



## Naturalization and the transition to homeownership: an analysis of signalling in the Dutch housing market

Floris Peters

To cite this article: Floris Peters (2020) Naturalization and the transition to homeownership: an analysis of signalling in the Dutch housing market, *Housing Studies*, 35:7, 1239-1268, DOI: [10.1080/02673037.2019.1654601](https://doi.org/10.1080/02673037.2019.1654601)

To link to this article: <https://doi.org/10.1080/02673037.2019.1654601>



© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 26 Aug 2019.



[Submit your article to this journal](#)



Article views: 1716



[View related articles](#)



[View Crossmark data](#)



Citing articles: 1 [View citing articles](#)

# Naturalization and the transition to homeownership: an analysis of signalling in the Dutch housing market

Floris Peters

Department of Political Science, Maastricht University, Maastricht, the Netherlands

## ABSTRACT

This article pioneers in investigating a citizenship premium for homeownership of first-generation immigrants, using Dutch register data from Statistics Netherlands ( $N = 106,187$ ). I hypothesize that naturalization favourably influences the risk-calculation of lenders through positive signalling among employed migrants, who are likely to meet the basic financial criteria for credit. Results confirm that, all else constant, employed immigrants who have naturalized are 26% more likely to be homeowner. Additional analyses specifically designed to isolate endogeneity bias show that the effect is smaller, but still reveal an increase in the probability of homeownership after naturalization. Citizenship acquisition matters less for migrants with a native-born partner, suggesting that legal status discrimination may be an underlying mechanism. I find no evidence that the relevance of citizenship is conditioned by cultural distance of the origin country or the post-2008 economic crisis. I conclude that naturalization matters in the housing market, but that its relevance cannot be generalized to all migrant groups.

## ARTICLE HISTORY

Received 6 November 2017

Accepted 7 August 2019

## KEYWORDS

Citizenship; immigration; homeownership; the Netherlands

## Introduction

Over the last decade, a large number of foreign-born individuals acquired the citizenship of an OECD country (OECD, 2015, p. 204). Among long-term settlers who are resident for at least 10 years, more than 60% possesses the host country citizenship. In that context, a broad range of literature has analysed whether naturalization improves the odds of settlement success (OECD, 2011, 2015). While the integration of immigrants starts at the moment of arrival in the host country, naturalization may still be an important legal status transition. Indeed, literature suggests that citizenship acquisition facilitates socio-economic integration for some migrant groups under certain conditions (Bratsberg *et al.*, 2002; Engdahl, 2014; Helgertz *et al.*, 2014; Steinhardt, 2012). While inequalities based on origin, religion, education and class are clearly not erased by naturalization, citizenship may serve to attenuate such

**CONTACT** Floris Peters  [floris.peters@maastrichtuniversity.nl](mailto:floris.peters@maastrichtuniversity.nl)  Department of Political Science, Maastricht University, Grote Gracht 90-92, 6211 SZ Maastricht, the Netherlands

© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

discrepancies, and promote opportunities for participation, integration and social mobility (Bloemraad, 2017, p. 546).

However, research on integration outcomes of naturalization – also known as the ‘citizenship premium’ – has so far predominantly focussed on labour market outcomes, such as employment and earnings. Yet the settlement process comprises a much broader range of socio-economic factors, such as quality of housing, living conditions and neighbourhood characteristics. Although there is a wealth of research on those indicators (Feijten *et al.*, 2008; McConnel, 2015; Rossi & Weber, 1996; Uunk, 2017; Zorlu *et al.*, 2014), the role of citizenship for tenure patterns is often not specifically addressed. As such, the relevance of naturalization remains an open question. This article analyses whether citizenship acquisition matters for one of the understudied non-labour market indicators of socio-economic integration, namely housing market integration. More specifically, I analyse the relevance of Dutch citizenship for homeownership of first-generation immigrants in the Netherlands. Notwithstanding serious (financial) risks associated with buying a house (Smith *et al.*, 2009; Soaita & Searle, 2016), particularly for marginalized groups such as migrants (Searle & McCollum, 2014), as well as the gradually diminishing role of housing assets as the basis for welfare self-reliance (Ronald, 2008; Ronald *et al.*, 2017), homeownership can still be an important facet of the settlement process, and provide long-term financial benefits compared to private and social rented housing. Examples include lower long-term payment for housing, favourable tax treatment and the gradual accumulation of property wealth (Charles & Hurst, 2002). Furthermore, homeownership may stimulate social well-being through an increase in social status, greater psychological health (Rohe & Stegman, 1994) and better neighbourhood conditions (Rossi & Weber, 1996).

This article contributes to the literature in three ways. First, a substantial amount of literature, traditionally focussed on structural and institutional manifestations of racialized inequalities in housing systems (eg Ginsburg, 1992; Ginsburg & Watson, 1992; Tomlins, 1997), has already analysed the so-called ethnic gap in homeownership, revealing that immigrants are more likely to be tenants than homeowners compared to the native population (Boehm & Schlottmann, 2004; Dawkins, 2005; Uunk, 2017; Zorlu *et al.*, 2014).<sup>1</sup> These findings are robust to controls for various socio-economic and demographic characteristics. More recently, studies have included legal status in their models, revealing a positive association between naturalization and homeownership (Callis, 2003; Constant *et al.*, 2009; Coulson, 1999; Enchautegui & Giannarelli, 2015; Hutcheson & Jeffers, 2013; Masnick, 1997). However, many studies focus on particular migrant groups, most notably asylum seekers and refugees (Murdie, 2008; Phillips, 2006; Platts-Fowler & Robinson, 2015), for whom very specific rules and regulations apply. This article makes use of administrative data to analyse foreign-born individuals more generally.

Second, studies in the literature often use either cross-sectional data, or analyse longitudinal data in a descriptive way (often cross-nationally). Given the selective nature of the naturalization process, this introduces the risk of so-called self-selection bias. More specifically, migrants who naturalize are positively selected in terms of motivation, ability, the intention to stay and other (endogenous) characteristics that are hard to measure and control for. These characteristics may simultaneously be positively

associated with the propensity and ability to buy a house. Failing to account for selection may result in an overestimation of the citizenship premium in the housing market. This study makes use of panel data to compare the moment before and after naturalization, and disentangle selection effects from citizenship effects.

Third, this article draws on the established theoretical framework on labour market outcomes of naturalization to develop a model for housing market integration. Citizenship acquisition has the potential to provide a boost in employment and earnings for some migrant groups (Bratsberg *et al.*, 2002; Helgertz *et al.*, 2014; Peters *et al.*, 2018; Steinhardt, 2012). One of the most important mechanisms that is traditionally associated with this citizenship premium is positive signalling. In the context of uncertainty about qualifications and work experience of foreign-born individuals, employers may perceive the naturalized status as a proxy for desirable characteristics, reducing the risk of hiring such individuals compared to foreign-born non-citizens. This article builds on that theoretical framework by analysing whether the signalling potential of citizenship also matters in the housing market, and if so, to whom and under which conditions citizenship matters. Doing so may aid the development of a theoretical framework that goes beyond simply observing a citizenship premium, and instead highlights potential mechanisms underlying this relationship.

I make use of register data from Statistics Netherlands based on information from the Dutch System of Social Statistical Datasets. These data include almost all registered first-generation immigrants in the Netherlands ( $N=106,187$ ) over the period 2003–2011, whose characteristics can be tracked over time. The article is structured as follows. First, I briefly detail the Dutch housing market and citizenship policy. I then outline the theoretical framework and hypotheses, as well as the data and empirical strategy. Subsequently, results from the analyses are presented, and finally, I discuss the conclusions and implications of my findings.

## Context

Homeownership is comparatively attractive in the Netherlands. Down-payment requirements are typically limited, and houses can be financed through a mortgage with relatively little investment of personal wealth (Uunk, 2017, p. 98). Moreover, the Dutch government encourages homeownership through tax deduction of interest payments. These advantages are reflected in the large number of mortgaged homeowners (46.8% of all households in 2011), as well as the relatively high mortgage debt per household in the Netherlands (154,000 euro on average in 2011; CBS, 2018).<sup>2</sup>

There are no legal restrictions for immigrants to buy property in the Netherlands. Yet migrants are less often homeowners compared to the native population. Figures from Statistics Netherlands show that on January 1, 2011, over 3.5 million native-born individuals were homeowners, constituting 60.4% of all households with a native-born principal wage-earner (CBS, 2017). Among migrant households of western origin, the proportion of homeowners is 46.1%, and among migrant households of non-western descent, this is limited to 24.4%.<sup>3</sup> In addition to structural factors (eg compositional differences between migrants and natives), a contextual explanation for this discrepancy is that individuals with a non-permanent residence

status are not eligible for the so-called Dutch National Mortgage Guarantee (Nationale Hypotheek Garantie [NHG] in Dutch). When a mortgage is NHG-backed, periodic payment is guaranteed to the mortgage lender (in most cases a bank) by the governmental Homeownership Guarantee Fund (Waarborgfonds Eigen Woningen) when payment is not possible due to exceptional circumstances beyond the mortgagee's control (such as the loss of employment or the death of the partner). Given the relatively secure, low-risk nature of such loans, banks are generally willing to offer a mortgage under more liberal conditions, which in practice means that these individuals are better able to afford a house. However, there are strict requirements for an NHG-backed mortgage, including a non-temporary residence permit. In the Netherlands, this may explain part of the ethnic gap in homeownership.

Eligibility for a mortgage is formally not linked to citizenship status. In fact, article 7, paragraph 1c of the Equal Treatment Act (Algemene Wet Gelijke Behandeling) prohibits unequal treatment in the provision of services and goods, as well as the closing, executing and terminating of agreements in the field of housing on the basis of nationality. In practice however, banks may consider mortgage applications of non-naturalized migrants as risky due to observed or perceived higher failure rates compared to naturalized or native-born applicants. Indeed, there are signs that Dutch banks do not always abide by the Equal Treatment Act.<sup>4</sup> In other words, while from a legal perspective, citizenship acquisition should not matter for homeownership in the Netherlands, it may in practice still matter through positive signalling to mortgage lenders.

The conditions under which migrants are eligible for citizenship acquisition in the Netherlands are stipulated in the Dutch Nationality Act. Since April 1, 2003, requirements for naturalization include being at least 18 years of age, having a non-temporary residence permit, residing legally in the Netherlands for an uninterrupted period of five years, and the absence of a criminal record. Migrants who have a Dutch partner for an uninterrupted period of at least three years are exempted from the residence requirement, and only need a permanent residence permit and principal residence in the Netherlands. Dual citizenship is not allowed in the Netherlands. However, there are many exceptions to the renunciation requirement, for instance for migrants who are the registered partner of a Dutch national, or for whom renunciation of the original nationality is not legally possible or cannot be reasonably demanded. Finally, migrants need to pass a formalized naturalization test in which their Dutch language skills and civic knowledge of the Netherlands are tested. The language requirement is at level A2 of the Common European Framework of Reference for Languages. In terms of formal benefits, the Dutch nationality provides a secure legal status on the territory of the Netherlands, full voting rights, and diplomatic protection and support. With regard to labour market access, naturalization lifts restrictions on a small number of professions in the army, law and the public sector.

## **Theoretical framework**

Research on (racialized) inequalities in the housing systems of western countries dates back decades. This body of literature, focussing predominantly on the UK and the USA, has mapped the various complexities involved in immigrants' transition to

homeownership, including the relevance of socio-economic, legal and informal opportunity structures (eg Kain & Quigley, 1975; King & Mieszkowski, 1973; Schafer, 1979), as well as immigrants' aspirations, social relations and other life course dynamics [see Galster (1992, p. 642) for a conceptual framework of the traditional literature]. While some of these studies produced mixed results (eg Follain & Malpezzi, 1979; Reifel, 1994) and were challenged for their methodological design and model specifications [see for instance Chambers (1992)], the literature has gradually converged on six main explanations for the ethnic gap in homeownership.

First, migrants generally have a weaker socio-economic position in terms of wealth and labour market access compared to natives (Heath & Cheung, 2007). Due to these financial constraints, migrants have limited opportunities in the credit market, and are less able to afford a house (Charles & Hurst, 2002; Coulson & Dalton, 2010). Second, it is often assumed that individuals prefer homeownership to renting due to long-term financial, social, physical and ecological benefits (Charles & Hurst, 2002; Rohe & Stegman, 1994; Rossi & Weber, 1996; Uunk, 2017). This implies that individuals in social or private rented housing face particular constraints that deter them from becoming a homeowner. However, the notion of homeownership in the life course has undergone a process of ideological normalization (Gurney, 1999), masking the fact that its benefits are often exaggerated and overgeneralized (Soaita & Searle, 2016). Buying a house is not only a potentially lucrative investment but also carries substantial risk in light of macroeconomic turmoil or personal shocks to household means (Smith *et al.*, 2009). Such risks are not equally distributed, and are often more severe for marginalized groups, including migrants (Searle & McCollum, 2014). Moreover, for foreign-born individuals, the decision to buy a house is not just an economic cost-benefit consideration, but can also be seen as a commitment to the community, and a life course decision to permanently settle in the host country (Constant *et al.*, 2009). In the initial years after migration, immigrants differ from the native population with regard to the stability of their life situation in the host country. More specifically, migrant households may be more mobile and less settled compared to natives (Charles & Hurst, 2002). Homeownership is arguably less attractive while long-term prospects remain unclear. Migrants may therefore be less inclined to buy a house.

Third, research shows that housing appreciation rates are positively associated with income (Case & Mayer, 1996). Since migrants in general have more limited financial means, the appreciation rates of houses that are affordable to them will be lower. As such, expected returns on the investment will be smaller, and the valuation of homeownership more limited compared to natives. Fourth, migrants can face ethnic discrimination in the housing and credit market. Lenders may be less inclined to approve credit for immigrants in light of real or perceived higher risk associated with such a loan compared to natives. Although the migrant background is only one factor that lenders consider in their risk-calculation, studies have found evidence of so-called redlining by ethnicity when holding other personal and contextual characteristics constant (Aalbers, 2007; Ross & Tootell, 2004). Fifth, migrants may not only face institutional inequalities in the housing system but also be subject to harassment and intimidation in particular residential areas, constraining tenure opportunities. There

is evidence of housing officers being reluctant to offer houses in certain areas to migrants, as well as migrants being reluctant to accept any such offers, in spite of the generally high quality of such housing (Ginsburg, 1992, p. 124; Ginsburg & Watson, 1992, p. 143). Finally, neighbourhoods with a large share of migrants often are (or become) dominated by rented housing (Brown *et al.*, 2003). Remaining in these neighbourhoods to maintain social ties and networks may thus limit opportunities to transition into homeownership due to limited stock and a lack of local opportunities.

### **Naturalization and homeownership: the citizenship premium in the housing market**

How does citizenship factor into the dynamics underlying the ethnic homeownership gap? A systematic analysis of a potential citizenship premium in the housing market is surprisingly absent in the literature. Some research has analysed housing experiences of recent immigrants in relation to legal status (Murdie, 2008; Phillips, 2006; Platts-Fowler & Robinson, 2015). However, these studies often focus on refugees and asylum seekers, for whom very specific rules and regulations apply, and typically do not specifically analyse the relevance of citizenship acquisition. Indeed, in most studies, citizenship is not considered, as the foreign-born non-naturalized and naturalized migrant population are pooled together (eg Borjas, 2002, p. 450). One study that does analyse the role of citizenship for living conditions of immigrants, including homeownership, reveals more positive outcomes among naturalized migrants compared to the foreign-born non-naturalized population (Hutcheson & Jeffers, 2013). However, these aggregate, cross-national findings do not include any controls for socio-economic or demographic characteristics. Another study makes use of a quasi-experimental matching strategy to isolate omitted variable bias (Enchautegui & Giannarelli, 2015). However, the cross-sectional nature of their data does not allow for controls on reverse causality. In other words, it is unclear to what extent the positive effect of naturalization on homeownership is explained by homeownership increasing the odds of naturalization. In sum, while there has long been evidence of a positive correlation between citizenship and homeownership (eg Coulson, 1999), the question remains to what extent citizenship acquisition indeed facilitates homeownership of immigrants.

Most of the literature on the citizenship premium focusses on labour market outcomes rather than the housing market. Although this field of literature is more extensive, empirical findings are equally ambiguous (Helgertz *et al.*, 2014, p. 343). Some studies identify a positive effect of naturalization on the earnings of particular migrant groups (Bratsberg *et al.*, 2002; Engdahl, 2014; Helgertz *et al.*, 2014; Steinhardt, 2012). The literature points towards the signalling potential of citizenship as the main explanation for these labour market outcomes. In light of unfamiliar or unrecognized educational qualifications, as well as possible short-term out-migration, employers may find it risky to hire foreign-born individuals. Possessing the citizenship of the host country may placate those uncertainties by signalling commitment and the intention to permanently settle in the host country. For similar reasons, citizenship may positively affect the opportunities of immigrants in the credit market. Lenders consider many characteristics when evaluating creditworthiness, such as an

applicants' household wealth, household income and job prospects (Charles & Hurst, 2002; Uunk, 2017). Research confirms that financial means are an important determinant of homeownership, and constitute one of the explanations for the ethnic gap in homeownership (Charles & Hurst, 2002; Coulson & Dalton, 2010; Mayer & Engelhardt, 1996). In that context, possessing the host country citizenship may prove instrumental for immigrants to secure credit. Naturalization may signal motivation, commitment and the intention to invest in building a life in the host country, and lenders may thus assume that job prospects for these migrants are more positive. Indeed, naturalizing migrants are positively selected with regard to their labour market potential, and citizenship acquisition facilitates access to the labour market (Peters *et al.*, 2018). In other words, citizenship acquisition may favourably influence the risk-calculation of lenders, improving the odds of successfully securing a mortgage.

Another determinant of the ethnic gap in homeownership is ethnic discrimination (Aalbers, 2007; Ross & Tootell, 2004), which can manifest in different forms. First, lenders will have to work harder to get a mortgage approved for households that are in the margins of qualification, and thus face additional costs when doing so (Uunk, 2017, p. 98). In that context, mortgage officers may be warned of higher failure rates among immigrants, and not consider applicants with a migrant background. This process of 'redlining by ethnicity' is a statistical form of discrimination. Alternatively, lenders may hold ethnic prejudices and discriminate more directly. While ethnic discrimination is illegal in the Netherlands, some research suggests that discriminatory practices do occur in the Dutch housing market (Aalbers, 2007). Again, possession of the citizenship of the host country may positively factor into the risk-calculation of lenders, and mitigate discriminatory behaviour. The naturalized status may signal that these individuals are the cream of the immigrant population and are therefore the exception to the rule that migrants constitute a future payment risk. As such, naturalized migrants may have more opportunities in the credit market due to legal status discrimination.

### ***Unpacking the citizenship premium: to whom does naturalization matter?***

If naturalization matters in the housing market, does it matter equally to all migrant groups? Research shows that the ethnic gap in homeownership is bigger for lower income households (Uunk, 2017, p. 107) and for particular ethnic groups (Borjas, 2002, p. 468). Yet the literature provides no guidelines whether the relevance of citizenship acquisition is conditional. Although the signalling effect of citizenship may positively influence the risk-calculation of lenders, it cannot provide a foundation for creditworthiness on its own. Without a stable and sufficient financial basis to meet standard loan qualifications, the citizenship of an applicant may not even be considered. In other words, if migrants do not fulfil the minimum financial requirements to be eligible for credit, lenders will have no reason to discriminate on the basis of legal status. I argue that migrants without employment are relatively unlikely to meet basic loan qualifications, as they are almost completely dependent on the earnings of their spouse to meet the necessary criteria. I thus theorize that the host country citizenship is unlikely to matter for these migrants, as financial constraints likely weigh more



heavily than migrants' legal status in the risk-calculation of lenders. My hypothesis reads as follows:

*H1: Citizenship acquisition has a positive effect on the probability of homeownership of employed immigrants after naturalization.*

One of the mechanisms underlying the hypothesized citizenship premium in the housing market is that the host country citizenship attenuates discriminatory practices among lenders. While lenders may associate the migrant background with credit problems due to real or perceived higher failure rates among immigrants, naturalized migrants may be considered the exception to the rule, and thus suffer less from ethnic redlining. However, mortgage applications are often filed together with the partner, and qualifications are thus evaluated at the family level. If the spouse does not have a migrant background, this may placate perceived risk associated with approving a loan to a migrant. Lenders may in those cases be less inclined to discriminate on the grounds of legal status. In other words, having a native-born partner may function as a positive signalling device in its own right, and the legal status of the migrant is less relevant in that context. Naturalization is thus particularly important to migrants without a native-born partner, who need the citizenship of the host country to mitigate the negative consequences of their migrant background. I thus expect the following:

*H2: The positive effect of citizenship acquisition on the probability of homeownership of employed immigrants after naturalization is weaker for migrants with a native-born partner.*

Furthermore, lenders will not associate all migrants with an equal amount of risk. Some migrant groups may be considered more of a potential credit problem than others. Moreover, lenders may not discriminate against migrants in general, but rather against particular migrant groups. I expect that migrants who are culturally more dissimilar to the native population are more likely to be the subject of ethnic discrimination. Possessing the citizenship of the host country may matter more for these migrants, as naturalization has the potential to attenuate such discrimination. Conversely, migrants who are phenotypically hard to distinguish from natives, or who share similar cultural values and beliefs, may not suffer from ethnic discrimination as much, and thus may not benefit from naturalization. My expectations are as follows:

*H3: The positive effect of citizenship acquisition on the probability of homeownership of employed immigrants after naturalization is stronger for migrants from origin countries that are culturally more dissimilar to the host country.*

Besides the applicants' characteristics at the individual and family level, contextual circumstances will also factor into the risk-calculation of lenders. Liberal behaviour in mortgage approvals, speculative investment of housing assets and evasion of regulatory capital requirements for lending were instrumental in triggering the global financial crisis in 2008 (Acharya & Schnabel, 2009; Martin, 2011). Moreover, in the context of poorly performing economies and high national unemployment rates, the risk that individuals will lose their job and have trouble paying their mortgage will be higher. For both reasons, lenders may have become more critical when evaluating

creditworthiness during and after the global financial crisis. In that context, additional criteria may be considered, including the legal status of immigrants. In other words, the potential of the naturalized status to mitigate the risk associated with the migrant background may be more relevant under conditions where lenders are more critical, for instance post-2008. My expectation is thus as follows:

*H4: The positive effect of citizenship acquisition on the probability of homeownership of employed immigrants after naturalization is stronger during and after the global financial crisis of 2008.*

## Data and methodology

To analyse the relevance of citizenship acquisition in the housing market, I make use of register data from Statistics Netherlands. Information is derived from the Dutch System of Social Statistical Datasets. This integral data source, developed by Statistics Netherlands, includes centrally stored and standardized information from a wide range of registers [see Bakker *et al.* (2014) for details]. Relevant socio-economic and demographic characteristics have been linked to municipal population registers using assigned linkage keys. The final dataset consists of annual observations of first-generation immigrants in the Netherlands between 2003 and 2011 ( $N=106,187$ ). Migrants are tracked over this period of time until the end of the observation period or the potential moment of emigration (right-truncation). I analyse migrants who arrived in the Netherlands between 1999 and 2002. The argument for this cohort selection is twofold. First, in light of the residence requirement for naturalization, almost all migrants in this cohort selection became eligible for citizenship acquisition under the same institutional conditions, namely after the revision of the Dutch Nationality Act in 2003. Second, these migrants can be tracked up to 10 years after migration. The observation period is fixed to a maximum of 10 years of residence to standardize the tracking period between the cohorts.

This article analyses foreign-born individuals of whom both parents were born abroad. I focus on first-generation immigrants because later generations can acquire citizenship through a facilitated procedure, and the determinants of naturalization differ between generations (Bauböck *et al.*, 2013). The small number of migrants who already acquired the Dutch citizenship prior to migrating to the Netherlands were excluded. This includes migrants born in Suriname before 1975, and individuals born in the Netherlands Antilles, who are often Dutch citizens by birth. I further focus the selection on migrants aged between 20 and 50 at the moment of arrival in the Netherlands. Homeownership rates of migrants younger than 20 are very low, and migrants older than 50 may have a relatively low incentive for homeownership, as returns on the investment will be comparatively small. Finally, I exclude migrants who are already homeowners at the moment of migration.

The dependent variable in this study is homeownership, which is measured dichotomously as living in a house that is owned by one or more members of the household. In other words, if the partner is the legal owner of the house in which both spouses live, then the given individual is still considered a homeowner. I analyse the impact of measuring homeownership at the household level in the paragraph

'Robustness analyses'. Independent variables include characteristics at the individual, household and contextual level. Individual characteristics are naturalization, gender, age at the moment of migration, the partner status, the employment status and education. The relevance of naturalization is captured by two variables. The first is a dummy that is set to unity when a migrant acquires the Dutch citizenship and all subsequent years. The second is a time-invariant dummy that is set to unity if a migrant naturalizes during the observation period. The latter variable is included to capture positive selection into naturalization, whereas the former measures a potential one-time boost in the probability of homeownership after citizenship acquisition. This study distinguishes between having a foreign-born foreign partner (a non-naturalized migrant), a foreign-born Dutch partner (a naturalized migrant) and a native-born partner. This is important in light of the legal status discrimination hypothesis, in which I theorize that having a native-born Dutch partner attenuates discriminatory behaviour by lenders. I track partners and their legal status over time. Employment is measured dichotomously as being employed or not. Since the registers do not include information on whether employed individuals have a permanent or temporary contract, and this likely matters for the probability of securing a mortgage, a variable is created that measures the number of successive years that an individual has been employed. This is reset to zero from any unemployed observation onwards, and gradually starts to increase again upon regaining employment. The household variables are standardized household income (corrected for inflation based on the Consumer Price Index [CPI]), and having young children. I use household income as opposed to individual income, since the financial basis for mortgage eligibility is typically determined at the household level. When migrants have children below the age of 18 in the household, they are considered to have young children.

Contextual variables include the level of economic development and EU membership of the country of origin, the level of cultural difference between the origin country and the Netherlands, the global financial crisis and the level of urbanization of the municipality in which an individual resides. The level of economic development is based on the Human Development Index (United Nations Development Programme, 2014), including indicators for gross domestic product, general levels of education and life expectancy. The index provides a yearly country score between 0 and 1, where a higher score equals more development. Cultural differences between migrants' origin country and the Netherlands are based on the Dimensions of National Culture index. This model of national culture, introduced by Geert Hofstede (2001) and gradually developed over time, consists of six dimensions, each with a score ranging between 0 and 100. The difference between the scores of the origin country and the Netherlands are calculated for each of these dimensions. The sum of these differences is an individuals' cultural distance to the Netherlands, where a higher score equals greater distance. I keep track of changes in EU membership of origin countries over time. The level of urbanization is based on the number of household addresses in that municipality per square kilometre. More specifically, this variable is divided into five categories as follows: (1) very strong ( $\geq 2500$  addresses/km<sup>2</sup>); (2) strong (1500 to 2500 addresses/km<sup>2</sup>); (3) moderate (1000 to 1500 addresses/km<sup>2</sup>); (4) low (500 to 1000 addresses/km<sup>2</sup>); (5) very low ( $< 500$  addresses/km<sup>2</sup>). Note

that for a very small number of observations (about 1%), the urbanization of the municipality is unknown. These individuals have been allocated as such to a separate category (but coefficients are not reported). Finally, information on education is predominantly based on survey data in the Netherlands, and therefore incomplete. For this reason, I do not include education in the main models. However, the relevance of education is analysed using the available data in [Table A5](#) of the Appendix.

[Table A1](#) in the annex provides descriptive statistics on the research population. Note that because of the specific time-series structure of the data (used for the discrete-time hazard models discussed below), descriptives are shown for the last observation of each individual. Individuals who are naturalized at the end of the observation period are less often homeowners than their non-naturalized counterparts. However, the propensity to naturalize correlates strongly with other personal and origin characteristics which are simultaneously related to the probability of homeownership. For instance, migrants who naturalize are often younger at the moment of migration, and originate from economically less developed countries of origin (Helgertz & Bevelander, 2017; Peters *et al.*, 2016). These statistics thus do not necessarily imply that naturalization is negatively associated with homeownership. To analyse these data in greater detail, I use discrete-time hazard models (Allison, 1984, 2014). This method is appropriate to study the relevance of (time-varying) covariates for the risk that a specific event will occur (in this case, homeownership). Homeownership is theoretically not an event that occurs only once in an individuals' life course. However, since individuals are tracked for a period of 10 years, and homeownership constitutes a significant long-term investment, the vast majority of migrants either becomes a homeowner and remains a homeowner, or never becomes a homeowner, during the observation period. This pattern is ideally suited to hazard models. The econometric equation is as follows

$$\log\left(\frac{P(t)}{1-P(t)}\right) = b_0 + b_1x_1 + b_2x_2(t) + b_3t$$

where  $P(t)$  is the conditional probability that the event will occur at time  $t$  (given that the event has not yet occurred), determined by the baseline hazard at time  $t$  when all predictors are equal to zero ( $b_0$ ) and the time-constant ( $b_1$ ) and time-varying ( $b_2$ ) predictors. I furthermore allow for curvilinearity in the hazard by including time ( $b_3$ ) in the model. Since these models are less able to identify and isolate selection effects, I also perform the main analysis using logistic individual fixed-effects regression. These findings are discussed in the paragraph 'Robustness analyses'.

## Analysis

[Table 1](#) contains the results of the discrete-time hazard regression, providing coefficients on the risk of homeownership. As expected, employed migrants enjoy an increase in the odds of homeownership of 26% after naturalization, whereas citizenship acquisition has no effect for unemployed migrants, all else constant.<sup>5</sup> This confirms hypothesis 1, in which I argue that migrants' legal status only matters for

**Table 1.** Logistic discrete time hazard model on the risk of homeownership of immigrants, cohorts 1999–2002.

	Not employed			Employed		
	Coef.	Std. error	Exp. coef.	Coef.	Std. error	Exp. coef.
Naturalization						
Yes	0.062	0.050	1.064	0.233	0.031	1.262***
No	ref.	ref.	ref.	ref.	ref.	ref.
Naturalization during the observation period						
Yes	-0.000	0.035	1.000	0.183	0.026	1.204***
No	ref.	ref.	ref.	ref.	ref.	ref.
Gender						
Male	ref.	ref.	ref.	ref.	ref.	ref.
Female	0.217	0.032	1.242***	0.210	0.017	1.234***
Age at migration	0.050	0.016	1.051**	0.048	0.011	1.049***
Age at migration <sup>2</sup>	-0.002	0.000	0.998***	-0.001	0.000	0.999***
Partner						
No partner	ref.	ref.	ref.	ref.	ref.	ref.
Foreign-born foreign partner	-0.109	0.039	0.897**	0.197	0.024	1.218***
Foreign-born Dutch partner	-0.073	0.044	0.930	0.091	0.031	1.095**
Native-born partner	0.698	0.039	2.010***	0.497	0.024	1.644***
Children < 18 in the household						
Yes	-0.196	0.031	0.822***	0.128	0.020	1.137***
No	ref.	ref.	ref.	ref.	ref.	ref.
(CPI adjusted) log disposable household income	2.231	0.053	9.309***	1.256	0.041	3.511***
Period employed						
Level of urbanization municipality						
Very high	ref.	ref.	ref.	ref.	ref.	ref.
High	-0.021	0.031	0.979	0.026	0.020	1.026
Moderate	-0.121	0.047	0.886**	-0.050	0.030	0.951
Low	-0.254	0.051	0.776***	-0.179	0.034	0.836***
Very low	-0.152	0.080	0.859	-0.014	0.053	0.986
Development country of origin	2.526	0.119	12.503***	2.159	0.088	8.662***
EU membership country of origin	0.153	0.040	1.165***	0.106	0.024	1.112***
After January 1 2008	ref.	ref.	ref.	ref.	ref.	ref.
	0.205	0.051	1.228***	-0.036	0.030	0.965
	ref.	ref.	ref.	ref.	ref.	ref.
	N = 76,444.			N = 67,593.		
	Observations = 286,149.			Observations = 231,502.		
	Events = 5,834.			Events = 14,446.		
	AIC = 50,909 (null model = 56,972).			AIC = 100,406 (null model = 108,125).		

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

Source: Statistics Netherlands.

those who meet the basic financial requirements for credit in the housing market. In other words, financial constraints weigh more heavily than migrants' legal status in the risk-calculation of lenders. When migrants do not qualify for the minimum economic criteria, their citizenship will not make a difference for being a homeowner. However, when applicants are eligible for a mortgage, the citizenship of the host country factors positively into the evaluation of creditworthiness. I theorize that the naturalized status signals commitment, motivation and better career prospects, and mitigates the negative consequences of statistical discrimination.

Moving to the control variables, I observe positive selection into naturalization for employed migrants. More specifically, migrants who naturalize during the observation period are 20% more likely to become a homeowner. Note that this is already the case prior to citizenship acquisition. This can be rationalized by the selective nature of both the processes of naturalization and of becoming a homeowner. Those who successfully acquire the host country citizenship are generally more motivated and skilled, and likely intend to stay. Isolating such selection bias is crucial to avoid overestimating the relevance of naturalization for homeownership. In line with the descriptive statistics and previous literature (eg Boehm & Schlottmann, 2004, p. 121; Coulson & Dalton, 2010, p. 160), women are more likely to be a homeowner than men. A potential explanation is that women are more often family reunification migrants, who are more likely to permanently settle and buy a house, whereas male immigrants are more often economic migrants or seasonal workers, who are more prone to emigration or circular migration (and thus less likely to buy a house). The age at migration is positively associated with homeownership. However, the squared term is negative, which corresponds to the curvilinear pattern observed in the descriptive statistics. The partner also matters for the probability of homeownership, particularly if the partner is native-born.<sup>6</sup> Having children decreases the odds of homeownership for migrants without employment. Given their weaker financial position, these migrants may find it difficult to meet the economic requirements to finance a house in addition to the costs associated with having children. Conversely, having young children in the household increases the probability of homeownership for employed immigrants by 14%. From a life course perspective, migrants with children are likely more settled and less mobile, and thus more likely to invest in property. As expected, there is a positive association between the probability of homeownership and the period of successive employment, as well as disposable household income. Migrants living in municipalities with low levels of urbanization are less likely to become a homeowner compared to their counterparts in highly urbanized regions, although this is not the case for migrants living in extremely rural areas. This may be related to variation in housing prices and available tenure stock, as well as compositional and life course differences between migrants living in various parts of the Netherlands. Origin characteristics also matter: migrants from economically less developed and non-EU countries of origin are less likely to become a homeowner. Surprisingly, there is no statistical relationship between homeownership and the global financial crisis in 2008.

Citizenship acquisition matters for employed immigrants in the housing market, and I theorize that this effect is based on two mechanisms. First, the naturalized

status may signal motivation, commitment and skills, which may positively factor into the evaluation of creditworthiness. Second, migrants who have acquired the host country citizenship may not suffer from ethnic discrimination to the same extent as their non-naturalized counterparts. Naturalized migrants may be perceived as an exceptional group to whom prejudiced beliefs about migrants in general do not apply. However, if legal status discrimination is indeed one of the underlying mechanisms behind the citizenship premium in the housing market, then the effect of naturalization should be weaker for migrants with a native-born Dutch partner. Having a native-born partner fulfils a similar function as the naturalized status by attenuating discriminatory behaviour, limiting the added benefit of the host country citizenship. To test these assumptions, I perform the main analysis with the inclusion of an interaction term between naturalization and having a native-born Dutch partner. Since it has already been established that citizenship acquisition only matters for employed migrants, I exclude migrants without employment (results for migrants without employment are reported in [Table A2](#), Model 1 in the Appendix). Findings in [Table 2](#) show that the interaction term is negative, meaning that the role of naturalization is weaker for migrants with a native-born Dutch partner. This confirms hypothesis 2 and suggests that either citizenship or a native-born partner can overcome legal status discrimination, assuming that is the underlying mechanism.

To further analyse the legal status discrimination mechanism, I perform the main analysis with an interaction between cultural distance and naturalization. If the host country citizenship attenuates ethnic discrimination, then the effect should be stronger for migrants from origin countries whose culture is more dissimilar compared to the Netherlands. I assume that these migrants are more likely to be subject to ethnic discrimination, and thus stand to benefit most from the mitigating effect of the host country citizenship. As expected, [Table 3](#) shows that cultural distance between the origin country and the Netherlands is negatively associated with the odds of homeownership. This can be rationalized not only through ethnic discrimination but also by a potentially more limited willingness to permanently settle and buy a house in a country that is culturally dissimilar to the origin country. However, the results provide no evidence for the expectation that the relevance of naturalization is conditioned by cultural distance. As such, hypothesis 3 is rejected.<sup>7</sup>

Finally, I argue that the signalling potential of citizenship is more relevant when lenders are more critical in their evaluation of creditworthiness. When the overall risk of approving a mortgage is high, additional criteria may be considered such as the legal status of an applicant. Given the fact that lenient behaviour when approving credit was one of the mechanisms behind the collapse of the housing market in 2008 (Acharya & Schnabel, 2009; Martin, 2011), I assume that lenders will be more critical during and after this point in time. In that context, I perform the main analysis with an interaction between a dummy that is set to unity from 2008 onwards and naturalization. However, results in [Table 4](#) show that the financial crisis neither affect the probability of homeownership nor is the relevance of naturalization conditioned by the financial crisis (as the interaction term is not statistically significant). Hypothesis 4 is therefore rejected.<sup>8</sup>

**Table 2.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.294	0.034	1.342***
	No	ref.	ref.	ref.
Naturalization* Native-born Dutch partner		-0.221	0.051	0.802***
Naturalization during the observation period	Yes	0.182	0.026	1.200***
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.210	0.017	1.234***
Age at migration		0.047	0.011	1.048***
Age at migration <sup>2</sup>		-0.001	0.000	0.999***
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.197	0.024	1.218***
	Foreign-born Dutch partner	0.079	0.031	1.082
	Native-born partner	0.532	0.026	1.702***
Children < 18 in the household	Yes	0.128	0.020	1.137***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		1.261	0.041	3.529***
Period employed		0.115	0.006	1.122***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.027	0.020	1.027
	Moderate	-0.049	0.029	0.952
	Low	-0.179	0.034	0.836***
	Very low	-0.013	0.053	0.987
Development country of origin		2.165	0.088	8.715***
EU membership country of origin	Yes	0.102	0.024	1.107***
	No	ref.	ref.	ref.
After January 1 2008	Yes	-0.034	0.030	0.967
	No	ref.	ref.	ref.

*N* = 67,593.  
 Observations = 231,502.  
 Events = 14,446.  
 AIC = 100,389 (null model = 108,125).

\**p* < 0.05.\*\*\**p* < 0.001.

Source: Statistics Netherlands.

## Robustness analyses

In this paragraph, I perform additional analyses to assess the robustness of the findings. First, one of the most important challenges in the literature on the citizenship premium is the selective nature of the naturalization process. Migrants who naturalize may have (endogenous) characteristics that are positively associated with both the propensity to naturalize and the probability of homeownership. Examples include



**Table 3.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.150	0.039	1.162***
	No	ref.	ref.	ref.
Naturalization* Cultural distance origin country		0.000	0.001	1.000
Naturalization during the observation period	Yes	0.217	0.029	1.242***
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.202	0.019	1.224***
Age at migration		0.045	0.012	1.046***
Age at migration <sup>2</sup>		-0.001	0.000	0.999***
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.195	0.025	1.215***
	Foreign-born Dutch partner	0.022	0.034	1.022
	Native-born partner	0.501	0.026	1.650***
Children < 18 in the household	Yes	0.112	0.021	1.119***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		1.151	0.043	3.161***
Period employed		0.111	0.001	1.117***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.043	0.021	1.044
	Moderate	-0.022	0.032	0.978
	Low	-0.160	0.037	0.852***
	Very low	0.016	0.057	1.016
Development country of origin		1.687	0.127	5.403***
EU membership country of origin	Yes	0.097	0.026	1.102***
	No	ref.	ref.	ref.
After January 1 2008	Yes	-0.044	0.033	0.957
	No	ref.	ref.	ref.
Cultural distance origin country		-0.002	0.000	0.998***

*N* = 55,563.  
 Observations = 192,180.  
 Events = 12,675.  
 AIC = 87,106 (null model = 108,125).

\**p* < 0.05.\*\*\**p* < 0.001.

Source: Statistics Netherlands.

high levels of motivation, commitment or cognitive ability. Since these characteristics are almost impossible to measure and control for, we may overestimate the unique relevance of citizenship. To account for this, I include a time-invariant naturalization dummy (measuring whether a migrant naturalizes during the observation period) as well as a time-varying naturalization dummy (measuring whether a migrant is a

**Table 4.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.203	0.037	1.225***
	No	ref.	ref.	ref.
Naturalization * After January 1 2008		0.068	0.047	1.070
Naturalization during the observation period	Yes	0.181	0.026	1.198***
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.209	0.017	1.232***
Age at migration		0.047	0.011	1.048***
Age at migration <sup>2</sup>		-0.001	0.000	0.999***
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.197	0.024	1.218***
	Foreign-born Dutch partner	0.092	0.031	1.096**
	Native-born partner	0.498	0.024	1.645***
Children < 18 in the household	Yes	0.127	0.020	1.135***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		1.255	0.041	3.508***
Period employed		0.115	0.006	1.122***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.026	0.020	1.026
	Moderate	-0.051	0.030	0.950
	Low	-0.179	0.034	0.836***
	Very low	-0.014	0.053	0.986
Development country of origin		2.154	0.088	8.619***
EU membership country of origin	Yes	0.106	0.024	1.112***
	No	ref.	ref.	ref.
After January 1 2008	Yes	-0.055	0.033	0.946
	No	ref.	ref.	ref.

*N* = 55,563.  
 Observations = 192,180.  
 Events = 12,675.  
 AIC = 100,406 (null model = 108,125).

\*\* $p < 0.01$ .\*\*\* $p < 0.001$ .

Source: Statistics Netherlands.

citizen of the host country at a given point in time). The underlying logic is that any unmeasured time-invariant characteristics associated with the propensity to naturalize will be captured by the time-invariant naturalization dummy. For instance, if migrants who are highly motivated or skilled are simultaneously more likely to naturalize and to become a homeowner, irrespective of their citizenship status, then the time-invariant naturalization dummy captures the more positive baseline of these individuals. The time-varying dummy then only captures the residual variation

associated with acquiring the host country citizenship. However, given the fact that this is a central methodological aspect of the article, I assess the robustness of this strategy by also analysing the main model using logistic individual fixed-effects regression. This is the state-of-the-art methodology to account for selection into naturalization in the literature focussing on labour market outcomes of naturalization (Bratsberg *et al.*, 2002; Engdahl, 2014; Helgertz *et al.*, 2014; Peters *et al.*, 2018; Steinhardt, 2012). This method controls for time-invariant omitted variable bias by focussing exclusively on variation within rather than between individuals (before and after naturalization versus those who have naturalized or not, respectively).

While this method is effective at dealing with the potential endogeneity problem, it presents two important challenges. First, in contrast to labour market outcomes, the transition to homeownership is largely a one-way street (at least within the 10 year observation period in this article). In other words, being a homeowner at time  $t$  is strongly dependent on being a homeowner at time  $t - 1$ . This is one of the main reasons for using a hazard model in this article. To account for this in the individual fixed-effects regression, a 1-period lag of the dependent variable is included in the model, capturing (and isolating) the relevance of being a homeowner or not in the previous observation for the current observation. Second, due to the focus on variation within rather than between individuals, any migrants who do not differ on the dependent variable within the observation period drop out of the analysis. As a result, a significant number of individuals cannot be taken into account in the individual fixed-effects analysis. While this may induce a different kind of selection, the purpose of these analyses is not so much to generalize its findings, but rather to identify whether the main findings from the hazard models can be explained by endogeneity.

Table A3 provides the results of the logistic individual fixed-effects regression. Note that years since migration is included as an additional control, but all time-invariant characteristics are not included (because they are implicitly controlled for in the individual fixed-effects). Results show that naturalization continues to provide a boost in the probability of homeownership, even when controlling for endogeneity. The effect is considerably smaller compared to the discrete-time hazard regression, suggesting that omitted variable bias explains part of the citizenship premium in the housing market. However, there is no reason to assume that the effect of naturalization is solely attributable to self-selection.

Second, homeownership is measured at the household level. As such, if a migrant becomes the registered partner of a homeowner, he or she becomes a homeowner as well. However, this study is interested in the relevance of naturalization for the decision and ability to become a homeowner, not transitions into homeownership through partners. To disentangle the latter from the former, I include a variable that captures instances where the occurrence of the event (homeownership) may be attributable to a partner shift. More specifically, this is a dummy variable that is set to unity when a migrant has a partner and did not have a partner during the previous observation, or when a migrant has a different partner compared to the previous observation. This dummy thus captures any transition into homeownership that may be due to the fact that the new spouse was already a homeowner. The results reported in Table A4 are very similar to the main model. As expected, the partner

shift dummy is positive and statistically significant, presumably due to the fact that some new spouses were already a homeowner. Also note that by disentangling partner effects from household measurement effects, the relevance of the partner slightly decreases compared to the main model. Most importantly, the relevance of naturalization remains almost identical with a control for partner shifts. In other words, there are no indications that the positive effect of naturalization is explained by the measurement of homeownership at the household level.<sup>9</sup>

## Conclusion

This article explores a potential citizenship premium in the housing market. More specifically, I analyse whether citizenship acquisition matters for homeownership of foreign-born residents of the Netherlands. Research on the ethnic gap in homeownership shows that immigrants are more likely to be tenants than homeowners compared to the native population. Although literature has identified numerous explanations for this discrepancy, including compositional differences in socio-economic and demographic terms (Charles & Hurst, 2002; Coulson & Dalton, 2010), institutional inequalities and ethnic discrimination in the housing market (Aalbers, 2007; Ginsburg, 1992; Ginsburg & Watson, 1992; Ross & Tootell, 2004), limited and uncertain returns to homebuying (Searle & McCollum, 2014; Smith *et al.*, 2009; Soaita & Searle, 2016), and lower preferences for homeownership (Constant *et al.*, 2009), the relevance of citizenship acquisition has so far not received much attention. I draw on the traditional literature of the citizenship premium in the labour market, and theorize that the host country citizenship may favourably factor into the evaluation of creditworthiness through positive signalling towards lenders and legal status discrimination. However, I hypothesize that naturalization will only make a difference if applicants fulfil the basic financial requirements for a mortgage, and are thus eligible for credit in the housing market.

To test these assumptions, this study analyses individual-level register data from Statistics Netherlands. I find empirical support for a citizenship premium in the housing market, but only for employed migrants. Citizenship acquisition increases the odds of homeownership for these immigrants by 26%, all else constant. Additional analyses specifically designed to isolate self-selection bias show that the effect is smaller, but still reveal an increase in the probability of homeownership after naturalization. This suggests that possession of the host country citizenship may signal creditworthiness to lenders and mitigate the negative consequences of discrimination. In other words, the traditional signalling mechanism, which has often been studied in the context of labour market outcomes of naturalization, may also be relevant in the housing market. The host country citizenship has less added benefit for employed migrants with a native-born Dutch partner, providing support for the notion of legal status discrimination. However, the relevance of naturalization is not conditioned by cultural differences between migrants' origin country and the host country, or by the global financial crisis. Additional analyses confirm that the findings are robust to controls for wealth, education and right-truncation.

This article only constitutes the first step in developing a model of immigrant naturalization and homeownership and presents several avenues for future inquiry. First, homeownership is only one aspect of living conditions. Future research could analyse the

relevance of citizenship for a broader set of indicators, including physical quality of the accommodation, overcrowding, and characteristics of the neighbourhood and its resident population. Second, this article builds on the traditional understanding of the citizenship premium as a causal before-after phenomenon, where naturalization subsequently provides a boost in integration (Helgertz *et al.*, 2014, p. 351). However, citizenship acquisition is not an isolated, abrupt legal status transition, but rather an important life-course event that requires timing and preparation. Migrants will for instance have to invest in meeting the formal civic and linguistic requirements for naturalization (Goodman, 2010). The decision to start preparing for the moment of naturalization may also affect tenure choices of immigrants. Indeed, the future life-course perspective of immigrants who have decided to naturalize is more clear and established compared to other migrants. As such, naturalization may already increase the propensity for homeownership prior to citizenship acquisition, not because of the legal status transition, but rather due to the decision to permanently settle and naturalize in the future. Analysing housing market outcomes prior to citizenship acquisition would require an adjusted regression model. Third, given the fact that citizenship has the potential to increase labour market access and employment opportunities for some migrant groups (Bratsberg *et al.*, 2002; Engdahl, 2014; Helgertz *et al.*, 2014; Peters *et al.*, 2018; Steinhardt, 2012), the citizenship premium in the labour market may subsequently affect opportunities in the housing market. Through a process of cumulative advantage [also known as the ‘Matthew effect’ (Merton, 1968)], naturalization may trigger a process of successive increments of opportunity that build on each other. Citizenship acquisition improves employment opportunities, and the resulting consecutive period of activity in the labour market may subsequently improve opportunities in the credit market. Future research could attempt to identify the extent to which the role of naturalization on homeownership is mediated by positive labour market outcomes.

Finally, while cross-national studies on homeownership are not uncommon, and occasionally include citizenship as a determinant, these studies are typically based on aggregate, cross-sectional data, which do not allow for controls on self-selection into naturalization. As such, it is difficult to compare findings in this study to other countries, and thus to determine the relevance of the institutional context. In the Netherlands, an important example of this would be the relevance of the National Mortgage Guarantee. Arguably, this instrument may mitigate some of the risk associated with approving a mortgage for individuals at the lower end of the mortgage market, and thus reduce the importance of citizenship in the Netherlands. Longitudinal analyses in other countries may reveal if these assumptions hold, and more generally whether and to whom the institutional context of the host country matters.

## Notes

1. Note that – without diminishing the importance of this dichotomy (Harrison *et al.*, 2005) – the general comparison between individuals with and without a migrant background masks important variation between migrant groups. Due to complex interactions between settlement patterns of particular ethnic communities and local housing histories or regional tenure and labour market developments, the proportion of homeowners is larger among some migrant groups than others (Harrison & Phillips, 2011).

2. See also Norris & Winston (2012) for a comparative overview.
3. Statistics Netherlands distinguishes between migrants of western and non-western descent. Western migrants are individuals originating from a country in Europe (excluding Turkey), North-America, Oceania, Indonesia and Japan, whereas migrants from Africa, South-America, Asia (excluding Indonesia and Japan) and Turkey are classified as non-western. Statistics Netherlands considers migrants from Indonesia and Japan western due to their socio-economic and cultural position, and in light of the colonial history of the Netherlands.
4. See for instance the case of a German migrant versus the Dutch Bank SNS in 2016, where the Netherlands Institute for Human Rights (College voor de Rechten van de Mens, 2016) ruled that discrimination on the basis of nationality occurred when said migrant applied for a mortgage. In this case, SNS conditioned eligibility of migrants for a mortgage to a minimum period of activity in the Dutch labour market. A recent report by the National Ombudsman revealed that migrants in the Netherlands indeed have trouble securing a mortgage due to their nationality (van Dorst *et al.*, 2017, pp. 22–23). And in a recent response to the explanatory memorandum on the proposed law concerning the residence requirement for naturalization, the Dutch government noted that not possessing the Dutch nationality likely decreases the odds of successfully securing credit in the housing market of the Netherlands (Kamer, 2017, p. 3).
5. While it is expected that the period of successive employment and income are the most important labour market determinants of homeownership for recently arrived immigrants, I performed additional analyses including a control for wealth (for which data is available from 2006 onwards). While these findings show that wealth has a minor positive effect on the probability of homeownership, this does not explain the relevance of citizenship.
6. Note that the positive role of the native-born partner will in part be attributable to the measurement of homeownership at the household level. In the paragraph ‘Robustness analyses’, I perform additional analyses to explore this in detail.
7. Table A2, Model 2 confirms that the addition of the interaction term does not change the relevance of naturalization for unemployed migrants, although cultural distance itself does matter for the probability of homeownership.
8. Findings in Table A2, Model 3 confirm that the relevance of naturalization for unemployed migrants remains statistically insignificant when the interaction term is added to the model.
9. Tables A5 and A6 in the Appendix include additional robustness checks on the relevance of education and right-truncation, respectively. Neither explains the relevance of naturalization for homeownership.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Funding

The contribution to this publication by Floris Peters is financed by the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (grant agreement No 682626).

## References

- Aalbers, M. B. (2007) What types of neighbourhoods are redlined? *Journal of Housing and the Built Environment*, 22, pp. 177–198.

- Acharya, V. V. & Schnabel, P. (2009) How banks played the leverage game, in: V. V. Acharya & M. Richardson (Eds) *Restoring Financial Stability: How to Repair a Failed System*, pp. 83–100 (New York, NY: Wiley).
- Allison, P. D. (1984) *Event History Analysis: Regression for Longitudinal Event Data* (Beverly Hills: Sage Publications).
- Allison, P. D. (2014) *Event History and Survival Analysis* (Beverly Hills: Sage Publications).
- Bakker, B., van Rooijen, J. & van Toor, L. (2014) The system of social statistical dataset of statistics Netherlands: An integral approach to the production of register-based social statistics, *Statistical Journal of the IAOS*, 30, pp. 411–424.
- Bauböck, R., Honohan, I., Huddleston, T., Hutcheson, D., Shaw, J. & Vink, M. (2013) *Access to Citizenship and Its Impact on Immigrant Integration* (European University Institute, EUDO Citizenship). Available at <https://cadmus.eui.eu/bitstream/handle/1814/29828/AccessoCitizenshipanditsImpactonImmigrantIntegration.pdf?seq>
- Bloemraad, I. (2017) Does citizenship matter? in: A. Shachar, R. Bauböck, I. Bloemraad, & M. Vink (Eds) *The Oxford Handbook of Citizenship*, pp. 525–550 (Oxford: Oxford University Press).
- Boehm, T. P. & Schlottmann, A. M. (2004) The dynamics of race, income, and homeownership, *Journal of Urban Economics*, 55, pp. 113–130.
- Borjas, G. J. (2002) Homeownership in the immigrant population, *Journal of Urban Economics*, 52, pp. 448–476.
- Bratsberg, B., Ragan, J. F., Jr. & Nasir, Z. M. (2002) The effect of naturalisation on wage growth: A panel study of young male immigrants, *Journal of Labor Economics*, 20, pp. 568–597.
- Brown, B., Perkins, D. D. & Brown, G. (2003) Place attachment in a revitalizing neighborhood: Individual and block levels of analysis, *Journal of Environmental Psychology*, 23, pp. 259–271.
- Callis, R. R. (2003) *Moving to America – Moving to Homeownership: 1994–2002*, Current Housing Reports H121/03-1, US Bureau of the Census. Available at <https://cadmus.eui.eu/bitstream/handle/1814/29828/AccessoCitizenshipanditsImpactonImmigrantIntegration.pdf?seq>
- Case, K. & Mayer, C. (1996) Housing price dynamics within a metropolitan area, *Regional Science and Urban Economics*, 26, pp. 387–407.
- CBS. (2017) Vermogen van huishoudens, 2007-2015: Samenstelling vermogen particuliere huishoudens naar kenmerken. Den Haag/Heerlen: CBS. Available at <https://www.cbs.nl/nl-nl/maatwerk/2017/07/vermogen-van-huishoudens-2007-2015> (accessed 20 June 2019).
- CBS. (2018) Financieel risico hypotheekschuld; eigen woningbezitters, 2006-2015. Available at <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/81702NED/table?ts=1562442699267> (accessed 20 June 2019).
- Chambers, D. N. (1992) The racial housing price differential and racially transitional neighborhoods, *Journal of Urban Economics*, 32, pp. 214–232.
- Charles, K. K. & Hurst, E. (2002) The transition to home ownership and the black-white wealth gap, *Review of Economics and Statistics*, 84, pp. 281–297.
- College voor de Rechten van de Mens. (2016) Oordeel in de zaak van verzoeker tegen, Judgement No. 2016-138, SNS Bank N.V. Available at <https://www.mensenrechten.nl/en/oordeel/2016-138>
- Constant, A. F., Roberts, R. & Zimmermann, K. F. (2009) Ethnic identity and immigrant homeownership, *Urban Studies*, 46, pp. 1879–1898.
- Coulson, N. E. (1999) Why are Hispanic- and Asian-American homeownership rates so low?: Immigration and other factors, *Journal of Urban Economics*, 45, pp. 209–227.
- Coulson, N. E. & Dalton, M. (2010) Temporal and ethnic decompositions of homeownership rates: Synthetic cohorts across five censuses, *Journal of Housing Economics*, 19, pp. 155–166.
- Dawkins, C. (2005) Racial gaps in the transition to first-time homeownership: The role of residential location, *Journal of Urban Economics*, 58, pp. 537–554.
- Enchautegui, M. E. & Giannarelli, L. (2015) *The Economic Impact of Naturalization on Immigrants and Cities* (New York: Urban Institute).
- Engdahl, M. (2014) *Naturalisation and the Economic and Social Integration of Immigrants*, Paper No 2014.11, Institute for Evaluation of Labour Market and Education Policy. Available at <https://www.econstor.eu/bitstream/10419/106284/1/786043644.pdf>

- Feijten, P., Hooimeijer, P. & Mulder, C. H. (2008) Residential experience and residential environment choice over the life course, *Urban Studies*, 45, pp. 141–162.
- Follain, J. & Malpezzi, S. (1979) Dissecting housing value and rent: Estimates of hedonic indexes of 39 large SMSAs, *The Urban Institute*, 249, pp. 249–317.
- Galster, G. C. (1992) Research on discrimination in housing and mortgage markets: Assessment and future directions, *Housing Policy Debate*, 3, pp. 639–683.
- Ginsburg, N. (1992) Racism and housing: Concepts and reality, in: P. Braham, A. Rattansi & R. Skellington (Eds) *Racism and Antiracism: Inequalities, Opportunities and Policies*, pp. 109–132 (London: Sage Publications).
- Ginsburg, N. & Watson, S. (1992) Issues of race and gender facing housing policy, in: J. Birchall (Ed) *Housing Policy in the 1990s*, pp. 140–162 (London: Routledge).
- Goodman, S. W. (2010) *Naturalisation Policies in Europe: Exploring Patterns of Inclusion and Exclusion* (European University Institute, EUDO Citizenship). Available at [https://cadmus.eui.eu/bitstream/handle/1814/19577/Wallace\\_Goodman\\_NaturalisationPoliciesEurope.pdf?sequence=1](https://cadmus.eui.eu/bitstream/handle/1814/19577/Wallace_Goodman_NaturalisationPoliciesEurope.pdf?sequence=1)
- Gurney, C. M. (1999) Pride and prejudice: Discourses of normalisation in public and private accounts of home ownership, *Housing Studies*, 14, pp. 163–183.
- Harrison, M. & Phillips, D. (2011) Housing and neighbourhoods: A UK and European perspective, in: A. Bloch & J. Solomos (Eds) *Race and Ethnicity in the 21st Century*, pp. 18–38 (Hampshire: Palgrave Macmillan).
- Harrison, M., Phillips, D., Chahal, K., Hunt, L. & Perry, J. (2005) *Housing, 'Race' and Community Cohesion* (Oxford: Alden Press).
- Heath, A. F. & Cheung, S. Y. (2007) *Unequal Chances: Ethnic Minorities in Western Labour Markets* (Oxford: Oxford University Press).
- Helgertz, J. & Bevelander, P. (2017) The influence of partner choice and country of origin characteristics on the naturalization of immigrants in Sweden: A longitudinal analysis, *International Migration Review*, 51, pp. 667–700.
- Helgertz, J., Bevelander, P. & Tegunimataka, A. (2014) Naturalisation and earnings: A Denmark-Sweden comparison, *European Journal of Population*, 30, pp. 337–359.
- Hofstede, G. (2001) *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (Thousand Oaks: Sage Publications).
- Hutcheson, D. & Jeffers, K. (2013) *Citizenship Status and the Integration of Immigrants: CITINT Indicators*. (European University Institute, EUDO Citizenship). Available at <https://cadmus.eui.eu/bitstream/handle/1814/29830/CitizenshipStatusandtheIntegrationofImmigrants.pdf;sequence=1>
- Kain, J. & Quigley, J. (1975) *Housing Markets and Racial Discrimination* (New York: National Bureau of Economic Research).
- Kamer, T. (2017) *Nader voorlopig verslag van de vaste commissie voor immigratie en asiel/jbz-raad*, 33 852, (R2023) (The Hague: Eerste Kamer der Staten Generaal).
- King, A. T. & Mieszkowski, P. (1973) Racial discrimination, segregation and the price of housing, *Journal of Political Economy*, 81, pp. 590–606.
- Martin, R. (2011) The local geographies of the financial crisis: From the housing bubble to economic recession and beyond, *Journal of Economic Geography*, 11, pp. 587–618.
- Masnack, G. (1997) *Citizenship and Homeownership among Foreign Born Residents in the US*, Research Note No. 97–1, Joint Center for Housing Studies. Available at <https://www.jchs.harvard.edu/>
- Mayer, C. & Engelhardt, G. (1996) Gift, down payment and house affordability, *Journal of Housing Research*, 7, pp. 59–77.
- McConnel, E. D. (2015) Restricted movement: Nativity, citizenship, legal status, and the residential crowding of Latinos in Los Angeles, *Social Problems*, 62, pp. 141–162.
- Merton, R. K. (1968) The Matthew effect in social science: The reward and communication system of science, *Science*, 199, pp. 55–63.
- Murdie, R. A. (2008) Pathways to housing: The experiences of sponsored refugees and refugee claimants in accessing permanent housing in Toronto, *Journal of International Migration and Integration*, 9, pp. 81–101.



- Norris, M. & Winston, N. (2012) Home ownership, housing regimes and income inequalities in Western Europe, *International Journal of Social Welfare*, 21, pp. 127–138.
- OECD. (2011) *Naturalisation: A Passport for the Better Integration of Immigrants?* (Paris: OECD Publishing).
- OECD. (2015) *Indicators of Immigrant Integration 2015: Settling In* (Paris: OECD Publishing).
- Peters, F., Vink, M. P. & Schmeets, H. (2016) The ecology of immigrant naturalisation: A life course approach in the context of institutional conditions, *Journal of Ethnic and Migration Studies*, 42, pp. 359–381.
- Peters, F., Vink, M. P. & Schmeets, H. (2018) Anticipating the citizenship premium: Before and after effects of immigrant naturalisation on employment, *Journal of Ethnic and Migration Studies*, 44, pp. 1051–1080.
- Phillips, D. (2006) Moving towards integration: The housing of asylum seekers and refugees in Britain, *Housing Studies*, 21, pp. 539–553.
- Platts-Fowler, D. & Robinson, D. (2015) A place for integration: Refugee experiences in two English cities, *Population, Space and Place*, 21, pp. 476–491.
- Reifel, J. W. (1994) Black-white housing price differentials: Recent trends and implications, *The Review of Black Political Economy*, 23, pp. 67–93.
- Rohe, W. M. & Stegman, M. A. (1994) The effects of homeownership: On the self-esteem, perceived control and life satisfaction of low-income people, *Journal of the American Planning Association*, 60, pp. 173–184.
- Ronald, R. (2008) *The Ideology of Home Ownership: Homeowner Societies and the Role of Housing* (Dordrecht: Springer).
- Ronald, R., Lennartz, C. & Kadi, J. (2017) What ever happened to asset-based welfare? Shifting approaches to housing wealth and welfare security, *Policy & Politics*, 45, pp. 173–193.
- Ross, S. L. & Tootell, G. M. B. (2004) Redlining, the community reinvestment act, and private mortgage insurance, *Journal of Urban Economics*, 55, pp. 278–297.
- Rossi, P. H. & Weber, E. (1996) The social benefits of homeownership: Empirical evidence from national surveys, *Housing Policy Debate*, 7, pp. 1–35.
- Schafer, R. (1979) Racial discrimination in the Boston housing market, *Journal of Urban Economics*, 6, pp. 176–196.
- Searle, B. A. & McCollum, D. (2014) Property based welfare and the search for generational equity, *International Journal of Housing Policy*, 14, pp. 325–343.
- Smith, S. J., Searle, B. A. & Cook, N. (2009) Rethinking the risks of home-ownership, *Journal of Social Policy*, 38, pp. 83–102.
- Soaita, A. M. & Searle, B. A. (2016) Debt amnesia: Homeowners' discourses on the financial costs and gains of homebuying, *Environment and Planning A: Economy and Space*, 48, pp. 1087–1106.
- Steinhardt, M. F. (2012) Does citizenship matter? The economic impact of naturalisations in Germany, *Labour Economics*, 19, pp. 813–823.
- Tomlins, R. (1997) Officer discretion and minority ethnic housing provisions, *Netherlands Journal of Housing and the Built Environment*, 12, pp. 179–197.
- United Nations Development Programme. (2014) *Human Development Index Trends, 1980–2013* (New York: UNDP). Available at <http://hdr.undp.org/en/content/human-development-index-hdi> (accessed 20 June 2019).
- Uunk, W. (2017) Does the ethnic gap in homeownership vary by income? An analysis on Dutch survey data, *Housing Studies*, 32, pp. 95–114.
- van Dorst, P., Hoogendijk, S., Vreeburg, E. & Verheul, R. (2017) *Geen thuis zonder Nederlands paspoort*, Report No. 2017/077, De Nationale Ombudsman. Available at [https://www.nationaleombudsman.nl/system/files/onderzoek/Rapport%20Geen%20thuis%20zonder%20Nederlands%20paspoort\\_0.pdf](https://www.nationaleombudsman.nl/system/files/onderzoek/Rapport%20Geen%20thuis%20zonder%20Nederlands%20paspoort_0.pdf)
- Zorlu, A., Mulder, C. H. & van Gaalen, R. (2014). Ethnic disparities in the transition to home ownership, *Journal of Housing Economics*, 26, pp. 151–163.

## Appendix

**Table A1.** Descriptive statistics on homeownership of immigrants in percentages, last observation, cohorts 1999–2002.

		Event (homeownership)
Naturalization	Yes	14.1
	No	20.5
Naturalization during observation period	Yes	21.6
	No	18.0
Gender	Male	17.5
	Female	20.7
Age at migration	20–24 year	21.6
	25–29 year	23.4
	30–34 year	18.5
	35–39 year	15.1
	40–44 year	10.7
	45–50 year	8.3
Partner	No partner	13.4
	Foreign-born foreign partner	19.1
	Foreign-born Dutch partner	15.5
	Native-born Dutch partner	42.8
Children < 18 in household	Yes	18.8
	No	19.4
Employment	Yes	26.9
	No	11.1
Disposable household income	Lowest quartile	7.4
	Second quartile	10.8
	Third quartile	23.8
	Highest quartile	34.4
Level of urbanization municipality	Very high	20.2
	High	19.1
	Moderate	18.6
	Low	16.0
	Very low	19.0
	Unknown	11.0
Development country of origin	Lowest quartile	11.3
	Second quartile	24.3
	Third quartile	17.5
	Highest quartile	24.1
EU country of origin	Yes	27.2
	No	16.7
After January 1 2008	Yes	8.6
	No	33.8
Total		19.1

*N* = 106,187.

Source: Statistics Netherlands.

**Table A2.** Logistic discrete time hazard model on the risk of homeownership of unemployed immigrants, cohorts 1999–2002<sup>a</sup>.

	Model 1			Model 2			Model 3		
	Coef.	Std. error	Exp. coef.	Coef.	Std. error	Exp. coef.	Coef.	Std. error	Exp. coef.
Naturalization									
Yes	-0.004	0.056	0.996	0.089	0.067	1.093	0.058	0.060	1.060
No	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Naturalization * Native-born Dutch partner	0.251	0.090	1.285**						
Naturalization * Cultural distance country of origin				-0.001	0.001	0.999			
Naturalization * After January 1 2008							0.010	0.085	1.010
Cultural distance country of origin									
				-0.004	0.000	0.996***			
Naturalization during the observation period									
Yes	-0.001	0.035	0.999	0.061	0.040	1.063	-0.000	0.035	1.000
No	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
	N = 76,444.	Observations = 286,149.		N = 58,035.	Observations = 208,755.		N = 76,444.	Observations = 286,149.	
	Events = 5,834.			Events = 4,909.			Events = 5,834.		
	AIC = 50,903 (null model = 56,972).			AIC = 42,180 (null model = 56,972).			AIC = 50,911 (null model = 56,972).		

\*\* $p < 0.01$ .\*\*\* $p < 0.001$ .

<sup>a</sup>Model includes controls for gender, age at migration, age at migration  $\wedge$  2, the partner status, having young children the household, (CPI adjusted) log disposable household income, level of urbanization of the municipality, development country of origin, EU membership country of origin, and the period before/after 2008.

Source: Statistics Netherlands.

**Table A3.** Logistic individual fixed-effects regression on the risk of homeownership of employed immigrants, cohorts 1999–2002<sup>a</sup>.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.063	0.028	1.065*
	No	ref.	ref.	ref.
Years since migration		0.206	0.008	1.229***
1-period lag dependent variable		2.147	0.020	8.559***
<i>N</i> = 18,013. Observations = 90,926. AIC = 86,500 (null model = 113,989).				

\* $p < 0.05$ .\*\*\* $p < 0.001$ .

<sup>a</sup>Model includes controls for partner status, having young children in the household, (CPI adjusted) log disposable household income, the period of successive employment, the level of urbanization of the municipality and the period before/after 2008.

Source: Statistics Netherlands.

**Table A4.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	2.304	0.031	1.259***
	No	ref.	ref.	ref.
Naturalization during the observation period	Yes	0.188	0.026	1.207***
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.215	0.017	1.240***
Age at migration		0.049	0.011	1.050***
Age at migration <sup>2</sup>		-0.001	0.000	0.999***
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.157	0.024	1.170***
	Foreign-born Dutch partner	0.070	0.031	1.073*
	Native-born partner	0.469	0.025	1.598***
Partner shift		0.257	0.031	1.293***
Children < 18 in the household	Yes	0.153	0.020	1.165***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		1.271	0.041	3.564***
Period employed		0.115	0.006	1.122***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.032	0.020	1.033
	Moderate	-0.042	0.030	0.959
	Low	-0.170	0.034	0.844***
Very low	-0.005	0.053	0.995	
Development country of origin		2.177	0.087	8.820***
EU membership country of origin	Yes	0.100	0.024	1.105***
	No	ref.	ref.	ref.
After January 1 2008	Yes	-0.035	0.030	0.966
	No	ref.	ref.	ref.

*N* = 67,593.  
Observations = 231,502.  
Events = 14,446.  
AIC = 100,346 (null model = 108,125).

\**p* < 0.05.\*\*\**p* < 0.001.

Source: Statistics Netherlands.

**Table A5.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.329	0.049	1.390***
	No	ref.	ref.	ref.
Naturalization during the observation period	Yes	0.033	0.047	1.034
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.146	0.032	1.157***
Age at migration		0.008	0.022	1.008
Age at migration <sup>2</sup>		-0.001	0.000	0.999*
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.219	0.044	1.245***
	Foreign-born Dutch partner	0.177	0.052	1.194***
	Native-born partner	0.498	0.045	1.645***
Children < 18 in the household	Yes	0.180	0.037	1.197***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		2.041	0.094	7.698***
Period employed		0.073	0.009	1.076***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.056	0.035	1.058
	Moderate	0.051	0.055	1.052
	Low	-0.138	0.063	0.871
Very low	0.029	0.105	1.029	
Development country of origin		1.922	0.149	6.835***
EU membership country of origin	Yes	-0.119	0.047	0.888*
	No	ref.	ref.	ref.
After January 1 2008	Yes	0.136	0.046	1.146**
	No	ref.	ref.	ref.
Education	Low	ref.	ref.	ref.
	Middle	0.255	0.041	1.290***
	High	0.518	0.041	1.679***

*N* = 23,610.  
 Observations = 66,244.  
 Events = 4,348.  
 AIC = 29,739 (null model = 95,648).

\**p* < 0.05.

\*\**p* < 0.01.

\*\*\**p* < 0.001.

Source: Statistics Netherlands.

**Table A6.** Logistic discrete time hazard model on the risk of homeownership of employed immigrants without right-truncation, cohorts 1999–2002.

		Coef.	Std. error	Exp. coef.
Naturalization	Yes	0.279	0.032	1.322***
	No	ref.	ref.	ref.
Naturalization during the observation period	Yes	0.137	0.027	1.147***
	No	ref.	ref.	ref.
Gender	Male	ref.	ref.	ref.
	Female	0.166	0.018	1.181***
Age at migration		0.036	0.012	1.037**
Age at migration <sup>2</sup>		-0.001	0.000	0.999***
Partner	No partner	ref.	ref.	ref.
	Foreign-born foreign partner	0.234	0.025	1.264***
	Foreign-born Dutch partner	0.069	0.032	1.071*
	Native-born partner	0.431	0.026	1.539***
Children < 18 in the household	Yes	0.132	0.021	1.141***
	No	ref.	ref.	ref.
(CPI adjusted) log disposable household income		1.516	0.046	4.554***
Period employed		0.105	0.006	1.111***
Level of urbanization municipality	Very high	ref.	ref.	ref.
	High	0.055	0.021	1.057**
	Moderate	-0.055	0.031	0.946
	Low	-0.176	0.036	0.839***
Very low	0.006	0.056	1.006	
Development country of origin		2.499	0.094	12.170***
EU membership country of origin	Yes	0.089	0.03	1.093***
	No	ref.	ref.	ref.
After January 1 2008	Yes	-0.006	0.031	0.994
	No	ref.	ref.	ref.

$N = 53,215$ .  
 Observations = 196,395.  
 Events = 12,987.  
 AIC = 88,510 (null model = 95,648).

\* $p < 0.05$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

Source: Statistics Netherlands.