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## 2 Background

The purpose of this chapter is to establish the fundamental concepts upon which the proceeding study rests. To accomplish that, a review of the existing literature, associated with the analysis of migration and housing prices, is depicted in Section 2.1. Furthermore, Section 2.2 serves to provide a brief summary of the historical events that shaped German reunification and motivated the exploitation of this natural experiment in the underlying thesis.

### 2.1 Related Literature

The nature of *the migration phenomenon* is characterised by its universal presence across the globe and persistency over time, which attracted a vast number of scholars to contribute to a large strand of literature on the topic. Due to the complexity of the factors and processes that drive migration and the associated consequences thereof, the related literature may be subdivided into two major categories: The first branch relates to theories that evolved from the analysis of the *determinants of migration*. In particular, this category focuses on the structure of the P&P factors that trigger migration and result in the observable aggregate migrant streams *per se*.<sup>10</sup> In addition, a sub-group of this branch relates to the degree at which migrants are selected. That is, the composition of the migrant streams in terms of individuals' characteristics, such as, migrants' state of education, professional qualifications and the like. However, both subgroups are closely related to each other and in a way condensed in the theory underlying the Borjas model of *migrant*

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<sup>10</sup> See Bodvarsson, Ö. B. and H. Van den Berg (2009), pp. 7-9, among others.

*selection*,<sup>11</sup> which is an adaptation of A. D. Roy's fundamental "[...] thoughts on the distribution of earnings"<sup>12</sup> in 1951. Nevertheless, specifically the consideration of migrants' educational stance induced a fiery debate, in the early 1960s and '70s, on the existence of a *brain drain* related to emigration of the highly skilled; which moreover, experienced a revival in the 1990s.<sup>13</sup> Accordingly, the consideration of related consequences for host and home countries establishes one of the many linkages to the second branch of literature, which is dedicated to the *impact of migration* on sending and recipient areas. It prevails, that the empirical literature of this branch is intensely slanted towards the labour market impact of migration. Although interesting from a political point of view, the results of related studies are somewhat puzzling, since the suggested immigration impacts on destination labour market outcomes are in most instances unexpectedly small in magnitude or inconclusive.<sup>14</sup>

In order to address this issue, recent research endeavours pointed toward the necessity to incorporate a larger variety of factors when analysing the impact of immigration on the well-being of natives. The reasoning behind the construction of more holistic migration models stems from a consideration of potential explanations for the controversial results that were drawn from existing labour market studies: First of all, the influx of migrants to a destination area may increase competition on the local labour market; thereby, inducing an outflow of natives thereof. Such spill-over effects lead to labour market equalisation on the grounds of

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<sup>11</sup> See Borjas, G. J. (1987), pp. 532-537.

<sup>12</sup> Roy, A. D. (1951), p. 135.

<sup>13</sup> See Grubel, H. and A. Scott (1966); Carrington, W. J. and E. Detragiache (1998), among others.

<sup>14</sup> See Friedberg, R. M. and J. Hunt (1995), pp. 30-35; Pischke, J. S. and J. Velling (1997), p. 594.

internal migration to areas that are characterised by more favourable labour market conditions. Hence, the increase in competition for jobs due to the arrival of migrants may be relatively short-lived and difficult to observe, since wages arguably do not adjust instantaneously to changes in the labour supply.<sup>15</sup>

Second, the workforce composition of destination areas is altered depending on immigrants' characteristics. Precisely, if migrants are close substitutes to natives, a change in the relative wage structure among different skill groups, and thus, production cost likely prevails. Moreover, the arrival of migrants with primarily complementing skill sets would likely yield an increase in productivity, hence, reducing production cost and additionally, opening up an alleyway for local economic growth prospects. Altogether, immigration may exhibit an upward or downward pressure on prices due to changes in the local labour force composition. However, the degree to which this effect is translated into actual price changes largely depends on the degree at which the respective products and services are traded in the economy. Commonly, the non-traded goods sector passes production-cost-induced price changes on to their customers. At the same time, changes in the demand structure for those goods, due to immigration, will likewise be replicated in price changes. Hence, inferring the third explanation of the ambiguous labour market impact of migration: Migrants' arrival increases demand for local consumption goods, thence, stimulating local economic activity.<sup>16</sup>

Indeed, how immigrant demand affects destination economies is an important issue that allows to draw a more concise picture of the factors

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<sup>15</sup> See Card, D. (1990), pp. 255-256.

<sup>16</sup> See Kalantaryan, S. (2013), p. 2.

driving migration as well as the associated consequences for the local economy and natives' welfare. Thus, recent studies have been directed at an examination of the migration impact on prices of goods and services in destination economies. For instance, in a first study on the pricing dynamics of non-traded goods across U.S. cities, in response to immigration of the low-skilled, a decreasing impact on prices of migrant intensive services has been suggested. That is, a one percent increase in the low-skilled immigrant share of an average U.S. city's labour force is claimed to decrease the price of services that are predominantly offered by this group, such as gardening and housekeeping, by 0.2 percent. Accordingly, it is argued that natives benefitted from immigration in the form of a reduction in the cost of living component of migrant intensive services. Nevertheless, the suggested benefits are accompanied by a reallocation of wealth, through alterations in *purchasing power parity (PPP)* across different skill groups. Precisely, the respective study exploits *consumer price index (CPI)* data from 1980 to 2000, moreover identifying an increase in the PP of the highly skilled by, on average, 0.32 percent; while the PP of high school drop outs and low skilled Hispanic inhabitants has been reduced by up to one and 4.2 percent, respectively.<sup>17</sup>

The above findings have been further supported by a similar study on the price impact of immigration in the *United Kingdom (UK)* between 1995 and 2006. Equally employing regional CPI data on roughly 300 surveyed items, the analysis has been extended to the tradeable goods sector. Although similarly small in magnitude to the outcomes for the U.S., a dual effect across sectors prevails: A predominantly high concentration of low-skilled migrants in the service sector, showed a price reducing

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<sup>17</sup> See, Cortes, P. (2008), pp. 413-414.

effect through the associated increase in labour supply. That is, a one percentage point increase in the local immigrant share, led to a 0.2 percent decrease in the remuneration of services. On the contrary, the demand increase in low-value groceries, which is arguably linked to the prevalent increase in the UK migrant stock of the latter group over the past decades, had driven prices up in this market segment. Taking both effects into consideration, it is once again pointed towards a redistribution of welfare away from the native low-level income group, since particularly the mid to upper-level earners are suggested to benefit from the consumption of non-tradeable services, which experienced a price decline. At the same time, the PP of the relatively poor has been decreased through rising prices of essential low-value groceries.<sup>18</sup>

Contrarily, a further related study on the mass arrival of former Soviet Union migrants to Israel during the 1990s has shown opposing results. However, the surveyed sample differs in that the price dynamics of 915 store-level CPI products are explored, hence, excluding the service sector. Accordingly, controlling for native population size as well as city and month effects provided evidence for a negative relationship between immigration and prices: It is claimed that a one percentage point increase in a destination's immigrant share decreased prices by, on average, 0.5 percentage points. Nevertheless, the estimated effect of this very large and unexpected migrant inflow, equal to roughly four percent of the initial population, is suggested to be largely attributable to differences in demand characteristics of migrants and natives. On the grounds that emigrants' demand was more price elastic and combined with extensive price comparison efforts, likely motivated by relatively low search costs, it is argued that local grocery owners were induced to lower prices in

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<sup>18</sup> See Frattini, T. (2008), pp. 1-3.

order to attract the newly arrived consumers to extend their customer base.<sup>19</sup>

Altogether, the analyses of immigrants' influence on pricing dynamics have shown that the effects differ largely among traded and non-traded goods and services. In particular, the consideration of the non-traded goods sector attracted further attention, which has been expressed in research endeavours on migrants' impact on housing price dynamics. This topic is of particular interest as it typifies a special case of non-tradeable goods in destination economies that represents a particularly large fraction of natives' living cost expenses. Indeed, this relatively unexplored field of research attracted first attention in the 1980s. Although, the initial studies were mostly of descriptive nature, a strong relationship between immigration and property prices had been suggested, which provided a profound fundament for subsequent empirical research endeavours.<sup>20</sup> Motivated by Card's analysis of the Mariel Boatlift in 1990, which explores the labour market impact of migration in a natural experiment setting,<sup>21</sup> Susin and Saiz were the first to conduct empirical analyses of associated housing market impacts.<sup>22</sup> The sudden mass arrival of approximately 125,000 Cuban immigrants increased Miami's tenant population by an additional nine percent, which was intuitively bound to have an effect on wages and rental prices. However, the local labour market apparently absorbed the additional supply of low-skilled labour very well, affecting wages only moderately.<sup>23</sup> However, the opposite was observed for the development

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<sup>19</sup> See Lach, S. (2007), pp. 548-551.

<sup>20</sup> See Muller, T. and T. J. Espenshade (1985); Ley, D. and J. Tuchenner (2001), among others.

<sup>21</sup> See Card, D. (1990), p. 245.

<sup>22</sup> See Susin, S. (2001) and Saiz, A. (2003).

<sup>23</sup> See Card, D. (1990), pp. 256-257.

of rental prices: the application of a difference in differences approach to this historical event produced empirical evidence of a rental price increase, which exceeded the ones of the respective control groups by eight to eleven percent. This finding is substantial in magnitude, particularly in the light of the fact that wages remained relatively stable throughout the surveyed time period of 1979 to 1982. In addition, the results allow a comparison of the impact on different rental categories, revealing that particularly low level income households, which rely on the lower bound rentals, have been affected by the letting price rise. Contrary to that, prices among the upper level categories have been characterised by a relative decline, providing once more evidence for the presence of redistributive effects, from the relatively poor to the relatively rich. However, the results do not suffice for general conclusions to be drawn, due to the high specificity of the observed location and time frame.<sup>24</sup>

An opposing view to this argument emerged from a more generalised consideration of the joint income and rental price development in response to migrant inflows. The related study on the rent to income ratio employs decennial data, from 1980 to 2000, on the 91 largest *metropolitan statistical areas (MSA)* in the U.S. The findings suggest no significant change in the average rent to income ratio, that is, the so called *rental burden* on natives. Moreover, it is proposed that there is no disproportionate impact on natives, who are more likely to compete for housing with immigrants. Much of this counterfactual outcome has been attributed to the capacity of housing markets to adjust fairly well over the longer run, since the survey is based on decennial changes.<sup>25</sup> Furthermore, in an attempt to conduct a first general equilibrium

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<sup>24</sup> See Saiz, A. (2003), p. 518.

<sup>25</sup> See Greulich, E. et al. (2004), pp. 183-185.

approach employing census data over three decades from 1970 to 2000 in combination with American Community Survey data for 2005, a causal relationship between immigration and housing rents across states and metropolitan areas has been suggested. In addition, evidence for differential impacts on natives with different schooling attainment has been provided, contradicting the latter study. The respective scholars argue that immigration had a significantly positive impact on rents of the highly and less educated. At the same time, the highly educated benefitted from increasing wages due to complementarities in production, while the less educated faced small but negative wage effects. Notably, the proposition that particularly the rental outcomes of the highly skilled were highly sensitive to immigration is somewhat outstanding among this branch of literature.<sup>26</sup>

In addition, a separate investigation of the immigration impact on average wages by David Card in 2007 has shown that the impact on wages among major U.S. cities is positive,<sup>27</sup> and moreover, of similar magnitude to the analogously observed average increase in rental prices by Albert Saiz in 2007.<sup>28</sup> In spite of the provided insight that the burden of living expenses remained approximately constant on average, the dispersion of the wage gap among natives in different skill-groups has arguably increased, lending further support to the welfare redistribution argument, discussed above. Thence, the study further points towards the necessity to consider the multilevel impact of immigration on the well-being of natives, beyond the sheer consideration of labour market

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<sup>26</sup> See Ottaviano, G. I.P. and G. Peri (2007), pp. 1-3.

<sup>27</sup> See Card, D. (2007), p. 3.

<sup>28</sup> See Saiz, A. (2007), p. 346.

effects. This is particularly important considering the formulation of appropriate immigration policy responses.<sup>29</sup>

Prevailingly, the seminal contributions to this relatively new strand of literature have been largely involved with analyses of the U.S. housing market and other traditional migrant destinations, which have featured a large foreign born composition of the population throughout history. It is thence surprising, that the results across those destination areas differ largely. For instance, the pioneering study on rental price dynamics in U.S.-MSAs between 1985 and 1998 by Albert Saiz in 2007, suggests that a one percent increase in the surveyed cities' population is associated with a one percent increase in average rents, which essentially provided a baseline result for subsequent studies and the present thesis. This result moreover translates into an income reducing effect that is an order of magnitude larger than comparable wage reductions, associated with a one percent increase in the relative share of a specific skill group among the labour force, due to immigration.<sup>30</sup> In addition, in a recent research contribution on the Canadian housing market, it is argued that there was a significant positive, yet restrained, impact of immigration on rents.<sup>31</sup>

In contrast, a study of local housing market dynamics in New Zealand, between 1986 and 2006, does neither provide empirical evidence for a positive causal effect of foreign-born immigration on local property prices nor rents. It is merely argued that an overall population increase by one percent is associated with a rental price increase of 0.2 to 0.5 percent. However, since there is no obvious link between the local

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<sup>29</sup> See Card, D. (2007), pp. 31-33.

<sup>30</sup> See Saiz, A. (2007), pp. 363-364.

<sup>31</sup> See Akbari, A. H. and Y. Aydede (2012), p. 1645.

housing price increases and changes in the share of the foreign born population, the driving forces are likely more complex. Interestingly, return migration is suggested to exhibit an upward pressure on property prices in the given setting: A one percent population increase due to higher return migration of natives yields a six to nine percent increase in local housing prices. In an extension to the neighbourhood level, the outcomes are supportive of the main result considering general population growth, yet boroughs that are characterised by larger foreign-born inflows featured relatively lower property price growth than surrounding areas. Nevertheless, the respective outcomes are not robust over time.<sup>32</sup>

Departing from the traditional immigrant recipient countries, more recent studies have explored the impact of immigration on housing markets in European countries. Precisely, a seminal research contribution focused on the immigration wave to Spain, between 2000 and 2010, which was accompanied by a boom in regional housing prices. The respective scholars find that immigration accounted for approximately 25 percent of the observed housing price increase during the surveyed decade as well as 50 percent of the construction activity. The empirical evidence suggests that an average 1.5 percent annual increase in the working population due to immigration induced a rental price rise of roughly two percent and increased construction activity by 1.2 to 1.5 percent.<sup>33</sup>

Moreover, a contemporary study of the Italian housing market focuses on the recently observed immigration phenomenon to the country, exploring data from 1996 to 2007. In this primary analysis of the migration impact on Italian rents, evidence for a positive, yet declining

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<sup>32</sup> See Stillman, S. and D. C. Maré (2008), pp. 27-28.

<sup>33</sup> See Gonzales, L. and F. Ortega (2013), pp. 37-39.

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