CAHIER D'ÉTUDES
WORKING PAPER

N° 57

THE IMMIGRANT/NATIVE WEALTH GAP IN GERMANY, ITALY AND LUXEMBOURG

Thomas Y. MATHÄ, Alessandro PORPIGLIA and Eva SIERMINSKA

FEBRUARY 2011

Conference on Household Finance and Consumption
Luxembourg 25-26 October 2010

BANQUE CENTRALE DU LUXEMBOURG

EUROSYSTÈME

The Immigrant/Native Wealth Gap in Germany, Italy and Luxembourg[*]

Thomas Y. MATHÄ

Economics and Research Department
Banque centrale du Luxembourg
thomas.mathae@bcl.lu

Alessandro PORPIGLIA

Economics and Research Department
Banque centrale du Luxembourg &
University of Tor Vergata, Rome
alessandro.porpiglia@bcl.lu

Eva SIERMINSKA[†]

CEPS / INSTEAD Research Institute &
DIW, Berlin
eva.sierminska@ceps.lu

February 2011

Abstract:

This paper analyses the existence of an immigrant/native wealth gap by using household survey data for Luxembourg, Germany and Italy. The results show that, in all three countries, a sizeable wealth gap exists between natives and immigrants. Towards the upper tail of the wealth distribution the gap narrows to a small extent. This gap persists even after controlling for demographic characteristics, country of origin, cohort and age at migration although cross-country differences exist in the immigration penalty.

Non-technical summary

Wealth plays a critical role in people's life. It cushions against life's uncertainties, gives families access to superior health services, better schools and allows living in areas characterized by lower crime levels. Wealth is also a resource to maintain the living standard in retirement and a possibility to rely on a buffer stock in times of diminished income streams. This point is particularly relevant in view of industrialised countries' increasingly ageing populations, jeopardising the upkeep of current social welfare systems. While increasing immigration flows alone cannot provide a long-term permanent solution to the effects of population ageing, at least in the short term, it may help to successfully smooth the effects. This strongly depends on the extent to which immigrants contribute to the social welfare system, which is linked to their economic success and wealth accumulation. Therefore, the socio economic assimilation of immigrants and the existence of a wealth gap between immigrants and natives are issues of growing interest among economists and policy makers.

This paper uses three different household surveys which link wealth holdings to migration histories and analyses the relative wealth position of immigrant and native households in Germany, Italy and Luxembourg. While the relative gap narrows at increasing percentiles, it is robust across the entire net wealth distribution. At the 75th percentile the immigrant/native wealth ratio still amounts to 36%, 14% and 61%, respectively. Furthermore, it persists even after controlling for relevant household characteristics and is not affected by different economic structures or migration situations, although the estimated effects vary across countries. We also find that a higher age at migration carries different penalties across countries.

1 Introduction

Wealth plays a critical role in people's life; as noted by Gittleman and Wolff (2004) and Sinning (2007) among others, it cushions against life's uncertainties, gives families access to superior health services, better schools and allows living in neighbourhoods characterised by lower crime levels. Wealth is also a resource to maintain the living standard in retirement and a possibility to rely on a buffer stock in times of diminished income streams.

This point is particularly relevant in view of industrialised countries' increasingly ageing populations, jeopardising the upkeep of current social welfare systems. More immigration is a commonly advocated solution discussed in this context. Indeed, the continued deepening and enlargement of the European Union has increased labour mobility in the EU, and together with the effects of globalisation more and more people nowadays live and work outside their country of birth. However, at current labour force participation and fertility rates it is reported that a yearly 1.3-1.6 million immigrants into the EU25 are needed to keep the labour force constant (Holzmann, 2005). It is thus clear that current immigration levels alone cannot provide a long-term permanent solution to the effects of population ageing. Nevertheless, at least in the short term, immigration may help to successfully smooth the effects of population ageing. This strongly depends on the extent to which immigrants contribute to the social welfare system, which is linked to their economic success and wealth accumulation. Therefore, the socio economic assimilation of immigrants and the existence of a wealth gap between immigrants and natives are issues of growing interest among economists and policy makers.

This paper is the first to examine the wealth gap between immigrants and natives in three European countries with very different immigration histories. In addition, it is the first paper to analyse the immigrant/native wealth gap in Italy and Luxembourg in a comparative context. We use a new source of harmonised wealth data and show that there is a sizeable wealth gap between natives and immigrants in all three countries in

our sample: Germany, Italy and Luxembourg. At the 75th percentile, the immigrant/native wealth ratio is 36%, 14% and 61%, respectively. While the relative gap narrows at increasing percentiles, it is robust across the entire net wealth distribution. Furthermore, it persists even after controlling for relevant household characteristics and is not affected by different economic structures, migration situations although the estimated effects vary across countries. The comparison of these three countries is particularly interesting as they span the spectrum from a traditional immigration country accepting only temporary, predominantly unskilled workers (Germany), to a traditional emigration country that, in recent years, has evolved into becoming an immigration country (Italy). In this context, Luxembourg is a unique case as it attracts both skilled and unskilled workers due to its high wages and high living standards. At the moment, it is the country with the highest foreign population share in the EU having experienced a high level of immigration since the beginning of the last century. Non-nationals presently account for about 44% of the Luxembourg resident population.

The paper proceeds as follows: section 2 provides a short survey of the existing literature on wealth and asset holdings. Section 3 describes the data used in the empirical analysis and provides some descriptive statistics. Section 4 discusses wealth levels and net wealth components. Section 5 provides the econometric and methodological framework. Section 6 presents the empirical results and section 7 concludes.

2 Relevant Literature and further motivation

The relevance of immigration has steadily been increasing since WWII and with it began the debate on the socioeconomic integration of immigrants. Early research regarded immigration mainly as a temporary phenomenon, and consequently the main focus was on labour market outcomes and purely on the economic performance of immigrants. Early contributions to the literature, such as Chiswick (1978) analysed the

economic performance of immigrants largely by concentrating on how immigrants' earnings and employment vary over the settlement process (see also Borjas, 1994).[1]

More recently, and as durations of stay in host countries increased, researchers began to analyse the wealth position of immigrants and natives. Wealth is an important measure of economic well-being, and despite an obvious conceptual link between income and wealth, wealth disparities are usually more pronounced than income disparities. Thus focusing exclusively on income is likely to underestimate differences in economic well-being between natives and immigrants (e.g. Blau and Graham, 1990). As pointed out by Gibson et al. (2007) wealth differences between immigrants and natives contribute to an intergenerational transmission of disadvantage and to a slowing of immigrant assimilation. Lastly, policies seeking to reduce income inequalities may remain ineffective in reducing wealth inequalities, as wealth and income are likely to be distributed differently and be driven by different determinants, with bequests and intergenerational transfers being two such examples.

In recent years, wealth disparities between natives and immigrants or ethnic and racial groups have been analysed for various countries. Shamsuddin and DeVoretz (1998) and Zhang (2003) both analyses wealth differences between immigrants and natives in Canada. Cross-country comparative evidence for the U.S., Germany and Australia is provided by Bauer et al. (2010) reporting significant immigrant/native household wealth gaps. In a study of wealth of Mexican Americans, Cobb-Clark and Hildebrand (2006) report that racial and ethnic differences in wealth levels are much larger than corresponding differences in income levels and that much of the wealth disadvantage of Mexican American households is attributable to them having more children and younger household heads. By contrast Hao (2004) studied the wealth of immigrants in

---

[1] In Luxembourg, the integration of immigrants has previously been analysed from the income perspective, but not for the wealth perspective. Ametepé and Hartmann-Hirsch (2008) find no relevant differences in income between natives and immigrants in Luxembourg, especially among highly qualified individuals.

the U.S. and native-born Americans and reported that, to a large extent, immigrants assimilate to their native racial-ethnic counterparts in wealth accumulation.

A number of studies have analysed specific components of wealth and their distribution among natives and immigrants. Carroll et al. (1994) report for example differences in the saving patterns of immigrants in Canada, which vary according to the country of origin. Borjas (2002) analysed the determinants of homeownership in immigrant households in the U.S. He reports that immigrant households have lower homeownership rates than native households and that this homeownership gap widened significantly in the past twenty years. Only a relatively small part of the homeownership gap between immigrants and natives can be attributed to differences in underlying variables such as income and household composition between the two populations.

The level and distribution of net wealth are, however, not the only statistics of importance. The portfolio composition of their assets provides a picture of the differences in risk-taking behaviour of immigrants and their exposure to economic fluctuations. Sinning (2007) for example examines wealth and asset holdings of immigrants in Germany. His findings indicate that nationals are wealthier than immigrants along the entire net wealth distribution and that immigrants' portfolio diversification is significantly lower than that of natives, even after controlling for relevant household characteristics. Furthermore, a substantial fraction of both the overall wealth gap and differences in wealth components are explained by differences in educational attainment.

3   Data description and methods

This paper uses data from three nationally representative household surveys which provide comparable measures of household wealth. We focus on these three countries as they provide the most recent, harmonised wealth data available in the Luxembourg Wealth Study. The German data are from the 2007 release of German Socio-Economic

Panel (SOEP), which is a representative longitudinal survey that includes more than 12,000 German and immigrant households. The Italian data are from the 2008 wave of the Bank of Italy Survey of Household Income and Wealth (SHIW). The primary purpose of the SHIW is to collect detailed data on demographics, consumption, income and household balance sheets (for more details on the SHIW see for example Brandolini and Cannari, 1994). It contains more than 8,000 households. The Luxembourg data are from a small wealth module included in the 2008 PSELL-3/EU-SILC (EU Survey on Income and Living Conditions), which is a representative household panel survey. It contains approximately 3,800 households. The German and Luxembourg data are taken from the respective data set included and to be included in the future in the Luxembourg Wealth Study (LWS).[2] The Italian data was harmonised using a methodology consistent with the LWS definitions. All variables in value terms are expressed in current euro.

Table 1: Availability of wealth components in the data

Components of net wealth	Germany	Italy	Luxembourg
Principal residence	x	x	x
Total financial assets	x	x	x
Investments in real estate	x		
Net Investments in real estate		x	x
Mortgages	x		x
House secured debt		x	
Non-house secured debt	x	x	
Net wealth 1	**x**	**x**	**x**
Business equity		x	x
Business assets	x		
Net wealth 2	x	x	x

---

[2] The Luxembourg Wealth Study (LWS) is a project associated with the Luxembourg Income Study (LIS). LIS is a cross-national archive of harmonised cross-sectional micro-datasets from across the industrialised countries. For over twenty years, LIS has collected and harmonised datasets containing income data at the household- and person-level; these datasets also include extensive demographic and labour market data. The LWS database contains harmonised wealth micro-datasets from ten rich countries. We focus on three countries with most recent data. For more details on LWS, see Sierminska et al. (2006).

Our measures of total household net wealth are derived from wealth components that are either estimated at the household level or directly measured at the individual level and aggregated to the household level. An overview of the specific components of the wealth measure for each country is provided in Table 1.

Surveys differ across countries and therefore the availability of specific wealth components also differs. To increase the comparability of net wealth, we will use the measure net wealth 1 in our analysis. This aggregation includes financial assets, the value of the principal residence and investment real estate net of mortgages on both type of properties and net of other house secured and non-house secured debt. It excludes business equities, as it is not available in all three countries. Nonetheless business assets and equity components are reported in the paper in order to provide a broader overview of the net wealth composition.

Despite our attempts to harmonise the net wealth value, difficulties remain (for a discussion see Sierminska et al., 2006) and components commonly used for the calculation of the aggregate may vary, resulting in small differences in the definition in each country. The components for the value of the principal residence and total financial assets are available for all three countries, whereas net investment in real estate are available for Luxembourg and Italy only; in Germany the value of investment real estate is reported separately and the respective debt is reported together with other mortgages. Mortgage holdings are available for Luxembourg and Germany, while for Italy, house secured debt is available. Although the share of non-house secured debt is usually very small it is only available for Germany and Italy. Consequently, the household liability figures reported for Luxembourg are likely to be somewhat underestimated in the paper. Business equities are available solely for Italy and Luxembourg, while for Germany the database only contains business assets. An important omission in all of these surveys is pension assets. As their importance differs

across countries, cross-national comparisons are bound to reflect these omissions.[3] Thus, strictly speaking direct comparison of our absolute measures of net wealth across countries is not possible. However, the net wealth gap between natives and immigrants in each country is unlikely to be much affected (assuming an equal distribution of pension assets), and this is the most relevant aspect given our research question.

All databases contain edited and imputed values. The Italian data are stochastically imputed, German and Luxembourg data have been multiply imputed.[4] Observations for which data was missing have been dropped. Observations for which the value of net wealth fell below the 0.5th percentiles or exceeded the 99.5th percentiles were marked as outliers and were subsequently dropped. The value for disposable income was winsorised at 1st and the 99th percentile. Table 2 reports the number of observations for the net wealth variable before and after the data cleaning.

Table 2: Sample Sizes

	Before data cleaning	After data cleaning
Germany	11,689	11,531
Italy	7,977	7,899
Luxembourg	3,770	3,742

All monetary values are either aggregated or reported at the household level. We classify a household as immigrant if the household head is born outside the country in question, regardless of his/her nationality. Thus, naturalised household heads are considered as immigrants to reflect the cultural background rather than the citizenship status.

---

[3] See Frick & Headey (2009) for a comparison of wealth inequality that includes pension entitlements among the elderly in Australia and Germany.

[4] Financial assets in the wealth module for Luxembourg are reported in categories. After multiple imputations we use information on interest income to calculate monetary values within each category. This is a first such attempt using Luxembourg data.

Table 2 reports the number of observations for analysing differences in demographic characteristics among immigrants and natives in the three countries. In the following section we provide a number of basic statistics highlighting the differences between immigrants and natives in our sampled countries. All reported values are weighted and country representative. Table 3 provides a comparison of the demographic characteristics of immigrants and natives for each country.

With a share of 39% of total households headed by a non-native person, the share of immigrant household heads is substantially higher in Luxembourg than in Germany (10%) or Italy (7%). The share of men heading households is substantially higher for immigrant households than the country average in all three countries considered.

Table 3: Descriptive statistics

		Germany			Italy			Luxembourg		
		Native	Immigrant	Total	Native	Immigrant	Total	Native	Immigrant	Total
Immigration status	Number of obs.	10,373	1,148	11,521	7,435	464	7,899	1,666	2,076	3,742
	Non-weighted share	90.0	10.0	100.0	94.1	5.9	100.0	44.5	55.5	100.0
	Weighted Share	89.8	10.2	100.0	92.9	7.1	100.0	60.6	39.4	100.0
Gender	Male	53.6	59.8	54.3	62.8	66.7	63.1	59.8	66.4	62.4
	Female	46.4	40.2	45.8	37.2	33.3	36.9	40.2	33.6	37.6
Age	16-49	45.2	43.5	45.1	36.2	83.6	39.6	43.5	60.5	50.2
	50-64	22.5	31.5	23.4	27.1	11.3	26.0	26.0	27.0	26.4
	over 65	32.3	25.0	31.6	36.7	5.2	34.4	30.5	12.4	23.4
Education	No Edu/Primary	14.8	27.6	16.1	64.9	63.2	64.6	35.5	41.4	37.8
	Secondary	64.7	55.5	63.8	25.7	26.3	25.8	40.1	26.0	34.6
	Post Secondary	20.5	16.9	20.1	9.4	10.6	9.6	24.4	32.6	27.6
Net wealth	mean	109,605	55,817	104,139	220,733	56,410	209,134	594,059	322,592	487,240
	median	20,660	0	17,040	157,500	2,733	150,000	486,893	179,145	400,000
Income	Mean	25,241	22,778	24,991	32,717	21,008	31,891	59,488	55,787	58,032
	median	21,446	19,426	21,309	27,074	17,068	26,313	52,819	44,779	49,812
Number of children	0	78.1	65.3	76.8	73.0	66.7	72.5	58.7	49.8	55.2
	1	11.8	14.7	12.1	14.2	11.3	14.0	18.7	20.8	19.5
	2	7.9	14.1	8.5	10.4	16.8	10.9	19.3	22.3	20.5
	3	1.8	4.0	2.0	2.0	4.4	2.1	2.8	6.2	4.2
	>3	0.4	1.9	0.5	0.4	0.9	0.4	0.5	0.8	0.6
Marital status	never married	24.0	9.5	22.5	13.0	26.9	14.0	18.0	21.0	19.2
	married	43.0	60.7	44.8	61.0	58.5	60.8	55.5	60.5	57.5
	separated/divorced	18.0	20.8	18.3	7.9	11.6	8.2	11.4	13.0	12.0
	widowed	15.0	9.1	14.4	18.1	3.1	17.1	15.1	5.4	11.3

Notes: All statistics weighted and country representative unless otherwise stated. Wealth and income in EUR

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

The ageing of the population is a pressing issue in all Western European countries. In the three countries analysed, the majority of households do not have any children younger than 18 years of age. Immigration is often discussed as the cure to an ageing population. The statistics explain why: immigrant household heads tend to be both younger and to have a higher number of children. The age distribution is much more left skewed for immigrant than for native household heads. In Italy, more than 80% of immigrant households heads, but only 36% of native households heads fall into the 16-49 years of age category. In Luxembourg, the share is 60% and 43%, respectively. At 75%, the share of immigrant households in pre-retirement age (less than 65 years of age) is 8 percentage points higher than for natives in Germany. The share of elderly people (over 65 years of age) is much smaller among immigrant than among native household heads. The respective shares for native household heads are 32%, 37% and 30% in Germany, Italy and Luxembourg but only 25%, 5% and 12% for immigrant household heads. The latter are also not only more likely to have children but they also tend to have more children. Furthermore, in Germany and Luxembourg they are more likely to be married (61% vs. 43% in Germany and 61% vs. 55% in Luxembourg) but more likely never to have been married in Italy (27% vs. 13%).

The educational pattern of immigrant and native household heads is of particular interest. In Germany, both tend to be concentrated in the secondary education category. With a share of 65% for native and 55% for immigrant household heads, the mode is the completion of secondary education. Interestingly, 15% of native household heads as compared to 28% of immigrant household heads have completed either no or primary education. In contrast, the respective share of those having completed tertiary education is quite similar (17% and 20%).

In Italy, for native and immigrant household heads, the education mode is having completed either no or primary education. Also, for the latter the share of having completed tertiary education is slightly higher than for native household heads (11% vs. 9%). Overall, the education distribution is quite similar for both groups. Out of the

three countries, Italy seems to have the least educated population for both immigrants and natives. These numbers omit illegal immigration that would otherwise further inflate the share of households headed by a person holding a low education.[5]

In Luxembourg, for native household heads the mode is to have completed secondary education whereas for immigrant household heads it is either no or primary education. However, 33% of immigrant household heads have completed tertiary education, this share being even higher than that for secondary education, which stands at 26%. In contrast, only 24% of native household heads have completed tertiary education. Thus, compared to native household heads, a relatively high share of immigrant household heads are considered to be either low or highly educated.

4   Descriptive statistics of wealth levels and wealth components

Next, we turn to income and wealth gaps and compare them across countries. It is worthwhile to emphasise that the wealth gap between immigrant and native households is wide (in the range of 50% or more) in all three countries and substantially wider than the income gap. This is shown Figure 1, which presents the mean income and the mean wealth of immigrants as a percentage of the respective values for natives and shows that immigrant households' mean income tends to be relatively close to that of native households. This is particularly the case for, Germany and Luxembourg. However, the net wealth held by immigrant households is just 54% of the net wealth of native households in Luxembourg, 51% in Germany and 26% in Italy.

---

[5]   It needs to be noted that all data is at the household level. In Italy, there are few young household heads since many adult children still live with their parents. As a result the household structure needs to be taken into account when making conclusions regarding wealth distribution. See also Bover (2010) on this point.

Figure 1: The Income and Wealth Gap

Mean income & wealth of immigrant households relative to native households, in %
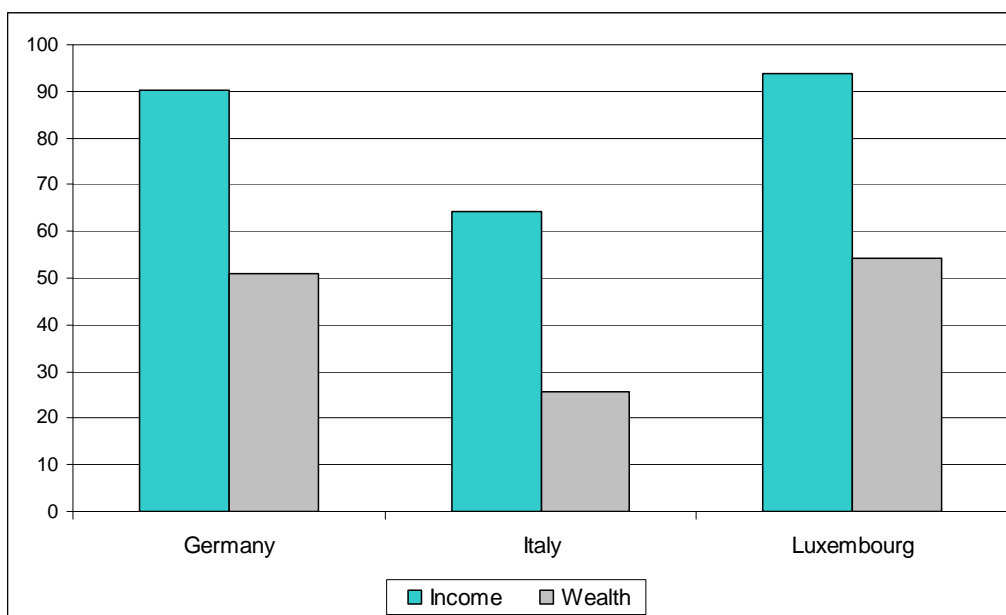
Comparing the central tendency measures of the distribution of net wealth for immigrant and native households only gives a partial view of the wealth gap issue given the large skewness of the data. Table 4 shows the values and immigrant/native wealth ratios at various points of the wealth distribution. In all three countries, the net wealth turns positive at an earlier stage of the distribution for native than for immigrant households. Across the wealth distribution, with the exception of first percentile for Germany, native households are always wealthier than immigrant households. Furthermore, net wealth among immigrant households is more asymmetrically distributed. The relative wealth gap narrows at higher percentiles of the wealth distribution in all countries, at the 75th percentile the net wealth of immigrants is 61% of the net wealth of native household for Luxembourg, 36% for Germany and 14% for Italy, while at 99th percentile of wealth distribution the share is 72% for Luxembourg, 70% for Germany and 43% for Italy.

Table 4: The distribution of net wealth and the wealth gap (ratio of immigrant to native wealth).

	Percentile	1	5	10	25	50	75	90	95	99
Germany	Total	-34,000	-9,587	-1,444	0	17,040	148,484	307,335	455,000	915,000
	Native	-34,135	-9,000	-1,000	0	20,660	154,611	320,000	470,000	938,441
	Immigrant	-30,000	-12,021	-4,000	0	0	55,000	176,000	289,000	661,053
	Wealth Gap	88	134	400	100	0	36	55	61	70
Italy	Total	-5,500	0	0	16,000	150,000	290,000	500,000	701,578	1,245,537
	Native	-4,800	0	500	35,000	157,500	300,000	505,000	728,028	1,269,000
	Immigrant	-10,000	-3,000	0	0	2,733	41,500	200,000	354,069	540,000
	Wealth Gap	208	n.a.	0	0	2	14	40	49	43
Luxembourg	Total	0	0	0	75,774	400,000	680,983	1,058,765	1,390,254	2,580,730
	Native	0	0	3,723	249,325	486,893	800,000	1,173,736	1,538,536	2,738,946
	Immigrant	0	0	0	3,749	179,145	488,268	798,480	1,050,785	1,967,585
	Wealth Gap	100	100	0	2	37	61	68	68	72

Notes: All statistics weighted and country representative. Wealth in EUR

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

Table 5: Asset participation rates of households

		Native	Immigrant	Total
Germany	Main Residence	42.3	24.7	40.5
	Financial Assets	59.1	36.5	56.8
	Investment in Real Estate	13.3	7.9	12.8
	Private Business	3.9	2.7	3.8
	Total Debt	33.4	31.5	33.2
	Home Secured Debt	n.a.	n.a.	n.a.
	Mortgage*	42.8	56.8	43.7
	Non Home Secured Debt	20.7	21.8	20.8
Italy	Main Residence	73.3	22.6	69.7
	Financial Assets	78.0	64.2	77.0
	Investment in Real Estate	22.4	12.7	21.7
	Private Business	17.7	10.9	17.2
	Total Debt	25.3	27.8	25.5
	Home Secured Debt *	16.0	42.5	16.6
	Mortgage	n.a.	n.a.	n.a.
	Non Home Secured Debt	15.2	18.8	15.4
Luxembourg	Main Residence	82.4	51.5	70.3
	Financial Assets	73.6	58.0	67.5
	Net investment in Real Estate	28.1	26.2	27.4
	Private Business	5.8	4.7	5.4
	Total Debt	n.a.	n.a.	n.a.
	Home Secured Debt	n.a.	n.a.	n.a.
	Mortgage*	43.3	65.8	49.8
	Non Home Secured Debt	n.a.	n.a.	n.a.

Note: Weighted shares, country representative

* calculated for homeowners only

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

The distribution of the main net wealth components elicits further differences between native and immigrant households. Table 5 describes the ownership rate of each component of household wealth. Consistent with the empirical findings in the U.S. (e.g. Borjas, 2002), homeownership rates are lower among immigrant households than among native households in Luxembourg, Germany and Italy. For home owners, having a mortgage is more common among immigrant households, reflecting the fact native households are more likely to receive property as inheritance or intergenerational transfer, for instance. Financial asset participation rates are relatively

well balanced between natives and immigrants in Italy; in Germany and Luxembourg, financial asset investment rates are higher among native households.

Investments in real estate are less common than holding financial assets. This is true for all households in all three countries. Slightly more than 27% of the overall population declared to have invested in real estate in Luxembourg, 13% in Germany and 22% in Italy. The participation rate of native households for this component is clearly higher than the participation rate of immigrant households in Italy and Germany, but barely so in Luxembourg. Private businesses are the least common asset owned by households. In Luxembourg and Germany, differences in the participation rates between native and immigrant households are low, whereas in Italy, it is quite sizeable. Non-home secured debt and total debt is not available for Luxembourg. The participation rates seem to be quite equally distributed among natives and immigrants both in Germany and in Italy.

To complete the picture of the wealth distribution of immigrant and native households we look at conditional central tendency measures of each component. The mean and median in Table 6 are calculated for those households only that have declared to hold the respective asset. Across the positive wealth components, with the relevant exception of the main residence value for Germany, both the conditional mean and median are higher for native households. For mortgages it is the opposite. The average value of the principal residence, which is the largest component of the wealth portfolio for immigrant and native homeowners, is quite similar across countries. However, as shown in Table 5 the homeownership rates vary, and hence the big differences in the wealth gap among countries. Italy exhibits a higher immigrant/native gap compared to Luxembourg and Germany in the conditional mean value of total financial assets. Private business exhibits a severe immigrant/native gap in all three countries considered; in part, this may be explained by private businesses' relevance in inheritances.

Table 6: Conditional mean and median of net wealth components

		Germany			Italy			Luxembourg		
		Native	Immigrant	Total	Native	Immigrant	Total	Native	Immigrant	Total
Main Residence	Mean	204,309	213,662	204,898	235,311	222,381	235,016	559,902	498,795	542,268
	Median	180,000	180,000	180,000	200,000	160,000	200,000	500,000	450,000	500,000
Total Financial Assets	Mean	33,364	22,967	32,685	27,319	8,433	26,207	50,157	44,283	48,171
	Median	15,000	8,000	14,014	9,464	3,049	8,243	17,511	16,893	17,423
Investment in Real Estate	Mean	167,020	144,618	165,611	156,697	81,164	153,572	507,123	341,883	444,881
	Median	100,000	91,790	100,000	100,000	50,000	93,500	400,000	200,000	300,000
Private Business	Mean	196,214	123,757	191,582	152,313	73,355	148,840	451,586	352,372	417,561
	Median	40,000	30,000	40,000	30,000	20,000	30,000	468,597	468,068	468,521
Total Debt	Mean	54,715	55,365	54,778	36,915	35,136	36,778	n.a.	n.a.	n.a.
	Median	30,000	22,000	30,000	13,000	7,000	12,500	n.a.	n.a.	n.a.
Home Secured Debt	Mean	n.a.	n.a.	n.a.	66,262	74,007	66,787	n.a.	n.a.	n.a.
	Median	n.a.	n.a.	n.a.	54,000	60,000	55,000	n.a.	n.a.	n.a.
Mortgages	Mean	81,574	96,997	82,826	n.a.	n.a.	n.a.	131,520	146,405	137,197
	Median	70,000	80,500	70,000	n.a.	n.a.	n.a.	95,000	120,000	104,000
Non Home Secured Debt	Mean	15,107	15,512	15,150	7,016	4,992	6,842	n.a.	n.a.	n.a.
	Median	8,000	9,119	8,000	4,700	4,000	4,600	n.a.	n.a.	n.a.

Note: Weighted statistics, country representative. Figures in EUR.

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

The descriptive statistics presented in this and in the previous section corroborate the existence of a clear immigrant/native wealth gap in Luxembourg, Germany and Italy despite the different economic and migration situations in the three countries. In the next sections we will analyse whether the immigration status of the household head has still a negative effect on wealth accumulation after controlling for relevant household characteristics.

5   Empirical Methodology

The distribution of net wealth is usually skewed to the right. As a result, the empirical model is commonly estimated in logarithmic terms or using the inverse hyperbolic sine transformation function. However, a logarithmic transformation is not appropriate for variables with zero or negative values, such as in the case of net wealth. Therefore, we use quantile regression techniques to analyse the determinants of household net wealth at the median of the distribution. As a priori there are no reasons to assume the immigrant/native wealth gap to be constant along the distribution of net wealth we also estimate quantile regressions for the 75th and 90th percentile of the net wealth distribution. For Germany and Luxembourg coefficients and standard errors are adjusted for the variability between imputations according to the combination rules by Rubin (1987).

Similar to the approach of Bauer et al. (2010) and others, we estimate a quantile regression model of the determinants of net household wealth W for Germany, Italy and Luxembourg:

$$W^q = \beta_0^q + X\beta_1^q + \beta_2^q I + \varepsilon^q, \text{ with}$$

$$X\beta_1^q = \gamma_1^q age + \gamma_2^q age^2 + \sum_{K=1}^{3} \gamma_{3+k-1}^q edu_k + \gamma_6^q children + \sum_{z=1}^{4} \gamma_{7+z-1}^q HH\ status_z + \gamma_{11}^q income$$

where q denotes a specific percentile of the distribution. I is an indicator function that takes the value 1 if the household head is an immigrant and zero if (s)he is a native. In other specifications of the empirical model, we also distinguish between different nationalities of immigrants. X is a vector containing information about the household.

The first two components refer to the age and age squared of the household head. According to the life cycle theory, we would expect a positive sign for the coefficient γ_1 and a negative coefficient γ_2. However, the sign and the significance of γ_2 could be mitigated by a lower dis-saving due to the presence of a strong welfare system, such as a public or state pension as is the case in all three countries considered. The effect of education on wealth is captured by the inclusion of three separate dummy variables for having successfully completed no/primary, secondary and tertiary education. Recent empirical evidence points towards a significant effect of education on wealth (e.g. Bauer et al., 2010). Whereas we expect a positive sign for the coefficients of secondary and tertiary education, it remains to be seen whether the effect of education is stable over the different percentiles of the net wealth distribution. Also, country specific features could affect the sign and the significance level. Bequests for example have been shown to be a relevant part of household wealth (see for example Wolff and Gittleman, 2010). As bequests may not necessarily linked to the level of education, in countries and in parts of the wealth distribution where such components play a predominant role, the coefficient of education could turn out to not be significant.

Martial status and the number of children are separate controls for the size of the household. Marital status is characterised by a set of indicator variables that reflect whether the household head is single, married, separated/divorced or widowed; the base category is single. Being married is expected to have a positive effect on net wealth. The description of household size includes the number of children under 18 years of age in our model. Lastly, we take into account the level of disposable income.[6] Recent findings in the empirical literature (Bauer et al, 2010; Sinning, 2007; Jäntti et al., 2010) have reported income to positively contribute to net wealth levels. Kennickell (2009) shows, using U.S. data, how this variable is correlated with wealth in the tails of the distribution. Between the tales the relationship could be weaker, though. In order to explore different dimensions of the impact of immigration on household net wealth

---

[6] According to the definition of the Luxembourg Income Study, the definition of disposable income is equal to gross income minus income taxes and contributions.

and to take into consideration country specific characteristics, different model specifications are estimated. These include area dummies, cohort of immigration or age at immigration of the household head.

6 Results

Estimation results from the median quantile regression (q = 50) are presented in Table 7. These results corroborate the descriptive results provided in the previous section. Even after controlling for household characteristics the median net wealth of immigrant households is estimated to be about 32,000, 35,000 and 150,000 euro lower than the median net wealth of native-born households in Germany, Italy and Luxembourg, respectively. This indicates that immigrant households with similar characteristics to native-born households have a wealth disadvantage. In most cases, the other wealth covariates have the expected signs. In all three countries, median net wealth increases with household net income and the age of the household head. Education has a positive impact although not always significant. The coefficient for tertiary education has a positive and significant effect both in Germany and Italy. In Luxembourg and Italy, secondary education has a positive and significant effect on net wealth. The marital status of the household head does not have a significant impact on wealth in Italy. In Germany and Luxembourg being married has a clear positive effect whereas being separated or divorced has a negative impact on the net wealth of the household. Additionally, being widowed reduces net wealth in Germany.

Dependent variable net wealth

	Germany		Italy	Luxembourg	
Age	2206.808 ***	1936.287 **	4299.769 ***	6719.312 ***	7159.624 ***
	(4.704)	(2.785)	(5.429)	(3.537)	(3.531)
Age-squared	-7.229	-5.663	-21.519 **	17.435	13.680
	(-1.702)	(-1.100)	(-3.207)	(0.942)	(0.694)
Secondary educ.	514.097	574.225	32133.546 ***	34750.874 **	40561.240 ***
	(0.156)	(0.176)	(7.361)	(3.217)	(3.313)
Tertiary educ.	17150.004 ***	12649.184	47124.640 ***	18574.631	35734.297 **
	(4.234)	(1.377)	(7.259)	(1.682)	(2.710)
Number of children	-3100.531	-5101.115	-4994.552	-20469.142 ***	-20779.210 ***
	(-1.953)	(-1.333)	(-1.927)	(-4.751)	(-4.450)
Disposable income	2.875 ***	2.853 ***	6.261 ***	4.547 ***	4.502 ***
	(45.106)	(41.142)	(62.161)	(33.813)	(30.062)
Married	12423.055 **	12839.881 **	6466.596	31254.498 *	31981.027 *
	(3.211)	(3.216)	(1.054)	(2.566)	(2.250)
Separated/divorced	-18870.213 ***	-18173.511 ***	-11668.008	-48892.874 **	-48928.823 **
	(-4.358)	(-3.784)	(-1.681)	(-3.242)	(-2.881)
Widowed	-28627.381 ***	-26962.467 ***	-1206.908	7366.239	4214.417
	(-5.202)	(-4.816)	(-0.208)	(0.369)	(0.193)
Gender	-228.814	1068.345	3351.769	-8385.404	-10402.638
	(-0.090)	(0.263)	(0.839)	(-0.891)	(-1.010)
Immigrant	-32055.303 ***		-34808.809 ***	-148991.293 ***	
	(-8.501)		(-4.638)	(-16.685)	
Country of birth					
Country 1		-49223.956 ***			11150.634
		(-6.273)			(0.344)
Country 2		-45967.642 ***			-125387.078 ***
		(-4.230)			(-6.388)
Country 3		-29962.885 **			-171469.065 ***
		(-2.726)			(-10.910)
Country 4		-24408.826			-213906.286 ***
		(-1.831)			(-9.502)
Country 5		-36314.275 **			-111169.178 ***
		(-3.114)			(-4.018)
Other EU-15		-17084.090			-144844.811 ***
		(-1.705)			(-4.809)
Other non EU-15		-24794.974 ***			-168804.793 ***
		(-4.345)			(-10.483)
Constant	-100370.569 ***	-90028.554 ***	-200232.243 ***	-221846.487 ***	-234759.428 ***
	(-8.896)	(-4.070)	(-8.592)	(-4.965)	(-4.883)
Pseudo R-squared	0.153	0.154	0.248	0.299	0.301
Number of obs.	11338	11338	7899	3710	3710

Note: T-statistics in parentheses. Country 1-5 refer to Portugal, Belgium, France, Germany and Italy for the Luxembourg regression and Turkey, Poland, Russia, Kazakhstan and Italy for the German regression. The base category is native, single with primary

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

Columns 2 and 5 present the estimation results, which include controls for the 5 principal foreign countries of birth plus indicator variables representing immigrants born in other EU-15 countries and other non EU-15 countries for Luxembourg and Germany. In the Italian dataset, the information of the country of origin is not available. The results are robust to this alternative specification with the exception of

tertiary education in Germany, where it loses its significance, and in Luxembourg, where it becomes positive. Being of foreign nationality at birth has a negative effect on median net wealth regardless of the country of birth in question, with the important exception of Portuguese immigrant households in Luxembourg.

The Portuguese immigrants in Luxembourg

This text box further investigates the result that immigrants from Portugal do not have an inherent immigrant penalty unlike all other major immigrants groups in Luxembourg. As the Portuguese minority is the largest foreign community in Luxembourg (see appendix) we estimate various specifications for the Luxembourg sample including different immigration groups only and including or excluding income and education. We find that the differences in net wealth compared to natives are explained by differences in the age structure, lower education levels and lower income compared to natives. The results presented in Table A3 column 1 in the appendix show clearly that all major immigrant groups have a lower median net wealth than Luxembourg natives. Table A2 also shows that immigrant household heads from Portugal tend to have lower education than native or other immigrant households. Similarly Portuguese household tend to be younger and have lower household disposable income than native or other immigrant households. Incorporating education and disposable income into the specification in Table A3 the inherent immigration penalty of immigrants born in Portugal vanishes. Thus, this suggests that their lower net wealth is mainly explained by their younger age, poorer education and lower income. This is also what separates them from all other immigration groups, for whom an inherent immigration penalty seems to exist.

Table 8: Quantile regression for the 75th and 90th percentile

Dependent variable net wealth

	Quantile regression, Q=75			Quantile regression, Q=90		
	Germany	Italy	Luxembourg	Germany	Italy	Luxembourg
Age	1235.439 *	5024.587 ***	9016.294 **	2011.129	4647.256 *	10632.782 *
	(2.029)	(5.036)	(3.010)	(1.312)	(2.313)	(1.972)
Age-squared	15.081 **	-22.171 **	44.824	24.505	-11.073	73.994
	(2.755)	(-2.642)	(1.527)	(1.699)	(-0.656)	(1.430)
Secondary educ.	3574.090	37994.287 ***	58455.367 ***	18177.992	54219.364 ***	50554.150
	(0.842)	(6.994)	(3.340)	(1.905)	(5.019)	(1.571)
Tertiary educ.	37535.315 ***	61959.245 ***	61541.695 **	90961.931 ***	107256.483 ***	72256.109
	(6.476)	(7.839)	(2.968)	(8.044)	(6.902)	(1.913)
Number of children	-3248.662	-1642.254	-26210.977 ***	-2444.209	-3299.863	-36800.568 **
	(-1.700)	(-0.511)	(-3.767)	(-0.550)	(-0.539)	(-2.859)
Disposable income	4.534 ***	8.920 ***	6.268 ***	6.146 ***	12.126 ***	8.088 ***
	(47.812)	(70.846)	(29.048)	(23.769)	(47.253)	(18.930)
Married	32989.185 ***	14740.695	39273.304	47024.991 ***	16426.775	73489.831 *
	(6.959)	(1.945)	(1.958)	(4.463)	(1.097)	(2.133)
Separated/divorced	-28812.744 ***	-2036.316	-41829.032	-38198.511 **	-7859.437	-65887.117
	(-5.325)	(-0.237)	(-1.674)	(-3.194)	(-0.471)	(-1.471)
Widowed	-12934.125	4306.390	48387.465	-4107.187	-11259.940	40764.447
	(-1.860)	(0.587)	(1.470)	(-0.271)	(-0.767)	(0.690)
Gender	-4719.833	1509.072	-16922.371	-18592.287 **	1958.422	-37665.658
	(-1.524)	(0.306)	(-1.124)	(-2.641)	(0.200)	(-1.407)
Immigrant		-41330.263 ***			-38310.039 *	
		(-4.507)			(-2.189)	
Country of birth						
Country 1	-74373.292 ***		-13881.442	-89337.296 ***		-26854.130
	(-7.135)		(-0.290)	(-3.823)		(-0.314)
Country 2	-65989.079 ***		-128297.344 ***	-94197.196 **		-219627.051 ***
	(-4.953)		(-4.011)	(-3.219)		(-4.137)
Country 3	-66747.668 ***		-218766.149 ***	-88174.916 **		-316272.916 ***
	(-4.494)		(-9.228)	(-2.732)		(-7.352)
Country 4	-53236.690 **		-248178.387 ***	-91907.629 *		-304678.128 ***
	(-3.190)		(-7.631)	(-2.497)		(-5.109)
Country 5	-58599.926 ***		-73050.068	-60011.829		-190047.995 **
	(-3.369)		(-1.747)	(-1.768)		(-2.585)
Other EU-15	-21092.701		-151078.141 ***	-483.728		-205376.555 **
	(-1.773)		(-3.435)	(-0.018)		(-2.642)
Other non EU-15	-36306.332 ***		-183474.345 ***	-53942.037 **		-241906.369 ***
	(-4.552)		(-7.601)	(-3.153)		(-5.691)
Constant	-77975.215 ***	-224167.006 ***	-278013.395 ***	-85525.609 *	-214204.250 ***	-212485.473
	(-5.146)	(-7.565)	(-3.877)	(-2.352)	(-3.607)	(-1.606)
Pseudo R-squared	0.225	0.293	0.312	0.252	0.351	0.312
Number of obs.	11338	7899	3710.000	11338	7899	3710.000

Note: T-statistics in parentheses. Country 1-5 refer to Portugal, Belgium, France, Germany and Italy for the Luxembourg regression and Turkey, Poland, Russia, Kazakhstan and Italy for the German regression. The base category is native, single with primary

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

As mentioned in the previous section, in order to take into account the varying effects of immigrant status across the wealth distribution, we also perform quantile regressions at the top of the distribution, for the 75th and 90th percentile. The results are reported in Table 8. The immigrant/native gap is wide and statistically significant for

both quantiles and the gap seems to widen between the 90th and 50th percentile of the net wealth distribution in some cases.

6.1 Robustness of results

Apart from cultural differences stemming from different countries of origin, the time spent in the host country and the area of residence are likely to have a strong impact on the economic integration of immigrant households. To explore this aspect, we estimate a different specification that includes the area of residence, the period of arrival in the host country as well as the age at arrival of the household head. Table 9 presents the results of various specifications. All specifications include regional dummies. In Germany, regional dummies represent the *Bundesländer*, in Italy the North; Centre and South and in Luxembourg the cantons. The introduction of the regional dummies does neither change the sign nor the significance of the coefficients of the immigration variable in the base model. The main difference to the base model is the significantly positive coefficient of the secondary education for Germany.

Controlling for immigrant cohorts

Immigrants have been migrating over time for different reasons, be it economic or family related. At the same time their length of stay and year of migration may have a different effect on their ability to assimilate in the host country. The inclusion of the cohort variables aims to capture these effects. Table 9 shows the results once the cohort of immigration of the household head is taken into account. In Germany and Luxembourg, cohort 1 includes households, whose head immigrated before 1980, and each subsequent cohort represents the decade of immigration of the household head the 80s and 90s, respectively; the last cohort represents households whose head immigrated after 2000. In Italy, the immigration phenomenon is more recent (see appendix) therefore just three cohorts are assigned; they represent households whose head immigrated before the 90s, in the 90s and after 2000.

Table 9: Robustness checks: quantile regressions, Q=50, dependent variable net wealth

	Germany			Italy			Luxembourg		
Age	3222.927 ***	3311.161 ***	3578.191 ***	4457.022 ***	4865.475 ***	4959.933 ***	7733.271 ***	6369.515 ***	15644.532 ***
	(7.060)	(7.079)	(7.403)	(6.310)	(6.492)	(6.780)	(4.128)	(3.465)	(8.652)
Age-squared	-16.612 ***	-17.523 ***	-18.076 ***	-23.586 ***	-26.775 ***	-27.724 ***	8.428	9.134	-64.502 ***
	(-4.024)	(-4.133)	(-4.124)	(-3.939)	(-4.233)	(-4.470)	(0.464)	(0.500)	(-3.651)
Secondary educ.	6807.564 *	6957.817 *	9654.275 **	32420.102 ***	31053.479 ***	32479.279 ***	30687.695 **	18317.052	7761.907
	(2.119)	(2.094)	(2.853)	(8.344)	(7.608)	(8.034)	(2.998)	(1.646)	(0.773)
Tertiary educ.	29436.204 ***	29426.263 ***	31648.191 ***	51021.383 ***	50197.099 ***	52383.033 ***	13762.867	18664.614	21487.309 *
	(7.659)	(7.320)	(7.768)	(8.827)	(8.265)	(8.713)	(1.232)	(1.666)	(2.017)
Number of children	-3877.475 *	-4243.500 **	-4117.801 **	-4636.852 *	-4062.143	-4954.479 *	-19304.466 ***	-15145.000 ***	-14554.414 ***
	(-2.541)	(-2.645)	(-2.621)	(-1.999)	(-1.644)	(-2.038)	(-4.597)	(-3.816)	(-3.544)
Disposable income	2.644 ***	2.631 ***	2.620 ***	6.107 ***	6.168 ***	6.106 ***	4.290 ***	3.986 ***	3.939 ***
	(42.794)	(41.331)	(38.862)	(65.488)	(63.214)	(63.130)	(31.809)	(31.247)	(31.339)
Married	14489.219 ***	14715.674 ***	12076.365 **	1725.697	3146.714	2011.943	27937.652 *	35690.404 **	34562.591 **
	(3.766)	(3.650)	(3.044)	(0.315)	(0.546)	(0.353)	(2.298)	(3.113)	(2.981)
Separated/divorced	-21367.272 ***	-21741.928 ***	-24864.101 ***	-16430.593 **	-15211.004 *	-15335.941 *	-55819.380 ***	-54297.379 ***	-34406.093 *
	(-4.921)	(-4.905)	(-5.564)	(-2.639)	(-2.324)	(-2.363)	(-3.685)	(-3.844)	(-2.411)
Widowed	-22784.650 ***	-21870.679 ***	-27849.589 ***	-1487.293	-1508.838	-1332.771	-2010.555	7930.793	-7591.380
	(-4.226)	(-3.991)	(-4.988)	(-0.288)	(-0.280)	(-0.249)	(-0.098)	(0.421)	(-0.398)
Gender	-428.123	-59.777	173.492	2046.253	2274.419	2877.807	-8471.981	-457.775	-618.842
	(-0.167)	(-0.023)	(0.066)	(0.575)	(0.610)	(0.779)	(-0.926)	(-0.052)	(-0.069)
Immigrant	-46286.645 ***			-38900.087 ***			-149766.822 ***		
	(-12.757)			(-5.750)			(-16.435)		
Cohort 1 (<1980)		-49213.533 ***						-15716.595	
		(-8.805)						(-1.054)	
Cohort 2 (1980s)		-42939.350 ***			-61990.629			-120405.801 ***	
		(-5.197)			(-1.564)			(-6.233)	
Cohort 3 (1990s)		-56376.667 ***			-47028.126 ***			-135003.488 ***	
		(-7.605)			(-3.506)			(-8.830)	
Cohort 4 (>2000)		-25366.819 **			-27561.297 *			-201827.819 ***	
		(-3.219)			(-2.118)			(-18.338)	
Age at arrival			-1709.157 ***			-1277.870 ***			-6267.901 ***
			(-11.655)			(-4.527)			(-23.470)
Constant	-139332.156 ***	-141641.769 ***	-155259.994 ***	-199825.886 ***	-213611.672 ***	-213722.948 ***	-252053.776***	-173654.735 ***	-399561.56 ***
	(-10.668)	(-10.561)	(-11.228)	(-9.594)	(-9.623)	(-9.926)	(-5.675)	(-4.179)	(-9.739)
Regional Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pseudo R-squared	0.167	0.167	0.169	0.252	0.248	0.250	0.304	0.315	0.326
Number of obs.	11338	11338	11130	7899	7680	7719	3708	3708	3685

Note: T-statistics in parentheses. The base category is native, single with primary or no education.Regional dummies repesent the Bundeslander for Germany, the nort/center/south marco regions for Italy and 13 cantons for Luxembourg

Source: Authors' calculation. Data from LWS, Bank of Italy and EU-SILC/PSELL3

All cohort dummies are significantly negative except for the oldest cohort in Italy and Luxembourg. This could suggest a convergence in net wealth for the non-native households that arrived earliest. In Germany, the magnitudes of the consecutive cohorts change in no particular direction suggesting perhaps other types of differences in the immigrant waves. In Luxembourg, the coefficient estimates are more negative for more recent cohorts.

Controlling for the age at migration

The age at immigration of the household head is a factor that can have a relevant influence on the economic integration of the immigrant household and therefore on the native/immigrant wealth gap. The coefficient of the age at immigration is negative and significant for all three countries. It highlights the fact that it is both in the interest of immigrants and the receiving country to arrive at a young age; for immigrants, earlier immigration reduces the wealth gap to natives, for the host country, earlier immigration increases immigrants' contribution to the social security system and increases the chances of their assimilation in the country. Each year of delay in immigration increases the wealth gap by about 1,700 euro in Germany, 1,280 euro in Italy and 6,270 euro in Luxembourg. Note these figures need to be considered by taking into account the level of net wealth that differs fundamentally among these countries.

7 Conclusions

The socio economic assimilation of immigrants and the existence of a wealth gap between immigrants and natives are issues of growing interest among economists and policy makers. There are many reasons to believe that people's origin of birth may affect their wealth holdings and asset portfolios and it is hitherto still largely unknown whether immigrants have accumulated sufficient wealth to provide for themselves in retirement.

This paper uses three different household surveys which link wealth holdings to migration histories and analyses the relative wealth position of immigrant and native households at the end of the first decade of the XXI century in Germany, Italy and Luxembourg. Our results show that native-born households are wealthier than immigrant households, even after controlling for household characteristics, the country of origin and migration cohort. This result is robust across the entire net wealth distribution, and is not affected by different economic structures and migration situations of the countries considered although the estimated effects vary. We also find that a higher age at migration carries different penalties across countries. We leave it to future research to examine the dynamics the wealth gap over time that are largely unknown as well as causes of these differences be it due to differences in portfolio allocation, consumption and savings paths or inheritances. Remittances could also have a strong influence on the immigrant household wealth accumulation path, especially for those from particularly poor regions.

8   References

Ametepé F. and C. Hartmann-Hirsch. (2008). "Intégration au système, intégration sociale et performance économique: le cas du Luxembourg". unpublished manuscript.

Bauer T. K., D. A. Cobb-Clark, V. Hildebrand and M. Sinning. (2010). A comparative analysis of the nativity wealth gap. *Economic Inquiry*. no. doi: 10.1111/j.1465-7295.2009.00221.x

Bauer T. K., B. Dietz, K. F. Zimmermann and E. Zwintz. (2005). European migration: What do we know? in K. F. Zimmermann (ed.) *Migration and Development*. Oxford: Oxford University Press.

Bauer T. K., C. Larsen and P. C. Matthiessen. (2004). Immigration Policy and Danish and German Immigration. In T. Tranaes and K. F. Zimmermann (eds.) *Migrants, Work and the Welfare State*. Odense: University Press of Southern Denmark.

Blau F. D. and J. W. Graham. (1990). Black-white differences in Wealth and asset composition. *Quarterly Journal of Economics* **105**(2): 321-339.

Borjas G. J. (1994). The economics of immigration. *Journal of Economic Literature* **32**(4): 1667-1717.

Borjas G. J. (2002). Homeownership in the immigrant population. *Journal of Urban Economics* **52**(3): 448-476.

Bover O. (2010). Wealth inequality and household structure: US vs. Spain. *Research on Income and Wealth* **56**(5): 259-290.

Brandolini A. and L. Cannari. (1994). Methodological appendix: the Bank of Italy's survey of household income and wealth, in A. Ando, L. Guiso and I. Visco (eds.) *Saving and the Accumulation of Wealth. Essays on Italian Household and Government Saving Behavior.* Cambridge: Cambridge University Press.

Carroll C., B.-K. Rhee and C. Rhee. (1994). Are There Cultural Effects on Saving? Some cross-sectional evidence. *Quarterly Journal of Economics* **109**(3): 685-699.

Chiswick B. R. (1978). The Effect of Americanization on the earnings of foreign-born Men. *Journal of Political Economy* **86**(5): 897-921.

Cobb-Clark D. A. and V. A. Hildebrand. (2006). The wealth of Mexican Americans. *Journal of Human Resources* **41**(4): 841-868.

Cordeiro A. (2001). L'immigration au Luxembourg dans le dernier quart du siècle dernier. *Revue Passerelles* 22.

Eurostat. (2010). "Newsrelease 129/2010".

Frick, J. R. and B. Headey. (2009). Living standards in retirement: accepted international comparisons are misleading. *Schmoller's Jahrbuch – Journal of Applied Social Science Studies* **129**: 300-319.

Gibson, J., T. Le and S. Stillman. (2007). "What explains the wealth gap between immigrants and the New Zealand born?". CReAM Discussion Paper Series No. 15-07.

Gittleman M. and E. N. Wolff. (2004). Racial differences in patterns of wealth accumulation. *Journal of Human Resources* **39**(1): 193-227.

Hao L. (2004). Wealth of immigrant and native-born Americans. *International Migration Review* **38**(2): 518–546.

Holzmann R. (2005). "Demographic alternatives for aging industrial countries: Increased total fertility rate, labor force participation or immigration." IZA Discussion Paper No. 1885.

ISTAT. (1981, 1991, 2001). "Rapporto Istat - Censimento della popolazione: dati definitivi. Cittadini stranieri residenti"

Jäntti M., E. Sierminska and P. van Kerm. (2010). "The Middle Class in the Joint Distribution of Income and Wealth: Luxembourg in Comparative Perspective", unpublished manuscript.

Kennickell A. B. (2009). "Ponds and streams: wealth and income in the U.S., 1989 to 2007". Finance and Economics Discussion Series 2009-13, Board of Governors of the Federal Reserve System.

Rubin D. B. (1987). *Multiple imputation for Nonresponse in Survey*. New York: Wiley

Schmidt C. M. and K. F. Zimmermann. (1992). Migration pressure in Germany: Past and future. in K. F. Zimmermann (ed.). <u>*Migration and Development*</u>. Berlin: Springer.

Shamsuddin A. F. and D. J. DeVoretz. (1998). Wealth accumulation of Canadian and foreign-born households in Canada. <u>*Review of Income and Wealth*</u> **44**(4):515-533.

Sierminska, E., A. Brandolini, and T. M. Smeeding. (2006) The Luxembourg Wealth Study – a cross-country database for household wealth research, *Journal of Economic Inequality* **4**: 375-83.

Sinning M. (2007). "Wealth and asset holdings of immigrants in Germany" IZA DP No. 3089

Valentova M. and G. Brezosa (2010) "Attitudes toward immigrants in Luxembourg - Do contacts matter?" CEPS/INSTEAD Working Paper No 2010-70.

Wolff, E. N. and Gittleman M. (2010). "Inheritances and the distribution of wealth or whatever happened to the great inheritance boom?" Paper presented at the BCL / ECB joint conference on Household Finance and Consumption, Luxembourg, October 2010.

Zhang X. (2003). "The wealth position of immigrant families in Canada", Research Paper No. 197, Statistics Canada.

9   Appendix: Immigration history in Germany, Italy and Luxembourg

9.1 Germany

Germany is a traditional, immigrant-receiving country. In 2009, it recorded the largest numbers of foreign citizens (7.2 million people) and the 9th highest share (8.8%) among EU-27 countries (Eurostat 2010).

Both immigration flows and policy in Germany passed through different phases. Temporary immigration from South Europe was considered a solution to the shortage of low-skilled workers that Germany experienced in the 1960s and early 1970s. German immigration policy was tailored to this objective until the late 90s (e.g. Bauer et al., 2010). What initially was considered to be of temporary nature, slowly faded, as many of the *Gastarbeiter* decided to stay permanently. Also, German immigration policy radically changed after the oil price shock of the 1970s after which the German government basically stopped active labour recruitment (e.g. Schmidt and Zimmermann, 1992; Bauer et al., 2005).

Refugees, ethnic Germans from the former USSR and asylum seekers composed the main part of the migration flows in Germany during the 80s. This situation characterised the immigration picture of Germany until the early 90s when the German government changed the rules concerning the concession of asylum rights and the re-immigration of ethnic Germans (Bauer et al., 2004).

9.2 Italy

Despite immigration in Italy being a relatively recent phenomenon only, in 2009 Italy was the 4th largest European country with regard to the absolute number of immigrants, with a population of immigrants reaching of almost 3.9 million people (Eurostat 2010). Historically, Italy has always been an emigration country; between 1876 and 1976, more then 24 million Italians emigrated. In 1973, for the first time in its history, Italy had a positive net migration rate. Despite this turnaround, it is necessary to underline that the largest part of those immigrants were either Italians having previously emigrated from Italy or second generation expatriates.

At the end of 70s Italy pursued an immigration policy that was less restrictive than in other European countries, and subsequently immigration started to become a relevant phenomenon. In 1981, 321,000 foreigners lived in Italy. By 1991, this number had almost doubled. In 2001, more than 1.3 million foreigners lived in Italy. With 180,000 and 173,000 people the largest shares came from Morocco and the Albania (Istat, 1981, 1991, 2001).

The fast increase of the absolute number of foreigners living in Italy is not the only remarkable change that took place in the last decade. Even the composition of the sending countries changed substantially. Migration inflows from Eastern European

countries surpassed inflows from North Africa, which had been relevant until the late 90s. Today, Romanians account for the highest number of foreigners (953,000), followed by Albanians (472,000) and Moroccans (433,000).

The foreign population in Italy tends to be significantly younger than the Italian population. Second only to Denmark, foreigners living in Italy are the youngest in the EU-27. This is extraordinary especially considering that Italy has the second oldest native community (after Germany).

9.3 Luxembourg

Historically Luxembourg has seen high immigration rates, and immigration played a crucial role in the development of the country. The Luxembourg post-WWII period was characterised by two immigration cycles, the Italian and the Portuguese. Today, Luxembourg has the largest percentage of foreign citizens of any EU-27 country (Eurostat, 2010).

As reported by Cordeiro (2001), the migration inflow from Italy began far before WWII, at around 1910, and continued to be the predominant inflow to Luxembourg for more than 50 years until the 60s. The low skilled Italian workforce was largely employed in the steel and construction industry. At the beginning of the Italian cycle, most immigrants were supposed to stay temporarily and were mainly male without family. At the end of 50s immigration of Italians to Luxembourg increasingly became "family migration".

At the beginning of the 60s, the Italian economy experienced high growth rates, as did other Western European countries. This was mainly due to the industrialisation of the North of Italy's which in turn resulted in a strong decrease of Italian emigration. In this context, Luxembourg increasingly attracted the immigration of Portuguese workers. The importance of Portuguese labour force in Luxembourg led to a diplomatic agreement between the two countries in the same decade. After the signature of this agreement, Portuguese immigration was boosted further. Despite the initially temporary nature of the immigration flows to Luxembourg, both Italians and Portuguese increasingly decided to remain in Luxembourg.

Parallel to these immigration flows, which were essentially linked to the rise and the decline of the mining and manufacturing industry, Luxembourg became an attractive host country for high skilled immigrants, mainly from the neighbouring countries, aided by the development of the financial sector and hosting of European Union institutions (e.g. Valentova and Brezosa, 2010).

Today, Italians and Portuguese still play an important role in Luxembourg's demographic dynamics. In 2009, the Portuguese community was still the main minority among Luxembourg's population (16.2%), followed by French (5.8%), Italian

(3.9%), Belgian (3.4%) and German (2.4%). In January 2009, foreigners accounted for 44 % of a total population of 493,500.[7]

Table A1: Residents in Luxembourg classified by nationality

Nationality	Absolute	Share
Luxembourg	278.0	56.3
Foreign	215.5	47.3
Portugal	80.0	16.2
Belgium	16.7	3.4
France	28.5	5.8
Germany	12.0	2.4
Italy	19.4	3.9
Other EU-15	28.7	5.8
Other Non EU-15	30.2	6.1
Total	493.5	100.0

Note: Numbers in thousands.
Source: EU-SILC/PSELL3

The following tables provide further explanations of the results obtained for Luxembourg in the main text.

Table A2: Age structure, education attainment and income differences among population groups in Luxembourg

		Total	Native	Immigrant	Portugal-born
Age	16-49	50.2	43.5	60.5	76.8
	50-64	26.4	26.0	27.0	18.9
	over 65	23.4	30.5	12.4	4.3
Education	No Edu/Primary	37.8	35.5	41.4	80.4
	Secondary	34.6	40.1	26.0	16.6
	Post Secondary	27.6	24.4	32.6	3.0
Income	Mean	58,032	59,488	55,787	43,265
	median	49,812	52,819	44,779	40,327

Notes: All statistics weighted and country representative unless otherwise stated. Wealth and
Source: Authors' calculation. EU-SILC/PSELL3

---

[7] The high number of resident foreigners led the Luxembourg government to set up a legal framework that facilitates the assimilation of immigrants. A new law on nationality that entered into force on 1 January 2009 introduced the principle of dual nationality into Luxembourg law, and is aimed at facilitating the integration of foreigners who reside in the Grand Duchy and wish to obtain Luxembourg nationality while keeping their nationality of origin.

Table A3: The immigration penalty on wealth in Luxembourg

	(1)	(2)	(3)	(4)
		Luxembourg		
Age		16488.365 ***	17138.800 ***	7159.624 ***
		(8.127)	(7.766)	(3.531)
Age-squared		-76.664 ***	-78.814 ***	13.680
		(-3.867)	(-3.666)	(0.694)
Secondary educ.			81010.589 ***	40561.240 ***
			(6.085)	(3.313)
Tertiary educ.			133278.110 ***	35734.297 **
			(9.090)	(2.710)
Number of children		-6326.990	-3623.280	-20779.210 ***
		(-1.324)	(-0.676)	(-4.450)
Disposable income				4.502 ***
				(30.062)
Married		97008.398 ***	104475.818 ***	31981.027 *
		(7.255)	(7.037)	(2.250)
Separated/divorced		-76944.408 ***	-62560.466 ***	-48928.823 **
		(-4.623)	(-3.361)	(-2.881)
Widowed		-9416.876	23990.461	4214.417
		(-0.434)	(0.957)	(0.193)
Gender		1391.241	-1150.863	-10402.638
		(0.135)	(-0.098)	(-1.010)
Country of birth				
Portugal	-307575.826 ***	-138647.317 ***	-64107.003	11150.634
	(-7.158)	(-4.262)	(-1.774)	(0.344)
Belgium	-227380.227 ***	-128721.965 ***	-156358.649 ***	-125387.078 ***
	(-16.613)	(-6.035)	(-7.045)	(-6.388)
France	-372861.914 ***	-161065.053 ***	-202821.457 ***	-171469.065 ***
	(-42.415)	(-10.540)	(-11.894)	(-10.910)
Germany	-382094.018 ***	-201961.778 ***	-245160.037 ***	-213906.286 ***
	(-28.727)	(-8.892)	(-10.102)	(-9.502)
Italy	-208162.484 ***	-152159.100 ***	-138894.838 ***	-111169.178 ***
	(-11.446)	(-4.879)	(-4.318)	(-4.018)
Other EU-15	-162015.977 ***	-118477.607 ***	-132160.068 ***	-144844.811 ***
	(-3.918)	(-3.809)	(-3.956)	(-4.809)
Other non EU-15	-455383.562 ***	-238464.953 ***	-235030.109 ***	-168804.793 ***
	(-50.928)	(-15.022)	(-13.331)	(-10.483)
Constant	472861.914 ***	-217705.418 ***	-316167.934 ***	-234759.428 ***
	(105.148)	(-4.564)	(-5.975)	(-4.883)
Pseudo R-squared	0.154	0.225	0.237	0.301
Number of obs.	3742	3742	3710	3710

Note: T-statistics in parentheses.

Source: Authors' calculation. Data from EU-SILC/PSELL3

bcl

BANQUE CENTRALE DU LUXEMBOURG

EUROSYSTÈME

2, boulevard Royal
L-2983 Luxembourg

Tél.: +352 4774-1
Fax: +352 4774 4910

www.bcl.lu • info@bcl.lu