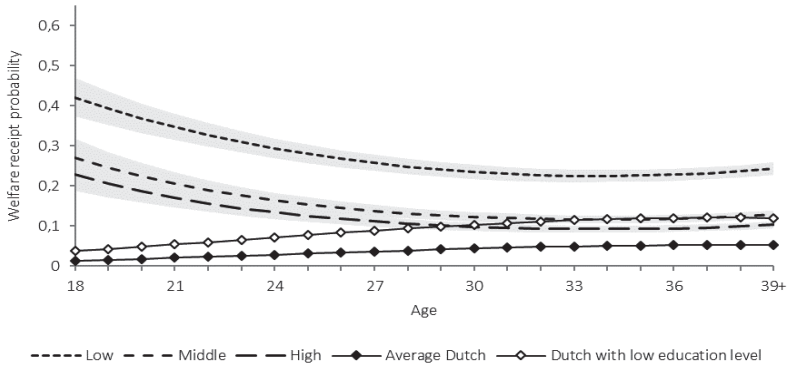

Figure 2.12: Assimilation profile for male family migrants from the MENA region by education level (Age at migration: 18)

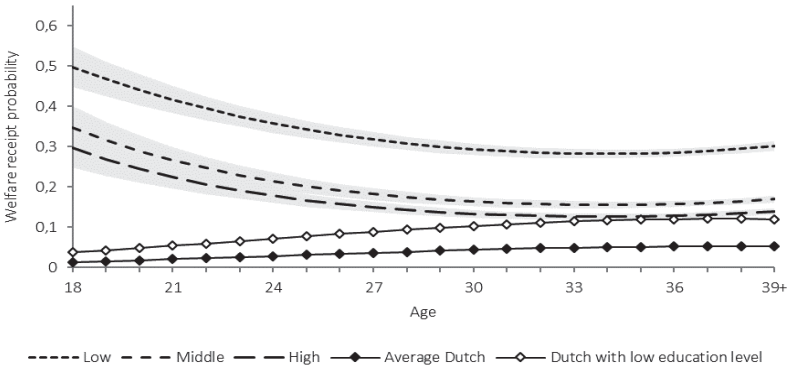

Figure 2.13: Assimilation profile for male asylum migrants from the MENA region by education level (Age at migration: 18)

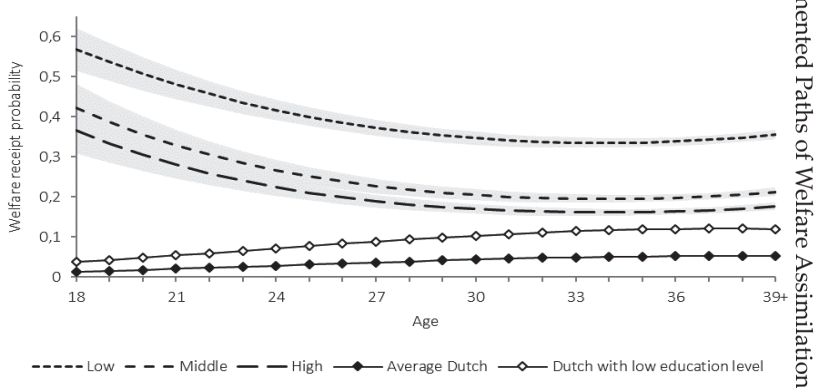

Figure 2.14: Assimilation profile for male labour migrants from Sub-Saharan Africa by education level (Age at migration: 18)

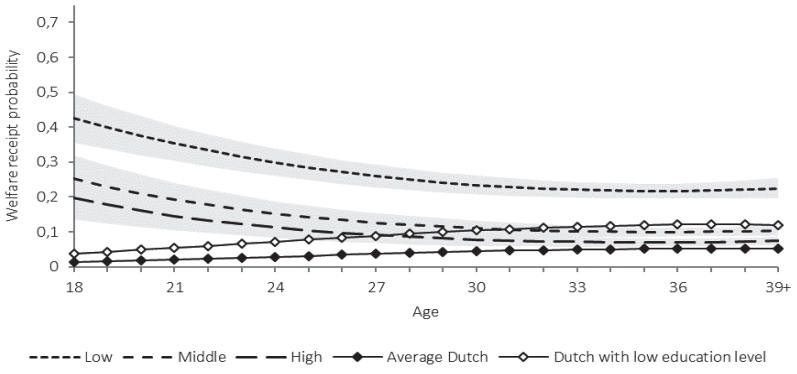

Figure 2.15: Assimilation profile for male education migrants from Sub-Saharan Africa by education level (Age at migration: 18)

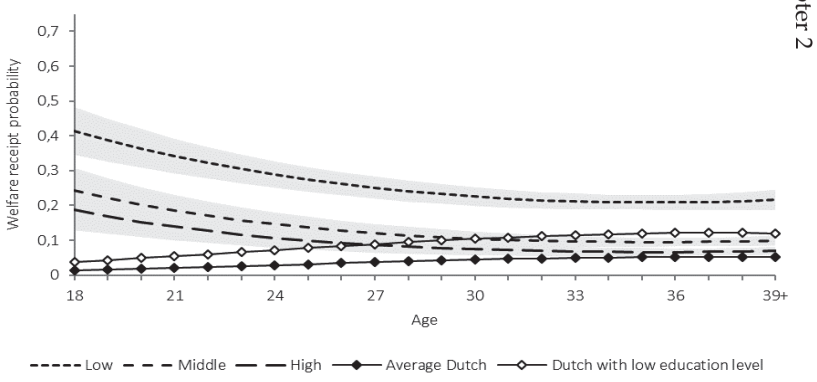

Figure 2.16: Assimilation profile for male family migrants from Sub-Saharan Africa by education level (Age at migration: 18)

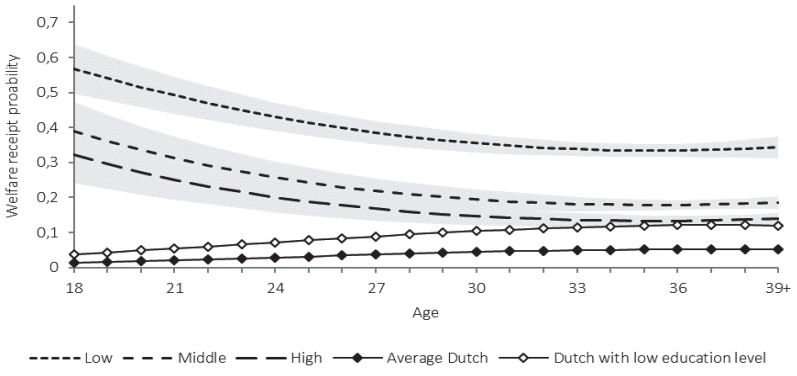

Figure 2.17: Assimilation profile for male asylum migrants from Sub-Saharan Africa by education level (Age at migration: 18)

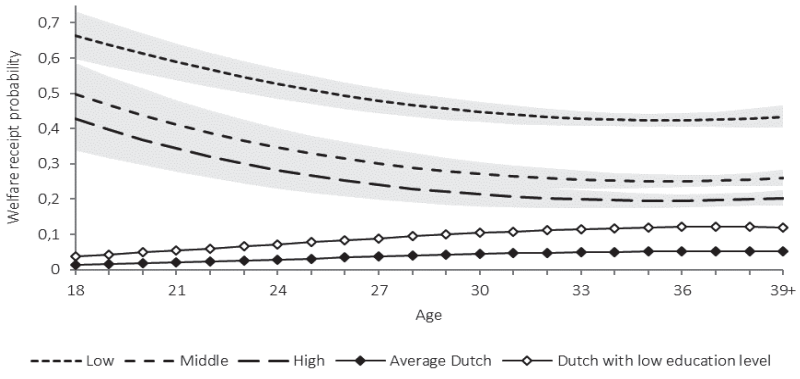

Figure 2.18: Assimilation profile for male labour migrants from Asia by education level (Age at migration: 18)

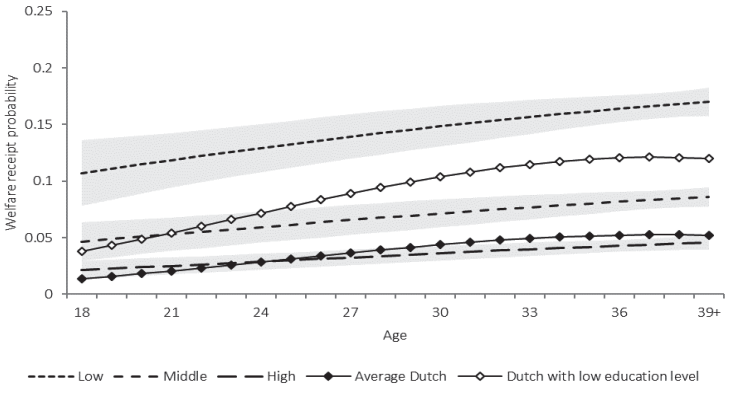

Figure 2.19: Assimilation profile for male education migrants from Asia by education level (Age at migration: 18)

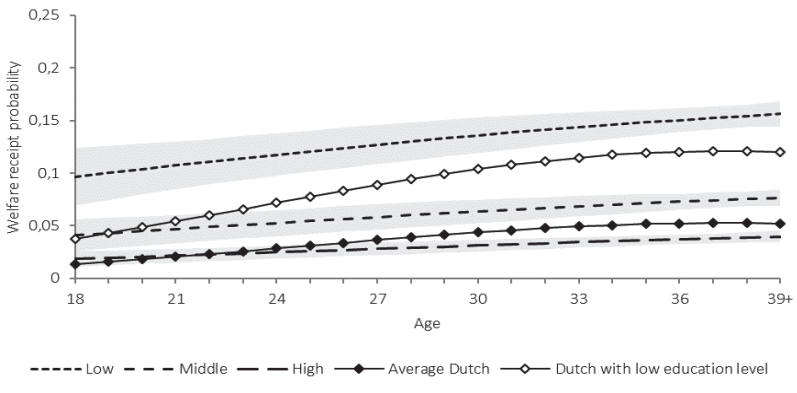

Figure 2.20: A Assimilation profile for male family migrants from Asia by education level (Age at migration: 18)

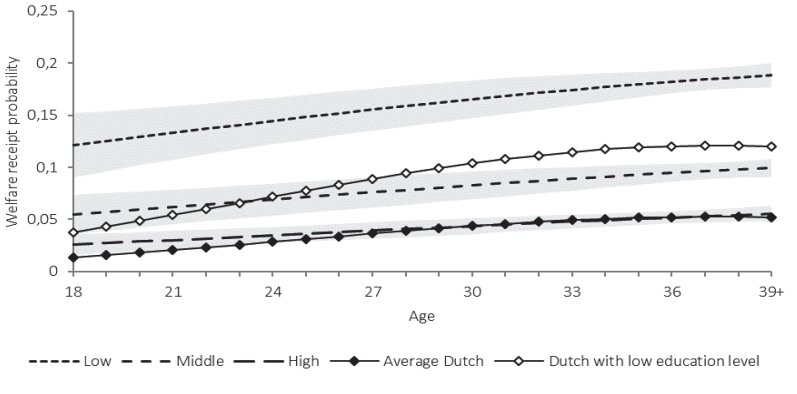

Figure 2.21: Assimilation profile for male asylum migrants from Asia by education level (Age at migration: 18)

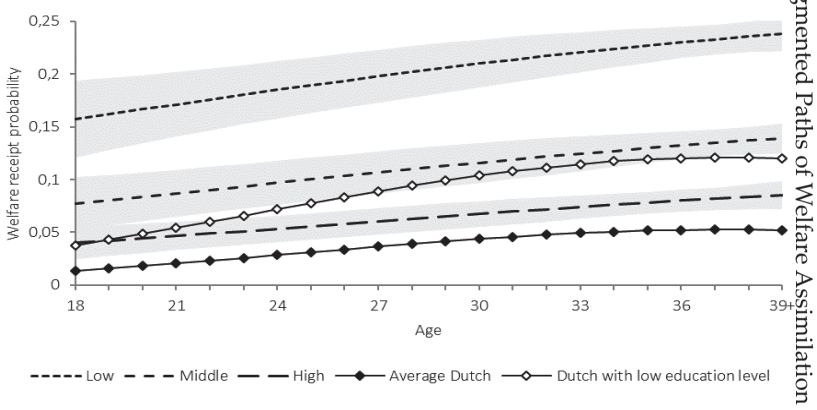

Figure 2.22: Assimilation profile for male labour migrants from Americas & Oceania by education level (Age at migration: 18)

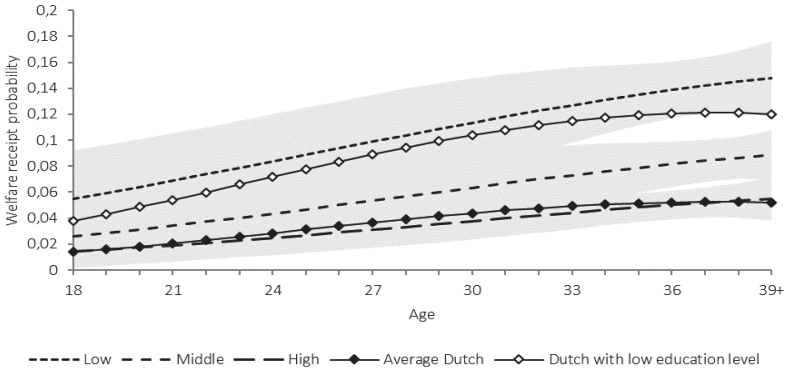

Figure 2.23: Assimilation profile for male education migrants from Americas & Oceania by education level (Age at migration: 18)

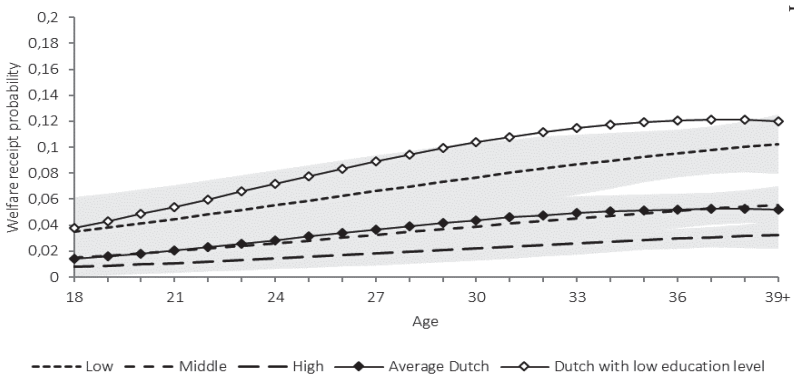

Figure 2.24: Assimilation profile for male family migrants from Americas & Oceania by education level (Age at migration: 18)

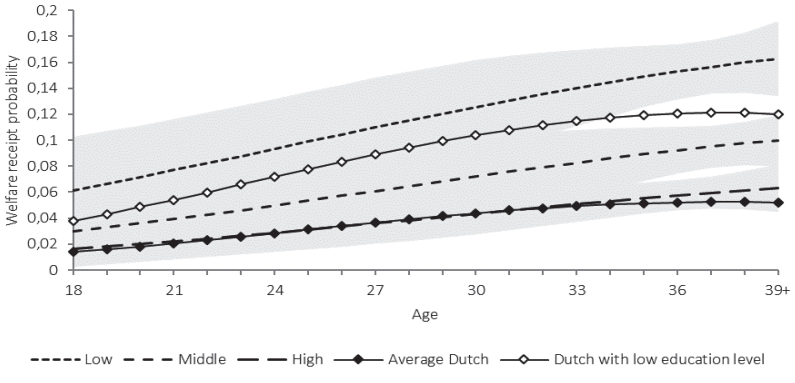

Figure 2.25: Assimilation profile for male labour migrants from Suriname & Caribbean by education level (Age at migration: 18)

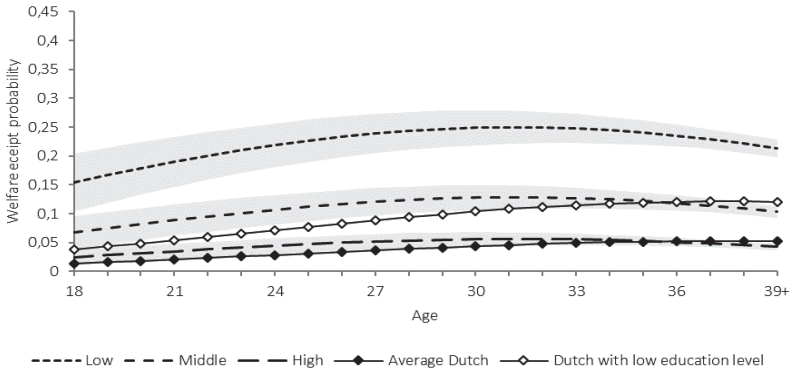

Figure 2.26: Assimilation profile for male education migrants from Suriname & Caribbean by education level (Age at migration: 18)

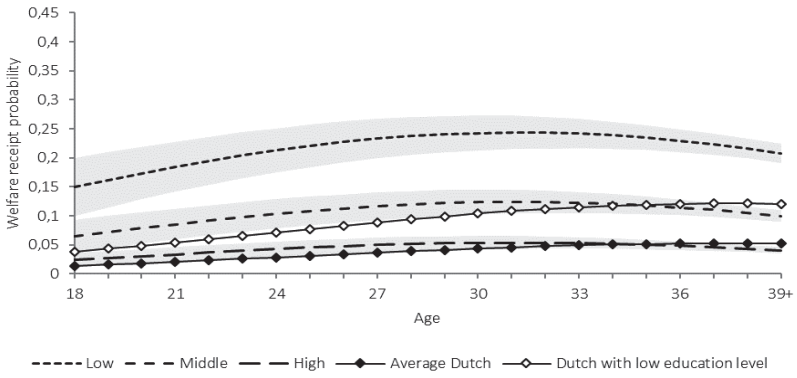

Figure 2.27: Assimilation profile for male family migrants from Suriname & Caribbean by education level (Age at migration: 18)

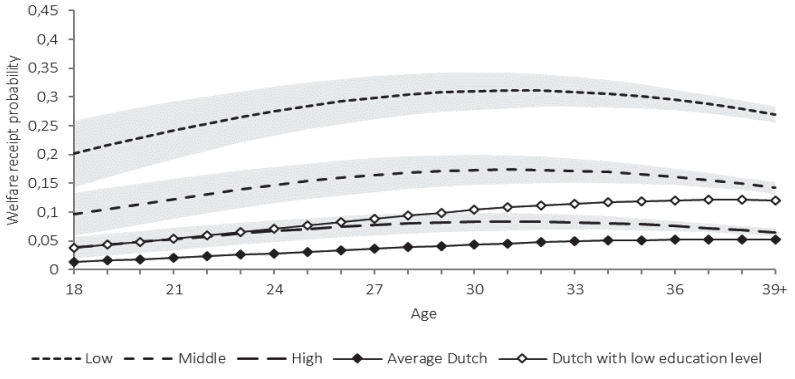

Figure 2.28: Assimilation profile for male asylum migrants from Suriname & Caribbean by education level (Age at migration: 18)

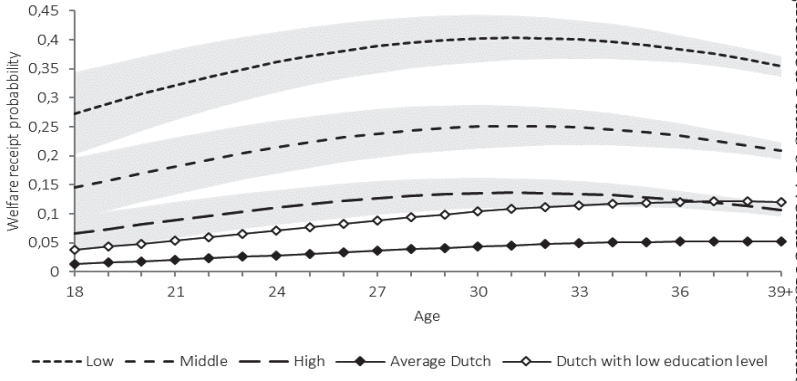

Table 2.4: Determinants of welfare receipt probability (Average marginal effects)

Welfare receipt	All migrants	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Lagged status	0.450***	0.192***	0.490***	0.619***	0.423***	0.529***	0.259***	0.461***
	(0.003)	(0.006)	(0.007)	(0.005)	(0.007)	(0.010)	(0.016)	(0.006)
YSM	-0.003***	0.000	0.006**	-0.019***	-0.019***	0.003**	0.004*	0.011***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)
YSM-squared	0.000***	0.000	0.000	0.001***	0.001***	-0.000	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Area of origin								
EU	(Ref. group)							
Other Europe	0.039***							
	(0.001)							
MENA	0.073***							
	(0.001)							
Sub-Saharan Africa	0.057***							
	(0.001)							
Asia	0.003***							
	(0.001)							
Americas & Oceania	0.000							
	(0.001)							
Suriname & Caribbean	0.029***							
	(0.001)							
Share of highly educated co-nationals	-0.001***	0.001***	-0.000	-0.001***	-0.007***	-0.003***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of co-nationals in municipality (log)	0.0004***	0.0004***	0.005***	0.0004***	-0.008***	0.001***	-0.0003	0.001***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Naturalization dummy	-0.017***	0.001	-0.025***	-0.030***	-0.046***	-0.004***	0.006***	-0.017***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)
Family migrant dummy	0.014***	-0.005***	0.008	0.012**	0.077***	0.003	0.015***	0.006
	(0.002)	(0.001)	(0.005)	(0.006)	(0.010)	(0.003)	(0.005)	(0.005)
Asylum migrant dummy	0.068***	0.012	0.063**	0.058***	0.160***	0.034***	0.061**	0.070***
	(0.002)	(0.007)	(0.008*)	(0.007)	(0.012)	(0.005)	(0.027)	(0.007)
Labour migrant dummy	-0.008***	-0.003**	-0.011*	-0.031***	-0.029***	-0.007**	0.008	-0.028***
	(0.002)	(0.001)	(0.006)	(0.006)	(0.011)	(0.003)	(0.005)	(0.005)
Education migrant dummy	-0.037***	-0.021***	-0.032***	-0.035***	-0.031***	-0.014***	-0.012***	-0.034***
	(0.002)	(0.001)	(0.006)	(0.007)	(0.011)	(0.003)	(0.004)	(0.005)
Age at migration	0.004***	0.002***	0.003***	0.005***	0.009***	0.002***	0.003***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Age at migration squared	0.000***	-0.000***	-0.000*	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Remigration dummy	-0.016***	-0.007***	-0.011***	-0.026***	-0.041***	-0.010***	-0.017***	-0.004
	(0.001)	(0.001)	(0.003)	(0.003)	(0.005)	(0.002)	(0.003)	(0.003)
Cohort								
Before 1995	(Ref. group)							
1995-1999	-0.019***	0.000	-0.002	-0.004	-0.065***	-0.001	-0.009	-0.032***
	(0.002)	(0.003)	(0.007)	(0.007)	(0.013)	(0.004)	(0.007)	(0.006)
2000-2004	-0.021***	-0.005	0.004	-0.006	-0.091***	-0.002	0.001	-0.034***
	(0.004)	(0.006)	(0.010)	(0.009)	(0.019)	(0.007)	(0.012)	(0.009)
2005-2009	-0.034***	-0.011*	-0.004	-0.040***	-0.110***	-0.004	-0.002	-0.044***
	(0.004)	(0.007)	(0.012)	(0.010)	(0.022)	(0.008)	(0.014)	(0.011)
2010-2015	-0.045***	-0.014**	-0.002	-0.064***	-0.164***	-0.006	-0.001	-0.026
	(0.004)	(0.007)	(0.014)	(0.012)	(0.022)	(0.009)	(0.016)	(0.016)
Education level								
Low	(Ref. group)							
Middle	-0.018***	-0.011***	-0.007***	-0.024***	-0.027***	-0.008***	-0.010***	-0.033***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)	(0.003)	(0.002)
High	-0.034***	-0.024***	-0.021***	-0.043***	-0.031***	-0.015***	-0.016***	-0.067***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.006)	(0.002)	(0.003)	(0.002)
Unknown	-0.049***	-0.054***	-0.033***	-0.037***	-0.021***	-0.034***	-0.044***	-0.068***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.003)	(0.001)	(0.003)	(0.002)
Female	0.003***	0.002***	-0.001	0.012***	0.015***	0.003**	0.004**	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.002)	(0.001)
Number of observations	2,026,536	426,362	318,004	393,983	139,329	230,319	79,185	439,354
Number of individuals	359,778	94,313	48,509	61,077	24,778	45,261	16,749	69,153

Note: The table reports average marginal effects of key variables of interest from the dynamic CRE probit models. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

The ethnic penalty effect appears the strongest for migrants from the MENA region and Sub-Saharan Africa, increasing welfare receipt probability by 7 and 6 percentage points respectively, followed by migrants from other Europe and Suriname & Caribbean (4 and 3 percentage points respectively). The citizenship premium, the proxy for aspiration to integrate, is also seen to be the largest among these groups, lowering welfare receipt probability by 2 to 5 percentage points, yet not large enough to offset the effects of ethnic penalty. In general, naturalization is found to significantly reduce welfare receipt probability of all non-western immigrants. This result aligns with the finding of Bevelander & Pendakur (2009) that citizenship acquisition increases the probability of employment for non-EU and non-North American immigrants in Sweden.

Compared with other types of migrants, entry as asylum migrants and family migrants as of 1995 are both correlated with higher probabilities of welfare receipt by 7 and 1 percentage point(s) respectively. Such positive correlations are statistically significant at the 1% level. The results suggest, in the first place, that YSM and human capital alone do not fully explain welfare utilization, and the modes of incorporation in the receptive context matter, as suggested by the segmented assimilation theory. Included as controls to arrive at less biased estimates of the effect of regional origin, although ethnic capital and ethnic concentration are significantly correlated with the welfare receipt probability for most first-generation immigrants, the average marginal effects are small in size – 1 percentage point increase in the share of highly educated co-nationals in the country on average reduces welfare receipt probability by 0.1 percentage point and 1% increase in the number of co-nationals at the municipality level only increases the welfare receipt probability by 0.04 percentage point. The results are only in part in line with the hypothesis of the segmented assimilation theory that strong ethnic communities might help offset the negative effects of unfavourable modes of incorporation in the receptive context, with the latter plausibly explained by potential reliance on co-ethnic economics before members of ethnic minorities obtain a higher level of self-sufficiency. Overall, the effectiveness of this route to upward mobility for first-generation immigrants in the Dutch context appears relatively limited.

In addition to these structural factors, other life-course factors at the individual and household levels appear to be closely related to the propensity of welfare receipt. Coefficients of the lagged welfare receipt status, which indicates the effect of structural state dependence, significantly increase the receipt probabilities by 45 percentage points for migrants from all areas of origin. Its effect is further reinforced when considering social assistance receipt alone. The so-called "welfare trap" occurs to have the strongest effect on those from the MENA region, Asia, other Europe and Suriname & Caribbean, significantly increasing the welfare receipt probability by 62, 53, 49 and 46 percentage points respectively). Age at migration, arrival before 1995, and living in a single-person or single-parent household are also positively correlated with the probability of welfare receipt.

As for the issue of remigration, as mentioned in Section 2.3.3, the estimation results would be upwardly biased if the least successful in the labour market are the ones more likely to remigrate and vice versa. The results suggest that migrants who remigrate by the end of our observation period (2015) are uniformly less likely to receive welfare compared to those who did not. This finding accords with general findings in the literature that migrants that remigrate are the ones less likely to use welfare. Characteristics of the movers are identified as follows: (i) shorter YSM (on average 13 versus 17 for stayers); (ii) mainly from recent entry cohorts (18% entering between 2006-2015 compared with much lower rate of remigration at 6% among older cohorts); (iii) lower annual household income across all education levels and entry categories except for family migrants (37% versus 41% for stayers in the income distribution); (iv) more labour migrants and education migrants leave than stay; and (v) mainly from the EU (34% leave and 20% stay). Migrants from the MENA region and Suriname & Caribbean, as well as those with low-to-middle education levels, on the contrary, tend to stay than leave. This seemingly paradoxical profile of movers who have simultaneously worse economic position and lower welfare utilization probability could be possibly explained by: (i) ineligibility for social assistance and unemployment benefit due to short-term temporary permit or insufficient years of work experience in the Netherlands; (ii) skill mismatch with the Dutch labour market, driving their outmigration for better economic opportunities; and (iii) benefit claim in their origin country.

2.4.2.1 Discussion

The results are, in the first place, in line with the proposition of segmented assimilation theory that assimilation is not purely dependent on the accumulation of destination-specific human capital over time, but rather pertains to the interaction with the modes of incorporation. Furthermore, the results shed light on the respective roles of entry category and ethnic origin in the interplay.

At the structural level, as the segmented assimilation theory suggests, entry categories can reflect the modes of incorporation in the receptive context. Equal opportunities of and access to full participation in the society could be hindered by government policy, law and/or practice that are/is discriminative or carry unintended consequences that impede the integration of certain groups. Immigration policy tends to be the least restrictive towards highly skilled migrants who enter as economic and education migrants. When it comes to family and asylum migrants, the level of constraints escalates. According to the Aliens Decree, immigration via the route of family reunification in the Netherlands has two conditions: the sponsor must prove to have independent, stable and regular income equal to or higher than the applicable statutory minimum wage, and his/her family members does not rely on public funds. These requirements on one hand increase

the difficulty to immigrate and on the other hand cap the access to welfare for family migrants. The income requirement only applies to asylum family reunification three months after being granted the protection status. However, different sets of rights were given to asylum seekers during the prolonged asylum procedure which could take months and, in extreme cases, even years before a decision is reached – for example, they are allowed to work at most 12 weeks a year in this period – after which the problematic recognition of their academic and professional qualifications constitutes another common barrier to refugees' economic integration (Bakker, Dageos & Engbersen, 2017). These could at least in part explain why they typically start from a higher level of welfare receipt upon arrival, the low returns to refugees' education and the lack of assimilation even for those with higher education. Improving transferability of qualifications obtained abroad and skill profiling could accelerate and transform the assimilation process especially for refugees who are high-skilled. More in general, integration policies are crucial to preventing social and economic exclusion of migrants including disadvantaged groups such as refugees and asylum seekers.

At the individual level, the nature of migration could also indicate the level of favourable selectivity through returns to migration and education. Based on human capital migration model, Chiswick (2000) posits that favourable selectivity for labour market success in the supply of migrants is expected to be more intense for economic migrants than non-economic migrants such as tied-movers (family migrants) and refugees, and more intense for high-skilled than low-skilled workers. Such a viewpoint echoes with Ogbu and Simons' differentiation of voluntary and involuntary minorities, the diverse experiences of whom contribute to fundamentally different integration processes and educational outcomes (Ogbu & Simons, 1998). The move for economic and education migrants is by and large a rational decision after calculating the costs and benefits in expectance of higher returns to international migration. Not only are they likely to be well planned and prepared for their move in order to optimize their returns, such as having qualifications obtained abroad recognized by the Dutch authorities and learning the Dutch language, most likely they are able to stay because their skill matches with demands of the Dutch labour market. At the other end of the spectrum are asylum seekers and refugees. Forced migration due to war, conflicts or other external factors means their migration to the Netherlands is largely unexpected and unprepared, and thus their skill match with the local labour market is likely to be less optimal. Psychological trauma also adds to their difficulty in adaptation. Between these two ends are family migrants, who do not fully share the experience of voluntary nor forced migrants. For many, migration to the Netherlands is unforeseen before long. As such, their skills are to a larger extent home-country-specific rather than destination-specific. Among those who migrate for family reunification with their partner or family member who entered as asylum migrants, their nature of migration is not so different from forced migration and thus similar difficulties as asylum migrants are anticipated for this type of family migrants.

What cannot be explained by the interaction between human capital and nature of migration are the differences across regional origin within the same entry category and gender at the same education level and YSM. Equally highly skilled and statistically comparable, why are EU family migrants predicted to have successful integration into the mainstream while non-EU family migrants remain on the margins? Given the variety of potential implications from the effect of regional origin, we have controlled for some of the important external and internal indirect effects, such as spillover of ethnic capital, ethnic concentration, and differences in cohort quality (i.e. human capital), aspiration for integration, residential duration, residential location, arrival year and age at migration of migrants from certain areas of origin. What could remain in the regional origin effects are: (i) existence of discrimination and/or group-based stereotypes, as consistently highlighted both by segmented assimilation theory and the literature, and (ii) cultural, traditional and linguistic distances to the host society. While we do not have data on cultural and traditional factors, their Dutch language proficiency has been indirectly captured by citizenship acquisition for more recent cohorts. To say the least, ethnic penalty appears to act as an additional condition upon the interaction between nature of migration and human capital.

2.2 Robustness Checks

2.5.1 Other specifications: Social assistance receipt as the dependent variable

We tried to re-estimate the regressions separately for social assistance receipt and unemployment benefit receipt, the latter of which suffers the problem of over-concentration of zeroes. Estimation results from using social assistance receipt alone as the dependent variable (shown in Appendix 5) appear primarily consistent with our main estimation results and show that our main estimation results have been mainly driven by the receipt of social assistance. In spite of that, certain differences are worth mentioning as they shed light on the interesting dynamics of benefit substitution.

With regards to the assimilation outcome, the patterns show to be rather consistent albeit less optimistic when the dependent variable changes from the composite welfare measure to social assistance receipt probability alone. The main differences include: (i) more of first-generation immigrants with low education level predicted for working-class assimilation fall into the prediction of no assimilation; (ii) slightly more groups of migrants are predicted for working-class assimilation; (iii) migrants from the MENA region with high education level, regardless of their entry category, are predicted to assimilate to the working class, which shows a more prominent ethnic penalty effect; and (iv) the only groups that have more favourable outcomes are asylum migrants with middle-to-high education levels from Asia and other Europe, for whom assimilation out of social assistance is predicted but the risk of unemployment remains higher

than average Dutch natives. Such differences are partly due to the fact that, as mentioned in Section 2.4.2, Dutch natives are less likely to receive social assistance relative to first-generation immigrants than unemployment benefit, and hence the thresholds for working-class assimilation and no assimilation are lowered to a greater extent (from 0.12 to 0.09 and from 0.24 to 0.18 respectively) than the reduction in predicted probabilities of social assistance receipt for migrants.

While the coefficient estimates remain largely similar, being a labour migrant reduces the probability of social assistance receipt more strongly whereas being an education migrant reduces the probability of social assistance receipt less strongly than when both social assistance and unemployment benefit are examined altogether. The effects of these two types of migrants have converged to a similar size when only social assistance receipt is considered. Such a difference points to the fact that while labour migrants are more likely to receive unemployment benefit. The effects of having middle and high education levels have further strengthened on social assistance receipt, but the effect of having unknown education level has declined to a level more comparable to the effect of having middle education level than the effect of higher education. The effect of lagged status in increasing the probability of social assistance receipt has also intensified.

2.5.2 Sensitivity to threshold setting

Predictions made regarding the assimilation outcomes have been based on a selected threshold, that is, the average value of predicted probability for Dutch natives with low education level at age=39-60 (0.120). Given the 95% confidence interval of average predicted probability for Dutch natives with low education level to be between 0.116-0.124, we have also considered other thresholds adjacent to this range: (1) the lower bound of 95% confidence interval for Dutch natives with low education level (0.120); (2) mean value between predicted probability for average Dutch natives and Dutch natives with low education level (0.086); and (3) upper bound of 95% confidence interval for Dutch natives with middle education level (0.058). Except that the value of the third option is too low and too close to predicted probability for average Dutch natives (0.052), the other two options are within reasonable scope. While it is obvious that more subgroups would fall out of mainstream assimilation if lower thresholds are chosen for assimilation into the working class and vice versa, the assimilation patterns summarized in the previous sections remains valid.

Specifically, under the second threshold, the boundary shift of mainstream assimilation would exclude all labour and education migrants with low education level and the majority of labour and education migrants with middle education level, but labour migrants with middle education level from EU countries and other Europe as well as education migrants with middle education

level from EU countries, Asia, Americas & Oceania and other Europe (men only) remain exempted. The most distinct difference is that highly skilled economic migrants from the MENA region and more groups of family migrants at all education levels (mainly except EU family migrants with middle, high or unknown education level and highly educated family migrants from Asia, Americas & Oceania and Suriname & Caribbean) would then be categorized as at risk of working-class assimilation instead. For asylum migrants, little is changed with the change in threshold. Such results by and large align with the predicted pattern that non-economic migrants are in general worse-off than economic migrants, and that ethnic penalty and nature of migration are more decisive than human capital.

2.3 Concluding Remarks

Economic assimilation of immigrants, which is not only a significant indicator of their own success, but also of their overall contribution to the host country's economy, is both an intragenerational and intergenerational process. While the immigrant-native gap in economic outcomes is expected to diminish across generations, results from this research suggest that uniform, automatic closing of such gap over time should not be presumed. In the Dutch context, substantial gap in welfare utilization propensities, as a reflection of economic marginalization, is predicted to persist throughout the working-age life course between Dutch natives and migrants from certain areas of origin and entry categories, who are likely to remain marginalized despite display of their motivation to integrate and notable upward mobilities achieved. The most disadvantaged would not even have the chance to assimilate to the working class, suggesting prospective emergence of an ethnic underclass at the bottom of the economic ladder. This not only echoes with but reinforces the conclusion of Roelandt & Veenman (1992) from almost thirty years ago that the existence of an ethnic underclass in the Netherlands, though yet to be clearly proven, is indeed a valid concern.

While individual factors emphasized in classic theories such as years since migration and human capital remain important in explaining the welfare assimilation outcomes, in line with predictions from segmented assimilation theory, their interaction with the modes of incorporation in the receptive context matters for the first generation. What appears to affect which assimilation path one could follow is the differential interaction effects between regional origin and human capital conditioned upon the nature of migration. With much less stringent immigration and integration conditions, voluntary skilled migrants, such as labour and education migrants, have much higher returns to their education than family migrants who are tied movers and refugees who are forced migrants. While higher education seems to offset the ethnic penalty faced by family migrants with non-EU origin, it only minimally reduces the level of disadvantage for asylum migrants,

despite remarkable reductions in their welfare utilization propensities through their working-age life course.

The observed patterns shed light on the importance and consequence of government policies that can eliminate such concentrated disadvantages in the labour market integration of first-generation immigrants with non-EU origin and non-economic migration purposes. For example, improving transferability of qualifications obtained abroad could not only accelerate but transform the assimilation process for many, especially the highly-skilled refugees who are hindered from full participation in and contribution to the host society due to unnecessary structural barriers.

The results also illustrate the misleading nature of the rhetoric about immigrants as one homogenous group. Discrepancy between refugees and other types of migrants has been observed in both the patterns and determinants of welfare assimilation, which points to their fundamentally different nature of migration and thereby the need for different sets of policies. While long-term planning of immigration policy is possible due to predictability of the number and characteristics of migrants, the inflow of refugees due to an outburst of war is unpredictable in nature. For migrants, perhaps it is still reasonable to consider their potential economic costs and contributions so that a sensible admission policy could be formulated to promote sustainable development of the host country. Applying the same scale of economic calculation to refugees, who bear significant disadvantages due to traumatic experiences of fleeing war, conflict or prosecution, would be all but dehumanizing. Political commitment to signed international conventions remains important when it comes to protection of forced migrants.

Redefining assimilation from an absolute to a relative concept, the exploration of whether the process of immigrant adaptation has become segmented broadens and contextualizes the discussion onto the increasingly divided nature of contemporary societies with pervasive vertical and horizontal inequalities, if not stratification. The segmented assimilation theory, while offering new perspectives of potential diversity of the assimilation process, has yet to offer a solid methodology to unambiguously test the empirical validity of its core concepts. Confined to identifying the relevance of modes of incorporation to the disadvantaged position among similar immigrants, the fundamental question of whether they assimilate to a segment other than the mainstream was left unanswered. Besides complementing such methodological gap through offering alternative means of operationalization, this research contributes to the literature by expanding the descriptive and explanatory functions of the conventional welfare assimilation model through bridging the literature in the economics and sociology disciplines, and by undertaking a dynamic life-course approach in welfare assimilation analysis.

Due to the explicit focus on the aggregate patterns, predictions by country of origin and ethnicity were not provided (also due to data unavailability for the latter). Further analyses could be

conducted at the level of country of origin to help further understand the extent of integration, as well as the diverse patterns and mechanism of the simultaneous effects of ethnicity, ethnic concentration and ethnic capital for each group. Furthermore, although we have attempted to control for as many external and internal indirect effects of regional origin as possible, it should be seen as a proxy measure for the modes of incorporation in the receptive context, and the indirect effects of cultural and linguistic distances to the host community cannot be fully identified in this study. In addition, despite the presence of missing information and measurement error on the entry category and especially education level variables, the limited extent of these problems has been demonstrated. Further research is also needed to shed light on the cultural mechanism underlying segmented assimilation.

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Appendix 1: Definition of Regional Origin Variable

Table 2.5: List of countries and territories classified in each category of region of origin

Area of origin	List of countries
Dutch native	The Netherlands
EU	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom
Other Europe	Andora, Albania, Belarus, Bosnia and Herzegovina, Holy See, Iceland, Liechtenstein, Norway, Moldova, Monaco, Montenegro, North Macedonia, San Marino, Serbia, Switzerland, Turkey, Turkmenistan, Armenia, Cyprus, Georgia, Russia, Ukraine
MENA region	Algeria, Bahrain, Dibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Occupied Palestinian Territories, Yemen
Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gambia, Gabon, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia, Zimbabwe
Asia	Afghanistan, Azerbaijan, Bangladesh, Bhutan, Brunei, Cambodia, China, India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, North Korea, Pakistan, Philippines, Russia, Singapore, South Korea, Sri Lanka, Taiwan, Tajikistan, Thailand, Timor-Leste, Uzbekistan, Vietnam
Americas & Oceania	Argentina, Australia, Bolivia, Bouvet Island, Brazil, Canada, Chile, Colombia, Cook Islands, Costa Rica, Ecuador, El Salvador, Falkland Islands, Fiji, French Guiana, French Polynesia, Guam, Guatemala, Guyana, Honduras, Kiribati, Marshall Islands, Mexico, Micronesia, Nauru, New Caledonia, New Zealand, Nicaragua, Niue, Norfolk Island, Northern Mariana Islands, Palau, Panama, Papua New Guinea, Paraguay, Peru, Pitcairn Islands, Samoa, Solomon Islands, South Georgia and the South Sandwich Islands, Tokelau, Tonga, Tuvalu, United States of America, Uruguary, Vanuatu, Venezuela, Wake Island, Wallis and Futuna
Suriname & Caribbean	Anguilia, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Carribean Netherlands, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique Montserrat, Puerto Rico, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint

	Maarten, Saint Martin, Saint Vincent and the Grenadines, Suriname, Trindad and Tobago, Turks and Caicos Islands, United States Virgin Islands

Appendix 2: Coefficient estimates of dynamic CRE probit model for Dutch natives

Table 2.6: Regression output for Dutch natives

Welfare receipt	Dutch natives
Lagged status	1.626***
	(0.016)
Education level	
Low	(Ref. group)
Middle	-0.246***
	(0.014)
High	-0.625***
	(0.016)
Unknown	-0.845***
	(0.015)
Female dummy	-0.013
	(0.010)
Household category	
Single-person	(Ref. group)
Unmarried without kids	-0.164***
	(0.023)
Unmarried with kids	-0.202***
	(0.028)
Married without kids	-0.094***
	(0.029)
Married with kids	-0.211***
	(0.023)
Single-parent	0.128***
	(0.026)
Other	-0.111
	(0.068)
Institutional	0.0204
	(0.065)
Age	0.179***
	(0.013)
Age-squared	-0.002***
	(0.000)
Provincial unemployment rate	0.019**
	(0.007)
Observation year	
2008	(Ref. group)
2009	0.217***
	(0.018)
2010	0.150***
	(0.020)

2011	0.129***
	(0.020)
2012	0.238***
	(0.021)
2013	0.296***
	(0.031)
2014	0.206***
	(0.033)
2015	0.116***
	(0.030)
Province	
Groningen	(Ref. group)
Friesland	0.133
	(0.114)
Drenthe	0.0633
	(0.100)
Overijssel	-0.008
	(0.108)
Flevoland	-0.059
	(0.136)
Gelderland	0.027
	(0.100)
Utrecht	-0.015
	(0.104)
North-Holland	-0.052
	(0.099)
South-Holland	-0.118
	(0.0990)
Zeeland	-0.178
	(0.165)
North-Brabant	-0.075
	(0.106)
Limburg	0.138
	(0.126)
Initial status	0.733***
	(0.094)
Time-averages	
Household category	
Single-person	0.712***
	(0.256)
Unmarried without kids	0.298
	(0.257)
Unmarried with kids	0.202
	(0.257)
Married without kids	0.420
	(0.258)
Married with kids	0.224
	(0.255)
Single-parent	0.693***
	(0.257)
Other	0.366
	(0.286)
Institutional	0.464*
	(0.277)
Groningen	-0.327
	(0.316)
Friesland	-0.555*
	(0.311)
Drenthe	-0.561*
	(0.305)
Overijssel	-0.598**
	(0.290)
Flevoland	-0.481
	(0.336)
Gelderland	-0.788***
	(0.265)
Utrecht	-0.829***
	(0.275)
North-Holland	-0.711**
	(0.282)
South-Holland	-0.519*
	(0.295)
Zeeland	-0.684**
	(0.320)
North-Brabant	-0.610**
	(0.277)
Limburg	-0.746**
	(0.300)
Provincial unemployment rate	-0.096***
	(0.031)
Constant	-4.456***
	(0.293)
Sigma_u	0.597
	(0.012)
Rho	0.263
	(0.008)
Number of observations	580,834
Number of individuals	85,786

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix 3: Predicted assimilation outcome for disadvantaged groups given naturalization

Table 2.7: Predicted welfare assimilation outcome for disadvantaged groups by regional origin, entry category, education level and gender (Age at migration at 18 and naturalized)

		Labour migrant				Education migrant				Family migrant				Asylum migrant			
		Low	Mid	High	Unknown	Low	Mid	High	Unknown	Low	Mid	High	Unknown	Low	Mid	High	Unknown
EU	M																
	F																
Other Europe	M					0.07 (++)				0.17 (=)	0.12 (++)			0.24 (+)	0.17 (=)	0.13 (=)	0.12 (++)
	F					0.11 (++)				0.22 (=)	0.14 (=)			0.29 (=)	0.19 (=)	0.14 (=)	0.15 (=)
MENA	M	0.25 (=)	0.14 (=)		0.12 (++)	0.23 (+)	0.13 (=)		0.10 (++)	0.28 (=)	0.16 (=)	0.14 (=)	0.13 (=)	0.34 (=)	0.21 (=)	0.17 (=)	0.20 (=)
	F	0.30 (=)	0.14 (=)		0.15 (=)	0.28 (=)	0.13 (=)		0.13 (=)	0.31 (=)	0.16 (=)	0.14 (=)	0.16 (=)	0.40 (=)	0.22 (=)	0.18 (=)	0.25 (=)
Sub-Saharan Africa	M	0.20 (=)	0.10 (++)		0.18 (=)	0.09 (++)			0.07 (+)	0.31 (=)	0.17 (=)	0.13 (=)	0.14 (=)	0.40 (=)	0.25 (=)	0.19 (=)	0.26 (=)
	F	0.31 (=)	0.14 (=)		0.30 (=)	0.14 (+)	0.07 (++)		0.16 (=)	0.43 (=)	0.23 (=)	0.14 (=)	0.26 (=)	0.51 (=)	0.31 (=)	0.20 (=)	0.33 (=)
Asia	M	0.06 (++)				0.06 (++)				0.07 (++)				0.24 (=)	0.14 (=)		
	F	0.07 (++)				0.06 (++)				0.08 (++)				0.24 (=)	0.14 (=)		
Americas & Oceania	M	0.08 (++)								0.09 (++)							
	F	0.10 (++)				0.06 (++)				0.12 (++)	0.10 (+)						
Suriname & Caribbean	M	0.14 (=)				0.13 (=)				0.18 (=)	0.15 (=)			0.35 (=)	0.21 (=)		0.14 (=)
	F	0.15 (+)				0.15 (+)				0.20 (=)	0.16 (=)			0.40 (=)	0.23 (=)		0.15 (=)

Destination of assimilation (in colour)
Assimilation to the middle class: Average natives (pr<0.120)
Assimilation to the working class: Natives with low education level (pr>0.120)
No assimilation: Above predicted probability for natives with low education level (pr>0.240)

Parity with average natives (in bold): pr<0.052

Changes in assimilation outcome after additionally assuming naturalization (in bracket)
Upward mobility:
- From no assimilation to middle class: +++
- From working class to middle class ++
- From no assimilation to working class: +

Stagnation: =
Downward mobility: —

Note: Average probabilities of welfare utilization assuming age at migration at 18 and having naturalized are reported up to 2 decimal points. All predicted probabilities are statistically significant at 1% level. T-tests have been performed to compare each predicted probability against specific thresholds mentioned in the legend.

Appendix 4: Full regression results of dynamic CRE probit model of welfare receipt probability for first-generation immigrants

Table 2.8: Coefficient estimates of welfare receipt probability

Welfare receipt	All immigrants	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Lagged status	1.854***	1.354***	1.899***	2.114***	1.531***	2.249***	1.631***	1.800***
	(0.006)	(0.016)	(0.016)	(0.014)	(0.018)	(0.020)	(0.038)	(0.013)
YSM	-0.026***	-0.001	0.049**	-0.125***	-0.102***	0.047**	0.066*	0.086***
	(0.006)	(0.011)	(0.019)	(0.013)	(0.019)	(0.019)	(0.035)	(0.021)
YSM-squared	0.001***	0.000	-0.001	0.004***	0.003***	-0.001	-0.001	-0.003***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Area of origin								
EU	(Ref. group)							
Other Europe	0.342***							
	(0.009)							
MENA	0.593***							
	(0.009)							
Sub-Saharan Africa	0.505***							
	(0.011)							
Asia	0.034***							
	(0.009)							
Americas & Oceania	0.015							
	(0.013)							
Suriname & Caribbean	0.259***							
	(0.008)							
Share of high educated co-nationals	-0.007***	0.019***	-0.001	-0.005***	-0.037***	-0.044***	-0.024***	-0.012***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)	(0.001)
Number of co-nationals in municipality (log)	0.005***	0.006***	0.036***	0.003	-0.046***	0.016***	-0.005***	0.011***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.004)	(0.003)	(0.007)	(0.001)
Naturalization dummy	-0.140***	0.012	-0.198***	-0.189***	-0.243***	-0.054***	0.090**	-0.125***
	(0.006)	(0.015)	(0.012)	(0.011)	(0.018)	(0.017)	(0.032)	(0.018)
Family migrant dummy	0.113***	-0.091***	0.060	0.079**	0.401***	0.043	0.223***	0.047
	(0.013)	(0.024)	(0.042)	(0.036)	(0.051)	(0.041)	(0.066)	(0.037)
Asylum migrant dummy	0.500***	0.171*	0.432***	0.351***	0.764***	0.382***	0.653***	0.452***
	(0.015)	(0.095)	(0.046)	(0.037)	(0.052)	(0.049)	(0.211)	(0.042)
Labour migrant dummy	-0.071***	-0.045**	-0.094*	-0.212***	-0.165***	-0.092**	0.117*	-0.224***
	(0.014)	(0.020)	(0.048)	(0.045)	(0.061)	(0.047)	(0.071)	(0.046)
Education	-0.349***	-0.435***	-0.280***	-0.243***	-0.176***	-0.216***	-0.210**	-0.280***
migrant dummy	(0.018)	(0.035)	(0.055)	(0.048)	(0.062)	(0.046)	(0.079)	(0.049)
Age at migration	0.032***	0.026***	0.024***	0.031***	0.047***	0.029***	0.045***	0.034***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.005)	(0.002)
Age at migration squared	-0.000***	-0.000***	-0.000*	-0.000***	-0.001***	-0.000***	-0.001***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Remigration dummy	-0.138***	-0.122***	-0.083***	-0.172***	-0.234***	-0.149***	-0.296***	-0.027
	(0.009)	(0.020)	(0.026)	(0.022)	(0.031)	(0.032)	(0.055)	(0.019)
Cohort								
Before 1995	(Ref. group)							
1995-1999	-0.154***	-0.001	-0.019	-0.023	-0.349***	-0.020	-0.147	-0.255***
	(0.019)	(0.046)	(0.053)	(0.042)	(0.070)	(0.059)	(0.107)	(0.049)
2000-2004	-0.168***	-0.067	0.036	-0.040	-0.499***	-0.031	0.012	-0.274***
	(0.029)	(0.084)	(0.076)	(0.056)	(0.106)	(0.091)	(0.178)	(0.079)
2005-2009	-0.289***	-0.179*	-0.031	-0.273***	-0.619***	-0.049	-0.025	-0.361***
	(0.038)	(0.104)	(0.094)	(0.070)	(0.131)	(0.112)	(0.216)	(0.103)

2010-2015	-0.407***	-0.240**	-0.016	-0.453***	-0.990***	-0.079	-0.017	-0.203
	(0.043)	(0.111)	(0.116)	(0.086)	(0.146)	(0.130)	(0.244)	(0.134)
Education level								
Low	(Ref. group)							
Middle	-0.130***	-0.107***	-0.050***	-0.148***	-0.147***	-0.086***	-0.110***	-0.212***
	(0.006)	(0.015)	(0.015)	(0.012)	(0.020)	(0.018)	(0.036)	(0.011)
High	-0.256***	-0.247***	-0.161***	-0.275***	-0.170***	-0.160***	-0.186***	-0.472***
	(0.007)	(0.017)	(0.021)	(0.016)	(0.032)	(0.021)	(0.039)	(0.016)
Unknown	-0.396***	-0.775***	-0.254***	-0.233***	-0.112***	-0.429***	-0.642***	-0.481***
	(0.005)	(0.014)	(0.011)	(0.009)	(0.016)	(0.015)	(0.035)	(0.011)
Female	0.024***	0.029***	-0.010	0.080***	0.083***	0.035**	0.063**	-0.020**
	(0.004)	(0.011)	(0.011)	(0.009)	(0.018)	(0.013)	(0.027)	(0.009)
Household type								
Single-person	(Ref. group)							
Unmarried without kids	-0.123***	-0.113***	-0.131***	-0.090***	-0.152***	-0.083**	-0.088*	-0.128***
	(0.010)	(0.019)	(0.031)	(0.024)	(0.028)	(0.035)	(0.050)	(0.019)
Unmarried with kids	-0.163***	-0.114***	-0.138***	-0.111***	-0.193***	-0.190***	-0.266***	-0.200***
	(0.012)	(0.028)	(0.033)	(0.029)	(0.033)	(0.044)	(0.069)	(0.020)
Married without kids	-0.178***	-0.234***	-0.156***	-0.101***	-0.201***	-0.138***	-0.236***	-0.245***
	(0.013)	(0.031)	(0.029)	(0.025)	(0.055)	(0.039)	(0.073)	(0.030)
Married with kids	-0.183***	-0.188***	-0.182***	-0.110***	-0.228***	-0.190***	-0.345***	-0.209***
	(0.010)	(0.027)	(0.024)	(0.019)	(0.035)	(0.035)	(0.062)	(0.022)
Single-parent	0.192***	0.205***	0.306***	0.312***	0.297***	0.147***	0.270***	0.067***
	(0.010)	(0.028)	(0.027)	(0.023)	(0.030)	(0.038)	(0.058)	(0.018)
Other	-0.077***	-0.065	-0.068	-0.085***	-0.041	-0.014	0.109	-0.085**
	(0.019)	(0.056)	(0.057)	(0.033)	(0.058)	(0.074)	(0.128)	(0.039)
Institutional	-0.140***	0.075	0.074	-0.333***	-0.181***	0.091	0.534***	-0.019
	(0.021)	(0.071)	(0.078)	(0.043)	(0.052)	(0.097)	(0.147)	(0.037)
Provincial unemployment rate	0.007*	0.023**	-0.004	-0.008	0.041***	-0.002	0.006	0.008
	(0.004)	(0.009)	(0.008)	(0.007)	(0.012)	(0.012)	(0.023)	(0.008)
Observation year								
2008	(Ref. group)							
2009	0.171***	0.192***	0.166***	0.161***	0.124***	0.170***	0.248***	0.222***
	(0.007)	(0.020)	(0.016)	(0.014)	(0.024)	(0.023)	(0.045)	(0.014)
2010	0.092***	0.093***	0.050***	0.102***	0.081***	0.114***	0.095*	0.161***
	(0.008)	(0.023)	(0.019)	(0.017)	(0.028)	(0.027)	(0.053)	(0.017)
2011	0.076***	0.095***	0.022	0.082***	0.085***	0.044	0.184***	0.157***
	(0.008)	(0.023)	(0.019)	(0.017)	(0.029)	(0.028)	(0.054)	(0.018)
2012	0.120***	0.158***	0.088***	0.093***	0.125***	0.098***	0.183***	0.219***
	(0.010)	(0.026)	(0.022)	(0.020)	(0.034)	(0.032)	(0.063)	(0.022)
2013	0.154***	0.169***	0.156***	0.153***	0.077	0.156***	0.225**	0.258***
	(0.015)	(0.039)	(0.033)	(0.030)	(0.052)	(0.049)	(0.095)	(0.033)
2014	0.093***	0.118***	0.077**	0.090***	0.033	0.057	0.198**	0.212***
	(0.015)	(0.040)	(0.035)	(0.031)	(0.054)	(0.051)	(0.098)	(0.035)
2015	0.001	0.006	-0.034	0.010	0.012	-0.006	0.106	0.120***
	(0.014)	(0.036)	(0.031)	(0.028)	(0.048)	(0.045)	(0.087)	(0.031)
Province								
Groningen	(Ref. group)							
Friesland	0.072	-0.196	-0.048	0.441***	0.211	-0.253	0.186	-0.034
	(0.057)	(0.158)	(0.187)	(0.116)	(0.147)	(0.174)	(0.365)	(0.124)
Drenthe	-0.097*	-0.019	-0.325*	0.084	0.016	-0.153	0.457	-0.235**
	(0.057)	(0.156)	(0.182)	(0.117)	(0.144)	(0.181)	(0.400)	(0.121)
Overijssel	0.122**	-0.251*	0.071	0.468***	0.249*	-0.174	0.629**	-0.094
	(0.051)	(0.139)	(0.145)	(0.101)	(0.141)	(0.170)	(0.300)	(0.114)
Flevoland	-0.206***	-0.494***	0.120	0.066	-0.362***	-0.503***	0.022	-0.358***
	(0.050)	(0.148)	(0.161)	(0.105)	(0.138)	(0.167)	(0.286)	(0.097)
Gelderland	0.194***	-0.203	-0.031	0.615***	0.444***	0.007	0.230	-0.073
	(0.047)	(0.122)	(0.138)	(0.097)	(0.130)	(0.155)	(0.274)	(0.100)
Utrecht	0.103**	-0.269**	-0.123	0.433***	0.726***	-0.078	0.523*	-0.347***
	(0.048)	(0.126)	(0.141)	(0.097)	(0.133)	(0.162)	(0.267)	(0.103)
North-Holland	0.072**	-0.289**	-0.106	0.482***	0.694***	-0.318**	0.357*	-0.369***
	(0.043)	(0.113)	(0.130)	(0.091)	(0.120)	(0.142)	(0.237)	(0.089)
South-Holland	0.139***	-0.528***	-0.045	0.604***	0.771***	-0.199	0.220	-0.199*
	(0.042)	(0.113)	(0.126)	(0.088)	(0.115)	(0.141)	(0.237)	(0.086)
Zeeland	0.037	-0.398**	-0.177	0.576***	0.275	-0.062	0.010	-0.370**
	(0.069)	(0.162)	(0.210)	(0.148)	(0.190)	(0.217)	(0.425)	(0.151)
North-Brabant	0.0611	-0.383***	-0.073	0.422***	0.615***	-0.073	0.260	-0.275***
	(0.046)	(0.119)	(0.136)	(0.096)	(0.122)	(0.151)	(0.267)	(0.098)
Limburg	0.033	-0.126	0.080	0.240**	0.237*	-0.408**	0.589*	-0.166
	(0.052)	(0.129)	(0.154)	(0.106)	(0.142)	(0.173)	(0.301)	(0.116)
Initial status	0.596***	0.338***	0.732***	0.318***	0.712***	0.711***	1.145***	0.658***
	(0.016)	(0.037)	(0.057)	(0.031)	(0.039)	(0.052)	(0.125)	(0.035)
Time-averages								
Household type								
Single-person	-0.729***	-0.244	-1.354	-1.372**	-1.830**	-0.292	0.808	0.032
	(0.281)	(0.538)	(1.170)	(0.630)	(0.816)	(1.208)	(1.763)	(0.595)
Unmarried without kids	-1.102***	-0.267	-1.768	-2.078***	-2.688***	-0.574	0.500	-0.606
	(0.282)	(0.538)	(1.171)	(0.632)	(0.818)	(1.209)	(1.765)	(0.595)
Unmarried with kids	-0.963 ***	-0.191	-1.614	-1.694***	-2.291***	-0.422	0.617	-0.431
	(0.281)	(0.539)	(1.170)	(0.632)	(0.817)	(1.209)	(1.766)	(0.595)
Married without kids	-1.173***	-0.408	-1.713	-1.966***	-2.774***	-0.525	0.459	-0.568
	(0.282)	(0.539)	(1.170)	(0.632)	(0.820)	(1.208)	(1.765)	(0.596)
Married with kids	-1.123***	-0.471	-1.711	-1.839***	-2.286***	-0.487	0.482	-0.613
	(0.281)	(0.538)	(1.170)	(0.631)	(0.817)	(1.208)	(1.764)	(0.595)
Single-parent	-0.560**	0.030	-1.164	-1.500**	-1.602**	-0.119	1.000	0.097
	(0.281)	(0.538)	(1.170)	(0.631)	(0.816)	(1.208)	(1.764)	(0.595)
Other	-1.311***	-0.565	-1.815	-1.840***	-2.803***	-0.466	0.590	-0.479
	(0.281)	(0.550)	(1.176)	(0.633)	(0.829)	(1.215)	(1.789)	(0.595)
Institutional	-0.001	0.472	-1.638	-0.710	-1.601**	-0.178	0.894	0.661
	(0.281)	(0.537)	(1.170)	(0.630)	(0.815)	(1.213)	(1.769)	(0.594)
Province								
Groningen	0.557*	-0.388	0.678	1.548**	2.230***	0.073	-0.445	-0.342
	(0.284)	(0.545)	(1.177)	(0.638)	(0.820)	(1.221)	(1.775)	(0.600)
Friesland	0.642**	0.077	0.918	1.091*	1.981**	0.561	-0.731	-0.188
	(0.285)	(0.554)	(1.185)	(0.638)	(0.822)	(1.221)	(1.794)	(0.605)
Drenthe	0.783***	-0.126	1.246	1.451**	2.325***	0.362	-1.197	-0.105
	(0.287)	(0.561)	(1.185)	(0.641)	(0.824)	(1.226)	(1.816)	(0.607)
Overijssel	0.446	0.066	0.548	1.046*	1.930**	0.281	-1.006	-0.363
	(0.283)	(0.545)	(1.174)	(0.634)	(0.818)	(1.217)	(1.771)	(0.600)
Flevoland	0.594**	0.139	0.353	1.249**	2.297***	0.523	-0.372	-0.336
	(0.283)	(0.540)	(1.179)	(0.635)	(0.817)	(1.218)	(1.769)	(0.595)
Gelderland	0.396	-0.067	0.881	0.840	1.821**	0.090	-0.800	-0.415
	(0.282)	(0.539)	(1.172)	(0.632)	(0.816)	(1.214)	(1.763)	(0.595)
Utrecht	0.294	-0.183	0.656	0.854	1.367*	0.177	-1.361	-0.341
	(0.282)	(0.539)	(1.173)	(0.632)	(0.816)	(1.214)	(1.763)	(0.596)
North-Holland	0.293	-0.109	0.585	0.710	1.335*	0.361	-1.065	-0.304

	(0.280)	(0.535)	(1.170)	(0.631)	(0.812)	(1.211)	(1.754)	(0.592)
South-Holland	0.277	0.235	0.631	0.675	1.228	0.172	-0.806	-0.446
	(0.280)	(0.535)	(1.170)	(0.630)	(0.810)	(1.210)	(1.756)	(0.591)
Zeeland	0.515*	0.132	0.893	0.874	2.076**	0.205	-0.487	-0.088
	(0.289)	(0.553)	(1.189)	(0.649)	(0.837)	(1.221)	(1.811)	(0.613)
North-Brabant	0.471*	0.161	0.729	0.906	1.681**	0.116	-0.954	-0.260
	(0.281)	(0.536)	(1.171)	(0.631)	(0.813)	(1.211)	(1.761)	(0.594)
Limburg	0.507*	-0.147	0.730	1.115*	2.046**	0.572	-1.127	-0.254
	(0.282)	(0.537)	(1.173)	(0.632)	(0.815)	(1.215)	(1.767)	(0.596)
Provincial unemployment rate	0.059***	0.038**	0.046	0.064***	0.039	0.068	-0.054	0.019
	(0.009)	(0.019)	(0.032)	(0.022)	(0.030)	(0.032)	(0.050)	(0.020)
Constant	-2.031***	-2.223***	-2.224***	-1.111***	-1.191***	-2.393***	-2.779***	-1.602***
	(0.092)	(0.218)	(0.277)	(0.202)	(0.291)	(0.305)	(0.511)	(0.232)
Sigma_u	0.636	0.670	0.632	0.574	0.790	0.357	0.625	0.619
	(0.006)	(0.012)	(0.015)	(0.014)	(0.017)	(0.020)	(0.031)	(0.012)
Rho	0.288	0.310	0.285	0.248	0.384	0.113	0.281	0.277
	(0.004)	(0.008)	(0.009)	(0.009)	(0.010)	(0.011)	(0.020)	(0.008)
Number of obs.	2,026,536	426,362	318,004	393,983	139,329	230,319	79,185	439,354
Number of individuals	359,778	94,313	48,509	61,077	24,778	45,261	16,749	69,153

Note: The table reports estimated coefficients of the dynamic CRE probit models. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 5: Full regression results of dynamic CRE probit model of social assistance receipt probability for first-generation immigrants

Table 2.9: Determinants of social assistance receipt probability

Social assistance receipt	All immigrants	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Lagged status	2.828***	2.965***	3.004***	2.834***	2.114***	3.116***	2.718***	2.80***
	(0.006)	(0.022)	(0.010)	(0.008)	(0.021)	(0.017)	(0.047)	(0.009)
YSM	-0.046***	0.023=	0.002	-0.132***	-0.131***	0.048**	0.043	0.063***
	(0.006)	(0.016)	(0.018)	(0.011)	(0.019)	(0.022)	(0.042)	(0.020)
YSM-squared	0.001***	-0.001	0.000	0.004***	0.004***	-0.002*	-0.001	-0.003***
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.002)	(0.001)
Area of origin								
EU	(Ref. Group)							
Other Europe	0.381***							
	(0.009)							
MENA	0.606***							
	(0.009)							
Sub-Saharan Africa	0.435***							
	(0.010)							
Asia	0.142***							
	(0.010)							
Americas & Oceania	0.094***							
	(0.014)							
Suriname & Caribbean	0.305***							
	(0.009)							
Share of highly educated co-nationals	-0.0105***	0.000501	0.00225	-0.00214	-0.0335***	-0.0366***	-0.0232***	-0.0103***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.005)	(0.001)
Share of co-nationals in municipality	-0.007***	-0.008**	0.018***	-0.000	-0.355***	-0.101***	-0.308***	-0.006***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.018)	(0.018)	(0.097)	(0.001)
Naturalization dummy	-0.144***	0.009	-0.174***	-0.177***	-0.254***	-0.089***	0.059	-0.129***
	(0.005)	(0.017)	(0.011)	(0.009)	(0.019)	(0.020)	(0.039)	(0.016)
Family migrant	0.122***	-0.048*	0.047	0.058*	0.451***	0.091*	0.246***	0.064*
	(0.013)	(0.028)	(0.038)	(0.030)	(0.053)	(0.048)	(0.080)	(0.034)
Asylum migrant	0.392***	0.230**	0.316***	0.247***	0.782***	0.357***	0.456**	0.370***
	(0.014)	(0.095)	(0.041)	(0.030)	(0.054)	(0.056)	(0.220)	(0.037)
Labour migrant	-0.206***	-0.201***	-0.122***	-0.180***	-0.212***	-0.138**	0.0382	-0.260***
	(0.015)	(0.024)	(0.044)	(0.038)	(0.066)	(0.056)	(0.087)	(0.045)
Education migrant	-0.201***	-0.342***	-0.153***	-0.169***	-0.0767	-0.133**	-0.0998	-0.169***
	(0.018)	(0.045)	(0.051)	(0.041)	(0.065)	(0.055)	(0.096)	(0.046)
Age at migration	0.010***	0.003	0.006***	0.015***	0.034***	0.015***	0.021***	0.008***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.005)	(0.001)
Age at migration squared	0.000***	0.000***	0.000***	0.000*	-0.000***	0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Remigration dummy	-0.099***	-0.182***	-0.048**	-0.123***	-0.220***	-0.143***	-0.194***	-0.018
	(0.009)	(0.027)	(0.025)	(0.019)	(0.031)	(0.038)	(0.064)	(0.018)
Cohort								

Before 1995	(Ref. group)							
1995-1999	-0.155***	-0.003	-0.004	-0.012	-0.462***	-0.175**	-0.195	-0.241***
	(0.018)	(0.055)	(0.047)	(0.035)	(0.072)	(0.071)	(0.129)	(0.044)
2000-2004	-0.165***	-0.061	0.0636	-0.035	-0.583***	-0.250**	-0.005	-0.246***
	(0.028)	(0.100)	(0.067)	(0.047)	(0.108)	(0.108)	(0.213)	(0.069)
2005-2009	-0.267***	-0.086	-0.015	-0.248***	-0.709***	-0.268**	-0.040	-0.301***
	(0.035)	(0.122)	(0.083)	(0.058)	(0.134)	(0.134)	(0.259)	(0.091)
2010-2015	-0.460***	-0.243*	-0.066	-0.420***	-1.110***	-0.250	-0.094	-0.201*
	(0.041)	(0.133)	(0.105)	(0.071)	(0.148)	(0.154)	(0.294)	(0.121)
Education level								
Low	(Ref. group)							
Middle	-0.215***	-0.295***	-0.154***	-0.177***	-0.292***	-0.171***	-0.184***	-0.242***
	(0.00579)	(0.0189)	(0.0145)	(0.0105)	(0.0225)	(0.0222)	(0.0411)	(0.0100)
High	-0.382***	-0.459***	-0.293***	-0.304***	-0.365***	-0.356***	-0.437***	-0.531***
	(0.00838)	(0.0232)	(0.0212)	(0.0145)	(0.0365)	(0.0291)	(0.0519)	(0.018)
Unknown	-0.253***	-0.546***	-0.178***	-0.162***	-0.0899***	-0.314***	-0.460***	-0.292***
	(0.00485)	(0.0179)	(0.0106)	(0.00831)	(0.0172)	(0.0172)	(0.0408)	(0.010)
Female dummy	0.0727***	0.105***	0.0438***	0.0991***	0.198***	0.0687***	0.104***	0.0277***
	(0.00427)	(0.0137)	(0.00971)	(0.00761)	(0.0192)	(0.0156)	(0.0329)	(0.00838)
Household type								
Single-person	(Ref. group)							
Unmarried without kids	-0.198***	-0.271***	-0.208***	-0.0926***	-0.242***	-0.249***	-0.255***	-0.185***
	(0.012)	(0.032)	(0.038)	(0.027)	(0.034)	(0.049)	(0.072)	(0.022)
Unmarried with kids	-0.274***	-0.309***	-0.192***	-0.139***	-0.281***	-0.483***	-0.573***	-0.294***
	(0.014)	(0.042)	(0.039)	(0.031)	(0.039)	(0.057)	(0.095)	(0.025)
Married without kids	-0.240***	-0.307***	-0.193***	-0.141***	-0.257***	-0.371***	-0.404***	-0.306***
	(0.016)	(0.050)	(0.035)	(0.027)	(0.069)	(0.052)	(0.110)	(0.037)
Married with kids	-0.249***	-0.359***	-0.221***	-0.106***	-0.298***	-0.429***	-0.718***	-0.314***
	(0.012)	(0.042)	(0.028)	(0.021)	(0.041)	(0.045)	(0.088)	(0.027)
Single-parent	0.182***	0.212***	0.291***	0.296***	0.341***	0.0757*	0.194***	0.078***
	(0.011)	(0.036)	(0.030)	(0.024)	(0.034)	(0.046)	(0.070)	(0.020)
Other	-0.088***	-0.095	-0.011	-0.111***	-0.035	-0.034	0.053	-0.081*
	(0.023)	(0.090)	(0.069)	(0.037)	(0.068)	(0.093)	(0.156)	(0.045)
Institutional	-0.103***	0.245***	0.287***	-0.348***	-0.138***	0.050	0.755***	0.094**
	(0.022)	(0.079)	(0.079)	(0.043)	(0.053)	(0.105)	(0.155)	(0.037)
Provincial unemployment rate	-0.001	-0.006	-0.016*	-0.007	0.025*	-0.018	-0.013	0.017*
	(0.004)	(0.014)	(0.009)	(0.008)	(0.014)	(0.015)	(0.030)	(0.009)
Observation year								
2008	(Ref. group)							
2009	0.134***	0.169***	0.146***	0.148***	0.0662**	0.0744**	0.174***	0.160***
	(0.008)	(0.030)	(0.019)	(0.015)	(0.027)	(0.030)	(0.062)	(0.017)
2010	0.154***	0.182***	0.151***	0.159***	0.123***	0.123***	0.193***	0.177***
	(0.010)	(0.034)	(0.022)	(0.018)	(0.032)	(0.035)	(0.071)	(0.020)
2011	0.105***	0.140***	0.081***	0.111***	0.079**	0.0485	0.186***	0.149***
	(0.010)	(0.034)	(0.023)	(0.018)	(0.032)	(0.036)	(0.072)	(0.021)
2012	0.091***	0.078**	0.116***	0.089***	0.065*	0.051	0.180**	0.132***
	(0.012)	(0.039)	(0.025)	(0.021)	(0.039)	(0.042)	(0.083)	(0.026)
2013	0.150***	0.210***	0.210***	0.162***	0.0503	0.144**	0.239*	0.172***
	(0.017)	(0.058)	(0.038)	(0.032)	(0.059)	(0.064)	(0.125)	(0.039)
2014	0.121***	0.241***	0.159***	0.118***	0.0144	0.0719	0.248*	0.162***
	(0.018)	(0.060)	(0.040)	(0.033)	(0.061)	(0.066)	(0.129)	(0.041)
2015	0.0468***	0.107**	0.0764**	0.0492*	-0.0217	0.0273	0.0790	0.105***
	(0.016)	(0.053)	(0.036)	(0.030)	(0.055)	(0.059)	(0.115)	(0.0361)
Province								
Groningen	(Ref. group)							
Friesland	0.166***	-0.0228	-0.0440	0.531***	0.161	-0.484**	-0.295	0.133
	(0.062)	(0.207)	(0.201)	(0.115)	(0.153)	(0.210)	(0.458)	(0.132)
Drenthe	-0.089	0.0030	-0.320	0.141	-0.139	-0.196	0.305	-0.253*
	(0.062)	(0.199)	(0.196)	(0.118)	(0.155)	(0.214)	(0.444)	(0.129)
Overijssel	0.145***	-0.187	0.0365	0.458***	0.193	-0.528**	0.317	-0.079
	(0.0556)	(0.183)	(0.160)	(0.101)	(0.151)	(0.207)	(0.371)	(0.123)
Flevoland	-0.257***	-0.347*	0.0426	0.124	-0.587***	-0.912***	-0.442	-0.415***
	(0.055)	(0.209)	(0.181)	(0.105)	(0.150)	(0.202)	(0.360)	(0.108)
Gelderland	0.273***	-0.0449	-0.0506	0.604***	0.432***	-0.240	-0.308	0.0406
	(0.051)	(0.163)	(0.151)	(0.096)	(0.138)	(0.186)	(0.339)	(0.109)
Utrecht	0.159***	-0.169	-0.0813	0.502***	0.700***	-0.398**	0.0494	-0.336***
	(0.053)	(0.172)	(0.157)	(0.0969)	(0.142)	(0.194)	(0.345)	(0.113)
North-Holland	0.143***	-0.302**	-0.0188	0.523***	0.595***	-0.611***	-0.169	-0.275***
	(0.0472)	(0.148)	(0.143)	(0.0905)	(0.128)	(0.170)	(0.295)	(0.096)
South-Holland	0.246***	-0.385***	0.0568	0.617***	0.768***	-0.432***	-0.340	-0.148
	(0.0456)	(0.148)	(0.139)	(0.0872)	(0.122)	(0.167)	(0.293)	(0.092)
Zeeland	0.147*	-0.289	-0.268	0.548***	0.290	-0.119	-0.0137	-0.251
	(0.0766)	(0.227)	(0.229)	(0.149)	(0.200)	(0.254)	(0.510)	(0.166)
North-Brabant	0.127**	-0.144	-0.138	0.434***	0.523***	-0.484***	-0.172	-0.227**
	(0.050)	(0.162)	(0.151)	(0.0955)	(0.129)	(0.185)	(0.346)	(0.107)
Limburg	0.0678	-0.0276	-0.189	0.293***	0.144	-0.589***	0.126	0.0122
	(0.0568)	(0.171)	(0.171)	(0.105)	(0.151)	(0.211)	(0.374)	(0.126)
Initial welfare receipt status	0.017	0.148**	0.021	-0.241***	0.373***	0.136***	0.559***	0.046*
	(0.014)	(0.068)	(0.045)	(0.023)	(0.040)	(0.046)	(0.123)	(0.026)
<u>Time-averages</u>								
Household type								
Single-person	-0.159	0.723	-0.0657	-0.492	-1.195	-1.026	0.558	0.346
	(0.271)	(0.581)	(1.106)	(0.536)	(0.800)	(1.471)	(2.199)	(0.529)
Unmarried without kids	-0.637**	0.528	-0.350	-1.073**	-2.196***	-1.455	0.136	-0.225
	(0.272)	(0.583)	(1.108)	(0.538)	(0.804)	(1.473)	(2.201)	(0.530)
Unmarried with kids	-0.539**	0.384	-0.288	-0.909*	-2.225***	-1.125	0.138	-0.127
	(0.272)	(0.585)	(1.107)	(0.537)	(0.807)	(1.472)	(2.202)	(0.532)
Married without kids	-0.310	0.805	-0.187	-0.672	-1.655**	-0.943	0.535	0.0159
	(0.272)	(0.583)	(1.107)	(0.538)	(0.803)	(1.472)	(2.201)	(0.530)
Married with kids	-0.439	0.458	-0.274	-0.801	-1.554*	-1.005	0.412	-0.128
	(0.271)	(0.583)	(1.107)	(0.536)	(0.802)	(1.471)	(2.200)	(0.530)
Single-parent	-0.149	0.795	-0.143	-0.716	-1.054	-0.859	0.708	0.310
	(0.271)	(0.582)	(1.107)	(0.537)	(0.801)	(1.472)	(2.198)	(0.530)
Other	-0.67**	0.079	-0.455	-0.854	-2.166***	-1.064	0.588	-0.0179
	(0.274)	(0.608)	(1.114)	(0.540)	(0.816)	(1.479)	(2.222)	(0.535)
Institutional	0.485*	1.050*	-0.405	0.233	-0.818	-0.868	0.296	0.660
	(0.271)	(0.578)	(1.107)	(0.536)	(0.799)	(1.476)	(2.199)	(0.529)
Province								
Groningen	0.449	-0.890	-0.0966	1.101**	1.908**	0.846	-0.504	-0.229

	(0.274)	(0.592)	(1.115)	(0.543)	(0.805)	(1.488)	(2.209)	(0.536)
Friesland	0.334	-0.856	-0.0109	0.496	1.768**	1.464	-0.0804	-0.291
	(0.276)	(0.608)	(1.125)	(0.545)	(0.806)	(1.488)	(2.234)	(0.542)
Drenthe	0.600**	-0.945	0.306	0.926*	2.158***	1.078	-1.047	0.0960
	(0.277)	(0.614)	(1.125)	(0.547)	(0.809)	(1.492)	(2.246)	(0.545)
Overijssel	0.257	-0.793	-0.321	0.605	1.648**	1.364	-0.770	-0.208
	(0.273)	(0.593)	(1.112)	(0.540)	(0.803)	(1.484)	(2.207)	(0.537)
Flevoland	0.504*	-0.810	-0.271	0.790	2.106***	1.619	0.0224	-0.0517
	(0.273)	(0.603)	(1.118)	(0.541)	(0.802)	(1.484)	(2.205)	(0.531)
Gelderland	0.153	-1.087*	-0.0412	0.412	1.513*	1.017	-0.179	-0.340
	(0.272)	(0.581)	(1.110)	(0.538)	(0.800)	(1.479)	(2.196)	(0.531)
Utrecht	0.121	-1.027*	-0.237	0.390	1.048	1.155	-0.893	-0.103
	(0.272)	(0.585)	(1.112)	(0.539)	(0.801)	(1.480)	(2.201)	(0.532)
North-Holland	0.116	-0.818	-0.277	0.305	1.058	1.405	-0.520	-0.132
	(0.270)	(0.577)	(1.108)	(0.537)	(0.796)	(1.476)	(2.187)	(0.526)
South-Holland	0.0115	-0.639	-0.342	0.249	0.946	1.161	-0.195	-0.259
	(0.270)	(0.575)	(1.108)	(0.536)	(0.794)	(1.476)	(2.189)	(0.526)
Zeeland	0.238	-0.894	0.0702	0.462	1.657**	0.896	-0.456	-0.0213
	(0.281)	(0.612)	(1.130)	(0.558)	(0.823)	(1.490)	(2.250)	(0.554)
North-Brabant	0.183	-1.045*	-0.116	0.479	1.375*	1.169	-0.646	-0.141
	(0.271)	(0.580)	(1.108)	(0.537)	(0.797)	(1.477)	(2.192)	(0.530)
Limburg	0.302	-1.028*	0.0996	0.624	1.839**	1.400	-0.694	-0.288
	(0.271)	(0.577)	(1.111)	(0.537)	(0.800)	(1.483)	(2.203)	(0.533)
Provincial unemployment rate	0.067***	-0.009	0.007	0.057***	0.0591*	0.057	0.013	0.034*
	(0.009)	(0.025)	(0.031)	(0.020)	(0.030)	(0.038)	(0.057)	(0.018)
Constant	-2.161***	-1.716***	-1.832***	-1.417***	-1.444***	-1.860***	-2.510***	-1.898***
	(0.093)	(0.278)	(0.269)	(0.182)	(0.300)	(0.365)	(0.603)	(0.218)
Sigma_u	0.232	0.249	0.005	0.087	0.671	0.007	0.366	0.366
	(0.010)	(0.029)	(0.008)	(0.019)	(0.022)	(0.012)	(0.052)	(0.052)
Rho	0.051	0.058	0.0000	0.007	0.311	0.000	0.118	0.118
	(0.004)	(0.013)	(0.0001)	(0.003)	(0.014)	(0.000)	(0.030)	(0.030)
Number of observations	2,026,536	426,362	318,004	393,983	139,329	230,319	79,185	439,354
Number of individuals	359,778	94,313	48,509	61,077	24,778	45,261	16,749	69,153

Note: The table reports estimated coefficients of the dynamic CRE probit models. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Chapter 3

Pathways to Intergenerational Welfare Assimilation

3.1 Introduction

In Chapter 2, the presence of segmented assimilation has been confirmed among first-generation immigrants in the Netherlands. Segregation from the mainstream throughout the working-age life-course is predicted to concentrate in three groups marked by structural and human capital disadvantages: refugees regardless of their education levels, less-skilled family migrants and low-skilled economic migrants with non-western backgrounds. The scale of segmentation is found to be more striking than existing evidence suggests: the worst scenario, prevalent among refugees with lower education levels, is a lack of assimilation even to the working class of the Dutch society, indicating prospective emergence of an ethnic underclass at the bottom of the economic ladder.

With the risk groups of persistent marginalization identified among first-generation immigrants, *what are the prospects of integration for their children?* Equally born and raised in the Netherlands, whether second-generation immigrants, who make up approximately 14% of all children in the Netherlands in 2017 (CBS, 2018), can reach parity with their Dutch native counterparts will render a direct evaluation of the effectiveness of the Dutch integration policy. Perhaps more fundamental to this concern are the menacing consequences of enduring ethnic polarization. It is known that horizontal inequality will hamper intergenerational mobility, through which the process of immigrant assimilation could be disrupted. Among group members subject to persistent poverty and/or discrimination, human capital investment tends to be depressed by the anticipation, from both parents and children, of low return rates to and high discount rates of their education (Lundberg and Startz, 1983), especially in the case of credit constraint (Solon, 2014). As a result, children of immigrants are more likely to end up in a vicious cycle of poverty and low mobility traps (Piketty, 1997) and become restrained from full participation in the labour market and society as a whole.

The literatures of immigrant assimilation and intergenerational mobility offer two interlinked perspectives to examine the issue. With regards to the integration outcome, the persistent disadvantage hypothesis compares how second-generation immigrants fare relative to the native population, whereas the second-generation decline hypothesis compares the second generation to their immigrant parents. On one hand, classic assimilation theory, dominant in both economics and sociology literatures, predicts assimilation to take place at a greater extent across generations and, be it straight-line or bumpy-line assimilation, should end up in convergence to the host society over time – but questions remain as to how long convergence takes in reality? To whom are immigrants converging? And is there a limit in terms of magnitude and duration where a lack of convergence should be deemed problematic? On the other hand, opponents of the assimilationists reject such an assumption of automatic convergence and put forward much less optimistic forecasts, perhaps the most well-known of which is Gans' "second-generation decline" (1992). Built upon this basis, segmented assimilation theory foresees a significant portion of

second-generation youths characterized by a negative mode of incorporation and a lack of social capital to join the underclass through downward assimilation. Not only is social and economic exclusion likely, downward or stagnant mobility relative to the socio-economic position of their working-class parents is also predicted.

While the most common proxy variables used in measuring integration and mobility are income, educational attainment, employment and occupational status, we will employ welfare utilization as an indicator of economic marginalization due to our explicit focus on identifying the existence of segmentation. The definition encompasses receipt of social security programs the functions of which are to protect individuals from poverty and economic vulnerability: social assistance and unemployment benefit, the receipt of which indicates a lack of income either due to (a) low-paid job(s) or no employment (involuntary job loss or being out of the labour force). In light of the possibility of benefit substitution, exclusion of either program might result in underestimation of the extent of segmentation.

The objectives of this study are twofold: to assess the extent to which segmented assimilation pertains to second-generation immigrants and to identify pathways to intergenerational welfare assimilation. Three sets of questions will be addressed. First, to what extent is segregation from the mainstream a relevant concern for second-generation young adults? Second, does a lack of intergenerational mobility characterize disadvantaged groups? Third, to what extent do structural, family and human capital disadvantages predict marginalization in spite of their aspiration for integration? This chapter evaluates the hypotheses of persistent disadvantage and second-generation decline by comparing second-generation young adults to four reference groups: average Dutch natives, Dutch natives with low education level, their own parents, and first-generation immigrants of the same regional origin, education level and gender.

This chapter makes use of unique longitudinal administrative data based on the entire Dutch population from Statistics Netherlands (CBS). Family information is retrieved from second-generation and Dutch native youths from six birth cohorts (1987-1992) who turned 16 between the years 2003 and 2008. The observation period for welfare receipt status of young adults aged between 20 and 28 is between 2011 and 2015. Dutch natives are defined as individuals with both parents born in the Netherlands, regardless of where they were born (WRR, 2016). Second-generation immigrants are those born in the Netherlands with three possible types of family composition: both parents foreign-born (the 2.0 generation), one parent foreign-born and one parent as a second-generation immigrant (2.25/2.5 generation), and one parent foreign-born and one Dutch native parent (the 2.75 generation); while the ethnic origin of first-generation immigrants is determined by the country of birth, for the second generation, it is the country of birth of the mother, or of the father if the mother was born in the Netherlands (CBS, 2016).

This study contributes to the literature in the following ways. It provides new empirical evidence by undertaking an intergenerational perspective to welfare assimilation. Such evidence is scant internationally primarily due to a lack of intergenerational data, and hence usually replaced either by matching with fake parents or comparing descriptive statistics on key integration outcomes between the first and second generation. Moreover, as the new focus on children of ethnic groups beyond the four biggest ethnic minorities is made possible with the use of national register data, it provides the first longitudinal evidence on welfare assimilation of all groups of second-generation immigrants in the Netherlands. In addition, through incorporating Borja's ethnic capital theory into the operationalization of segmented assimilation theory, it not only provides empirical evidence for the theories but also bridges conceptually and methodologically between the economics and sociology disciplines.

3.2 Literature Review

In the following section, theoretical backgrounds of the immigrant adaptation literature and conceptual framework of this paper will first be outlined. Existing evidence on economic and welfare assimilation of second-generation immigrants in the Netherlands will then be presented, followed by remarks on operationalization and our main hypotheses.

3.2.1 Theoretical Backgrounds and Conceptual Framework

Assimilation theories try to describe and explain the social relations between natives and immigrants in the host society. Debates in the past century between assimilationists and its opponents are centered on one key question: *Do assimilation and acculturation necessarily lead to a promising future of structural mobility for minority groups?*

Classic assimilation theory has been the dominant ideology guiding the understanding of the early immigrant adaptation process. Primarily grounded on observations of the adaptation experience of European immigrants in the American society in the beginning of the 20th century, this school of thought features scholars from the Chicago School, Gordon, Warner & Srole, Alba & Nee, to name but a few. The central idea is that, immigrants, being the "periphery", come into contact with the natives, the "unified core", and gradually adapt to their customs and values through the process of acculturation. With full acculturation, immigrants will be completely absorbed into the white American mainstream which, figuratively, functions as a melting pot. In one of the most recognized works by Gordon (1964), he devised a theoretical framework on the seven stages of assimilation: acculturation is the prerequisite to any other form of assimilation, followed by a non-linear process of structural assimilation, marital assimilation, identificational

assimilation, attitudinal assimilation, behavioural assimilation, and civic assimilation. The process will end up in an ultimate absence of prejudice, discrimination, and value and power conflict towards immigrants.

While the classic assimilation theory envisions a rosy future for the second generation, its variants sprung up in the latter half of the century. With an anomalous forecast of "second-generation decline", Gans (1992) questions the fundamental assumptions of the straight-line or bumpy-line assimilation theory. In his view, the classic assimilation theory and its optimistic outlook was based on the context of economic prosperity, but fundamental changes have occurred in the American society after the second world war. Economic restructuring has left behind the mode of labor-intensive economic growth, which used to favour economic integration of immigrants and their children. New waves of immigration are now composed of non-Caucasian migrants from much more diverse ethnic and socio-economic backgrounds, which leaves room for persistent discrimination from the white mainstream society. He envisions "second-generation decline" as one of the possible scenarios at the turn of the century, particularly for the dark-skinned, poor and unskilled immigrant children, whom he foresees to be trapped in the loop of joblessness, poverty and related pathologies such as crime, alcoholism, and drug abuse.

Sharing Gan's less optimistic outlook, Portes & Zhou (1993) put forward the segmented assimilation theory to fill the gap in understanding contemporary integration experiences of the children of immigrants. In view of persistent differences in integration outcomes between the children of immigrants and the native children, they suggest that the assimilation process is segmented into diverse trajectories through three acculturation mechanisms. Through consonant acculturation, the children of immigrants are adapted to the mainstream culture and find upward assimilation to join the middle class. However, the process of acculturation might as well leave the second generation disillusioned by discrimination and dim prospects for mobility. Without sufficient parental control and support, these children will experience downward or stagnant assimilation into the underclass through dissonant acculturation and find themselves entrapped in permanent exclusion. Besides these two mechanisms, immigrant children may still find upward mobility through selective acculturation – obtaining support from ethnic networks by retaining their own ethnic identity.

Unlike the situation of their parents, for whom the interplay between modes of incorporation and human capital determine their fate, whether structural and family disadvantages exist becomes the pivotal question. At the structural level, modes of incorporation in the receptive context reflect political and cultural attitudes of the mainstream society towards different ethnic minorities. For example, racial or ethnic discrimination or hostility against children of "unwanted" migrants such as illegal migrants may be pervasive. This can be captured by one's ethnic origin. At the community level, the presence of strong ethnic communities may buffer the negative effects of

discrimination through providing useful resources, such as social capital and network. At the family level, the amount of financial and non-financial resources provided by parents are deemed the most relevant. On one hand, children from families with higher socio-economic status have more support from their parents to excel in schools, which could later on translate into attainment of higher education and higher occupational status. On the other hand, growing up in a broken family implies less parental support and control. Parental separation may lead to lower psychological well-being, behavioural problems and disruption in school performance (Härkönen, Bernardi and Boertien, 2017). The consequent higher likelihood of being sorted into lower educational tracks is associated with early school drop-outs and a lower likelihood of securing prestigious and well-paid jobs in the future. The most extreme scenario, given a lack of parental control, is that these children would resort to the underclass subculture and delinquency, as observed for some second-generation Hispanics in the American case.

3.2.2 Evidence on Welfare and Economic Assimilation of the Second Generation

The following sub-section will review existing evidence in the literature regarding two hypotheses: persistent disadvantage and second-generation decline. As mentioned above, although semantically similar, the comparison groups differ: the persistent disadvantage hypothesis compares the second generation to the native populations, and the second-generation decline hypothesis compares the second generation to their immigrant parents. Empirical evidence for the Netherlands has been focused on the four largest ethnic minorities: Turkish, Moroccans, Antilleans and Surinamese. The former two are predominantly low-skilled guest workers and their family who came through family reunification, and the latter two post-colonial migrant groups who are relatively familiar with the Dutch culture and language.

Existing evidence is mixed regarding both hypotheses, though to a lesser extent for the second-generation decline hypothesis. In general, intergenerational progress is notable in terms of educational attainment, but it has not been proportionally translated into comparable levels of labor market success vis-à-vis their Dutch native counterparts. In line with existing evidence in the European and American contexts, parity is yet to be observed. To note, such intergenerational comparisons have been based primarily on group averages rather than direct comparison between immigrant parents and their children, due to a lack of intergenerational data until more recently. Despite limitations, these studies serve as an important base for reviewing evidence for and against the second-generation decline hypothesis on an aggregate level. The main findings of each relevant study are summarized in Table 3.1 below.

The strongest support for intergenerational improvement and ethnic parity is provided by Zuccotti, Ganzeboom & Guveli (2015). Using repeated cross-sectional biannual survey data from

Table 3.1: Summary of Dutch evidence on economic and welfare assimilation of the second generation by outcome variables

Outcome	Persistent disadvantage hypothesis			Second-generation decline hypothesis		
	Support	Study	Specifics	Support	Study	Specifics
Education	+	Crul & Doomernik (2003)	Turks & Moroccans	-	Zuccotti et al. (2015)	Turks
	+	Zuccotti et al. (2015)	Turkish women	-	Witteveen & Alba (2018)	Turks & Moroccans
	-		Turkish men			
	=	Crul (2018)	Turkish & Moroccan			
LM participation	+	Tesser & Dronkers (2007)	Turkish, Moroccan, Antillean & Surinamese men	-	Tesser & Dronkers (2007)	Turkish, Moroccan, Antillean & Surinamese women
	-	Tesser & Dronkers (2007)	Turkish, Antillean & Surinamese women			
Income	+	Tesser & Dronkers (2007)	Turkish, Moroccan, Antillean & Surinamese except Surinamese men			
	-	Crul (2018)	Turks & Moroccans			
Employment / Unemployment	+	Witteveen & Alba (2018)	Turks & Moroccans	=	Tesser & Dronkers (2007)	Men
	+	Gracia, Vazquez & van de Werfhorst (2014)	Turks & Moroccans			
	+	Tesser & Dronkers (2007)	Turkish, Moroccan, Antillean & Surinamese men			
	+	Euwals et al. (2007)	Turks			
	+	De Vries & Wolbers (2004)	Turks, Moroccans, Antilleans & Surinamese			
	+	Crul & Doomernik (2003)	Turks & Moroccans			
	=	Crul (2018)	Turks & Moroccans			
Permanent contract	+	Witteveen & Alba (2018)	Turks & Moroccans except Moroccan women			
	+	De Vries & Wolbers (2004)	Turks, Moroccan, Antillean & Surinamese except Moroccan men			
	+	Euwals et al. (2007)	Turks & Moroccans			
Occupational status	+	De Vries & Wolbers (2004)	Turks, Moroccans, Antilleans & Surinamese			
	+	Euwals et al. (2007)	Turks & Moroccans			
	+	Gracia, Vazquez & van de Werfhorst (2014)	Turkish men			
	-		Turkish and Moroccan women			
	-	Zuccotti et al. (2015)	Turks			
	-	Tesser & Dronkers (2007)	Turks, Moroccans, Antilleans & Surinamese			
	=	Crul (2018)	Turks & Moroccans			
Welfare use	+	Zorlu (2013)	Turks, Moroccans, Antilleans & Surinamese	=	Zorlu (2013)	

Source: Author. Note: + indicates support for the hypothesis; = indicates mixed evidence; and – indicates a lack of support for the hypothesis.

2002 to 2010, they compare first- and second-generation Turkish immigrants in nine European countries (the Netherlands, Germany, France, Austria, Belgium, Switzerland, Denmark, Sweden, and Norway) with the native populations and Turks in Turkey. First of all, comparing between the first and second generations, they find evidence for second-generation advance in terms of education, and no support for second-generation decline in terms of occupational status. Optimistic conclusions are also drawn from the comparison between the second generation and the native populations. In terms of years of education, difference from the native population is closed for men after controlling for parental education and occupation and remains statistically significant for women albeit small. In terms of occupational status, difference from the native population disappears once education and parental education and occupation are controlled for. Since this study did not differentiate between the European countries studied, the precise situation of second-generation Turkish in the Netherlands cannot be distinguished.

Shifting the focus of comparisons from inter- to intra-national and from within- to between-group greater heterogeneities are seen (Crul, 2018; Witteveen & Alba, 2018; Gracia, Vazquez & van de Werfhorst, 2014; OECD, 2008; Tesser & Dronkers, 2007; de Vries & Wolbers, 2004). In the study by Crul (2018), the integration experiences of second-generation Turkish and Moroccans are marked by polarization and stark gender differences. Descriptive statistics from 2008 survey data on education level, unemployment rate, occupational status and number of household incomes from paid work are used to show that, comparable proportions of such groups are split into those that enjoy steep social mobility and those that are left-behind. The author argues that such polarization is due to early stratification in the education system, which leads to a "multiplier effect" polarizing the amount of resources possessed by early school drop-outs and the others.

With the use of more recent two-wave survey data (2008-2010 and 2013), Witteveen & Alba (2018) compare the labour market performance of children of Turkish and Moroccan immigrants to the native born before and after the 2008 economic recession. Despite educational advances beyond the first generation, there is evidence for an ethnic penalty, to a larger extent during recession, in terms of probabilities of employment and having a permanent contract, even after controlling for education level and demographic characteristics. Prior to the recession, while the average marginal disadvantage in employment is the largest among Turkish men and Moroccan women than their counterparts, Moroccan women do not suffer disadvantage in having a permanent employment contract. While both ethnic groups are negatively affected by recession, a widening gap in employment from the native population is observed only for the Turkish second generation, which the authors speculate to be related to the reliance on a co-ethnic network for economic opportunities that happen to be concentrated in the most fragile parts of the economy in times of economic downturn.

Using cross-sectional survey data from 2009/2010, Gracia, Vazquez & van de Werfhorst (2014) study the roles of ethnic penalty, family background (proxied by parental education and cultural capital), education, and skills (linguistic and numeracy skills) on employment and occupational status of Turkish and Moroccan second-generation immigrants by gender. To compare these groups to their Dutch native counterparts, the sample includes 2,030 respondents aged 23-49 with either one or both parent(s) coming from Turkey, Morocco or the Netherlands. For men, an ethnic penalty largely explains the relatively low employment participation among Moroccans and Turks, whereas family background explains the disadvantaged occupational status found only for Turkish men. As for women, their relatively low employment participation is mainly explained by family background and linguistic proficiency, but they achieve higher occupational status than their Dutch native counterparts with similar social origins. Education is found to strengthen ethnic disadvantage, rather than reduce it. To be noted, such results are obtained from a sample that: (i) is overrepresented by Dutch natives (86%) and thus contains few observations of Turkish and Moroccan second-generation immigrants; and (ii) excluded ethnic intermarriages between the Turkish, Moroccans and Dutch natives, meaning the Turkish and Moroccan 2.5 generation with one Dutch parent are not observed.

In line with this, OECD (2008) summarizes empirical evidence for the Dutch case and concludes that labour market outcomes in terms of employment rate, unemployment rate and wage differentials of the second generation are well below those of Dutch natives, even after controlling for education level. However, post-colonial migrants, to a larger extent for Surinamese than Antilleans, have a relatively advantaged position.

Using repeated cross-sectional survey data from 1988, 1991, 1994 and 1998, Tesser & Dronkers (2007) compare the labour market performance of first- and second-generation Turkish, Moroccans, Antilleans and Surinamese with that of Dutch natives. The greatest sign of parity is observed in labour market participation among women, whose gap from Dutch women has significantly reduced from the first generation to the second generation except for Moroccan women. The occupational status appears similar to Dutch natives after controlling for age, education, and economic fluctuations. Except Surinamese men, their income is comparable to that of Dutch natives in the same occupational class. However, for all men, continued higher unemployment and lower labour force participation across generations is observed compared with Dutch men. Since the data is from two to three decades ago, the number of second-generation youths already in the labour market was small in the sample, and because of this, observed outcomes are likely to reflect early labour market performance of predominantly early school leavers.

De Vries & Wolbers (2004) study ethnic differences in early labour market performance of school leavers using survey data from 1998. Compared with Dutch native youths, the four largest groups

of ethnic minorities are less likely to have paid employment, permanent employment and employment with occupational prestige. An ethnic gap in having paid employment remains even after controlling for education level and parental education level, but not in having a job with occupational prestige for Moroccans. The lower occupational prestige enjoyed by Turkish immigrants can also be largely accounted for by these two factors. With regards to the research design, while this study includes both first- and second-generation immigrants in the sample without distinguishing between them, the number of second-generation is few and those in the sample are usually the early school leavers following lower educational tracks.

The least optimistic findings are provided by Zorlu (2013), Euwals, Dagevos, Gijsberts & Roodenburg (2007) and Crul & Doomernik (2003). Using 2005 register data, Zorlu (2013) finds a similar degree of welfare dependence between the second generation with Turkish, Moroccan, Surinamese and Antillean backgrounds and first-generation immigrants from these groups even after controlling for age differences. As for the comparison with western immigrants, second-generation immigrants with non-western backgrounds are uniformly more likely to receive social assistance, with an unconditional gap of five times and a conditional gap of two times higher. They are found also to be overrepresented in disability and unemployment benefits, although in the latter it is not the case for the second generation with one Dutch parent. The distinction between the 2.25/2.5 generation and 2.75 generation was not made in this study.

Euwals, Dagevos, Gijsberts & Roodenburg (2007) compare labour market integration outcomes of first- and second-generation Turks in the Netherlands and Germany using survey data from 2002. Lower employment rates, tenured job rates and job prestige scores are found compared with the native population. In the former two outcomes, a particularly large standardized gap is observed for the Dutch case. The authors argue that the results can be due to differences in past immigration policies between the two countries – the Netherlands was more lenient in enforcing return than Germany. Discrimination is also a possible cause as a "glass ceiling" seems to exist for immigrants. It is to be noted that this study treated the two generations as one homogenous group per country, and thus it is not known the exact performance of the second generation nor can intergenerational progress be traced.

Crul & Doomernik (2003) show, with descriptive statistics from 1998, that the average educational status of second-generation Turkish and Moroccans is weak. Among those with a short education track, they are hit the hardest by unemployment and discrimination. The authors suggest that the acculturation patterns and the amount of social resources are different for the two groups, which carry both positive and negative influences on their integration. While entrepreneurship and ethnic ties are much stronger among Turkish immigrants leading to a more favourable economic position, the lack of such ethnic connection among Moroccans leads to fewer barriers to acculturation and notably more female success stories.

Descriptive statistics from official integration reports may complement existing scientific evidence in areas where data availability or accessibility is a problem. The 2018 Integration Report (CBS, 2018) provides an important overview of key characteristics and trends of the four largest ethnic minorities in the Netherlands. In terms of family composition, Turkish and Moroccans largely marry within their own ethnic group, while mixed marriage is much more prevalent among Antilleans and to a lesser extent Surinamese. While couples (married and unmarried) consisting of two Turkish or two Moroccans are as stable as Dutch couples, the least stable is mixed couples with one Turkish or Moroccan man and a Dutch woman. In terms of education, larger proportions of students, both Dutch native and the second generation, are entering higher education over the past decade. At the final year of primary school, more Dutch than non-Dutch students are given recommendation letters to enter higher-level educational tracks HAVO (senior general secondary education) and VWO (pre-university education). The rate among Dutch students is almost double of that for Turkish and Antillean students, followed by Moroccan and Surinamese second-generation who still lag well behind. As for enrollment in the lowest education track VMBO (prevocational education), there are more students with non-western backgrounds than Dutch students. At the MBO level (secondary vocational education), early drop-out rates among non-western students are two times higher than that of Dutch students, despite a significant decline over the past decade. In terms of labour market performance, compared with first-generation immigrants, the second generation is less dependent on social benefits and has higher employment rates and incomes. Compared with Dutch natives, however, the second generation is still relatively more likely to be unemployed, have temporary job contracts and lower incomes and receive social benefits. This largest gap in unemployment from Dutch natives is observed among the second generation with Moroccan and Surinamese backgrounds.

While there is a lack of academic studies on the economic integration of the children of refugees, the profiles of first- and second-generation immigrants from the four largest refugee groups (Afghanistan, Iraq, Iran and Somalia) in the Netherlands have been outlined by SCP (2011). Descriptive statistics from survey data collected in 2009 are used to compare their socio-economic position with that of Dutch natives and non-refugee ethnic minorities. The most urgent problem highlighted in the report is high unemployment among refugees, and in particular, youth unemployment. One-third of Somalis and one-fifth of Iranians in the labour force were unemployed, and Afghans and Iraqis with unemployment rates in between the two. Such a gap is not only significant from the Dutch natives, but also compared with other non-refugee ethnic minorities. Over-qualification and skill mismatch is a common problem for refugees. Despite their comparably high education levels, Iraqis and Afghans occupy jobs at the bottom of the occupational ladder more often than Turkish and Moroccans who have much lower education levels. While such a situation is even more common among Somalis, Iranians who manage to find

a job however climb up the ladder and occupy more middle- and senior-level jobs. Self-employment is also much more common among Iranians than Somalis. In terms of school dropout at the secondary education level, the rate is the highest among Somalis and the lowest among Afghans. For Iranians and Iraqis, such rates are higher than that for Dutch native students.

Drawing on existing evidence from academic and descriptive studies, we summarize factors relevant to the welfare and economic assimilation of the second generation, which are in line with general findings in the literature across country contexts (see, for example, Stuhler, 2018). At the macro level, immigration policy, education policy especially early track-choice, and economic fluctuations lay out and alter the opportunity structure. At the meso level, ethnicity and socio-economic background of both parents, their ethnic network, and the neighborhood appear to shape the environment where the children grow up. At the individual level, heterogeneities can be seen across gender, age and education levels. Overall, the effect of an ethnic penalty is observed to outweigh social and demographic backgrounds in terms of welfare use, employment and job tenure, although it is not the case in educational attainment and occupational status. There is, however, no evidence of second-generation decline in any economic outcome, with the least extent of intergenerational mobility observed to be stagnant. Taking these into account, in this study, we expect to find ethnic difference in the probability of welfare utilization in spite of intergenerational mobility and heterogeneous effects of ethnic penalty. These factors will be assessed and incorporated through our conceptual framework in the next section into our estimation model.

Last but not least, we identify four areas of knowledge gap which this research aims to fill. First, the overall prospects for welfare and economic assimilation for second-generation young adults with immigrant backgrounds other than the four largest ethnic minorities in the Netherlands remain unknown. Second, no study has examined the existence and extent of segmented assimilation among the second generation in terms of welfare assimilation for the Dutch case. Third, while the average labour market performance of the first and second generation has been compared, empirical evidence on the intergenerational mobility in terms of welfare utilization between immigrant parents and their children is absent. Last, no study has quantified the effects of family and structural disadvantages altogether for the explanation of welfare assimilation outcome. This is can be due to difficulties in linking between the second generation and their parents' information, which has been made possible with panel register data.

3.2.3 Operationalization and Hypothesis

Empirical evidence calls for caution regarding the hypothesis that ethnic network would offer an alternative route to mobility. For one thing, there is limited proof for ethnic cohesion as a route

to upward mobility in the European context (Thomson & Crul, 2007). For another, while the ethnic resilience perspective regards withholding one's ethnic identity as something beneficial to assimilation, Thomson & Crul (2007) point out that this might not be entirely true. Strong ethnic cohesion might, on the contrary, become oppressive for some by imposing stress and strict cultural norms through censoring from the closely-connected ethnic community. This is the case for many female second-generation Turks in the Netherlands who are pressured by family, and ultimately the Turkish community, into getting married early instead of entering higher education (Crul & Vermeulen, 2003). Besides, ethnic groups are not homogenous – not only in terms of size, but also in terms of quality. Two aspects of ethnic group quality have been singled out in the literature: the extent of cohesion, and the amount of resources to be shared across classes. The influence of ethnic cohesion can be seen in the contrast between the Turkish and Moroccan communities in the Netherlands. Albeit of similar size, they have different cultural preferences over retaining close ties with their own ethnic group members. This determines the extent to which intra-ethnic contact will have an effect on their integration, which is in turn inseparable from the amount of resources available in their ethnic network. The importance of such resources is the conclusion drawn by Waters, Tran, Kasinitz & Mollenkopf (2010), when they compare the integration between two groups with strong ethnic cohesion, the Chinese and Puerto Ricans in the U.S., and observe upward mobility to be common among the children of Chinese but not of Puerto Ricans.

In view of the complexities suggested by these empirical findings that remain underexplored by segmented assimilation theory, insights from Borja's ethnic capital theory will be incorporated into the conceptual framework to redefine the role of ethnic network. While the traditional literature on intergenerational mobility has long recognized the effect of parental inputs on social mobility of the children, Borjas (1992) further identifies the external effect of ethnicity in the human capital accumulation process. He finds the skill level of children to be statistically significantly correlated to, besides the parental skill level, the average skill level of the ethnic group from immigrant parents' generation, which serves as an indicator of what he calls "ethnic capital" or "ethnic spillover". Upon this basis, he further identifies three elements in the ethnic capital variable that could affect children's mobility patterns – (1) the ethnic spillover per se, (2) the neighborhood effect, and (3) the degree of ethnic segregation (Borjas, 1994). He argues that the ethnic capital variable could be indirectly capturing the socio-economic characteristics of the neighborhood; at the same time, the effect of ethnic spillover is likely to be more important in areas with a higher degree of ethnic concentration. Borjas' ethnic capital theory summarizes the key mechanisms of how ethnic capital may affect the economic mobility of younger generations and enables us to disentangle part of the ethnic origin effect.

We adapt Borja's ethnic capital theory to our research in the following ways: (1) the ethnic spillover effect, which allows resources to be shared within one's ethnic group, is captured by the

share of highly educated individuals among parents' co-nationals, given that the common measure of average income level of co-nationals might have collinearity with the welfare receipt variable; (2) the ethnic concentration effect, which offers the channel through which such ethnic spillover can occur, is captured by the number of co-nationals at the municipality level, given that the link between co-ethnic contact and labour market integration is likely not to be restricted to contact at the neighborhood level but related to the economic opportunities present more broadly at the local level, such as through co-ethnic employment; (3) the neighborhood effect, which proxies the environment where children grow up, is captured by the share of highly educated individuals in the neighborhood. While the former two capture intra-ethnic social capital, the latter captures both inter-ethnic and intra-ethnic social capital.

Another complementation to the segmented assimilation theory is the role of individual aspiration. While segmented assimilation theory sheds light on the higher-level dynamics which shape the opportunity structure, there is a lack of discussion about the agency of migrants. Considering that immigrant integration is a product of immigrant capacity and immigrant aspirations (Lutz, 2017), individual aspirations will determine the extent to which available opportunities can be turned into economic success or progress. Given the lack of cultural variables in our dataset, we will employ neighborhood choice, namely the share of Dutch natives in the neighborhood, during early adulthood of young adults as a proxy of their aspiration for integration into the Dutch society.

Operationalizing these America-originating concepts requires contextualization. In two ways we follow the practice in Chapter 2 (Section 2.2.3). First, the concepts of assimilation destination and mobility will be differentiated and examined respectively instead of altogether. As the terms "upward assimilation" and "downward assimilation" in the segmented assimilation theory tend to mix up the empirically unparallel concepts, we will refer to the trajectories as "assimilation into the middle-class" and "assimilation into the working class", and complement such outcome analysis with intergenerational comparison of mobility patterns. Second, we continue to focus on the comparison with Dutch natives, which is why we refrain from assuming the presence of an underclass as in the American context when empirical evidence for the Dutch case did not suggest so. The bottom sector thus refers to the working class. Third, we will focus on the links between macro-, meso- and micro-level factors and the outcomes of assimilation instead of the acculturation mechanisms. Due to the lack of data on cultural or identity-related information, identification of the exact acculturation mechanism undertaken by each individual is not possible. This is also due to the lack of evidence proving direct effects of the three acculturation mechanisms on assimilation (Waters, Tran, Kasinitz & Mollenkopf, 2010).

Drawing on segmented assimilation theory, ethnic capital theory and empirical evidence, we formulate the following hypotheses: second-generation immigrants who face a less favourable mode of incorporation (non-western background) and low family social capital (low parental socio-economic status and a lack of family structure) are likely to experience the least extent of welfare assimilation and end up in a marginalized position relative to the mainstream of the Dutch society. Those with a favourable mode of incorporation (western background) and high family social capital (high parental socio-economic status and a complete family structure) are the most likely to achieve mainstream assimilation. A middle-range alternative pathway is available for those whose intraethnic and interethnic social capital is sufficiently strong to overcome disadvantages incurring from negative modes of incorporation and family social capital. Individual factors such as human capital and aspiration for integration are expected to contribute positively to their welfare assimilation. Nevertheless, unlike the assumption of segmented assimilation theory but in line with empirical evidence, we expect intergenerational progress to be prevalent regardless of their assimilation outcomes. The main hypotheses are summarized in Table 3.2 below.

Table 3.2: Conceptual framework

Inputs		Outcomes		
Level	Main determinants	Assimilation outcome	Intergenerational mobility	
Macro	Mode of incorporation	– Assimilation to middle class – Assimilation to working class – No assimilation	Reference: First generation	Reference: Parents
Meso	Social capital – Interethnic – Intraethnic – Family		Progress / Decline	High / Low mobility
Micro	Human capital			
	Aspiration for integration			

Source: Author's own illustration.

3.3 Data and Methodology

3.3.1 Estimation issues of intergenerational mobility

Black & Devereaux (2011) summarized three methodological issues for intergenerational mobility estimation noted in the literature, which relate to decisions about the observation period for our dependent variable welfare receipt status of young adults, and our explanatory variable parental income. First of all, the possibility of transitory fluctuations needs to be taken into account. Variables such as income and welfare receipt can be highly volatile throughout one's lifetime. Period-specific effects or transitory poverty due to occurrence of certain life events could bias the estimates if single-year data is used. In view of this, our observation period for welfare receipt is five years (2010-2015), and we test several age ranges during which parental welfare receipt status is retrieved.

This relates to another estimation issue, namely, the lifecycle bias. It has been proven that the period in one's lifecycle at which such data is taken matters. Behrman and Taubman (1990) compare the effects of father's earning on child's earning by taking such parental data from different points in life: (1) when the youth was 15, (2) between the ages 14 and 22, and (3) average sample age of youths at 26. They find that the association is the strongest when father's earning is taken before the end of compulsory education, when the decision of whether the child continues education or not may be subject to liquidity constraint effect. Such result aligns with general findings in the literature. This is the reason why, in this study, age 16, by which Dutch compulsory education ends, is used as the threshold to account for potential liquidity constraints confronted beforehand.

Equally important is age-related error in variable bias, which relates to the age when the data for our dependent variables of young adults' and parents' welfare receipt status is taken. We include as regressors the age of young adults during the observation period, and the age of their parents when their welfare receipt status was observed during their children's adolescence. In addition, we exclude parents whose age approaches the retirement age, the chosen threshold of which in our case is 60, in order to minimize the bias caused by using welfare program as an alternative exit pathway into early retirement. The literature has also drawn attention to potential noise in the earning elasticity during initial years of work cycle for youths, which we cannot perfectly overcome due to relatively few years of data containing the income variable (only since 2003), but aim to minimize through observing individuals over a longer period (i.e. five years).

3.3.2 Sample and Variable Description

Family-level information from six birth cohorts (1987-1992) who turned 16 between 2003 and 2008 are retrieved. This time span is chosen since 2003 is the first year when the income variable became available in the dataset. During the observation period 2011-2015, we follow their transition from school to labor market to evaluate their early labour market performance. Only young adults having left full-time education, moved out of parental home, whose parents were aged below 60 at the point of observation for their family characteristics, and having no missing information on parental origin and identifiers. The sample consists of 474,086 Dutch native (1,509,009 observations) and 76,810 second-generation (232,518 obs.) young adults. Descriptive statistics of the sample can be seen in Table 3.3 below.

Kleinepier & de Valk (2014) report that, by the age of 25, on average about 20% of Dutch, Turkish and Moroccan young adults still live in the parental home. Young adults that reside with their parents are, on one hand, atypical in the Dutch context and hence might introduce selection bias. On the other, young adults' earning from their parents' earning cannot be separated if they stay

in the same household, as social assistance receipt is dependent on household income. One of the limitations of this study is that the observation period is relatively short for groups of second-generation youths who enter the sample in later years due to relatively late arrival of their parents. This is particularly the case for refugee children born in the Netherlands, as most refugees came between the 1980s and 1990s. As a result, the majority of them only turned 18 during later years of our observation period, meaning that we will not be able to trace their early labour market performance for as long as we do for the other groups.

The dependent variable is welfare utilization probability. Social assistance and unemployment benefit are encompassed in the definition of welfare in this research due to their representation of economic marginalization. The four sets of key explanatory variables are summarized in Table 3.4 below.

Table 3.3: Descriptive statistics of estimation sample by ethnic / regional origin

Variable	Dutch natives	EU	Other Europe	MENA region	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Social assistance receipt status	0.025	0.045	0.055	0.119	0.079	0.035	0.046	0.110
Unemployment benefit receipt status	0.028	0.031	0.041	0.035	0.037	0.028	0.028	0.038
Lagged welfare receipt status	0.045	0.065	0.081	0.130	0.090	0.053	0.058	0.120
Initial welfare receipt status	0.044	0.065	0.078	0.124	0.088	0.054	0.059	0.121
Parental ethnic origin								
Dutch natives								
Both parents born abroad		0.088	0.924	0.878	0.315	0.280	0.107	0.568
One second-generation parent and one parent born abroad		0.090	0.017	0.012	0.073	0.100	0.101	0.056
One Dutch parent and one parent born abroad		0.822	0.059	0.110	0.612	0.620	0.791	0.376
Share of highly educated parents' co-nationals in 2003	8.308	6.994	2.511	2.798	5.407	7.198	7.119	6.247
Number of parents' co-nationals in municipality in 2003 (log)	10.411	9.275	8.496	8.576	9.018	8.531	9.335	9.286
Share of highly educated neighbors in 2003	6.197	6.743	6.225	6.922	7.177	7.066	7.994	6.909
Either parent's main income source as welfare receipt during 15-16	0.060	0.123	0.319	0.396	0.209	0.140	0.141	0.244
Parents' age at 16	46	47	42	48	47	49	47	45
Parents' divorce status	0.204	0.330	0.289	0.224	0.468	0.284	0.385	0.538
Education level								
Low	0.250	0.316	0.437	0.407	0.315	0.235	0.275	0.382
Middle	0.341	0.310	0.370	0.359	0.332	0.309	0.312	0.338
High	0.409	0.374	0.193	0.234	0.353	0.456	0.413	0.280
Share of Dutch native neighbors	78.682	73.067	57.638	57.848	63.468	67.881	68.708	60.517
Female	0.577	0.576	0.512	0.524	0.569	0.573	0.571	0.571
Age	25	25	25	25	25	25	25	25
Type of household								
Single-person household	0.324	0.367	0.301	0.360	0.408	0.379	0.397	0.358
Unmarried without kids	0.380	0.360	0.082	0.092	0.293	0.339	0.332	0.236
Married without kids	0.088	0.050	0.261	0.135	0.036	0.054	0.052	0.065
Unmarried with kids	0.068	0.087	0.031	0.035	0.084	0.071	0.067	0.107
Married with kids	0.089	0.058	0.228	0.174	0.039	0.059	0.059	0.063
Single-parent household	0.018	0.035	0.023	0.038	0.075	0.029	0.039	0.102
Other household types	0.020	0.029	0.063	0.150	0.037	0.057	0.036	0.046
Institutional household	0.013	0.016	0.010	0.016	0.028	0.012	0.019	0.023
Observation year								
2011	0.109	0.116	0.133	0.130	0.115	0.108	0.109	0.122
2012	0.156	0.158	0.169	0.169	0.158	0.155	0.154	0.161
2013	0.200	0.199	0.199	0.198	0.196	0.197	0.197	0.197
2014	0.247	0.244	0.232	0.234	0.241	0.244	0.249	0.238
2015	0.289	0.284	0.268	0.269	0.291	0.295	0.290	0.282
Province								
Groningen	0.048	0.038	0.012	0.007	0.030	0.033	0.026	0.029
Friesland	0.046	0.022	0.003	0.008	0.015	0.019	0.016	0.016
Drenthe	0.029	0.014	0.003	0.004	0.018	0.012	0.007	0.009
Overijssel	0.077	0.055	0.086	0.016	0.032	0.048	0.040	0.024
Flevoland	0.023	0.023	0.018	0.026	0.023	0.027	0.029	0.064
Gelderland	0.127	0.086	0.098	0.051	0.077	0.087	0.068	0.049
Utrecht	0.087	0.073	0.072	0.122	0.067	0.085	0.106	0.061
Noord-Holland	0.149	0.205	0.203	0.261	0.207	0.234	0.313	0.243
Zuid-Holland	0.194	0.206	0.343	0.347	0.401	0.264	0.260	0.400
Zeeland	0.023	0.041	0.008	0.006	0.009	0.012	0.011	0.012
Noord-Brabant	0.144	0.128	0.129	0.113	0.086	0.127	0.092	0.078
Limburg	0.055	0.109	0.024	0.037	0.035	0.052	0.031	0.015
Provincial unemployment rate	6.643	6.630	6.687	6.741	6.869	6.738	6.750	6.938
Number of observations	1,509,009	40,207	50,988	54,811	8,273	28,685	6,133	43,421
Number of individuals	474,086	13,010	16,632	17,613	2,892	9,848	2,122	14,695

Table 3.4: Definition of key explanatory variables

	Variable	Definition / Measurement
Modes of incorporation	Regional origin	EU, other Europe, MENA, Sub-Saharan Africa, Asia, Americas & Oceania, Suriname & Caribbean
	Parents' origin	2.0, 2.25-2.5, 2.75 generation
Social capital	Ethnic capital	Share of highly educated individuals among parents' co-nationals in 2003 (%)
	Ethnic concentration	Number of parents' co-nationals at municipality level in 2003 (log)
	Neighborhood effect	Share of highly educated neighbors in 2003 (%)
	Parents' socio-economic status	Whether either parents' main income source was social assistance / unemployment benefit receipt when their child was 16 years old
	Parents' divorce status	Whether parents divorced by the age of 16
Individual characteristics	Education level	Low, middle, high (see Appendix 1 for means of categorization)
	Neighborhood choice as proxy of aspiration for integration	Share of Dutch neighbors in early adulthood (%)
	Gender	
	Age	

3.3.3 Model Specification

Despite the fact that an overwhelming proportion of welfare utilization and assimilation studies work with a static model, a recent study by Akay (2016) proposes the use of a dynamic employment assimilation model to avoid biased estimates of assimilation profiles through taking into account the dynamic nature of such processes. Built upon this basis, a dynamic correlated random-effects (CRE) probit model will be used to estimate the marginal effects of key explanatory variables on welfare utilization probability and the unconditional and conditional marginal probabilities across subgroups.

The basic dynamic random effects model is demonstrated in equation 1 below. Y refers to the latent probability of welfare receipt. Y_{it-1} is the lagged status of welfare receipt, and γ can be interpreted as the degree of structural state dependence (Heckman, 1981). Only one lag of the dependent variable is and can be used when controlling for initial conditions (Wooldridge, 2005, p. 42). X is a vector of covariates. μ captures the individual-specific unobserved heterogeneity. ε is the error term. These two error terms are assumed to be uncorrelated and normally distributed with mean zero. The observation period is 2011-2015, with 2010 as the initial period. Two problems are to be solved: the endogenous covariates problem and initial conditions problem. The endogenous covariates problem arises if there is correlation between the

unobserved heterogeneity and the covariates. The initial condition problem occurs if the unobserved heterogeneity is correlated with Y_{i0} and thus with lagged status, unless the initial condition is exogenous. For example, if the first wave of observation for all individuals starts at the age of 18, the first year eligible for welfare, there is no initial conditions problem. Otherwise, specific estimators are needed to deal with this problem.

$$Y_{it} = \alpha + Y_{it-1}\gamma + X_{it}\beta + \mu_i + \varepsilon_{it}\,, \qquad t = 1, \dots, 5 \qquad (1)$$

In the econometrics literature, three common approaches have prevailed in the setting of dynamic binary choice models – Heckman's reduced-form approximation (1981), Wooldridge's conditional maximum likelihood estimator (2005), and Orme's approach (2001). Instead of modelling the initial state as in Heckman's and Orme's methods, Wooldridge proposes to model the distribution of the unobserved effect conditional upon Y_{i0} and $X_i = (X_{i1}, \dots, X_{iT})$ (Wooldridge, 2007). Wooldridge's approach approximates the specification of the Chamberlain-Mudlank correlated random effects (CRE), which deals with the endogenous covariates problem by relaxing the strict exogeneity assumption of random effects between μ_i and X_i through $\bar{X}_i$. This specification has been commonly applied in empirical research through using individual-specific time-averaged values, including the initial period, of time-varying covariates (e.g. Akay, 2016; Stewart 2007; Biewen 2009), with the advantages of applicability on unbalanced panel and parsimony.

$$Y_{it} = \alpha + Y_{it-1}\gamma + X_{it}\beta + Y_{i0}\theta + \bar{X}_i\tau + \mu_i + \varepsilon_{it}\,, \qquad t = 1, \dots, 5 \qquad (2)$$

The advantage of Wooldridge's approach is ease of implementation. The initial conditions need not be modeled as required in other approaches, and it can be estimated with existing or user-written programs in Stata: xtprobit and xtpdyn (Grotti and Cutuli, 2018). Although Wooldridge's approach was developed to be implemented on balanced panels, it may be applied to unbalanced panels if attrition is random (Cappallari & Jenkins, 2008). Its application in unbalanced panels by Cappellari & Jenkins (2008) and Akay (2007) did not suggest presence of substantial bias. Cappellari & Jenkins (2008) demonstrate that similar results are provided by the three estimators on both balanced and unbalanced panels that are sufficiently long. Arulampalam & Stewart (2009) also find that, for T>3, similar insubstantial bias is produced across Wooldridge's and Heckman's approaches. Akay (2007) even suggests that, for panels with longer durations (5-8 periods), the Wooldridge method works better than Heckman's approach.

3.4 Estimation Results

3.4.1 Patterns of Welfare Assimilation

Table 3.5 reports the average probabilities of welfare receipt, probability ratios to average Dutch native young adults and the corresponding destination of assimilation according to results of significance testing. The predicted probability difference from Dutch native young adults is visualized in Figure 3.1. The definition of various types of assimilation is as follows. The risk of assimilation to the working class is deemed to occur if t-test shows that the predicted probability is either not significantly different from or is significantly higher than that of Dutch native young adults with low education level. For whose predicted probability is shown by t-test to be significantly lower than such threshold, they are considered assimilating to the middle class. No assimilation occurs if t-test sows that the predicted probability is either not significantly different from or is significantly higher than the value which doubles the AAP estimated for Dutch native young adults with low education level. T-test is also applied to identify groups that reach parity with average Dutch natives. All predicted probabilities are statistically significant at 1% level.

When comparing second-generation young adults to Dutch native young adults, an education gradient is seen as all with higher education are predicted to assimilate to the middle class and reach parity with average Dutch native young adults. The majority of those with low education level and some with middle education level are predicted to be at risk of either assimilation to the working class or no assimilation at all. For this group of second-generation young adults who are characterized by human capital disadvantages, an immigrant-native gap almost always exists. While women are generally more disadvantaged than men, a stark gender difference is observed among women with low education level, as women with low education level with a background from Sub-Saharan Africa, Americas & Oceania and Suriname & Caribbean have predicted probabilities more than 2 times higher than those predicted for their male counterparts. Together with both male and female second-generation young adults with a background from the MENA region, these groups are at risk of no assimilation with predicted probabilities 4 to 6.5 times higher than that of average native young adults.

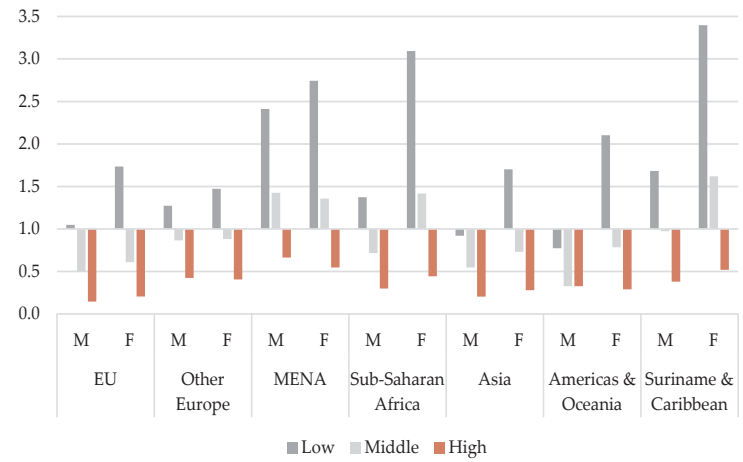
Table 3.5: Predicted welfare utilization probability, its ratio to that of average Dutch native young adults and corresponding assimilation outcome

		Education level					
		Low		Middle		High	
Regional origin	Gender	AAP	Ratio	AAP	Ratio	AAP	Ratio
EU	M	0.093	2.0	**0.044**	0.9	**0.013**	0.3
	F	0.153	3.3	0.054	1.1	**0.018**	0.4
Other Europe	M	0.113	2.4	0.077	1.6	**0.038**	0.8
	F	0.130	2.8	0.078	1.7	**0.036**	0.8
MENA	M	0.213	4.5	0.126	2.7	0.059	1.2
	F	0.243	5.2	0.120	2.6	**0.048**	1.0
Sub-Saharan Africa	M	0.121	2.6	0.063	1.3	**0.026**	0.6
	F	0.274	5.8	0.125	2.7	**0.039**	0.8
Asia	M	0.081	1.7	**0.048**	1.0	**0.018**	0.4
	F	0.151	3.2	0.065	1.4	**0.025**	0.5
Americas & Oceania	M	0.068	1.5	**0.029**	0.6	**0.029**	0.6
	F	0.186	4.0	0.069	1.5	**0.026**	0.5
Suriname & Caribbean	M	0.149	3.2	0.086	1.8	**0.034**	0.7
	F	0.300	6.4	0.143	3.0	**0.046**	1.0
Dutch natives	M	0.066		0.035		0.013	
	F	0.111		0.040		0.017	

Assimilation outcome (in colour)	Parity with native young adults (in bold)
Assimilation to the middle class: <0.088 Assimilation to the working class: >0.088 No assimilation: >0.177	

Note: T-test is performed to compare predicted probabilities against the specific thresholds.

Figure 3.1: Probability ratio to natives with low education level for second-generation young adults by regional origin, education level and gender



To provide a complementary view with regards to the intergenerational progress, Table 3.6 reports their percentage difference in average marginal probabilities of welfare receipt from first-generation immigrants of the same regional origin, education level and gender, the assimilation outcome if the threshold for assimilation to the working class changes from Dutch native young adults to Dutch natives with low education level aged 39-60, and intergenerational progress in the assimilation outcome. Description of the sample and predictions of first-generation immigrants and Dutch natives aged 18-60 can be seen in Chapter 2 (Section 2.3.1). When comparing second-generation young adults to first-generation immigrants of the same regional origin, education level and gender, high degrees of upward mobility is observed in both absolute and relative terms, even for those predicted to be at risk of marginalization. Such intergenerational progress at the aggregate level provides preliminary evidence of second-generation progress rather than decline.

Table 3.6: Predicted probability difference and mobility in assimilation outcome from first-generation immigrants from the same regional origin, education level and gender and corresponding assimilation outcome given the threshold of low-educated Dutch natives aged between 39-60

		Low		Middle		High	
		% change	Mobility	% change	Mobility	% change	Mobility
EU	M	-26%	=	-38%	=	-70%	=
	F	-6%	++	-38%	=	-59%	=
Other Europe	M	-57%	++	-51%	++	-65%	=
	F	-57%	+++	-53%	++	-64%	=
MENA	M	-23%	+	-20%	++	-45%	=
	F	-26%	+	-30%	++	-52%	=
Sub-Saharan Africa	M	-51%	++	-55%	++	-74%	=
	F	-9%	=	-23%	++	-60%	=
Asia	M	-69%	+++	-66%	++	-81%	=
	F	-51%	+	-58%	++	-73%	=
Americas & Oceania	M	-71%	++	-79%	++	-67%	=
	F	-34%	+	-55%	++	-70%	=
Suriname & Caribbean	M	-40%	=	-35%	=	-54%	=
	F	8%	=	8%	=	-32%	=

Assimilation outcome (in colour)	Intergenerational progress (in symbol)
Assimilation to the middle class: <0.132	Upward mobility:
Assimilation to the working class: >0.132	– From no assimilation to middle class: +++
No assimilation: >0.264	– From working class to middle class: ++
	– From no assimilation to working class: +
	Stagnation: =
	Downward mobility: —

Note: T-test is performed to compare predicted probabilities against the specific thresholds.

3.4.2 Determinants

Table 3.7 reports the average marginal effects (AME) of key variables from dynamic CRE probit models estimated separately for (i) all Dutch native and second-generation young adults, (ii) second-generation young adults only, and (iii) young adults from each regional origin. Full regression outputs can be found in Appendix 2 and 3.

Regarding the modes of incorporation, the first regression estimated for all young adults shows that, compared with Dutch native young adults, all second-generation young adults are significantly more likely to receive social assistance and unemployment benefits. Specifically, second-generation young adults with a background from the MENA region and Suriname & Caribbean are more likely to receive welfare than Dutch native young adults by 1.5 and 1.1 percentage points, followed by those from Sub-Saharan Africa and Americas & Oceania (0.8 and 0.6 percentage points respectively). Such ethnic disadvantage relative to Dutch native young adults is the smallest for those with a background from EU and Asia, who are respectively 0.2 and 0.3 percentage points more likely to receive welfare.

Compared with second-generation young adults with both parents born abroad, those with one Dutch parent and one foreign-born parent are less likely to receive welfare (0.8 percentage point), whereas those with one second-generation parent and one foreign-born parent are more likely to receive welfare (1.4 percentage points). It is to be noted that such differences are not statistically significant for young adults with a background from EU countries, Sub-Saharan Africa and Americas & Oceania.

These estimates suggest that structural disadvantage matters, as ethnic penalties are found among young adults equally born and raised in the Netherlands. Our results only partially align with the findings by Zorlu (2013). While he finds that second-generation immigrants with one Dutch parent are less disadvantaged, we find this to be true only for those with one Dutch parent and one foreign-born parent but not for those with one Dutch parent and one second-generation parent. Although having a non-western background indeed adds to probability bonus, the results of this chapter suggest that second-generation young adults, either with western or non-western background, are always more likely than their Dutch native counterparts to receive welfare.

As far as the role of family social capital is concerned, results from the regressions generally support the hypothesis derived from segmented assimilation theory. The parental socio-economic status is summarized by whether either parent's main income source was social assistance or unemployment benefit receipt when the young adult was aged 16. The coefficient of this variable indicates intergenerational elasticity. A higher value means a stronger relationship between parents' welfare receipt status and that of their children and thus lower intergenerational mobility. Such a relationship appears to be relatively strong for second-generation young adults

with a background from Suriname & Caribbean, EU and other Europe, for whom parents' economic reliance on welfare increases their welfare receipt probability by 0.8 percentage point. Second-generation young adults with an Asian background are marked by comparably high levels of intergenerational mobility (0.5 percentage point) that are statistically significant at least at 5% level. This aligns with our prediction that the second-generation decline hypothesis might not be widely applicable as the levels of disadvantage and intergenerational mobility are not always parallel. A lack of family structure, summarized by the dummy variable indicating whether parents divorced by the age of 16, is associated with an average increase in the welfare utilization probability of second-generation young adults by 0.4 percentage point. Its effect is differential, however, and affects those with a background from Americas & Oceania, EU and Asia the most (1, 0.8 and 0.8 percentage points respectively). These results confirm the influence of family environment on the welfare assimilation of children.

The effects of intraethnic and interethnic community social capital are heterogeneous and appear particularly relevant for second-generation young adults with an Asian background. The effect of ethnic capital, summarized by the share of highly educated individuals among parents' co-nationals in 2003, is statistically significant for second-generation young adults on an aggregate level as 1% increase in the share of highly educated co-nationals leads to a reduction in welfare utilization propensity by 0.7 percentage point. In regressions estimated separately for second-generation young adults from each area of origin, the coefficients of ethnic capital remain large but it is only statistically significant for those with an Asian background. After controlling for the amount of ethnic capital, the presence of a large ethnic community at the municipality level in 2003 would marginally increase welfare utilization propensity by 0.2 to 0.4 percentage points for second-generation immigrants with a background from the MENA region, Suriname & Caribbean, Asia and Americas & Oceania. One plausible explanation might be potential reliance on co-ethnic economics before members of ethnic minorities obtain a higher level of self-sufficiency, in which case ethnic concentration during adolescence partially reflects the degree of economic success of the parents of second-generation immigrants. Although not as sizeable as the ethnic capital effect, the neighborhood effect also appears to be important – for second-generation young adults with a background from EU countries, Asia or Suriname & Caribbean, growing up in a neighborhood with a higher share of highly educated neighbors reduces welfare utilization propensity by 3.9 to 5.2 percentage points.

The positive contribution from social and economic resources available in one's ethnic group to mitigating structural barriers to welfare assimilation is the case only for a minority of second-generation immigrants. The hypothesis from segmented assimilation theory that ethnic capital would offer a middle-range pathway to mainstream assimilation for those faced with negative conditions is only partially valid for second-generation immigrants in the Dutch context, which aligns with the general lack of European evidence for ethnic network as a route to upward

mobility described by Thomson & Crul (2007). While Borjas has proven the importance of separating the effect of neighborhood and ethnic concentration from ethnic capital, our results shed light on the differential degrees of importance of such social capital to different ethnic communities.

In addition to key predictors from segmented assimilation theory, other socio-economic and demographic characteristics at the individual level show to influence welfare utilization. Attaining higher education, relative to having only compulsory education, appears to have one of the strongest influences and reduces welfare utilization probability of second-generation young adults as a whole by 2.5 percentage points. It is a particularly important factor to those with a background from the MENA region, Suriname & Caribbean and Sub-Saharan Africa, for whom having higher education reduces their welfare utilization propensity respectively 4.5, 4.3 and 3.6 percentage points.

Living in a neighborhood with 1% higher share of Dutch natives reduces the welfare utilization propensity for second-generation young adults by 0.7 percentage point and such an effect is statistically significant at least at 10% level only except for those with a background from Sub-Saharan Africa or Americas & Oceania. While such choice of residential location is used to proxy individual aspirations for integration, it also partially reflects the amount of intraethnic social capital.

The lagged status of welfare receipt has the strongest positive effects for second-generation young adults from the MENA region and Suriname & Caribbean (7.3 and 4.6 percentage points respectively), followed by those from other Europe and Sub-Saharan Africa (4.2 and 3.4 percentage points respectively). Such strong effect of state dependence indicates that the pace of welfare assimilation is much slower for these groups, among whom those from other Europe and Suriname & Caribbean are simultaneously characterized by low intra-generational and inter-generational mobilities. Being a woman and being one year older, however, increases welfare receipt probability for second-generation young adults by respectively 0.3 percentage point and 0.2 percentage points.

Table 3.7: Average marginal effects of key explanatory variables

	Overall			Ethnic background / Area of origin						
	All young adults	All second generation	Dutch native	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Lagged welfare receipt status	0.018 ***	0.033 ***	0.014 ***	0.024 ***	0.042 ***	0.073 ***	0.034 ***	0.023 ***	0.002 *	0.046 ***
	(0.001)	(0.002)	(0.001)	(0.005)	(0.005)	(0.006)	(0.011)	(0.006)	(0.012)	(0.005)
Area of origin										
Dutch natives	(Ref. group)									
EU	0.002 ***	(Ref. group)								
	(0.001)									
Other Europe	0.001	-0.002								
	(0.001)	(0.002)								
MENA	0.015 ***	0.014 ***								
	(0.002)	(0.002)								
Sub-Saharan Africa	0.008 ***	0.008 ***								
	(0.002)	(0.002)								
Asia	0.003 **	-0.002								
	(0.001)	(0.001)								
Americas & Oceania	0.006 ***	0.003								
	(0.001)	(0.003)								
Suriname & Caribbean	0.011 ***	0.009 ***								
	(0.001)	(0.002)								
Parents' origin										
Both parents foreign-born		(Ref. group)		(Ref. group)						
One second-generation parent		0.014 ***		0.005	0.016 *	0.031 **	0.012	0.015 ***	0.008	0.028 ***
and one foreign-born parent		(0.002)		(0.005)	(0.010)	(0.015)	(0.014)	(0.006)	(0.015)	(0.007)
One Dutch parent and one		-0.008 ***		-0.009 *	0.007	-0.015 *	-0.005	-0.015 ***	-0.016	-0.017 ***
foreign-born parent		(0.002)		(0.005)	(0.009)	(0.009)	(0.011)	(0.005)	(0.013)	(0.004)
Share of highly educated among parents' co-nationals in 2003	-0.183 ***	-0.112 **		0.012	-0.239	-0.333	-0.213	-0.124 *	-0.338	0.001
	(0.023)	(0.037)		(0.009)	(0.191)	(0.239)	(0.183)	(0.069)	(0.232)	(0.001)
Share of parents' co-nationals in municipality in 2003	-0.001 ***	0.002 ***	0.001 ***	0.002	0.000	0.002 **	0.002	0.004 ***	0.004 *	0.002 **
	(0.000)	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Share of highly educated neighbors in 2003	-0.007 **	-0.022 ***	-0.008 **	-0.003	-0.014	-0.021	-0.021	-0.039 ***	-0.003	-0.046 *
	(0.003)	(0.007)	(0.003)	(0.002)	(0.002)	(0.024)	(0.007)	(0.025)	(0.049)	(0.027)
Either parent's main income source as welfare receipt at 16	0.006 ***	0.005 ***	0.006 ***	0.008 ***	0.008 ***	0.007 ***	0.010	0.005 *	-0.005	0.008 **
	(0.000)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.007)	(0.003)	(0.006)	(0.003)
Parents' divorce status	0.006***	0.004 ***	0.006 ***	0.008 ***	0.000	0.003	0.008	0.008 ***	0.010 *	0.006 **
	(0.000)	(0.001)	(0.0000)	(0.002)	(0.002)	(0.003)	(0.006)	(0.002)	(0.005)	(0.003)
Share of Dutch neighbors	-0.016 ***	-0.011 ***	-0.015 ***	-0.009 **	-0.028 ***	-0.018 ***	-0.020	0.003	-0.027 *	-0.015 **
	(0.001)	(0.002)	(0.001)	(0.004)	(0.006)	(0.006)	(0.015)	(0.007)	(0.015)	(0.007)
Female	0.005 ***	0.003 ***	0.005 ***	0.005 ***	0.004 *	0.001	0.012 **	0.005 ***	0.009 *	0.009 ***
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.003)	(0.006)	(0.002)	(0.005)	(0.003)
Age	0.001***	0.002 ***	0.001 ***	0.000	0.003 ***	0.005 ***	0.003 *	0.001 *	0.002	0.004 ***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Education level										
Low	(Ref. group)									
Middle	-0.008 ***	-0.011 ***	-0.007 ***	-0.014 ***	-0.007 ***	-0.022 ***	-0.025 ***	-0.006 **	-0.020 ***	-0.018 ***
	(0.000)	(0.001)	(0.000)	(0.003)	(0.002)	(0.003)	(0.007)	(0.003)	(0.007)	(0.003)
High	-0.020 ***	-0.025 ***	-0.017 ***	-0.028 ***	-0.028 ***	-0.045 ***	-0.036 ***	-0.020 ***	-0.035 ***	-0.043 ***
	(0.000)	(0.001)	(0.000)	(0.003)	(0.003)	(0.003)	(0.009)	(0.003)	(0.007)	(0.004)
Pseudo R-square	0.347	0.359	0.333	0.357	0.285	0.360	0.380	0.347	0.346	0.387

Note: The table reports the average marginal effects. All regressions also control for the household composition, province of residence, provincial unemployment rate, observation year, average age of parents when the young adult was aged 16, initial welfare receipt status, and time-averages of time-varying variables. Clustered standard errors are in parentheses. *** p<0.01, ** p<0.05, *<0.1.

3.4.2.1 Simulation Exercise: Effects of Key Predictors

Following the probit regressions from which correlations have been identified, we further estimate welfare receipt probabilities at the average characteristics of Dutch native young adults in order to identify whether the immigrant-native gap is attributable to our key variables of interest, or to differences in other characteristics. By allowing certain parameters to vary while fixing others at the mean values of Dutch native young adults, we can observe the effect(s) of the varying parameter(s), namely the variables of interest, given that second-generation young adults had the same characteristics as an average Dutch native young adult. Being statistically similar, the difference in welfare utilization propensity from average Dutch natives should be minor unless the effects of our key variables of interest override the effect of concentrated disadvantages in other characteristics. Exceptions are made for the values of the following variables: for province, the median value of Dutch natives is used; for ethnic concentration variable, the mean value of EU migrants is used; for observation year, the last observable period 2015 is used; for provincial unemployment rate and its mean, the values correspond to the chosen province and observation year; for household type, single-person household is selected to avoid contamination from other household members given that social assistance is a household-level benefit; as for mean values of time-varying variables, no change is assumed to have occurred across the observation years.

Figure 3.2 - 3.5 show the predicted difference in APM from Dutch native young adults with low education level for male and female second-generation young adults by keeping all covariates fixed at the average characteristics of Dutch native young adults and allowing variations only in the values of regional origin, gender, parental origin, education level, parental divorce status and parental welfare receipt status variables. By doing so, the comparison is made between statistically similar second-generation young adults, and thus the effects of regional origin, education level, parental welfare receipt status and parental divorce status are directly observable. Table 3.8 presents such probability (APM) ratios to average Dutch native young adults when decomposed by regional origin, education level, gender, parental welfare receipt status and parental divorce status.

After controlling for all other characteristics, the pattern observed in the descriptive analysis did not alter. While changing the values of other characteristics on average reduced by about half the level of welfare utilization probability for those predicted to be at risk of marginalization, the three-way interactions of education level, regional origin and gender still appear deterministic of the welfare assimilation outcomes of second-generation young adults. If second-generation young adults had the same characteristics as average Dutch native young adults except their regional origin and education level and had the motivation to integrate, higher education consistently and significantly reduces their levels of disadvantage. However, the effect of education is differential, especially regarding the extent to which human capital disadvantage would hamper their prospects for mainstream assimilation. It first interacts with regional origin, as ethnic penalty is strong for second-generation young adults with low education level and a background from the MENA region and Suriname & Caribbean who are observed to remain close to the margins even given the average characteristics of Dutch native young adults and the motivation to integrate. Such an interaction is further coupled with family backgrounds for second-generation young adults with a background from Sub-Saharan Africa, Asia and Americas & Oceania, for whom growing up in a divorced family with low socio-economic status with such ethnic backgrounds leads to marginalized positions.

Figure 3.2: Predicted difference from native young adults with low education level for statistically similar male second-generation young adults whose parents did not divorce by regional origin, education level and parental welfare receipt status

Figure 3.3: Predicted difference from native young adults with low education level for statistically similar male second-generation young adults whose parents divorced by regional origin, education level and parental welfare receipt status

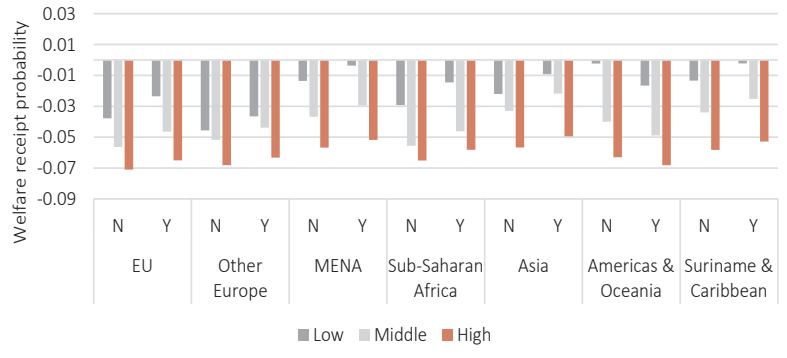


Figure 3.4: Predicted difference from native young adults with low education level for statistically similar female second-generation young adults whose parents did not divorce by regional origin, education level and parental welfare receipt status

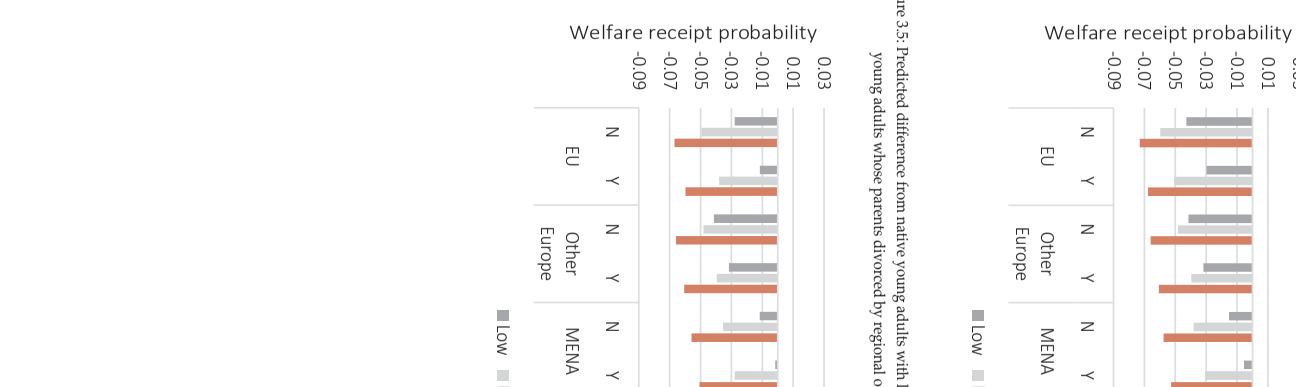


Figure 3.5: Predicted difference from native young adults with low education level for statistically similar female second-generation young adults whose parents divorced by regional origin, education level and parental welfare receipt status

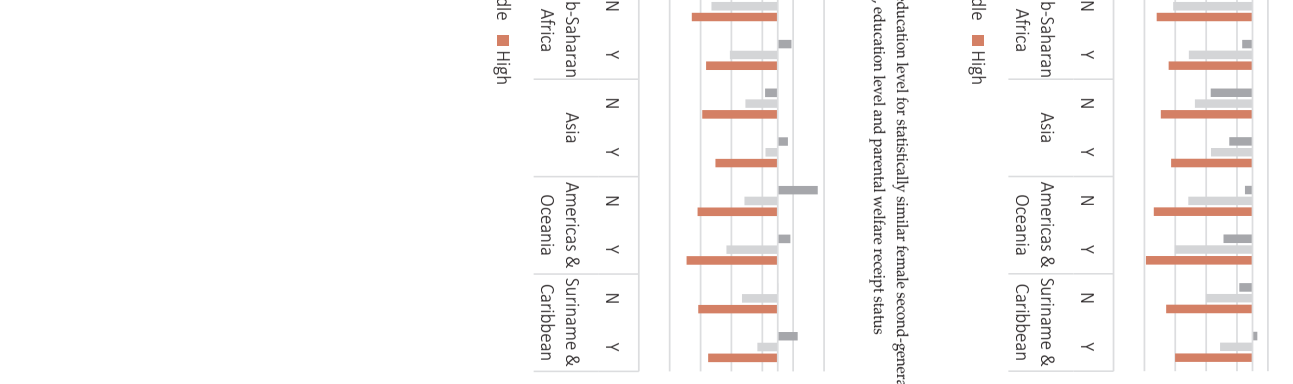


Table 3.8: Probability ratio relative to average native young adults by regional origin, gender, education level, parental welfare receipt status and parental divorce status assuming all other characteristics of second-generation young adults to be the same as average native young adults

		Male						Female					
		Parents did not divorce			Parents divorced			Parents did not divorce			Parents divorced		
	Parents' main income source: welfare receipt	Low	Middle	High	Low	Middle	High	Low	Middle	High	Low	Middle	High
EU	No	0.80	0.49	0.25	1.07	0.67	0.36	0.96	0.60	0.32	1.28	0.82	0.45
	Yes	1.03	0.65	0.35	1.37	0.88	0.49	1.24	0.79	0.43	1.63	1.07	0.60
Other Europe	No	0.90	0.77	0.42	0.90	0.77	0.42	0.99	0.85	0.47	0.99	0.85	0.47
	Yes	1.09	0.94	0.52	1.09	0.94	0.53	1.20	1.03	0.58	1.20	1.03	0.58
MENA	No	1.51	1.03	0.63	1.58	1.09	0.66	1.55	1.06	0.65	1.62	1.12	0.68
	Yes	1.71	1.19	0.73	1.79	1.25	0.77	1.76	1.22	0.75	1.84	1.28	0.79
Sub-Saharan Africa	No	1.03	0.55	0.38	1.25	0.69	0.49	1.39	0.78	0.55	1.67	0.96	0.69
	Yes	1.30	0.72	0.51	1.56	0.89	0.63	1.73	1.00	0.72	2.06	1.21	0.88
Asia	No	1.06	0.87	0.48	1.40	1.17	0.67	1.30	1.08	0.61	1.70	1.43	0.83
	Yes	1.28	1.06	0.60	1.68	1.41	0.82	1.55	1.30	0.75	2.01	1.70	1.01
Americas & Oceania	No	1.30	0.70	0.35	1.82	1.02	0.53	1.77	0.99	0.51	2.42	1.41	0.77
	Yes	1.07	0.56	0.27	1.52	0.83	0.42	1.47	0.80	0.41	2.05	1.17	0.62
Suriname & Caribbean	No	1.42	1.02	0.55	1.59	1.15	0.63	1.69	1.23	0.68	1.88	1.38	0.78
	Yes	1.59	1.15	0.63	1.82	1.34	0.75	1.94	1.43	0.81	2.15	1.59	0.91

Note: All APM are statistically significant mostly at 1% level and at least at 10% level, except for the following subgroups with a background from Americas & Oceania: men whose parents did not divorced with high education level, men whose parents did not divorced and whose parents received welfare at 16, men whose parents divorced and whose parents received welfare at 16, and women whose parents did not divorce and received welfare at 16.

3.5 Robustness Checks

We have experimented with other specifications in the main models. We first tried to vary the age(s) at which parental welfare receipt status is retrieved during adolescence of young adults. We took single-year dummies from 12-16, as well as interval dummies (15-16, 14-16, 14-15 and 13-14) in order to account for transitory fluctuations which might be otherwise neglected if only single-year status is considered. The highest correlation between parental welfare receipt status and young adults' welfare receipt status is found at 16, although the coefficients for parental welfare receipt status variable taken at different ages or intervals do not show to vary markedly. However, statistical significance of the coefficients of other key variables is lost when changing the measurement from 16 to other ages in the regressions run for each regional origin. This can be related to the significant drop in sample size (for example, changing from 16 to 15 reduces the number of observations by 503,786) as fewer cohorts were observed for parental welfare receipt status. In view of these in addition to the empirical observation mentioned in Section 3.3.1 of the importance of parental credit constraint by the end of children's compulsory education, we use age 16 as the observation period for parental welfare receipt status.

We further attempted to vary in two ways the measurement of ethnic concentration: (i) the level at which ethnic concentration is measured; and (ii) the definition of ethnic concentration. Ethnic concentration is measured as the share of parents' co-nationals at the municipality level. We first introduced the ethnic concentration variable measured respectively at the neighborhood, municipality, regional and provincial levels in the regression of all second-generation young adults. While pseudo R-square is the highest when measuring ethnic concentration at the provincial level for second-generation youths and the second highest when measuring at the municipality level, this pattern does not hold when regressions are run separately for youths from each regional origin: pseudo R-square is the same as that measuring ethnic concentration at the municipality level, and for those with a background from the EU, Americas & Oceania and Suriname & Caribbean, statistical significance of some other key variables are lost using the measurement at provincial level. In view of these, we have chosen the municipality level to be the unit of measurement for this variable for two additional reasons: the literature has shown that stronger effects of ethnic concentration are seen in lower geographical units; and to proxy the channel through which ethnic capital can spill over through provision of local employment opportunities, the neighborhood is too small whereas the province is too large, and therefore municipality appears an ideal unit.

As for the definition of ethnic concentration, we tried to measure ethnic concentration as the average share of parents' co-nationals in the municipality. The estimated coefficients are close to zero and for most groups lose statistically significance. Besides measuring ethnic concentration in terms of the share of parents' co-nationals, we also tried to measure separately for the father's

and the mother's. Considering that this did not alter the results, we have opted for the former for the sake of more straightforward interpretation. Another attempt is through the size of ethnic minorities from the same regional origin in the neighborhood, among whom social and economic capital can be shared. However, changing the definition again led to loss of statistical significance of the ethnic concentration variable.

3.6 Concluding Remarks

This study has three main findings. First of all, second-generation progress rather than decline is observed, and the chances of intergenerational mobility are not exclusive of relatively disadvantaged groups. If comparison is to be made at the aggregate level, relative to first-generation immigrants of the same regional origin, education level and gender, the risk of welfare utilization has significantly reduced among second-generation young adults in both absolute and relative terms. A remarkable degree of upward mobility has been observed, as many of those with low-to-middle education levels moved up from the marginalized positions of their previous generation to mainstream assimilation. Even among those who remain on the margins, intergenerational progress is still prevalent. As we compare second-generation young adults directly to their own parents, it is found that the degree of intergenerational mobility and the level of advantage/disadvantage are not necessarily parallel. While the second-generation decline hypothesis foresees little prospects for intergenerational mobility among those with less favourable modes of incorporation, the lowest degree of intergenerational elasticity, implying the strongest relationship between the welfare receipt status of young adults and their parents', is observed simultaneously among second-generation young adults with western and non-western backgrounds (i.e. EU, other Europe, and Suriname & Caribbean), and second-generation young adults facing the strongest ethnic penalty (i.e. from the MENA region) have comparable levels of intergenerational elasticity as the native-born. This aligns with our prediction and other existing findings that that intergenerational mobility can be salient even among disadvantaged groups. As such, our results suggest that the second-generation decline hypothesis has limited applicability in the Dutch context.

In spite of remarkable intergenerational progress, segmented welfare assimilation is found to pertain to second-generation young adults. Regardless of their areas of origin, second-generation young adults are almost always more likely to receive welfare than Dutch native young adults except those with higher education. Ethnic penalty appears to be the strongest for those with a background from the MENA region, Suriname & Caribbean and Sub-Saharan Africa, and the smallest for those from EU countries and Asia. While marginalization is the predicted welfare assimilation outcome for many of those with low-to-middle education levels, the risk of no

assimilation exists for the most disadvantaged (i.e. men and women with low education level and a background from the MENA region, and women with low education level from Sub-Saharan Africa, Americas & Oceania and Suriname & Caribbean), who might not even have the chance to assimilate to the working class of the Dutch society.

What seem to have dominant effects on the extent of welfare assimilation among the second generation is the three-way interaction of modes of incorporation, human capital and family backgrounds. While higher education seems to offer an effective pathway to mainstream assimilation, the effect of education is differential according to one's area of origin, especially regarding the extent to which human capital disadvantage would hinder mainstream assimilation. Even given average characteristics of Dutch native young adults and the motivation to integrate, for second-generation young adults with low education level and a background from the MENA region or Suriname & Caribbean, the combined effects of human capital disadvantage and ethnic penalty are sufficiently strong to prevent them from joining the mainstream. This applies also to those who grew up in disadvantaged family conditions with a background from Sub-Saharan Africa, Asia and Americas & Oceania.

Regarding the hypotheses of segmented assimilation theory, our study finds support for the presence of segmented assimilation as well as the importance of structural and family disadvantages for second-generation young adults in the Dutch case. Nevertheless, our results do not entirely align with some other predictions in three main ways. Firstly, the effect of human capital is found to outweigh all other factors. This can be seen as positive evidence for intergenerational welfare assimilation in the sense that, while structural factors are identified as the most important determinant to the welfare assimilation of first-generation immigrants in the Netherlands (as identified in Chapter 2), its relevance is expected to diminish across generations. Secondly, the hypothesis that the presence of a strong ethnic community would offer a middle-range pathway to mainstream assimilation for those faced with negative conditions is only supported for second-generation young adults with an Asian background, whereas interethnic social capital appears a more common determinant. This differs from the small yet significant effect of ethnic capital in reducing the levels of disadvantage observed for all first-generation immigrants with non-EU backgrounds in the Netherlands. This indicates that, on one hand, the implications of ethnic capital across ethnic communities are heterogeneous; on the other hand, it appears that inter-ethnic social capital is a more prominent factor than intra-ethnic social capital for the majority of second-generation immigrants. Thirdly, a lack of intergenerational mobility does not concentrate among disadvantaged groups in the Dutch context.

The results indicate that, while higher education may offer an alternative route to mainstream assimilation for second-generation young adults faced with negative conditions in ethnic, social and family backgrounds, its effectiveness is largely conditioned by the modes of incorporation in

the receptive context – the extent to which government policies and public attitudes in the Dutch society are receptive and accommodating towards people with migration backgrounds, in particular those with non-western backgrounds.

Finally, several shortcomings of this study are to be noted. As intergenerational data for second-generation immigrants is not available before 2003, given their relatively young age composition up to 2015, we are not able to observe the extent to which the predicted immigrant-native gap identified in this study will change later on in their adulthood when they are around 30s and 40s, which is generally agreed in the literature to be a more representative age range of their lifetime economic position. That said, 86% of second-generation immigrants with non-western backgrounds is minors and the average age of this group is much younger than that of second-generation immigrants with western background, and thus to observe the labour market performance of both groups at later stage would perhaps only be possible in future years. Another limitation is related the tightened eligibility criteria in recent decades and thus access to social assistance benefit for young people aged between 18 and 27. Since the WWB (2003) and its amendment (2012) require young people to demonstrate to have looked for work for 4 weeks and seek possibilities to follow government-funded education programs before application for social assistance benefit, such requirements might have affected social assistance receipt status of young adults in a way we cannot observe in the data. Last but not least, since one of our sample restriction criteria limit our observations to young adults who have finished full-time education, our sample could be affected by different proportions of higher education enrolment across groups and underestimate the effect of higher education. Further research is needed to explain the differential levels of intergenerational mobility found among second-generation immigrants, as well as the mechanism which affects the extent to which ethnic capital can serve as a facilitator of immigrant integration.

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Appendix 1: Education level classification

Table 3.9: Classification of education level in the Dutch education system

Education	Corresponding level
Primary education grade 1-8 Practical education Vmbo-b/k Mbo 1 Vmbo-g/t Havo-, vwo-onderbouw	Low
Mbo 2 Mbo 3 Mbo 4 Havo-bovenbouw Vwo-bovenbouw	Middle
Hbo-associate adegree Hbo-bachelor Wo-bachelor Hbo-master Wo-master Doctor	High

Source: Adapted from Van Rooijen, J., De Vries, R. and Linder, F. (2016). Het opleidingsniveaubestand. CBS internal presentation.

Appendix 2: Full regression outputs for all young adults

Table 3.10: Coefficient estimates of benchmark specifications for all and second-generation young adults

	All young adults		Second generation only	
Dependent variable: welfare receipt	Coefficient	SE	Coefficient	SE
Lagged welfare receipt status	0.305 ***	0.008	0.418 ***	0.016
Area of origin				
Dutch natives	(Ref. group)			
EU	0.047 ***	0.017		
Other Europe	0.016	0.030	-0.019	0.029
MENA region	0.265 ***	0.028	0.200 ***	0.027
Sub-Saharan Africa	0.156 ***	0.034	0.125 ***	0.035
Asia	0.053 ***	0.020	-0.035	0.025
Americas & Oceania	0.109 ***	0.039	0.053	0.041
Suriname & Caribbean	0.205 ***	0.017	0.143 ***	0.022
Ethnic origin of parents				
Both parents foreign-born	(Ref. group)			
One second-generation parent and one parent foreign-born			0.182 ***	0.030
One Dutch parent and one parent foreign-born			-0.135 ***	0.024
Share of highly educated among parents' co-nationals in 2003	-0.137 ***	0.026	-0.073 **	0.030
Number of parents' co-nationals in municipality in 2003 (log)	0.006	0.005	0.035 ***	0.007
Share of highly educated neighbors in 2003	-0.007	0.005	-0.026 ***	0.009
Either parent's main income source as welfare receipt at 16	0.119 ***	0.008	0.081 ***	0.013
Parents' age at 16	-0.005 ***	0.001	-0.001	0.001
Parents' divorce status	0.124 ***	0.006	0.062 ***	0.013
Share of Dutch neighbors	-0.177 ***	0.009	-0.084 ***	0.014
Female	0.101 ***	0.005	0.058 ***	0.012
Age	0.022 ***	0.002	0.032 ***	0.004
Education level				
Low	(Ref. group)			
Middle	-0.145 ***	0.006	-0.157 ***	0.013
High	-0.410 ***	0.007	-0.422 ***	0.017
Type of household				
Single-person household	(Ref. group)			
Unmarried without kids	-0.123 ***	0.009	-0.163 ***	0.023
Married without kids	-0.045 ***	0.016	-0.046	0.031
Unmarried with kids	-0.038 ***	0.015	-0.012	0.034
Married with kids	0.014	0.016	-0.004	0.031
Single-parent household	0.800 ***	0.020	0.650 ***	0.038

Other household types					-0.116 ***	0.021	-0.195 ***	0.033
Institutional household					0.185 ***	0.027	0.177 ***	0.053
Observation year								
2011					(Ref. group)			
2012					0.222 ***	0.009	0.188 ***	0.020
2013					0.302 ***	0.010	0.306 ***	0.024
2014					0.233 ***	0.011	0.264 ***	0.026
2015					0.193 ***	0.012	0.207 ***	0.027
Province								
Groningen					(Ref. group)			
Friesland					-0.041	0.062	-0.145	0.201
Drenthe					-0.047	0.054	-0.161	0.182
Overijssel					-0.220 ***	0.058	-0.252	0.174
Flevoland					-0.550 ***	0.071	-0.685 ***	0.170
Gelderland					-0.374 ***	0.056	-0.502 ***	0.163
Utrecht					-0.584 ***	0.056	-0.648 ***	0.159
Noord-Holland					-0.677 ***	0.054	-0.662 ***	0.151
Zuid-Holland					-0.626 ***	0.055	-0.655 ***	0.151
Zeeland					-0.353 ***	0.098	-0.511 **	0.245
Noord-Brabant					-0.482 ***	0.060	-0.603 ***	0.163
Limburg					-0.541 ***	0.074	-0.738 ***	0.189
Provincial unemployment rate					0.053 ***	0.013	-0.017	0.035
Initial welfare receipt status					2.215 ***	0.011	2.068 ***	0.023
Constant					1.167	0.441	0.390	0.693
/lnsig2u					-0.918	0.017	-0.939	0.037
sigma_u					0.632	0.005	0.625	0.012
rho					0.285	0.003	0.281	0.007
Pseudo R-square					0.347		0.359	

Note: All regressions also control for time-averages of time-varying variables as Wooldrige's estimators; province, household composition and provincial unemployment rate. Clustered standard errors are in parenthesis. *** p<0.01, ** p<0.05, *<0.10

Appendix 3: Full regression outputs by regional origin

Table 3.11: Coefficient estimates of benchmark specifications by regional origin

	Dutch native	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean
Dependent variable: welfare receipt								
Lagged welfare receipt status	0.266 *** (0.009)	0.333 *** (0.047)	0.375 *** (0.035)	0.515 *** (0.028)	0.349 *** (0.085)	0.340 *** (0.059)	0.328 *** (0.123)	0.385 *** (0.033)
Ethnic origin of parents								
Both parents foreign-born		(Ref. group)						
One second-generation parent and one parent foreign-born		0.067 (0.075)	0.167 * (0.089)	0.253 ** (0.109)	0.135 (0.157)	0.203 *** (0.071)	0.107 (0.192)	0.245 *** (0.055)
One Dutch parent and one parent foreign-born		-0.152 * (0.083)	0.074 (0.097)	-0.146 (0.089)	-0.068 (0.137)	-0.274 *** (0.080)	-0.260 (0.194)	-0.183 *** (0.040)
Share of highly educated among parents' co-nationals in 2003	-3.397 (5.581)	0.426 (1.900)	-2.651 (2.127)	-3.050 (2.187)	-2.649 (2.274)	-2.243 * (1.257)	-5.956 (4.044)	0.014 (1.619)
Number of parents' co-nationals in municipality in 2003 (log)	0.035 *** (0.004)	0.035 ** (0.015)	0.004 (0.009)	0.019 ** (0.008)	0.020 (0.022)	0.066 *** (0.016)	0.064 * (0.033)	0.017 ** (0.008)
Share of highly educated neighbors in 2003	-0.177 ** (0.082)	-0.885 ** (0.397)	-0.155 (0.253)	-0.195 (0.224)	-0.262 (0.678)	-0.715 (0.449)	-0.052 (0.858)	-0.468 * (0.271)
Either parent's main income source as welfare receipt at 16	0.140 *** (0.010)	0.124 *** (0.045)	0.093 *** (0.025)	0.067 *** (0.023)	0.115 (0.078)	0.093 * (0.050)	-0.097 (0.117)	0.075 ** (0.030)
Parents' divorce status	-0.007 *** (0.001)	-0.003 (0.003)	0.003 (0.002)	0.000 (0.002)	0.005 (0.007)	-0.012 *** (0.004)	0.000 (0.009)	-0.006 ** (0.003)
Share of Dutch neighbors	0.135 *** (0.007)	0.140 *** (0.035)	0.002 (0.027)	0.025 (0.028)	0.096 (0.072)	0.141 *** (0.041)	0.178 ** (0.089)	0.058 ** (0.029)
Share of highly educated among parents' co-nationals in 2003	-0.362 *** (0.021)	-0.211 ** (0.111)	-0.308 *** (0.066)	-0.169 *** (0.059)	-0.249 (0.181)	0.050 (0.122)	-0.483 * (0.257)	-0.152 ** (0.070)
Female	0.112 *** (0.006)	0.089 *** (0.033)	0.045 * (0.024)	0.013 (0.024)	0.151 ** (0.070)	0.100 *** (0.039)	0.162 * (0.089)	0.091 (0.029)
Age	0.019 *** (0.002)	0.006 (0.012)	0.031 *** (0.009)	0.046 *** (0.008)	0.041 * (0.024)	0.026 * (0.014)	0.037 (0.031)	0.037 (0.010)
Education level								
Low	(Ref. group)							
Middle	-0.138 ***	-0.214 ***	-0.073 ***	-0.190 ***	-0.281 ***	-0.091 **	-0.297 ***	-0.164 ***

	(0.007)	(0.037)	(0.025)	(0.024)	(0.074)	(0.045)	(0.099)	(0.029)
High	-0.403 ***	-0.477 ***	-0.334 ***	-0.420 ***	-0.433 ***	-0.355 ***	-0.593 ***	-0.442 ***
	(0.008)	(0.045)	(0.036)	(0.032)	(0.088)	(0.051)	(0.117)	(0.038)
Type of household								
Single-person household	(Ref. group)							
Unmarried without kids	-0.114 ***	-0.150 ***	-0.082	-0.195 ***	-0.335 ***	-0.186 ***	0.074	-0.217 ***
	(0.010)	(0.054)	(0.060)	(0.052)	(0.114)	(0.066)	(0.139)	(0.049)
Married without kids	-0.036 **	-0.180	0.031	-0.059	-0.242	-0.136	-0.131	-0.007
	(0.018)	(0.113)	(0.051)	(0.051)	(0.275)	(0.142)	(0.303)	(0.093)
Unmarried with kids	-0.031 *	-0.080	0.041	-0.027	-0.369 **	0.135	0.195	-0.020
	(0.016)	(0.084)	(0.091)	(0.077)	(0.166)	(0.107)	(0.247)	(0.064)
Married with kids	0.036 *	0.111	0.063	-0.026	-0.343	-0.212 *	0.119	-0.040
	(0.019)	(0.099)	(0.053)	(0.053)	(0.233)	(0.122)	(0.288)	(0.087)
Single-parent household	0.866 ***	0.738 ***	0.796 ***	0.741 ***	0.531 ***	0.760 ***	0.179	0.497 ***
	(0.023)	(0.105)	(0.095)	(0.078)	(0.179)	(0.129)	(0.271)	(0.072)
Other household types	-0.059 **	-0.290 **	-0.072	-0.188 ***	-0.503 **	-0.278 **	-0.069	-0.262 ***
	(0.027)	(0.128)	(0.074)	(0.047)	(0.236)	(0.137)	(0.288)	(0.095)
Institutional household	0.192 ***	0.276 *	-0.034	0.115	0.338	0.189	0.927 **	0.243 **
	(0.032)	(0.163)	(0.155)	(0.090)	(0.242)	(0.212)	(0.410)	(0.105)
Observation year								
2011	(Ref. group)							
2012	0.231 ***	0.173 ***	0.178 ***	0.242 ***	0.288 ***	0.073	0.023	0.177 ***
	(0.010)	(0.053)	(0.041)	(0.038)	(0.109)	(0.067)	(0.152)	(0.044)
2013	0.300 ***	0.282 ***	0.307 ***	0.341 ***	0.371 ***	0.194 **	0.415 **	0.302 ***
	(0.012)	(0.063)	(0.048)	(0.048)	(0.134)	(0.078)	(0.177)	(0.057)
2014	0.224 ***	0.309 ***	0.266 ***	0.328 ***	0.280 *	0.106	0.453 **	0.195 ***
	(0.012)	(0.068)	(0.052)	(0.051)	(0.144)	(0.085)	(0.189)	(0.062)
2015	0.186 ***	0.221 ***	0.217 ***	0.242 ***	0.320 **	0.097	0.396 **	0.151 **
	(0.013)	(0.071)	(0.054)	(0.053)	(0.149)	(0.088)	(0.194)	(0.062)
Province								
Groningen	(Ref. group)							
Friesland	-0.028	-0.433	-0.218	0.362	-0.832	-0.074	0.147	0.056
	(0.065)	(0.533)	(0.668)	(0.540)	(0.948)	(0.481)	(0.793)	(0.384)
Drenthe	-0.030	-0.387	-0.252	0.275	1.254	-0.908	1.693	-0.171
	(0.056)	(0.332)	(0.579)	(0.505)	(0.791)	(0.551)	(1.535)	(0.375)
Overijssel	-0.208 ***	0.076	-0.365	0.098	1.139	-0.885 *	0.585	-0.780 **
	(0.061)	(0.385)	(0.424)	(0.500)	(0.934)	(0.473)	(0.947)	(0.365)
Flevoland	-0.490 ***	-0.005	-1.237 ***	-0.381	0.970	-0.912 *	2.098 **	-0.897 ***
	(0.083)	(0.472)	(0.461)	(0.459)	(0.938)	(0.538)	(0.945)	(0.308)
Gelderland	-0.347 ***	-0.598	-0.588	-0.100	-0.069	-0.880 *	0.697	-0.585 *
	(0.059)	(0.384)	(0.418)	(0.441)	(0.811)	(0.455)	(0.875)	(0.348)
Utrecht	-0.573 ***	-0.920 **	-0.656	-0.142	-1.046	-1.209 ***	0.430	-0.741 **
	(0.060)	(0.380)	(0.422)	(0.440)	(0.852)	(0.435)	(0.825)	(0.321)
Noord-Holland	-0.691 ***	-0.751 **	-1.174 ***	-0.282	-0.130	-0.876 **	1.121	-0.663 **
	(0.059)	(0.364)	(0.402)	(0.434)	(0.748)	(0.403)	(0.828)	(0.284)
Zuid-Holland	-0.617 ***	-1.096 ***	-0.792 **	-0.085	0.058	-0.928 **	1.011	-0.988 ***
	(0.061)	(0.379)	(0.391)	(0.431)	(0.748)	(0.415)	(0.805)	(0.285)
Zeeland	-0.319 ***	-0.780	-0.600	-0.502	0.184	-0.059	-0.658	-0.144
	(0.108)	(0.578)	(0.672)	(0.551)	(1.681)	(1.103)	(1.651)	(0.470)
Noord-Brabant	-0.455 ***	-0.603	-0.784 *	-0.329	-0.202	-0.852 *	0.468	-0.532 *
	(0.065)	(0.389)	(0.422)	(0.447)	(0.846)	(0.465)	(0.987)	(0.318)
Limburg	-0.491 ***	-0.572	-0.764	-0.654	-0.521	-0.826	0.115	-0.647
	(0.082)	(0.434)	(0.507)	(0.480)	(0.953)	(0.511)	(1.231)	(0.416)
Provincial unemployment rate	0.069 ***	-0.098	0.007	-0.045	-0.115	-0.012	-0.325	0.092
	(0.014)	(0.082)	(0.064)	(0.077)	(0.186)	(0.104)	(0.261)	(0.095)
Initial welfare receipt status	2.258 ***	2.145 ***	1.938 ***	2.038 ***	2.220 ***	2.142 ***	2.243 ***	2.137 ***
	(0.013)	(0.067)	(0.046)	(0.042)	(0.127)	(0.080)	(0.179)	(0.049)
Constant	1.094	3.232	-1.201	-0.418	1.446	0.262	-2.826	-1.553
	(0.746)	(2.387)	(2.446)	(1.047)	(2.284)	(3.095)	(2.040)	(0.648)
/lnsig2u	-0.910	-0.843	-1.232	-0.880	-0.796	-1.137	-0.760	-0.824
	(0.019)	(0.100)	(0.092)	(0.067)	(0.179)	(0.146)	(0.249)	(0.076)
sigma_u	0.635	0.656	0.540	0.644	0.672	0.566	0.684	0.662
	(0.006)	(0.033)	(0.025)	(0.021)	(0.060)	(0.041)	(0.085)	(0.025)
rho	0.287	0.301	0.226	0.293	0.311	0.243	0.319	0.305
	(0.004)	(0.021)	(0.016)	(0.014)	(0.038)	(0.027)	(0.054)	(0.016)
Psuedo R-square	0.333	0.357	0.285	0.360	0.380	0.347	0.346	0.387

Note: All regressions also control for time-averages of time-varying variables as Wooldridge's estimators: province, household composition and provincial unemployment rate. Clustered standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Chapter 4

Precarious Welfare-to-work Transitions

4.1 Introduction

Recent decades have seen a wave of activation-focused reforms across European welfare states, with the main objectives to restrict inflow into and increase outflow from the welfare system. Such reforms, in the view of some, represent a paradigm shift in the responsibility of social security from the state to individuals (Delson, 2012). The neo-liberal assumption underlying this work-first model is that labour market attachment is the route to self-sufficiency. Empirical evidence has shown that moving recipients out of welfare is easy, but whether they will move into employment and what kind of employment, have come into question (McTier & McGregor, 2018; McCollum, 2013, 2012; Lein et al., 2007; Richburg-Hayes & Freedman, 2004; Moffitt, 2002).

In the meanwhile, the classical and neo-classical approaches to labour market functioning are challenged by a growing body of evidence of labour market segmentation (Wilkinson, 2013). Segmentationalists argue that the pricing and allocation of workers into 'good' and 'bad' jobs are no longer contingent on individual tastes or productive capacities, but more and more on demand side forces such as institutional and social influences (Piore, 2002; Leontaridi, 1998). The labour market is commonly thought to bifurcate into the primary and secondary segments, which contrast in terms of job rewards along the dimensions of wages, working conditions, job security, equity, and promotion opportunities (Doeringer & Piore, 1971). Employment in the secondary sector, the disadvantaged end of the spectrum, has been linked to a 'low-pay, no-pay' cycle (Winter-Ebmer & Zweimuller, 1992; D'Addio & Rosholm, 2005). As intersectoral mobility is limited if not prohibited, Doeringer & Piore (1971) further predict disadvantaged groups such as migrant and ethnic minorities to be confined to the secondary sector. If that is the case, labour market segmentation could possibly, via occupational segregation and wage discrimination (Bulow & Summers, 1986), influence the welfare-to-work transitions of individuals. For workers in the secondary sector and notably those who are migrant and ethnic minorities, welfare exit might not be followed by durable self-sufficiency, let alone upward mobility.

These ambiguities have not been adequately addressed in the benefit dynamics literature, which has a traditional focus on analyses of cross-sectional incidence and single-spell duration. While questions such as who enters welfare, who exits welfare and who stays in welfare have been more extensively researched, little is known about the process and mechanism of welfare dependency in the forms of both persistence and recidivism. As Wilkinson (2013) puts it, "(b)y rewarding people not solely in accord with their prospective productivities, a segmented market acquires an active role in the generation of inequality and low pay. In-market segmentation therefore raises social and ideological issues apart from the narrowly economic ones of market functioning". Furthermore, the issue is of particular relevance amid existing spectres of mass job destruction under technological change and eroding job stability and security in the gig economy.

Against this backdrop, it is therefore worth investigating whether and which groups of benefit leavers are able to attain and sustain self-sufficiency, which should be the primary goal of welfare policy. The main question to be addressed in the following study is the extent to which the risk of welfare dependency, measured by welfare persistence and recidivism, is influenced by employment in the secondary labour market and ethnic penalty.

Using longitudinal administrative data from Statistics Netherlands (CBS) which covers the entire Dutch populations, a random 50% sample is created from all observations of Dutch native and second-generation young adults aged 20-28 during 2010-2015. While existing welfare turnover studies mostly consider transitions into and out of social assistance and to a lesser extent unemployment benefit, we account for the possibility of benefit substitution by simultaneously considering all potential exit pathways as opposed to self-sufficiency: social assistance (WWB) receipt, unemployment benefit (WW) receipt, receipt of other social benefits, and having no income. The definition of dependent variable and eligibility criteria of these programs will be explained in Section 4.3.1. A two-state first-order Markov transition model accounting for the initial conditions problem and unobserved heterogeneity will be used to analyze transitions into and out of these states.

This paper extends the analysis of existing research in several ways. Firstly, with the bulk of literature focused on the issues of point-in-time incidence and single-spell persistence, it provides empirical evidence on welfare cycling and welfare persistence for the Dutch case by expanding the measurement of welfare transitions across spells and programs. Secondly, it accounts for endogeneities from the initial conditions and unobserved heterogeneity, which are estimation problems rarely addressed in existing welfare turnover studies dominated by descriptive and duration analyses, with the use of an endogenous switching model. Thirdly, it contributes to the literature by extending the theoretical linkages between labour market segmentation, ethnic penalty and welfare transitions.

The structure of this paper is as follows. A literature review will first be presented by introducing the theoretical framework and state-of-the-art. We will then discuss our modelling strategy and describe the data and sample. Estimation results of determinants and predicted probabilities of welfare transitions will be presented, followed by robustness checks. Finally, we will discuss the results with regards to policy implications and future research avenues.

4.2 Literature Review

4.2.1 Theoretical Approaches

The 'Great Restructuring' refers to structural adjustment of the economy under the rising influence of innovation and technological change in the aftermath of deindustrialization. Within this context, the labour market structure has accordingly adapted and evolved. Dual

or segmented labour market theory is one of the streams of thoughts put forward to describe and explain contemporary labour market trends and changes. Segmented labour market theorists argue that the labour market has become increasingly segmented into the primary and secondary sectors, which are on opposite ends of the spectrum in terms of wages, working conditions, job security, equity, and promotion opportunities (Doeringer & Piore, 1971). In their view, "the primary sector offers both greater job rewards for given labour quality and higher returns to increases in labour quality than does its secondary counterpart". While decent and attractive jobs are offered to workers in the primary sector, the secondary sector consists of jobs characterized by instability, insecurity, social and economic vulnerability and a lack of protection (Rodgers & Rodgers, 1989). A so-called 'low-pay, no-pay' cycle is foreseen for those employed in the secondary sector (D'Addio & Rosholm, 2005; Winter-Ebmer & Zweimuller, 1992), as joblessness and precarious employment interchange over the course of their career with little prospect for career advancement or upward mobility.

Such an effect is expected to manifest particularly strongly among disadvantaged groups such as migrant and ethnic minorities (Doeringer & Piore, 1970; Fullin, 2011; Lusis & Bauder, 2010; Wachtel & Betsey, 1972), as discrimination reinforces occupational segregation and wage differentials (Bulow & Summers, 1986). Given the bulk of evidence of ethnic penalty effect on labour market outcomes such as the duration and occurrence of welfare use as proven in Chapter 2 and 3 (e.g. Zorlu, 2013; Hansen & Loftstrom, 2006, 2003), the interaction between labour market segmentation and ethnic penalty might impose double penalty on migrant workers employed in the secondary labour market. In the words of Wachter (1974, p.638), "(w)orkers are barred from the primary segment not so much by their own lack of human capital as by institutional restraints and a simple lack of good jobs". If this is the case, policy focus should be shifted from promoting outflow from the welfare system to mitigating the negative influences of such a structural barrier that are known to disproportionately affect disadvantaged groups in the labour market.

It is important to note that the concept of dualism is not confined to a rigid definition. The form in which segmentation takes place, whether dualistic or multiple, and whether there is a clear-cut frontier between the segments and thus between the 'good' and 'bad' jobs (or even the 'better' or 'worse' jobs) do not fundamentally dispel the existence of segmentation – be it classified according to a "strict" or "heuristic" definition, jobs located toward the lower tail of the distribution in terms of job rewards for labour of given quality could be classified as secondary and the rest as primary and "as dispersion remains large, in-market segmentation is still in evidence" (Wilkinson, 2013). Another noteworthy issue is that, while the common definition of segmentation is delinated by job rewards to workers of a given labour quality, "secondariness in employment is strictly applicable too to any highly qualified workers who receive markedly lower job rewards than comparable members of their peer group" (Wilkinson, 2013).

While the effect of such increasing difficulty to secure quality employment on total length of unemployment (Theodossiou & Yannopoulos, 1997) and poverty recurrence (Shildrick et al., 2010; Tomlinson & Walker, 2010) have been studied, few studies have examined its linkages with welfare recidivism and persistence. McCollum (2012) provides an extensive theoretical discussion, and several studies (Mc Tier & McGregor, 2018; McCollum, 2013; MacDonald, 2011) have tried to provide empirical evidence of such links, but the measurement of welfare-to-work cycling has been solely based on the observation of repeat joblessness or recurrence of temporary jobs, rather than direct observation of repeat welfare spells, the latter of which will be our approach in this study.

For the purpose of operationalization, we have to identify job attributes that characterize employment in the secondary sector, which has no straightforward answer in the precarious work and decent job literatures. Although the rising form of atypical work is marked by several prominent characteristics, it is most important to note that each attribute can but does not necessarily reflect precariousness, and that not necessarily all of these attributes have to be fulfilled for a job to be considered precarious (Rodgers and Rodgers, 1989). In the following we discuss four main attributes of such.

The first characteristic of precarious job is insecurity, which can be indicated by whether the job contract is fixed term or permanent. Temporary jobs are not necessarily bad, as they could serve as a stepping stone to permanent positions for the long-term unemployed and less-experienced young workers. Only if having a temporary contract significantly increases the probability of welfare re-entry would it constitute a sign of precariousness.

The second characteristic is underemployment, which can be captured by whether the job nature is part-time or on-call. Part-time jobs are known to be increasingly common in the job market. Many studies find that women with children tend to voluntarily opt for such jobs, which do not necessarily offer worse career prospects or security but more flexibility. However, if having such less than full-time jobs is found to significantly increase the risks of welfare re-entry and persistence, the implication would rather be that acceptance of such part-time or on-call work is perhaps involuntary due to the difficulty to find a full-time job.

The third attribute, which is a necessary condition for a job to be defined as secondary employment, is low skill level. These are mainly blue-collar or pink-collar jobs characterized by "low skill levels, low earnings, easy entry, job impermanence, and low returns to education or experience" (Piore, 1979). Note that skill level hereby refers to the skill level of a job, not necessarily of a worker, and highly-skilled worker being employed in a low-skilled job would indicate underemployment. Given that we do not directly observe the occupational level of a job and the closest variable we have is the sector of employment, it is not always straightforward to categorize a sector as belonging to the secondary sector except some typical blue-collar and pink-collar jobs such as construction and catering. As such, the interaction

between skill level of workers and the sector of industry affiliation can be seen as one indicator of employment in the secondary sector.

The fourth attribute is economic vulnerability which can be characterized by low pay. If low pay is accompanied by job security and self-sufficiency, low pay per se does not constitute a necessary or sufficient condition for precarious job. There are two ways in which low pay can be associated with precariousness. Firstly, if unemployment benefit leavers who transition into low-paid jobs are more likely to retrieve unemployment benefit receipt, it means that such low-paid jobs are the trigger of a 'low-pay, no-pay' cycle. Secondly, if unemployment benefit leavers who transition into low-paid jobs are more likely to receive social assistance, it means that such low-paid jobs are linked to job loss or in-work poverty. Due to collinearity with social assistance receipt, low pay cannot be included as a regressor but the low-pay, no-pay cycle can be indirectly captured by the indicators of low skill level of a job.

Empirical findings have not appeared uniform regarding which characteristic of precarious employment plays a larger role. While it has been observed that having a permanent contract outweighs the level of skills in protecting people against recurrent poverty (Tomlinson & Walker, 2010), Yoon & Chung (2015) suggests that what distinguishes those in the primary and secondary sectors are not employment contract types, but income levels, occupational profile and social security benefits attached to the job. In this study, we will try to quantify the effects of these job attributes on welfare re-entry and persistence.

A final note has to be made that these characteristics of precarious work might have different implications for workers from the secondary and primary sectors. For example, temporary contracts are not present only in the secondary sector but also increasingly common among skilled jobs. As mentioned, fulfilling one of these characteristics does not constitute a sufficient condition for a job to be defined as precarious. We acknowledge that each of these job attributes can simply be represent atypical work rather than precarious work, as long as they do not contribute to increased risk of economic vulnerability.

4.2.2 Existing Evidence on Welfare Persistence and Recidivism

Benefit dynamics studies are relatively scant in the European context and even more so in the Dutch context, with the majority conducted in the contexts of the US, Canada and the UK. As summarized by the review by Breitkreuz & Williamson (2012), these findings generally attest that life after welfare is not a smooth transition into economic well-being as envisioned by work-first models – large numbers of welfare leavers were found return to welfare in the subsequent years, which has been linked to continued poverty, precarious jobs and a lack of access to employment, and many others became working poor despite keeping their jobs.

For the Netherlands, several studies have provided relevant evidence with regards to the scale and distribution of welfare persistence and cycling. A comparative welfare dynamics study by Königs (2018) provides a descriptive overview of re-entry into social assistance in the Netherlands. Although re-entry is examined simultaneously with other aspects of social assistance receipt such as entry and exit rates, it is the rare few studies that has combined insights from multiple spells. Using a 0.5% random sample of CBS data from 1993 to 2010, he takes a balanced subsample of 2,572 working-age social assistance recipients for the analysis of re-entry. Compared with the case of Norway and Sweden where the spell length is generally shorter, the re-entry rates in the Netherlands are in relative terms low but still constitute about one-third in the medium term – 9.6% returned to social assistance within 3 months, 16.1% within 6 months, 23.1% within 12 months, and 32.6% within 24 months. Women (66.2%) and persons with a foreign nationality (48.9%) are the groups that are overrepresented among social assistance recipients who have long total duration of benefit receipt taking into account multiple spells.

Using the Dutch IPO register data based on income tax records from 1989-1997, Frijters, Lindeboom & van den Berg (2009) employ a multi-state mixed proportional hazard model to study how past labour market status affects future labour market status. Three states were considered – work (defined as having work-related income), unemployment (measured by WW receipt) and non-participation (encompassing receipt of other benefits such as WWB and no income). Within one year, the survival rate from unemployment to work is 35% (i.e. about 75% of individuals transition from unemployment to work), and the survival rate continues to decrease from about 20% in two years to about 5% in six years. As for transition from unemployment to non-participation, the survival rate is about 83% in one year (i.e. about 17% made such a transition), and further decreases to 70% in two years and 40% in six years. While the results of this study provide important insights into welfare transitions in the Netherlands, the authors mentioned that one limitation is that the model did not account for endogeneity from the initial condition and unobserved heterogeneity due to the lack of valid instrument. Another point to note is that the hazard models could not identify whether welfare recidivism took place after the first transition from welfare to work.

In order to study the prevalence of persistent poverty, Snel et al. (2013) follow individuals in the city of Rotterdam who entered social assistance in 1999 until 2006 to calculate the total spell length taking into account multiple spells. 7% of recipients have repeated spell(s) in 1 year, 29% in 3 years, and 41% in 5 years. Results from the logistic regression show that, once demographic (gender and age) and social characteristics (household situation and educational qualification) are controlled for, no main ethnic minority group from either Surinam, Dutch Antilles, Cape Verde Islands, Turkey or Morocco has a significantly different benefit duration from Dutch native claimants. It would however be insightful to know whether ethnic penalty effect will remain insignificant if all migrants besides these largest groups of ethnic minorities and if second-generation immigrants are also considered.

Using 2000-2003 data covering social assistance leavers in the city of Rotterdam, Van Berkel (2007) conducts a descriptive study on sustainability of social assistance independence among social assistance recipients who exit for labour market entry. Within 18 months of exit, 13% had ever returned to social assistance, although many more (40%) had experienced more than one spell of unemployment during the same period. From the descriptive statistics, ethnic minorities from Surinam, Dutch Antilles, Cape Verde Islands, Turkey and Morocco show slightly higher rates of both social assistance re-entry and renewed unemployment than Dutch natives.

Using the Dutch Socio-economic Panel from 1990 to 1994, Muffels, Fouarge & Dekker (2000) compare poverty dynamics across the Netherlands, Germany and the UK. They provide the descriptive statistics of poverty profiles after government transfers: in the Dutch case, 81.9% of individuals were never poor, whereas 9.7% were transient poor, 4.4% recurrent poor and 4% persistent poor. Interestingly, they also compare the pre- and post-transfer difference in poverty persistence and recurrence. During the years 1985-1994, the share of long-term poor reduced from 25.6% to 2.4%, and the share of recurrent poor reduced from 50% to 25% because of government transfers, which show the importance of government transfers in poverty reduction in the Dutch welfare state.

The results of these studies confirm that welfare persistence and cycling are not singular cases in the Netherlands. While welfare re-entry is less common shortly after exit, a much greater number of cyclers have been observed in the longer run. Moreover, immigrants and women are observed to be the risk groups of welfare dependence.

However, only one of these studies (Frijters, Lindeboom & van den Berg, 2009) has considered the potential transitions across welfare programmes, although they did not differentiate between programmes other than unemployment benefit. All other studies are focused on transition into and out of social assistance only. Ekhaugen (2005) calls for attention to benefit substitution when measuring the incidence of welfare use as she finds switching between programmes to be a common practice in Norway. It is also known from welfare leaver studies that, although cyclers generally have better economic well-being than long-term recipients, they are more likely to be working poor or cycling between temporary jobs if not remaining jobless (McTier & McGregor, 2018; McCollum, 2013, 2012; Acs & Loprest, 2004). It would therefore be beneficial to broaden the measurement of welfare dependence by considering not only unemployment benefit or social assistance but all potential routes. In addition, we will make use of more recent panel data covering the entire country rather than one particular city and all groups of migrant and native unemployment benefit leavers beyond the largest ethnic minority groups. The effects of job attributes will also be considered in the analysis.

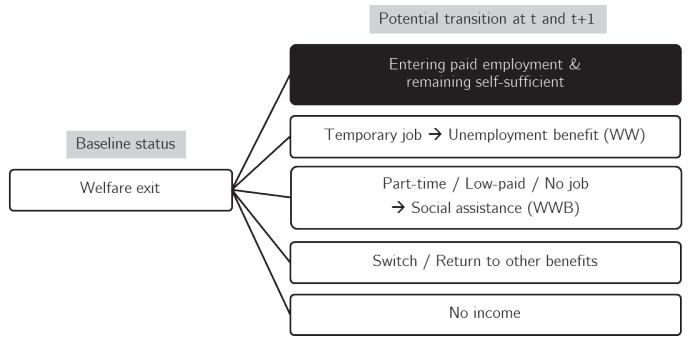
4.3 Methodology

4.3.1 Defining Welfare Dependency

The definition of dependent variable is grounded on the goal of this paper to measure prevalence of under-achievement of self-sufficiency, which will be interchangeably referred to as welfare dependence and economic dependence in the context of this research for the sake of simplification. In our broadened measure of welfare dependency, all exit routes from welfare as opposed to self-sufficiency are encompassed. It is a yearly measure based on the variable "main economic activity in the first month of the year", which refers to the primary source of income of individuals.

As welfare recipients exit from the welfare system, there are multiple routes of potential transitions (see Figure 4.1 below). The optimal transition route, in line with the anticipation of activation policies, is to enter paid employment, either employment or self-employment, and remain self-sufficient. However, there are also other far less optimistic scenarios: (i) returning via unemployment benefit after termination of the fixed-term contact or significant reduction in working hours; (ii) returning via social assistance under three conditions – (a) in-work poverty while having a less than full-time or low-paid job, (b) unemployment without or in exhaustion of entitlements to unemployment benefit, or (c) lack of income due to inactivity; (iii) switching to other benefits; and (iv) having no income, which can either indicates participation in unpaid work, unemployment or inactivity. Welfare recidivism is thought to occur as one, after falling out of and then back into self-sufficiency in earlier time, either re-enters the welfare system through the same benefit or other benefit(s), or (re)enters the state of no income.

Figure 4.1: Transition pathways following exit from the welfare system



Source: Author's own illustration.

The importance to consider benefit substitution is also embedded in the different nature and rules of each benefit. Unemployment benefit, as an individual benefit, falls under employee insurance and is accessible only to those who have worked 26 out of the preceding 36 weeks,

contributed to the employee insurance, and become partly or fully unemployed through no fault of one's own. The definition of partial unemployment is loss of 5 working hours a week, or for at least half of the working hours for individuals who are employed for a maximum of 10 hours a week. Self-employed individuals are not required to contribute to employee insurance. The eligibility criteria of unemployment benefit indicate that not all, be it first-time or recurrent, unemployed workers can access this route, and the duration limit indicates transition into other programs or states are indispensable for the long-term unemployed. Social assistance, as a household-level means-tested safety net, is received by a more diverse pool of individuals who have either exhausted or are ineligible for unemployment benefit, and can be either working or non-working poor who have insufficient means for living. Other less resorted possibilities are receipt of other benefits, such as sickness benefit and disability benefit, and having no income.

4.3.2 Model Specification

Existing studies of labour market dynamics use transition probability models as the standard tool (Jenkins, 2000), among which duration models and random-effects probit models have been much more commonly used than the Markov switching model. A Markov switching model has several advantages that could complement the limitations of a duration model. Firstly, it can account for the initial conditions problem, i.e. the potential non-randomness of the set of individuals at risk of re-entering the welfare system. Secondly, it allows for transition analysis with a bivariate switching approach, i.e. considering all possibilities of transitions from the initial states of receipt and non-receipt to the consecutive states of receipt and non-receipt. Thirdly, it directly allows for the observation of repeat spells. Its disadvantages relative to the duration model are that it cannot account for duration state dependence, and it requires exclusion restrictions for model identification which are hard to find.

The Markov switching model has been applied in the analyses of poverty, income, and labour market transition (e.g. Bingley et al., 1995; Stewart & Swaffield, 1999; Cappellari, 2001; Cappellari & Jenkins, 2002, 2008; Cappellari, 2007; Ayllon, 2008) but rarely of welfare cycling, or repeat event in general. The first relevant application is by Boskin and Nold (1975). Using a two-state first-order Markov model, they estimate the probability of repeat social assistance receipt in the US. Another application of a two-state first-order Markov model to repeat event is the study of return and circular migration by Constant & Zimmermann (2012) using a sample of guestworkers in Germany. Note that neither of the two studies accounted for the initial conditions problem, unobserved heterogeneity or sample selectivity.

To model welfare transitions with a bivariate switching approach, following the approach of Stewart & Swaffield (1999), we use a two-state first-order Markov transition model taking into account the initial conditions problem and unobserved heterogeneity. The model has three components: the determination of welfare receipt status at $t-1$ (initial condition), the

determination of welfare receipt status at t, and the correlations between the unobservables affecting the initial status and the current status.

The first process to be specified is the initial condition. For each individual $(i = 1, \dots, N)$ in the sample, let the latent welfare receipt propensity for base year $t-1$ be denoted as:

$$W^*_{it-1} = \beta' x_{it-1} + \mu_{it-1},\ \mu_{it-1} \sim N(0,1) \qquad (1)$$

where x_{it-1} is a vector of observable attributes and β is a vector of parameters. The error term μ_{it-1}, which follows the standard normal distribution, can be written as $\mu_{it-1} = \mu_i + \delta_{it-1}$ as the sum of a time-invariant individual-specific effect and an orthogonal white noise error. Following common practice in the literature, all time-varying regressors are measured at t-1 in order to avoid simultaneity between changes in attributes and changes in status.

The initial conditions problem lies in that the welfare receipt status at $t-1$ is not exogenous (see Heckman, 1981), as it is affected by unobserved heterogeneity and pre-sample response (Skrondal & Rabe-hesketh, 2014) unless the year $t-1$ marks the start of the data-generating process. As in all low-income transition studies which correct for initial conditions problem, we restrict the autocorrelation in the disturbances to be first-order and deal with the problem as one of endogenous sample selection (Stewart & Swaffield, 1999). As such, an exclusion restriction that explains the initial receipt status (level) but not the transition in receipt status from $t-1$ to t (change) (Wooldridge, 2002; Stewart & Swaffield, 1999) is needed to identify the model. Such an instrument is difficult to find (Ayllon, 2008). Corresponding to Heckman's (1981) suggestion that variables summarizing characteristics before the date of entry into the labour market may serve as instruments for initial conditions in models of labour market transitions, parental characteristics such as their socio-economic status when the individual was 14 have been mostly used (Cappellari & Jenkins, 2008; Cappellari & Jenkins, 2004; Van Kerm, 2004; Stewart & Swaffield, 1999). Instrument validity tests will be performed, and estimation results will be compared with that using another sample containing individuals up to age 37 for checking generalizability of estimates based on the young adult sample.

The second process to be specified is welfare transition in the following year. The latent welfare receipt propensity for year t can be written as:

$$W^*_{it} = \left[(W_{it-1})\gamma'_1 + (1 - W_{it-1})\gamma'_2\right] z_{it-1} + \varepsilon_{it},\ \varepsilon_{it} \sim N(0,1) \qquad (2)$$

where z_{it-1} is the vector of observable attributes excluding exclusion restrictions imposed in equation (1), γ'_1 and γ'_2 are vectors of parameters, and ε_{it} is the error term again comprising a normal time-invariant individual-specific effect and a normal orthogonal white noise error. Following common practice of low-income transition studies (e.g. Cappellari & Jenkins, 2008, 2002, Stewart & Swaffield, 1998), observable attributes in z_{it-1} are measured in the base year to avoid simultaneity of changes in observable attributes and changes in welfare receipt status.

In this specification, where the consecutive welfare receipt status is conditioned on the lagged status, the whole parameter vector γ is allowed to switch according to the base year status.

The third component, the correlation between error terms in equations (1) & (2), is allowed to be unrestricted. This shall provide, firstly, parameterization of the distribution of unobserved heterogeneity, and secondly, a test for initial conditions exogeneity and thereby the necessity of joint estimation of the two equations.

4.3.3 Sample description

Using longitudinal administrative data of Statistics Netherlands (CBS) which covers the entire Dutch population, we create a random 50% sample of all observations of Dutch native and second-generation young adults aged between 20 and 28 during 2010-2015 to observe their welfare-to-work transitions. The use of flow sample corresponds to what has been used in most low-pay transition studies applying a Markov transition model (e.g. Cappellari & Jenkins, 2008, 2002; Ayllon, 2008; Cappellari, 2007; Stewart & Swaffield, 1999) which typically do not impose restriction on status in the first period of observation.

Several sample restrictions are applied to create the final sample. Individuals who were in full-time education or living in parental home in the year t-1 or t are excluded. The latter condition is set in order to avoid complication given that WWB is a household-level benefit. As mentioned in Section 4.3.2, parental characteristics prior to labour market entry are used as instruments to identify the model. Retrieving such instruments from our data with limited years of availability (1995-2015, with most income-related variables available only as of 2003) means that the sample has to be further restricted to young adults aged 28 or below, for whom such variables prior to labour market entry are available.

The final sample consists of 426,429 observations, out of which 85.6% (366,840 observations) are Dutch natives and 14.4% (59,589 observations) second-generation immigrants. Although left censoring exists, our sample property of comprising only young adults in the labour market entry phase suggests that this should not be severely problematic. Table 4.1 below shows the descriptive statistics of main variables in the sample by area of origin and education level. Additional explanations and examples of jobs in each sector can be seen in Appendix 1.

Table 4.1: Mean values of dependent and explanatory variables by area of origin and education level

		Area of origin							Education level		
Variables	Sample average	Dutch natives	EU	Other Europe	MENA	Sub-Saharan Africa	Asia	Americas & Oceania	Suriname & Caribbean	Low	Middle	High
Dependent variables												
Main economic activity at t												
WW	0.018	0.017	0.020	0.030	0.029	0.020	0.020	0.021	0.026	0.023	0.021	0.012
WWB	0.030	0.023	0.044	0.055	0.114	0.060	0.032	0.028	0.106	0.075	0.020	0.005
Other benefits	0.084	0.081	0.112	0.102	0.117	0.118	0.066	0.086	0.118	0.191	0.045	0.017
No income	0.045	0.037	0.053	0.135	0.151	0.053	0.063	0.051	0.078	0.081	0.041	0.022
Employment	0.822	0.842	0.771	0.678	0.589	0.749	0.818	0.814	0.671	0.629	0.873	0.945
Main economic activity at t-1												
WW	0.017	0.016	0.020	0.026	0.025	0.019	0.019	0.020	0.024	0.023	0.021	0.010
WWB	0.028	0.021	0.042	0.054	0.107	0.054	0.031	0.026	0.099	0.070	0.018	0.005
Other benefits	0.079	0.076	0.104	0.092	0.105	0.112	0.063	0.081	0.112	0.182	0.042	0.015
No income	0.048	0.040	0.058	0.139	0.155	0.058	0.071	0.056	0.086	0.079	0.041	0.032
Employment	0.827	0.847	0.776	0.689	0.609	0.755	0.816	0.817	0.678	0.645	0.879	0.937
Not self-sufficient at t												
0	0.822	0.842	0.771	0.678	0.589	0.749	0.818	0.814	0.671	0.629	0.873	0.945
1	0.178	0.158	0.229	0.322	0.411	0.251	0.182	0.186	0.329	0.371	0.127	0.055
Not self-sufficient at t-1												
0	0.827	0.847	0.776	0.689	0.609	0.755	0.816	0.817	0.678	0.645	0.879	0.937
1	0.173	0.153	0.224	0.311	0.391	0.245	0.184	0.183	0.322	0.355	0.121	0.063
Explanatory variables (t-1)												
Area of origin												
Dutch natives	0.856									0.807	0.863	0.887
EU	0.025									0.031	0.023	0.024
Other Europe	0.029									0.047	0.030	0.014
MENA	0.031									0.047	0.031	0.019

Sub-Saharan Africa	0.006									0.007	0.005	0.006
Asia	0.018									0.016	0.015	0.021
Americas & Oceania	0.008									0.008	0.008	0.009
Suriname & Caribbean	0.026									0.036	0.024	0.020
Education level (t-1)												
Low	0.284	0.268	0.347	0.458	0.427	0.319	0.258	0.276	0.399			
Middle	0.362	0.365	0.324	0.373	0.359	0.327	0.318	0.336	0.334			
High	0.353	**0.**366	0.329	0.169	0.214	0.353	0.424	0.389	0.267			
Job type (t-1)												
Regular	0.677	0.704	0.616	0.440	0.394	0.594	0.642	0.661	0.507	0.495	0.730	0.786
Temporary	0.049	0.044	0.058	0.095	0.088	0.064	0.068	0.051	0.083	0.052	0.048	0.050
On-call	0.047	0.045	0.044	0.066	0.064	0.041	0.049	0.052	0.049	0.036	0.052	0.051
Intern / WSW	0.009	0.009	0.010	0.007	0.006	0.009	0.008	0.009	0.010	0.019	0.004	0.006
Missing	0.218	0.197	0.272	0.392	0.447	0.292	0.232	0.228	0.351	0.399	0.166	0.106
Sector of employment (t-1)												
Government & public administration	0.029	0.029	0.028	0.016	0.019	0.025	0.029	0.035	0.025	0.038	0.022	0.028
Catering & accommodation	0.032	0.032	0.039	0.025	0.025	0.039	0.057	0.037	0.034	0.035	0.037	0.026
Construction	0.026	0.028	0.017	0.013	0.007	0.016	0.013	0.019	0.013	0.033	0.032	0.014
Agriculture, forestry & fishery	0.005	0.006	0.002	0.002	0.001	0.004	0.001	0.003	0.001	0.006	0.006	0.003
Transport & storage	0.022	0.022	0.024	0.020	0.015	0.019	0.017	0.022	0.018	0.033	0.019	0.015
Wholesale / Retail	0.113	0.115	0.110	0.113	0.074	0.090	0.114	0.112	0.093	0.124	0.130	0.089
Other services	0.016	0.017	0.011	0.010	0.006	0.016	0.015	0.019	0.010	0.014	0.022	0.011
Other business support services	0.080	0.075	0.090	0.121	0.108	0.095	0.103	0.081	0.107	0.085	0.067	0.090
Less skilled manufacturing	0.030	0.032	0.028	0.021	0.012	0.017	0.023	0.027	0.015	0.048	0.026	0.020
Social work & care	0.096	0.101	0.074	0.047	0.070	0.072	0.058	0.089	0.060	0.045	0.141	0.094
Culture, sports & recreation	0.011	0.011	0.010	0.003	0.004	0.018	0.011	0.015	0.013	0.007	0.010	0.015
Skilled manufacturing & energy supplies	0.014	0.014	0.013	0.006	0.005	0.011	0.014	0.013	0.011	0.011	0.013	0.018
Real estate	0.004	0.004	0.004	0.003	0.003	0.002	0.005	0.003	0.004	0.002	0.004	0.006

Communication, design & advertising	0.017	0.017	0.019	0.011	0.014	0.027	0.027	0.020	0.016	0.007	0.014	0.029
IT	0.015	0.015	0.015	0.007	0.008	0.018	0.019	0.019	0.014	0.003	0.010	0.029
Health	0.060	0.064	0.048	0.027	0.022	0.057	0.047	0.045	0.034	0.012	0.054	0.107
Financial services	0.014	0.014	0.011	0.013	0.014	0.010	0.018	0.020	0.017	0.004	0.009	0.027
Specialized business services	0.038	0.039	0.035	0.022	0.022	0.033	0.051	0.037	0.030	0.010	0.020	0.081
Education	0.042	0.045	0.033	0.015	0.016	0.028	0.034	0.040	0.021	0.004	0.011	0.105
Missing	0.337	0.318	0.386	0.507	0.557	0.403	0.342	0.343	0.464	0.478	0.353	0.191
Gender												
Male	0.411	0.405	0.406	0.499	0.481	0.402	0.417	0.408	0.416	0.511	0.382	0.354
Female	0.589	0.595	0.594	0.501	0.519	0.598	0.583	0.592	0.584	0.489	0.618	0.646
Age (t-1)	23.952	23.981	23.827	23.627	23.627	23.839	24.164	23.912	23.760	23.540	23.749	24.508
Year (t-1)												
2009	0.073	0.073	0.079	0.083	0.077	0.074	0.066	0.073	0.082	0.075	0.107	0.035
2010	0.084	0.083	0.089	0.100	0.101	0.087	0.081	0.082	0.093	0.073	0.116	0.058
2011	0.128	0.126	0.131	0.140	0.139	0.133	0.126	0.127	0.134	0.173	0.111	0.108
2012	0.181	0.182	0.179	0.181	0.185	0.185	0.177	0.178	0.180	0.212	0.158	0.181
2013	0.237	0.239	0.230	0.225	0.225	0.234	0.241	0.239	0.228	0.219	0.227	0.265
2014	0.296	0.298	0.292	0.272	0.273	0.286	0.310	0.301	0.283	0.247	0.282	0.353
Household type (t-1)												
Single-person	0.326	0.321	0.364	0.327	0.363	0.393	0.387	0.353	0.359	0.315	0.289	0.372
Not married without kids	0.360	0.383	0.359	0.081	0.089	0.298	0.340	0.370	0.239	0.259	0.376	0.430
Married without kids	0.093	0.090	0.049	0.263	0.139	0.041	0.052	0.063	0.064	0.073	0.111	0.094
Not married with kids	0.065	0.065	0.082	0.029	0.031	0.085	0.069	0.073	0.104	0.117	0.070	0.021
Married with kids	0.085	0.081	0.052	0.201	0.160	0.038	0.053	0.064	0.058	0.108	0.106	0.047
Single-parent	0.022	0.019	0.039	0.023	0.036	0.062	0.029	0.029	0.097	0.052	0.018	0.004
Other	0.028	0.020	0.028	0.062	0.160	0.039	0.053	0.029	0.048	0.028	0.024	0.031
Institutional	0.021	0.021	0.026	0.014	0.021	0.044	0.017	0.019	0.030	0.047	0.005	0.002
Provincial unemployment rate (t-1, logged)	1.862	1.859	1.855	1.869	1.879	1.888	1.877	1.870	1.900	1.853	1.844	1.889
Province (t-1)												

Groningen	0.044	0.047	0.034	0.011	0.006	0.031	0.029	0.033	0.030	0.039	0.041	0.049
Friesland	0.043	0.047	0.021	0.005	0.008	0.023	0.020	0.042	0.017	0.047	0.051	0.032
Drenthe	0.027	0.030	0.014	0.004	0.005	0.022	0.012	0.019	0.011	0.033	0.032	0.017
Overijssel	0.073	0.078	0.057	0.083	0.016	0.044	0.049	0.052	0.030	0.072	0.079	0.069
Flevoland	0.025	0.024	0.023	0.016	0.029	0.025	0.027	0.034	0.059	0.033	0.028	0.017
Gelderland	0.121	0.129	0.086	0.095	0.051	0.082	0.090	0.104	0.054	0.123	0.128	0.113
Utrecht	0.084	0.084	0.069	0.073	0.122	0.088	0.088	0.092	0.059	0.064	0.068	0.114
Noord-Holland	0.153	0.142	0.187	0.198	0.254	0.198	0.228	0.222	0.240	0.138	0.136	0.182
Zuid-Holland	0.213	0.196	0.202	0.354	0.347	0.350	0.261	0.228	0.383	0.222	0.213	0.206
Zeeland	0.023	0.024	0.046	0.009	0.007	0.007	0.013	0.010	0.017	0.027	0.029	0.015
Noord-Brabant	0.139	0.143	0.138	0.126	0.116	0.095	0.131	0.124	0.083	0.141	0.139	0.138
Limburg	0.054	0.055	0.122	0.026	0.039	0.035	0.049	0.038	0.017	0.062	0.056	0.046
Instruments												
Father's income at 15-16 (logged)	9.955	9.973	10.008	9.717	9.586	9.890	9.955	10.084	10.009	9.891	9.924	10.045
Father's WW receipt status at 16												
0	0.979	0.982	0.969	0.950	0.951	0.960	0.965	0.977	0.965	0.972	0.978	0.985
1	0.021	**0.018**	0.031	0.050	0.049	0.040	0.035	0.023	0.035	0.028	0.022	0.015
Number of observations	426,429	366,840	9,977	12,843	14,196	2,414	6,502	3,516	10,141	128,251	150,458	143,613

4.4 Estimation Results

4.4.1 Tests for instrument validity and endogeneity of initial conditions

As mentioned in Section 4.3.2, exclusion restrictions are required to identify the models. The instrument used for the initial conditions in the entry model is log-transformed father's income during 15-16, and the instrument for the initial conditions in the persistence model is father's WW receipt status at 16. To test if the instruments are valid (i.e. significantly correlated with the initial status but not the transition), Wald tests are performed to test whether coefficient estimate for the instrument is 0 in the corresponding equation. Results of the Wald tests (see Table 4.2 below) suggest that the instruments are excludable from the transition equations and statistically significant in the initial status equations.

We also tested whether unobserved effects across the initial status and transition equations are indeed correlated, which determines whether joint estimation of the two equations is justified. The estimated cross-equation correlations of unobservables for both the entry and persistence are statistically significant at 1% level (shown in Table 4.2). The sign and size of such correlations are in line with findings in the literature.

Table 4.2: Diagnostic tests

	Entry model		Persistence model	
Wald test: Exclusion of instruments	x^2	p-value	x^2	p-value
From the transition equation	1.35	0.2455	1.73	0.1880
From initial status equation	14.42	0.0001	27.11	0.0000
Cross-equation correlation between unobservables	Estimate	p-value	Estimate	p-value
Initial status at t-1, transition at t	0.1926	0.0000	-0.2808	0.0000

4.4.2 Determinants and probabilities of welfare entry and persistence

Full regression outputs of the two-state first-order Markov transition models of welfare entry and welfare persistence can be seen in Appendix 2. The estimated average marginal effects (AME) of key variables are shown in Table 4.3 below.

Average marginal effects (AME)

All indicators of employment in the secondary sector show to significantly increase the probability of economic dependence regardless of their lagged status. In terms of education level, having higher education significantly reduces both the probabilities of welfare entry and persistence by 7 and 45 percentage points respectively. In terms of job type, non-regular workers are always more likely to experience welfare entry and persistence, although different contract types affect such transition probabilities differentially. Among individuals with non-missing information on contract type, being temporary workers at t-1 is associated with the highest risk of welfare entry by increasing such probability by 3 percentage points,

Table 4.3: Average marginal effects of key predictors

	Probability of non self-sufficiency in year t			
	Self-sufficient in year t-1		Not self-sufficient in year t-1	
	AME	SE	AME	SE
Area of origin				
Dutch natives				
EU	0.014 ***	0.003	0.048 ***	0.010
Other Europe	0.061 ***	0.004	0.073 ***	0.007
MENA	0.090 ***	0.004	0.163 ***	0.007
Sub-Saharan Africa	0.019 ***	0.006	0.067 ***	0.019
Asia	0.018 ***	0.004	0.033 ***	0.012
Americas & Oceania	0.012 ***	0.005	0.014	0.018
Suriname & Caribbean	0.051 ***	0.004	0.094 ***	0.008
Education level				
Low				
Middle	-0.049 ***	0.001	-0.211 ***	0.005
High	-0.068 ***	0.001	-0.451 ***	0.006
Job type				
Regular				
Temporary	0.027 ***	0.002	0.055 ***	0.015
On-call	0.019 ***	0.001	0.064 ***	0.013
Intern / WSW	0.016 ***	0.004	0.161 ***	0.021
Missing	0.172 ***	0.012	0.474 ***	0.011
Sector of employment				
Government & public administration				
Catering & accommodation	0.055 ***	0.002	0.175 ***	0.057
Construction	0.039 ***	0.003	0.019	0.069
Agriculture, forestry & fishery	0.039 ***	0.005	0.124	0.080
Transport & storage	0.036 ***	0.003	0.188 ***	0.059
Wholesale / Retail	0.038 ***	0.001	0.101 *	0.056
Other services	0.035 ***	0.003	0.159 **	0.063
Other business support services	0.052 ***	0.002	0.153 ***	0.056
Less skilled manufacturing	0.025 ***	0.002	-0.066	0.058
Social work & care	0.032 ***	0.001	0.110 *	0.056
Culture, sports & recreation	0.052 ***	0.004	0.184 ***	0.062
Skilled manufacturing & energy supplies	0.016 ***	0.003	0.049	0.088
Real estate	0.028 ***	0.005	0.091	0.105
Communication, design & advertising	0.048 ***	0.003	0.066	0.071
IT	0.030 ***	0.003	0.039	0.077
Health	0.016 ***	0.001	0.072	0.061
Financial services	0.030 ***	0.003	0.017	0.104
Specialized business services	0.028 ***	0.002	0.089	0.065
Education	0.023 ***	0.002	0.081	0.064
Missing	0.029 ***	0.003	0.164 ***	0.057
Female	0.028 ***	0.001	0.115 ***	0.004
Main economic activity at t-1				
WW				
WWB			0.416 ***	0.006
Other social benefits			0.190 ***	0.006
No income			0.319 ***	0.007

Note: The table reports the average marginal effects. All regressions also control for age, household composition, province of residence, log-transformed provincial unemployment rate and observation year at t-1. *** p<0.01, ** p<0.05, *p<0.1.

whereas being an intern or WSW worker (public work) is associated with the highest risk of welfare persistence by increasing such probability by 6 percentage points. That said, individuals who have missing information on contract type, which is likely a reflection of having no job at the time of measurement, significantly increases the risks of both welfare entry and persistence by 2 and 5 percentage points respectively.

In general, sectors with the lowest concentration of high-skilled workers have the highest risks of welfare entry and persistence (the order of sector of employment shown in all tables is arranged in ascending order according to the share of high-skilled workers in that particular sector in 2010). Sectors associated with the highest risks of both welfare entry and persistence include transport & storage, culture, sports & recreation, catering & accommodation, other services (e.g. personal care) and other business support services (e.g. cleaning services and employment placement agencies). Other sectors associated with a relatively high risk of welfare entry are construction, agriculture, forestry & fishery, wholesale & retail and communication, design & advertising. Missing information on sector of employment is associated with one of the highest probabilities of welfare persistence.

In terms of ethnic origin, all second-generation young adults are found to be significantly more likely to enter and stay in the state of being not self-sufficient, except those from Americas & Oceania in terms of persistence. The highest risks are seen among second-generation young adults with a background from the MENA region and Suriname & Caribbean. The entry probabilities are 9 and 5 percentage points higher for second-generation young adults from the MENA region and Suriname & Caribbean respectively, whereas the persistence probabilities are 16 and 9 percentage points higher respectively.

Besides the main predictors, being a woman increases the probabilities of welfare entry and persistence by 3 and 2 percentage points respectively. WWB receipt and having no income as the main economic activity at t-1 contribute the most to the probability of welfare persistence. Compared with WW receipt as the main economic activity at t-1, WWB receipt increases welfare persistence probability by 42 percentage points, whereas having no income increases welfare persistence probability by 32 percentage points.

Average predicted probabilities of welfare transitions

Based on model estimates, we can predict not only average welfare entry and persistence probabilities (will be referred to as base probabilities from now on) across the sample and based on attributes, but also further calculate the probabilities of specific transition patterns. In order to derive welfare persistence and re-entry probabilities in the medium-to-long run (defined as 3 and 5 years), the base probabilities directly predicted from the entry and persistence models are utilized for such calculations. The probability of staying off welfare after exit (i.e. regaining and maintaining self-sufficiency) ($p1$) in a 3-year period is derived as

$p1 = [(1 - pr(1,1) * (1 - pr(0,1))$, whereas the probability of persistence ($p2$) for 3 consecutive years is derived as $p2 = [pr(1,1) * Pr(1,1)]$. Given that these two probabilities represent any form of non re-entry in a 3-year period, the probability of re-entry is derived as $p3 = (1 - p1 - p2)$. The same calculations can be extrapolated to a 5-year period.

Table 4.4 below demonstrates the average predicted probabilities of entry and persistence (base probabilities) and specific welfare transition patterns in the medium-to-long run. Among those who have ever fallen out of self-sufficiency in the base year, the average probability of returning to the state of not being self-sufficient is 0.28 within 3 years and 0.56 within 5 years – such probability is 0.62 for second-generation young adults in the long term. The average probability of persistence decreases from 0.33 in the medium term to 0.11 in the long term. These patterns suggest that while the main form of welfare dependency in the medium run is welfare persistence, welfare cycling takes over in the longer run.

In terms of persistence in non self-sufficiency, the highest risks in both the medium and long term, as already indicated by the AME, concentrate among young adults with low education level as well as those with a background from the MENA region and Suriname & Caribbean. In terms of recidivism of non self-sufficiency, the highest risk of cycling in the long term are seen among young adults with missing job attributes at t-1, second-generation young adults with a background from other Europe and Suriname & Caribbean, low education level and being employed in less skilled sectors (i.e. with a low concentration of high-skilled workers) at t-1, such as catering & accommodation, other business support services, culture, sports & recreation, transport & storage, wholesale & retail and other services.

Table 4.4: Average probabilities of welfare transitions

	Base probabilities		Any form of non re-entry				Any form of re-entry	
	Entry	Persistence	Mid-term (3 years)		Long-term (5 years)		Mid-term	Long-term
	Pr(0,1)	Pr(1,1)	P1(1,0,0)	P2(1,1,1)	P1(1,0,0,0,0)	P2(1,1,1,1,1)		
Average	0.08	0.58	0.39	0.33	0.33	0.11	0.28	0.56
Second-generation average	0.16	0.64	0.30	0.41	0.21	0.17	0.29	0.62
Origin								
Dutch natives	0.08	0.56	0.41	0.31	0.35	0.10	0.28	0.55
EU	0.10	0.60	0.36	0.36	0.30	0.13	0.28	0.57
Other Europe	0.15	0.62	0.32	0.38	0.23	0.15	0.29	0.62
MENA	0.18	0.70	0.24	0.49	0.16	0.24	0.26	0.59
Sub-Saharan Africa	0.10	0.62	0.34	0.39	0.27	0.15	0.27	0.58
Asia	0.10	0.59	0.37	0.35	0.30	0.12	0.28	0.58
Americas & Oceania	0.09	0.56	0.40	0.32	0.33	0.10	0.29	0.57
Suriname & Caribbean	0.14	0.64	0.31	0.41	0.23	0.17	0.28	0.60
Education level								
Low	0.14	0.67	0.28	0.45	0.21	0.20	0.27	0.59
Middle	0.08	0.50	0.46	0.25	0.39	0.06	0.29	0.55
High	0.05	0.31	0.66	0.10	0.59	0.01	0.25	0.40
Job type								
Regular	0.07	0.21	0.74	0.04	0.64	0.002	0.22	0.35
Temporary	0.10	0.26	0.66	0.07	0.53	0.005	0.27	0.46
On-call	0.09	0.27	0.66	0.07	0.54	0.005	0.27	0.45
Intern / WSW	0.09	0.35	0.59	0.12	0.49	0.015	0.29	0.49
Missing	0.25	0.60	0.30	0.37	0.16	0.130	0.34	0.70
Sector of employment								
Government & public administration	0.03	0.44	0.55	0.19	0.51	0.04	0.26	0.45
Catering & accommodation	0.11	0.58	0.37	0.34	0.29	0.12	0.29	0.59
Construction	0.09	0.46	0.49	0.22	0.40	0.05	0.30	0.55
Agriculture, forestry & fishery	0.09	0.55	0.41	0.30	0.34	0.09	0.29	0.57
Transport & storage	0.09	0.60	0.36	0.36	0.30	0.13	0.27	0.57
Wholesale / Retail	0.09	0.53	0.43	0.28	0.36	0.08	0.29	0.57
Other services	0.09	0.58	0.39	0.33	0.32	0.11	0.28	0.57
Other business support services	0.11	0.57	0.38	0.32	0.30	0.10	0.29	0.59
Less skilled manufacturing	0.07	0.39	0.57	0.15	0.49	0.02	0.28	0.49
Social work & care	0.08	0.53	0.43	0.29	0.36	0.08	0.29	0.56
Culture, sports & recreation	0.11	0.59	0.36	0.35	0.29	0.12	0.29	0.59
Skilled manufacturing & energy supplies	0.06	0.48	0.49	0.23	0.43	0.05	0.28	0.52
Real estate	0.08	0.52	0.45	0.27	0.38	0.07	0.29	0.55
Communication, design & advertising	0.10	0.50	0.45	0.25	0.36	0.06	0.30	0.58
IT	0.08	0.48	0.48	0.23	0.41	0.05	0.29	0.54
Health	0.06	0.50	0.47	0.25	0.42	0.06	0.28	0.52
Financial services	0.08	0.46	0.50	0.21	0.42	0.04	0.29	0.53

Specialized business services	0.08	0.52	0.45	0.27	0.38	0.07	0.29	0.55
Education	0.07	0.51	0.46	0.26	0.40	0.07	0.28	0.54
Missing	0.08	0.58	0.39	0.33	0.33	0.11	0.28	0.56
Gender								
Male	0.06	0.51	0.46	0.26	0.40	0.07	0.28	0.53
Female	0.10	0.61	0.35	0.37	0.28	0.14	0.28	0.58

4.4.2.1 Simulation Exercise: Interaction Effects

To demonstrate the effects of employment in the secondary sector, ethnic penalty and their interaction, we further predict such welfare transition probabilities fixing other covariates at representative values. Precisely, that means the most representative category for categorical variables and the mean values for continuous variables in the sample. Exceptions are made for certain variables: gender and household type, which take the second most representative categories. The specific values are as follows: the main economic activity at t-1 in the persistence model as other benefits, men, age 28, observation year as 2014, household type as single-person household (to avoid complications given social assistance as a household-level benefit), log-transformed provincial unemployment rate as 1.862, and province of residence as South-holland.

Following the procedures and calculations explained in the previous sub-section, we derive the probabilities of welfare persistence and cycling in the medium-to-long run at representative values as shown in Table 4.5 below. To identify the effect of labour market segmentation, such probabilities are predicted for workers with characteristics of being employed in the primary sector and secondary sector respectively. A good example of employment in the primary sector is someone who has higher education, works in government & public administration and has a regular contract. For the sake of contrast, employment in the secondary sector is captured by someone who works in the catering & accommodation industry with low education level and a non regular-contract. To further illustrate how different indicators of labour market segmentation and their interaction with ethnic penalty influence the risks of welfare persistence and cycling, these probabilities are further decomposed by the area of origin and the precise type of non-regular contracts.

In line with estimated AME, low-skilled workers employed in less skilled sector with non-regular contracts are at the highest risk of persistent and repeat non self-sufficiency, which are more prevalent among second-generation young adults, especially those with non-western backgrounds, than Dutch native young adults who are otherwise statistically equivalent. Given that the average sample probability of welfare persistence in the medium term is 0.33, our predicted probabilities at representative values show that the average probability is inflated mainly by low-skilled workers who had missing job attribute in the

Table 4.5: Predicted probabilities of welfare transitions at representative values in the medium (3 years) to long (5 years) run

		Dutch natives		EU		Other Europe		MENA		Sub-Saharan Africa		Asia		Americas & Oceania		Suriname & Caribbean	
Duration of forecast (3 / 5 years)		Mid	Long	Mid	Long	Mid	Long	Mid	Long	Mid	Long	Mid	Long	Mid	Long	Mid	Long
Probability of successful exit: Staying self-sufficient for 3 / 5 years after welfare exit																	
High-skilled	Regular job in government	0.99	**0.98**	0.98	**0.97**	0.97	**0.95**	0.95	**0.93**	0.98	**0.97**	0.98	**0.97**	0.99	**0.98**	0.97	**0.96**
Low-skilled	Regular job in catering	0.71	0.59	0.65	0.52	0.58	0.40	0.47	0.29	0.62	0.49	0.66	0.52	0.69	0.55	0.57	0.40
	Temporary job in catering	0.61	0.46	0.55	0.38	0.47	0.26	0.36	0.18	0.52	0.35	0.55	0.38	0.59	0.41	0.46	0.27
	On-call job in catering	0.61	0.47	0.55	0.40	0.48	0.28	0.36	0.19	0.52	0.37	0.56	0.40	0.59	0.43	0.47	0.29
	Intern / WSW job in catering	0.52	0.41	0.46	0.34	0.40	0.24	0.29	0.16	0.43	0.31	0.47	0.34	0.50	0.37	0.38	0.24
	Missing job attributes	0.22	0.13	0.18	0.09	0.13	0.05	0.08	0.02	0.15	0.08	0.18	0.09	0.20	0.10	0.13	0.05
Probability of persistence: Staying non self-sufficient for 3 / 5 consecutive years																	
High-skilled	Regular job in government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Low-skilled	Regular job in catering	0.05	0.003	0.07	0.005	0.09	0.008	0.16	0.027	0.09	0.008	0.07	0.005	0.05	0.003	0.10	0.010
	Temporary job in catering	0.09	0.008	0.12	0.014	0.14	0.019	0.24	0.055	0.14	0.019	0.11	0.012	0.09	0.008	0.16	0.024
	On-call job in catering	0.09	0.009	0.12	0.015	0.14	0.021	0.25	0.061	0.15	0.021	0.12	0.014	0.10	0.009	0.16	0.027
	Intern / WSW job in catering	0.17	0.03	0.21	0.05	0.24	0.06	0.37	0.14	0.24	0.06	0.20	0.04	0.17	0.03	0.27	0.07
	Missing job attributes	0.51	0.26	0.57	0.32	0.60	0.37	0.73	0.54	0.61	0.37	0.56	0.31	0.51	0.26	0.64	0.40
Probability of recidivism: Falling back into non self-sufficiency within 5 years																	
High-skilled	Regular job in government	0.01	0.02	0.02	0.03	0.03	0.05	0.05	0.07	0.02	0.03	0.02	0.03	0.01	0.02	0.03	0.04
Low-skilled	Regular job in catering	0.24	0.40	0.28	0.47	0.33	0.60	0.37	0.68	0.29	0.51	0.28	0.48	0.26	0.45	0.33	0.59
	Temporary job in catering	0.30	0.53	0.33	0.60	0.39	0.72	0.40	0.77	0.34	0.63	0.34	0.61	0.32	0.58	0.38	0.70
	On-call job in catering	0.30	0.52	0.32	0.59	0.38	0.70	0.39	0.75	0.33	0.61	0.33	0.59	0.31	0.56	0.37	0.69
	Intern / WSW job in catering	0.31	0.56	0.32	0.61	0.36	0.70	0.34	0.71	0.33	0.63	0.33	0.62	0.32	0.60	0.35	0.69
	Missing job attributes	0.27	0.62	0.26	0.59	0.26	0.59	0.19	0.44	0.24	0.56	0.27	0.60	0.28	0.63	0.24	0.55

previous year, which implies joblessness for many. Among this group of low-skilled workers in the catering industry who are predicted to be most at risk of welfare persistence, those who are second-generation immigrants are always at higher risks than Dutch natives, except second-generation immigrants with a background from Americas & Oceania. Such cumulative disadvantages show to be the strongest among those with a background from the MENA region, Suriname & Caribbean, Sub-Saharan Africa and Other Europe, whose probabilities of welfare persistence are in the range of 0.60-0.73.

As for welfare cycling in the long term, recall that the average probability is 0.56. Among low-skilled among Dutch native workers in the catering industry, those with missing job attributes in the previous year are predicted to have the highest risk of welfare cycling (0.62). Among similarly low-skilled workers who are second-generation immigrants, the highest risks of welfare cycling concentrate among workers with non-regular contact and vary across ethnic backgrounds. The groups most prone to welfare cycling are low-skilled workers with a background from the MENA region hired in the catering industry with a temporary contract (0.77), with a freelance contract (0.75) and with an internship or WSW job (0.71), and those with a background from Other Europe with a temporary contract (0.72).

4.5 Robustness Checks

Given that the only existing study of welfare re-entry by Boskin and Nold (1975) has used a stock sample of social assistance recipients who entered in the first month of observation, we have tried several approaches to sample creation: (i) following the approach of Boskin and Nold (1975) and creating a stock sample of individuals who had received WW in 2010; (ii) creating a flow sample that contains individuals who received WW and WWB in any year as of 2009 prior to the current year t; and (iii) using the full sample of Dutch natives and second-generation young adults aged 20-28 (our current approach demonstrated above). The main difference is that, while in approaches (i) and (ii) welfare re-entry can be directly used as the dependent variable, in our current approach (iii) it can only be calculated based on entry and persistence probabilities. Coherent across all three approaches is that indicators of employment in the secondary sector and ethnic penalty show to have similar effects on the probability of welfare cycling. Since approaches (i) and (ii) are prone to sample selectivity issue, which we have also tried to solve by introducing one more equation of endogenous selection into the joint estimation but failed to converge, we ultimately decided to pursue approach (iii).

Another attempt is to use multinomial probit models for the joint estimation, but those models either could not converge or valid instruments could not be found. We also tried to vary the year in which explanatory variables are measured. One observation is that the proportion of missing values in job attributes (both contract type and sector of employment) at t-1, which either indicates such information is not available or the person does not have a job at the point

of measurement, varies greatly according to one's lagged status in the dependent variable. Across the sample, an average of more than 50% of the observations have missing information for these variables at t-1, but the percentage is inflated by the high number of missing among those who were not self-sufficient. Among those who were self-sufficient at t-1, only 13% and 6% are missing in the sector and job type variables respectively, whereas the percentages are as high as 89% and 87% for those who were not self-sufficient at t-1. On one hand, this is reasonable because we know from the literature that the scale of state dependence is large. On the other hand, we can as well check whether changing the year of measurement to t-2 would improve the model. The first observation is that the proportion of missing reduces by 80% and 67% missing in sector and job type variables respectively. After using sector and job type variables at t-2 instead of t-1 as explanatory variables, the second observation is that fewer sectors have statistically significant coefficients. The third observation is that the coefficient estimates are much smaller, although sectors associated with the highest risks of persistence remain similar. This indicates that job attributes in the previous year are more strongly correlated with welfare transitions in the following year. Given also that our sample size and thus the number of observations for each category of sector is large enough in spite of the large amount of missing information for individuals who were not self-sufficient at t-1, we continue to use t-1 as the year of measurement.

4.6 Concluding Remarks

As against the assumption of the work-first model, the findings of this paper suggest that welfare exit is not a good predictor of self-sufficiency in the Dutch context. Among Dutch native and second-generation young adults who had fallen out of self-sufficiency in the base year, we find that on average one-third of them are predicted to remain in this state in the next two years, and slightly more than half are predicted to return to this state in the next four years. In line with predictions of the labour market segmentation theory, large heterogeneities are observed by their relative position in the labour market and ethnic origin. The highest risks of welfare persistence and welfare cycling are found to concentrate among workers with attributes indicative of employment in the secondary sector, namely low skill level, non-regular contract and employment in less skill-intensive sectors, and second-generation young adults with a non-western background. The predicted probabilities of welfare persistence and welfare re-entry are close to 0 for high-skilled workers in the primary sector with average sample characteristics. As for low-skilled workers in the secondary sector with otherwise equivalent socio-demographic characteristics, the predicted welfare persistence probability in the medium term is as high as 0.73 and welfare cycling probability in the long term as high as 0.75 among those with a background from the MENA region, although the ceiling of such probabilities is 0.51 and 0.62 respectively for statistically similar Dutch natives. The estimated rates of welfare cycling provided in this chapter are fairly comparable to the descriptive rates provided in other studies in the Dutch context: 33% in 2 years (Königs, 2018) and 41% in 5

years (Snel et al., 2013). Since these figures are based on welfare transitions among social assistance recipients only without imposing any age restriction, it is reasonable that our predictions are higher in the long run as we adopt a composite measure of welfare.

With evidence of prevalent welfare persistence in the medium term and welfare cycling in the longer term among welfare recipients in the Netherlands, this paper makes the case that exit from welfare programmes should not be equated to exit from poverty or vulnerability. The focus on limiting access to and duration on social protection in the context of increasing labour market segmentation may put at stake the economic well-being of disadvantaged workers, especially when little evidence is suggestive of the existence of a programme-induced welfare trap per se (Banerjee et al., 2017; Plant, 1984). As Samson (2015) puts it, a narrow view of programmes "that focus on exit may ignore the key objective of promoting dynamic developmental impacts that enable households to progressively lift themselves out of poverty. A limited scope for social protection may fail to effectively tackle poverty and vulnerability if they do not support more comprehensively household demand for broad developmental impacts." (Samson, 2015). As economic and welfare dependence show to be closely linked to structural barriers in the labour market, the work-first approach as the stand-alone guiding principle of current welfare policies has been proven insufficient. Ensuring the availability of and access to decent jobs for disadvantaged groups should be prioritized as the prerequisites for activation policies to become truly effective.

It has to be noted that the observation period of the analysis (2010-2015) implies that the welfare transition patterns as well as the effects of labour market segmentation and ethnic penalty observed should be interpreted with caution, since most of these years except 2015 are deemed under the effects of economic recession (Delson, 2016). While these findings might be more reflective of the effects of labour market segmentation and ethnic penalty during economic downturn, it is also a period that disadvantaged workers are expected to be most negatively affected. Another limitation of this study is that, due to the lack of data, the measurement of secondary sector employment is confined to three indicators. Regarding the indicator of skill level of job, since we do not have data on the exact occupational level of the position, which is likely the optimal measure, we could only indirectly capture this through one's education level. We also lack sufficient information to proxy other characteristics of secondary sector employment such as social security provision of the job, availability of training or career progression opportunities and whether someone holds a part-time job. Future research may explore the sensitivities of these findings to the effects of business cycle and life cycle, the extent to which first-generation immigrants are affected differently from second-generation young adults, and the measurement of secondary sector employment.

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Appendix 1: Definition and Examples of Jobs in Sector Variable

Table 4.6: Definition and example of jobs in the sector variable

Sector of employment	Definition	Example
Government & public administration	Public administration, public services and compulsory social security	
Catering & accommodation	Food and beverage service	Restaurant, bar
	Accommodation	Hotel, camping site
Construction	Construction	
Agriculture, forestry & fishery	Agriculture	
	Forestry	
	Fishery	
Transport & storage	Transport	Land, sea and air transport
	Warehousing	
	Support activities for transportation	Cargo handling, weighing and measuring
Wholesale / Retail	Wholesale trade	Food and beverages, consumer goods
	Retail trade	Supermarket, market sale, online retail
	Sale and repair of motor vehicles and motorcycles	
Other services	Wellness and other services	Funeral activities, laundry or renting of linens, cleaning of clothes, hairdressing, beauty treatment, sauna
	Repair of computers and consumer goods	
	Trade unions	
	World view and political organizations, interest and ideological organizations, hobby clubs	
Other business support services	Renting and leasing of tangible goods	Motor vehicles, consumer goods
	Other business support services	Employment placement agencies, travel agencies, cleaning services, callcenters, security
Less skilled manufacturing	Manufacture	Manufacture of beverages, textile, wood, construction materials and metal
	Repair and installation of machinery and equipment	
	Water and waste management	Waste collection, treatment and disposal
Social work & care	Residential care and guidance	Residential nursing care, residential and day care for mental retardation, the disabled and the elderly
	Social work activities without accommodation	Child day-care centres, counselling for disabled
Culture, sports & recreation	Culture	Arts, lending of cultural goods, public archives, museums, botanical and zoological gardens and nature reserves activities
	Sports	Sports facilities
	Recreation	Amusement parks, carnival attracations
Skilled manufacturing & energy supplies	Manufacture	Manufacture of medical instruments and supplies, pharmaceutical products, chemical products, refined petroleum products, electrical equipment, machinery, transport vehicles
	Energy supplies	
Real estate	Renting, buying and selling of real estate	
Communication, design & advertising	Communication	Publishing of books, software publishing, motion picture and television programme production and distribution, sound recording and music publishing, telecommunication
	Design	Industrial design, photography, translation and other consultancies
	Advertising	Advertising and market research
IT	Information technology and supporting activities	Writing, producing and publishing of software, computer consultancy activities, data processing and hosting, web portals
Health	Human health activities	Hospitals, medical and dental practice
Financial services	Financial institutions and services	Financial institutions, investment fund, credit granting, pension fund, insurance
Specialized business services	Legal services	
	Accounting	
	Consultancy	Management, business and tax consultancy
	Architects, engineers and technical design and consultancies	
	Research & development	
	Veterinary activities	
	Extraterritorial organizations and bodies	
Education	Formal education	Primary, secondary and tertiary education
	Other education	Cultural education, driving schools, sports and recreation education

Source: CBS (2017). Standaard Bedrijfsindeling 2008, version 2017.

Appendix 2: Full regression outputs

Table 4.7: Coefficient estimates of first-order two-state Markov model with endogenous selection and unobserved heterogeneity

		Probability of non self-sufficiency in year t	
	Probability of self-sufficiency in year t-1	Self-sufficient in year t-1	Not self-sufficient in year t-1
Area of origin			
Dutch natives	(Ref. group)		
EU	-0.260 ***	0.184 ***	0.189 ***
	(0.057)	(0.034)	(0.043)
Other Europe	-0.327 ***	0.601 ***	0.298 ***
	(0.057)	(0.027)	(0.032)
MENA	-0.754 ***	0.786 ***	0.726 ***
	(0.054)	(0.027)	(0.033)
Sub-Saharan Africa	-0.301 ***	0.240 ***	0.307 ***
	(0.111)	(0.067)	(0.086)
Asia	-0.221 ***	0.226 ***	0.146 ***
	(0.070)	(0.040)	(0.053)
Americas & Oceania	-0.199 **	0.167 ***	0.019
	(0.094)	(0.055)	(0.075)
Suriname & Caribbean	-0.619 ***	0.528 ***	0.395 ***
	(0.055)	(0.032)	(0.036)
Education level			
Low	(Ref. group)		
Middle	0.806 ***	-0.487 ***	-0.748 ***
	(0.020)	(0.013)	(0.016)
High	1.264 ***	-0.871 ***	-1.574 ***
	(0.025)	(0.016)	(0.023)
Job type			
Regular	(Ref. group)		
Temporary	-0.349 ***	0.359 ***	0.292 ***
	(0.043)	(0.022)	(0.070)
On-call	-0.555 ***	0.276 ***	0.332 ***
	(0.035)	(0.018)	(0.059)
Intern / WSW	-1.548 ***	0.232 ***	0.740 ***
	(0.065)	(0.047)	(0.084)
Missing	-4.922 ***	1.231 ***	1.907 ***
	(0.051)	(0.053)	(0.062)
Sector of employment			
Government & public administration	(Ref. group)		
Catering	-1.138 ***	1.049 ***	0.684 ***
	(0.114)	(0.047)	(0.224)
Construction	-0.772 ***	0.867 ***	0.126
	(0.133)	(0.051)	(0.265)
Agriculture, forestry & fishery	-1.299 ***	0.866 ***	0.503
	(0.168)	(0.075)	(0.313)
Transport & storage	-1.265 ***	0.829 ***	0.765 ***
	(0.122)	(0.052)	(0.233)
Wholesale / Retail	-0.870 ***	0.855 ***	0.411 *
	(0.110)	(0.044)	(0.217)
Other services	-0.803 ***	0.816 ***	0.647 ***
	(0.131)	(0.053)	(0.248)
Other business support services	-1.268 ***	1.018 ***	0.612 ***
	(0.112)	(0.046)	(0.219)
Less skilled manufacturing	-0.259 **	0.670 ***	-0.226
	(0.122)	(0.050)	(0.227)
Social work & care	-0.802 ***	0.781 ***	0.448 **
	(0.111)	(0.045)	(0.218)
Culture, sports & recreation	-1.370 ***	1.019 ***	0.730 ***
	(0.130)	(0.057)	(0.245)
Skilled manufacturing & energy supplies	-0.483 ***	0.513 ***	0.212
	(0.165)	(0.064)	(0.338)
Real estate	-0.701 ***	0.719 ***	0.371
	(0.208)	(0.082)	(0.406)
Communication, design & advertising	-0.807 ***	0.978 ***	0.285
	(0.139)	(0.054)	(0.275)
IT	-0.823 ***	0.757 ***	0.174
	(0.156)	(0.062)	(0.298)
Health	-0.429 ***	0.496 ***	0.287
	(0.121)	(0.048)	(0.235)
Financial services	-0.164	0.746 ***	0.090
	(0.195)	(0.061)	(0.399)
Specialized business services	-0.721 ***	0.721 ***	0.361
	(0.127)	(0.050)	(0.250)
Education	-0.713 ***	0.639 ***	0.320
	(0.126)	(0.051)	(0.249)
Missing	-0.634 ***	0.738 ***	0.658 ***
	(0.114)	(0.067)	(0.219)
Lagged status			
WW			(Ref. group)
WWB			1.113 ***
			(0.024)
Other social benefits			1.500 ***
			(0.020)
No income			0.656 ***
			(0.020)
Female	-0.635 ***	0.399 ***	0.468 ***
	(0.019)	(0.012)	(0.017)
Age	0.075 ***	-0.036 ***	-0.020 ***
	(0.008)	(0.005)	(0.005)
Period			
2010	(Ref. group)		
2011	0.369 ***	-0.080	-0.127 ***
	(0.036)	(0.053)	(0.025)
2012	0.421 ***	-0.057	-0.060 **
	(0.040)	(0.054)	(0.029)
2013	0.290 ***	-0.081	-0.012
	(0.044)	(0.055)	(0.030)
2014	0.274 ***	-0.144 **	-0.033
	(0.047)	(0.055)	(0.032)
Household type			
Single-person	(Ref. group)		
Not married without kids	0.664 ***	-0.231 ***	-0.438 ***
	(0.019)	(0.012)	(0.019)
Married without kids	0.735 ***	-0.072 ***	-0.311 ***
	(0.031)	(0.017)	(0.029)
Not married with kids	0.109 ***	0.190 ***	-0.103 ***
	(0.029)	(0.020)	(0.023)

Married with kids	0.348 ***	0.126 ***	-0.034
	(0.029)	(0.019)	(0.023)
Single-parent	-1.130 ***	0.647 ***	0.463 ***
	(0.045)	(0.035)	(0.031)
Other	0.263 ***	-0.010	-0.156 ***
	(0.041)	(0.027)	(0.037)
Institutional	-1.468 ***	0.666 ***	0.915 ***
	(0.050)	(0.053)	(0.039)
Provincial unemployment rate	0.028 ***	0.027	0.049
	(0.038)	(0.027)	(0.034)
Province			
Groningen	(Ref. group)		
Friesland	0.339 ***	-0.099 ***	-0.124 ***
	(0.053)	(0.033)	(0.042)
Drenthe	0.269 ***	-0.072 ***	-0.088 *
	(0.061)	(0.038)	(0.048)
Overijssel	0.306 ***	-0.194 ***	-0.116 ***
	(0.049)	(0.031)	(0.039)
Flevoland	0.522 ***	-0.176 ***	-0.306 ***
	(0.064)	(0.039)	(0.050)
Gelderland	0.489 ***	-0.247 ***	-0.198 ***
	(0.047)	(0.030)	(0.038)
Utrecht	0.622 ***	-0.310 ***	-0.391 ***
	(0.051)	(0.030)	(0.040)
Noord-Holland	0.665 ***	-0.320 ***	-0.455 ***
	(0.044)	(0.028)	(0.035)
Zuid-Holland	0.644 ***	-0.326 ***	-0.361 ***
	(0.043)	(0.026)	(0.033)
Zeeland	0.908 ***	-0.341 ***	-0.345 ***
	(0.070)	(0.042)	(0.057)
Noord-Brabant	0.699 ***	-0.338 ***	-0.339 ***
	(0.046)	(0.028)	(0.036)
Limburg	0.445 ***	-0.206 ***	-0.249 ***
	(0.053)	(0.033)	(0.042)
Constant	1.299 ***	-1.473 ***	-2.382 ***
	(0.277)	(0.136)	(0.253)
Number of observations	421,211	346,840	100,291

Note: The table reports the coefficient estimates. Standard errors are reported in parentheses. *** p<0.01, ** p<0.05, *<0.1.

Chapter 5
Conclusion

5.1 Introduction

Despite a high degree of policy and societal relevance, scientific evidence in the research area of immigrant welfare assimilation remains scant at both the international and European levels. This is primarily due to a lack of quality longitudinal data permitting the analyses of intra-generational and inter-generational trajectories of individuals and their children over time. That has left plenty of room for ungrounded speculations and stereotypes about immigrant welfare recipients and their interaction with the welfare state. Against this background, this dissertation seeks to complement such missing link between the rhetoric and the complex welfare realities with the use of quality longitudinal population data of the Netherlands. Drawing on a dynamic life-course approach, it estimates the welfare utilization transitions and trajectories of first-generation and second-generation immigrants in comparison with those of Dutch natives from different economic segments. The main findings, policy implications, contributions, limitations of this thesis and future research avenues will be discussed in the following section.

5.2 Summary of Key Findings

This dissertation has explored various facets of the welfare cycle by examining the immigrant-native difference in welfare utilization and assimilation patterns, trajectories and determinants across generations in the Dutch context. Although causal linkages cannot be drawn, the findings of this dissertation provide new empirical evidence for intra-generational and inter-generational welfare dynamics of first-generation and second-generation immigrants. The key findings are summarized and discussed below.

Key Finding 1: In spite of the observation of segmented assimilation not only among first-generation immigrants but also second-generation young adults, both intra-generational and inter-generational upward mobilities are notable, even among the most disadvantaged groups.

In chapter 2, *Segmented Paths of Welfare Assimilation*, in order to investigate the presence of segmented assimilation, the welfare assimilation trajectories of first-generation immigrants are estimated over the working-age life-course vis-à-vis those of two base groups from the native populations representing different economic segments of the host country, namely: average Dutch natives and Dutch natives with low education level. The results show that, while mainstream assimilation is the dominant trend, it is not a common path for all. Despite a notable degree of upward mobility displayed, the risk of persistent marginalization exists. The worst scenario projected is a lack of assimilation to neither segment, suggesting prospective emergence of an ethnic underclass at the bottom of the economic ladder. These findings are in line with

predictions of segmented assimilation theory, at odds with the assumption of straight-line or bumpy assimilation underlying mainstream theoretical approaches in the literature.

To assess whether segmented assimilation pertains to the second generation and identify pathways to intergenerational welfare assimilation, Chapter 3, *Pathways to Intergenerational Welfare Assimilation*, examines the welfare assimilation patterns and determinants of second-generation young adults vis-à-vis four reference groups: average Dutch native young adults, Dutch native young adults with low education level, their own parents, and first-generation immigrants. The first finding is that, in opposition to the second-generation decline hypothesis, remarkable intergenerational progress is observed in both absolute and relative terms in comparison with first-generation immigrants from the same area of origin, education level and gender, and intergenerational mobilities relative to their own parents are not exclusive of those with less favourable modes of incorporation. Such intergenerational progress observed in welfare utilization differs from the relatively pessimistic finding of Zorlu (2013) that a similar degree of welfare dependence exists between first-generation and second-generation immigrants with Turkish, Moroccan, Surinamese and Antillean backgrounds in the Netherlands. The second finding is that, in line with the segmented assimilation theory, the risk of economic marginalization remains a relevant concern for many second-generation young adults without higher education. Such an observation of persistent disadvantage among second-generation immigrants vs-a-vis the natives is in line with the findings of many studies on the integration outcome of second-generation immigrants in the Dutch context in terms of welfare use (Zorlu, 2013) and more generally occupational status (De Vries & Wolbers, 2004; Euwals et al., 2007), employment (Witteveen & Alba, 2018; Gracia, Vazquex & van de Werfhorst, 2014; Tesser & Dronkers, 2007), income as well as labour market participation (Tesser & Dronkers, 2007).

These descriptive findings call for rethinking of common conceptual starting points in the general literature as well as case studies of the Netherlands. The study of whether immigrants and their children reach parity with the natives should take into account the life-course perspective, and a more fundamental question that warrants attention might be to whom and under what conditions they assimilate.

Key Finding 2: For first-generation immigrants, years since migration (YSM) is not the main explanatory factor – modes of incorporation in the receptive context and human capital show to be the major determinants of their welfare assimilation process. As for second-generation young adults, the importance of human capital overrides yet remains conditioned by the modes of incorporation and family backgrounds. The relevance of ethnic capital shows to decline across generations.

Chapter 2 has identified that concentrated disadvantages are observed among first-generation immigrants characterized by structural and human capital disadvantages, namely, those faced

with the most negative modes of incorporation in the receptive context, especially non-western and non-economic migrants, and whose level of education is at lower end of the distribution. This observation aligns with the foreseen gap in integration outcomes among different types of migrants (Chiswick, 2000) with particular regards to the difference in voluntary and involuntary nature of migration (Ogbu & Simons, 1998) in the broader immigrant integration literature.

As for second-generation young adults, results from Chapter 3 show that what seems to underlie segmentation of their welfare assimilation process is three-way interactions of human capital, modes of incorporation and family backgrounds. While higher education offers an effective pathway to mainstream assimilation, the extent to which human capital disadvantage would hamper such a prospect is conditioned upon their ethnic and family backgrounds, even after controlling for socio-demographic factors including intra-and inter-ethnic social capital.

Such evidence confirms that the influence of individual attributes on the immigrant assimilation process is conditioned by macro- and meso-level factors. It also highlights to the immigrant integration literature the great heterogeneity of the direct and indirect effects of ethnicity among the immigrant populations and thus the necessity to simultaneously control for these effects in order to avoid overestimation of ethnic penalty.

In addition, the relevance of structural disadvantage and ethnic capital generally shows to decline across generations, which, on one hand, provides positive evidence of intergenerational progress in the sense of ethnic penalty reduction, and, on the other, sheds light on evolving sets of determinants for the economic assimilation processes of first-generation and second-generation immigrants. This also attests to the general finding in the broader literature of immigrant integration that ethnic capital might not be as much an important leeway to integration as perceived, and might not be uniformly beneficial to all migrant groups as seen in previous European (Thomson & Crul, 2007) and Dutch studies (Crul & Vermeulen, 2003).

Key Finding 3: There is a considerable degree of welfare persistence in the medium term and welfare cycling in the long term among individuals who had fallen out of self-sufficiency, in spite of the policy focus on activation. Such patterns of precarious welfare-to-work transitions are particularly common among non-Dutch workers employed in the secondary labour market.

In order to understand pathways to durable self-sufficiency for welfare recipients, Chapter 4, *Precarious Welfare-to-work Transitions*, investigates the extent to which the propensities of welfare dependency, indicated by welfare persistence and welfare recidivism, are influenced by employment in the secondary labour market and ethnic penalty. At odds with the neo-liberal assumption underlying the work-first model, the results show that among Dutch native and second-generation young adults who had fallen out of self-sufficiency in the base year, on average one-third of them are predicted for welfare persistence in the medium term, and slightly more

than half predicted for welfare re-entry in the long term. It is found that ethnic penalty and each indicator of labour market segmentation per se, namely, low skill level, non-regular job contract and employment in less skilled sectors, as well as their interaction significantly increase such risks. These findings suggest that, in the first place, welfare cycling is a relevant issue, as in line with the theoretical projection in the literature (McTier & McGregor, 2018; McCollum, 2013, 2012; Breitkreuz & Williamson, 2012; Acs & Loprest, 2004) and empirical findings for the Netherlands (Konig, 2018; Van Berkel, 2007). Furthermore, the prospects for attaining and maintaining self-sufficiency are bifurcated for workers in the primary and secondary labour markets, and labour market segmentation has further amplified existing ethnic disadvantages in the process of economic integration. This underlines the importance of analyzing welfare transitions beyond a single-spell or exit-focused approach, and calls for attention to the very nature of the labour market structure and the overall opportunity structure to economic inclusion in general, and, specifically, immigrant economic and welfare assimilation.

5.3 Policy Implications

There is a substantial level of complexity surrounding the issue of immigrant welfare dynamics as well as its implications. Synthesizing research findings from Chapter 2-4, a number of policy implications relating to the integration, immigration, social protection and labour market policies will be discussed. While these policy implications are applicable directly to the Dutch context, they may also serve as a reference for other immigrant-receiving countries upon contextualization.

With regards to integration policies, notwithstanding notable degrees of intra-generational and inter-generational mobilities observed, uniform, automatic closing of the immigrant-native gap over time should not be presumed, as multilevel factors demonstrate strong and statistically significant correlation to welfare assimilation of first- and second-generation immigrants in the Netherlands. On one hand, individual efforts through educational attainment are part of the solution, but their effectiveness is conditioned by structural constraints in the labour market. Even after controlling for socio-demographic attributes, individual aspiration for integration and external factors, concentrated disadvantages are seen among first-generation immigrants with non-EU origin, non-economic migration purposes and lower education levels, as well as second-generation immigrants with lower education levels and certain non-western backgrounds. Although ethnic penalty can be offset by the attainment of higher education for second-generation young adults, it remains a clear watershed for those with lower education levels. For first-generation immigrants, its interaction with type of immigration can be at most alleviated by human and ethnic capital. Even though labour market segmentation hit all workers positioned in the secondary sector of the labour market, it hits harder those with second-generation status and

especially those with certain non-western backgrounds. These evidence of group-specific barriers indicate the need for targeted measures to unlock opportunities for full participation in and contribution to the host society for all, including but not limited to improving transferability of qualifications obtained abroad especially for asylum seekers and refugees, and eliminating discriminatory practices and institutional arrangements against migrants and ethnic minorities with respect to access to and opportunities in the labour market. On the other hand, the importance of inter-ethnic capital shows to override that of intra-ethnic capital for the welfare assimilation of second-generation immigrants. This not only attests to the value of integration policy, but also the importance of receptive public attitudes in facilitating the incorporation of immigrants and their children in the host economy and society.

With regards to immigration policy, the need for distinction between immigration policy and refugee policy should not be obscured by the consolidation of migrants as one homogenous group, as systematic discrepancies are observed between refugees and other types of migrants in terms of their patterns and mechanisms of welfare assimilation. While long-term planning of immigration policy with the goal to ensure sustainable development of the country may well be justified, the same cost-benefit rationale should not be directly applied to refugee policy for which enshrining international conventions and adhering to humanitarian principles remain fundamental.

With regards to social protection and labour market policies, critical rethinking is in need with respect to positioning of the welfare system. While recent decades have witnessed an expansion of social protection programmes in developing economies, which is moving beyond its traditional safety net function as a development tool to strengthen individual capacities to build more sustainable livelihoods (Devereux & Sabates-Wheeler, 2008), a number of European countries including the Netherlands have seemingly taken a reverse direction by reforming, reducing if not replacing the welfare state. Even though the subject of welfare is fundamentally provoking given its direct association with costs and expenses, and, along with that, popular beliefs of a welfare trap which keeps people lazy, welfare policies should be based on evidence and facts. It is, on one hand, ineffective if not detrimental to treat symptoms as the root cause, and, on the other hand, essential that the fundamental protective function of the welfare state shall not be compromised.

Research findings of this thesis, which encompass insights on the determinants of welfare receipt and dependency among first-generation and second-generation immigrants, have consistently re-iterated a clear message: the context within which the welfare system and welfare recipients are situated must not be cut off from the analysis and understanding of welfare participation.

While moving benefit recipients out of the welfare system by limiting access to and shortening duration on social benefits can lead to higher welfare exit rates and reduce the stock number of recipients in the system in the short term, it can be a means but not an end in itself. Effectiveness of the activation policy cannot be solely evaluated by the exit rate, which is proven in Chapter 4

to be a poor indicator of whether welfare recipients are able to attain and maintain self-sufficiency. Instead of attributing welfare dependence exclusively to individual choices and responsibilities on the basis of popular beliefs, new empirical evidence from this thesis attest to its connection to demand-side problems – the limited availability of and access to decent jobs in an increasingly segmented labour market and society as a whole, where high levels of horizontal inequalities if not stratifications have strongly conditioned the welfare and economic assimilation process of immigrants and their children. It is imperative that the basis upon which welfare policies and reforms have been built and designed should be reconsidered and recontextualized by policy makers in a spirit of evidence-based policy making.

5.4 Contributions, Limitations and Future Research

Immigrant welfare dynamics is an understudied domain for which empirical evidence is scant and predominantly descriptive. Centred on the interaction of first- and second-generation immigrants with the Dutch welfare state as well as the overall labour market and society, this dissertation has investigated the patterns, trajectories and determinants of the immigrant assimilation process. It extends the scope and analysis of existing studies in several ways.

First of all, this dissertation complements the conceptual and methodological approaches in existing research by bridging the economics and sociology literatures. From the conceptual perspective, Chapter 2 and 3 extend the descriptive and explanatory functions of the welfare assimilation model in the economics literature by redefining assimilation from an absolute to a relative concept based on the segmented assimilation theory in sociology. While the theoretical framework for welfare dynamics studies has a conventional focus on micro-level determinants, by drawing on insights from segmented assimilation theory (Chapter 2 and 3) and labour market segmentation theory (Chapter 4), this thesis incorporates macro-level and meso-level factors into this framework. Immigrant integration research is inherently embedded in multidisciplinary foundations. The scarcity of interdisciplinary research in this field might be a reflection of its complexities to a certain extent. It requires breaking cross-disciplinary boundaries by re-evaluating conventional if not authoritative theories, approaches, terminology and jargon in each discipline, assessing their respective strengths and weaknesses, combining conceptual and methodological insights, and finding common languages that convey to scholars working in very different silos. Notwithstanding these complications, it shall expand the bounds of what monodisciplinary research can do by exploiting the substantive scope of knowledge across disciplines.

Moreover, this dissertation addresses biases in existing analyses predominantly guided by static approaches with the use of quality longitudinal registry data which covers the entire Dutch

populations. By employing a dynamic life-course approach, the dynamics of immigrant welfare receipt are better captured. Three types of new evidence are generated from the use of this approach. Firstly, it provides the first evidence on welfare assimilation and welfare recidivism in the Netherlands. Secondly, it is a first attempt to undertake an intergenerational perspective to the issue of welfare assimilation by exploiting intergenerational data which is rarely available. Thirdly, it extends the analysis beyond the traditional single-spell focus by examining welfare transitions across spells and programmes.

In terms of the scope of analysis, departing from the conventional focus on the four main ethnic minority groups in the Netherlands, this thesis provides an aggregate overview of the welfare assimilation patterns and trajectories of first-generation and second-generation immigrants from all countries of origin, with a detailed decomposition by their socio-demographic characteristics. Another contribution is the provision of more recent empirical evidence to update the trends and developments of this subject, especially under the effect of economic recession as of 2007/8.

From the methodological perspective, this dissertation innovates the operationalization strategy employed for empirically testing the segmented assimilation theory. This involves basing the measurement of ethnic capital on Borjas' ethnic capital theory, testing segmented assimilation by conducting welfare assimilation analysis, establishing specific benchmark and reference groups for directly testing the core theoretical assumptions, and accounting for estimation biases from unobserved heterogeneity and the initial conditions problem. Such estimation biases have also been addressed in Chapter 4 in the analysis of welfare transitions.

Notwithstanding potential contributions it makes, some caveats are to be noted and some questions remain, which may point to future research avenues. While the findings attest to the propositions of these theories by identifying the patterns and determinants of welfare utilization and transitions, due to the research design and data limitation, identification of the causal mechanism, most notably with regards to the cultural mechanism, underlying the observed patterns is beyond the scope of this dissertation. Future research can provide further insights on these issues.

Another suggestion for future research is the examination of intra-group heterogeneities, given the focus of this thesis on the bigger picture by covering all migrant groups. This comes naturally with the disadvantage that relatively broad classification with regards to their origin has to be imposed, instead of looking at precise differences by their country of origin.

One data-related limitation is the presence of missing data mainly in variables that originate from surveys, such as education level for first-generation immigrants and job characteristics, which is embedded in the data collection methods. Despite such limitation, we have performed robustness checks to ensure that this issue does not threaten the reliability of our results. That said, future studies can make use of other survey data to compare with findings of this thesis.

Another issue is that, because of the relatively young age composition of the second generation and limited timespan of data available, the observation of welfare utilization and transition patterns of second-generation immigrants is confined to those up to age 28. Because of the latter reason, welfare transitions observed in Chapter 4 is confined to a period under the effect of recession, and the welfare transition patterns of first-generation immigrants cannot be observed vis-à-vis those of second-generation immigrants due to a lack of valid instruments, namely, characteristics prior to one's labour market entry. Future research may test the sensitivities of these results to lifecycle and business cycle effects, and focus on the welfare transitions of first-generation immigrants to shed light on intergenerational differences.

Related to this issue is that the choice of indicator for certain explanatory factor is conditioned by data availability. For example, the mode of incorporation is captured in this thesis by the variables area of origin and reason for migration; employment in the secondary sector is captured by the variables education level, job contract and sector of employment. Ideally, these measures can be complemented by other indicators if available, such as direct measurement of public attitude towards immigrants for the former, and occupational level in a job and availability of social security provision or promotion opportunity in a job for the latter. Future research can explore whether these effects identified show to diverge when using other measures, which may also confirm or shed light on the channels through which these observed effects take place.

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Anny Yip-Ching Yu was born and raised in Hong Kong. She holds a Master's degree in Public Policy and Human Development with a specialization in Social Protection Policy Design and Financing from Maastricht University and United Nations University-MERIT, and a Bachelor's degree in Translation with double minor in Government and Public Administration and French from the Chinese University of Hong Kong. Before and during her time as a PhD fellow at UNU-MERIT, Anny has worked as a researcher on a variety of migration, social protection and health related projects for several institutions including the International Centre for Reproductive Health, International Organization for Migration (IOM) and University of Bremen. She taught advanced classes on quantitative methods in poverty and inequality analysis, micro-simulation and impact evaluation. Anny was affiliated to Statistics Netherlands (CBS) and was a visiting researcher at the Centre for European Studies and Comparative Politics of Sciences Po Paris. Her doctoral research explores the immigrant welfare receipt dynamics in the Netherlands through micro-econometric analysis of longitudinal Dutch registry data. Her main research interests lie in social protection system strengthening, poverty and inequality, migration and development, labour market segmentation and social mobility. Anny currently works at the Regional Data Hub of IOM Regional Office for Asia and the Pacific.

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