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ABSTRACT

Intergenerational Mobility of Immigrants in the Netherlands[*]

A key measure of equality of opportunity is intergenerational mobility. Of particular interest is the extent to which children of immigrants catch up with natives. Using administrative data for the Netherlands, we find large gaps in the absolute income mobility of immigrants relative to natives (–23%), suggestive of large, persistent income gaps for future generations as well. Important drivers are differences in household composition and in personal incomes. However, we also uncover substantial heterogeneity by country of origin. Children of immigrants from China actually have higher incomes than natives, which is closely related to their educational outcomes.

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1 Introduction

With income inequality rising in many high-income countries [see e.g. OECD, 2019, and the country studies for the Deaton Review (2023)], there is increasing concern for inequality of opportunity. Inequality of opportunity is important not only from the perspective of equity, but also matters for economic efficiency, as it may be an indication of a misallocation and underutilization of the human capital potential in society. An important indicator of equality of opportunity is intergenerational income mobility. Specifically, low intergenerational income mobility, when the income or characteristics of parents play a key role in the income of their children, is considered indicative of relatively poor equality of opportunity [Chetty et al., 2014, Blanden, 2019]. Conversely, when the income and characteristics of the parents play no role in the income positions of their children, this is indicative of high equality of opportunity, and income differences that exist for parents will disappear over future generations [Becker and Tomes, 1979].

Of particular interest is the intergenerational mobility of immigrants [Borjas, 1993, Aydemir et al., 2009, Hammarstedt and Palme, 2012, OECD, 2017, Abramitzky et al., 2021, Bratu and Bolotnyy, 2023] and ethnic minorities [Chetty et al., 2020]. Indeed, the extent to which the children of immigrants and ethnic minorities catch up with the children of natives or the majority, is an important indicator of how successful the educational and labor market institutions of a country are in generating equal opportunities for all groups in society. So far, the relatively small, but growing body of empirical research on intergenerational mobility of immigrants and ethnic minorities has focused on what can be considered cases of polar opposites when it comes to income inequality: Sweden [Hammarstedt and Palme, 2012, Bratu and Bolotnyy, 2023] and the US [Chetty et al., 2020, Abramitzky et al., 2021].[1]

Generally speaking (a more detailed comparison is given below), conditional on the income of parents, the incomes of children of immigrants and natives are quite comparable in Sweden [Bratu and Bolotnyy, 2023]. For the US, conditional on the income position of fathers, the income position of sons is actually better for immigrants than for natives [Abramitzky et al., 2021]. However, also for the US, conditional on the income of the parents, the income position of sons of Black Americans and Native-Americans is much lower than of sons of (non-Hispanic) white Americans, though there is almost no gap for daughters [Chetty et al., 2020]. Given these heterogeneous results, it is important to expand our understanding of

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[1]Meanwhile, the analysis of intergenerational mobility for the full population or by region, has proliferated, see e.g. Chetty et al. [2014], Heidrich [2017], Corak [2020], Deutscher and Mazumder [2020], Acciari et al. [2022], Kenedi and Sirugue [2023], and Manduca et al. [2024].

intergenerational mobility of immigrants and ethnic groups to other countries and regions.

In this paper, we study the intergenerational mobility of natives and immigrants in the Netherlands. We pay particular attention to the heterogeneity in results, by country of origin and by gender. Furthermore, we study the underlying factors driving the differences in intergenerational mobility across groups, both at the household level and at the individual level.

Our empirical methodology closely follows Chetty et al. [2020] and looks at the rank-rank relationship between the incomes of parents and that of their children. We rank children based on their average household income in 2017–2019 and rank their parents based on their average household income in 2003–2006. We study intergenerational mobility patterns by regressing the children's income rank on a constant and their parents' income rank, for natives and each of the selected immigrant groups. Such a rank-based approach works well from a statistical perspective, because the conditional expectation of the children's income is generally well approximated by a linear function of the parents' income [see Chetty et al., 2014, 2020, and the results below].

Using administrative data on income, education and labor market outcomes, we consider intergenerational mobility for children of native-born and immigrants, for immigrants from lower-income versus higher-income countries, and by country of origin for the largest groups of immigrants in the Netherlands from lower-income countries: Morocco, Türkiye, Surinam, the Antilles, Indonesia, and China. In our main analysis we use data on children born between 1983-1988. We measure children's income as their annual equivalized disposable household income averaged over 2017–2019, when the children are aged 29–36. We measure their parents' income as their annual equivalized disposable household income averaged over 2003–2006,[2] when the children are aged 15–22. Equivalized disposable household income gives the economic resources available per person in the household, accounting for the number of adults and children in the household and for economies of scale in e.g. food and housing. We also consider the total wealth level of parents. Furthermore, we consider the share of children that are single, and, for those in couples, the share that is cohabiting with a partner with a background in a lower-income country, which may amplify the differences at the household level. For the children we also consider, by gender, personal primary income ('market income') and the factors that underlie primary income: the highest completed level of education, employment rates, hours worked and hourly wages.

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[2]2003 is the earliest year for which we have integral income data in the Netherlands.

Our main findings are the following: First, we find large gaps in the absolute income mobility of immigrants relative to natives. At the lowest income rank of parents, the predicted gap for children is 9.3 percentiles (–23% relative to natives). And although we typically find lower relative income mobility for immigrants than natives (the coefficient on the parents income rank is 0.30 and 0.23, respectively), which implies that the gap relative to natives is smaller for children of parents with a higher income level, our findings suggest large and persistent gaps between immigrants and natives for future generations.

Second, focusing on immigrants from lower-income countries, we find that these differences are driven both by differences in household composition and differences in personal incomes. Children of immigrants, from the countries we study, tend to be single more often (and therefore more likely to be in a single-earner household), in particular when they have parents with a relatively low income level. Furthermore, for those in a couple, children of immigrants born in lower-income countries are more likely to have a partner with a background in a lower-income country as well, which amplifies gaps at the household level, as both earners likely experience negative income gaps. Regarding individual incomes, we find personal income gaps for both sons and daughters, which are closely related to gaps in the highest completed level of education, and is the sum of differences in employment rates, hours worked, and (typically to a lesser extent) hourly wages, all contributing to the gap.

Third, we also uncover substantial heterogeneity in the intergenerational mobility by country of origin. We find large and persistent negative gaps for children with parents from Morocco and Türkiye, and also from Surinam and the Antilles (despite their parents' proficiency in Dutch). For children with parents from Morocco and Türkiye this is driven by large gaps in personal incomes, and exacerbated because they are more likely to have a partner with a background in a lower-income country, who likely face a negative personal income gap themselves. For children with parents from Surinam and the Antilles, the negative gaps in personal incomes are somewhat smaller, but they are more likely to be single, in particular women. Our findings for children of parents born in Asian countries are more optimistic. We find almost no gap relative to natives for children with parents from Indonesia, and children with parents from China reach higher income levels than children of natives, in particular for parents with a relatively low income. The latter appears closely related to the high share of children in this group that complete a higher education (ISCED 6 or higher) relative to children of native-born.

Our paper contributes to the small but growing literature on intergenerational mobility of immigrants and ethnic minorities using linked income data for parents

and children [Chetty et al., 2020, Abramitzky et al., 2021, Bratu and Bolotnyy, 2023]. The literature to date has focused on two polar opposite cases of income inequality and intergenerational income mobility: Sweden and the US. For the Netherlands, we find that at the lowest income rank of parents, the predicted gap for children in household income is 9.3 percentiles, which is much higher than the predicted gap of 3.2 percentiles for Sweden [Bratu and Bolotnyy, 2023]. Indeed, for many groups of immigrants from lower-income countries, the gaps in absolute income mobility relative ro natives are as large or larger than the gap in household income between children of Black Americans and children of (non-Hispanic) white Americans in the US [Chetty et al., 2020]. Accounting for the differences in relative income mobility as well (where the relative income mobility is typically somewhat lower for immigrants from lower-income countries), we predict large and persistent negative income gaps for descendants from most groups of immigrants from lower-income countries, similar to what has been shown by Chetty et al. [2020] for Black and white Americans in the US. Furthermore, also consistent with the findings for children of Black Americans relative to children of white Americans in the US [Chetty et al., 2020], we find that differences in household income between children of immigrants from lower-income countries and natives are partially driven by a higher probability of being single and partially by differences in personal incomes. However, we also find that within couples, children of parents born in lower-income countries are more likely to have a partner with a background in a lower-income country as well, amplifying the differences at the household level. To the best of our knowledge, we are the first to uncover this channel.

Due to the richness of our dataset, we can also consider outcomes for both sons and daughters.[3] We find substantial gaps relative to natives for both sons and daughters of immigrants, which differs from the findings of Chetty et al. [2020] for children of Black Americans and children of white Americans in the US, where the difference in personal incomes appears to be driven solely by sons. Consistent with the findings of Chetty et al. [2020] and Abramitzky et al. [2021], we find smaller gaps for children of parents born in the Asian countries we study,[4] in particular from China, which appears closely related to their educational outcomes.

The paper is organized as follows. In Section 2, we first briefly discuss the most important immigration waves into the Netherlands that have determined the composition of immigrants that we study. Section 3 discusses the empirical approach

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[3]Abramitzky et al. [2021] focus on father-son pairs for the US, Bratu and Bolotnyy [2023] do not consider outcomes by gender for Sweden.

[4]Hammarstedt and Palme [2012] finds a similar result for Sweden, using a slightly different methodology.

we use to estimate the intergenerational mobility patterns for natives and the immigrant groups. Section 4 describes the administrative income data, the estimation sample, and presents descriptive statistics for natives and different groups of immigrants. Section 5 presents the results for intergenerational mobility by country of origin, where we consider income at the household level, and household composition, individual incomes, education, and labor market outcomes by gender. Section 6 concludes the paper. Supplementary tables and figures are provided in the Supplementary Material.

2   Immigrants in the Netherlands

We first provide some background information on the main immigration waves into the Netherlands since the late 1940s (see Nicolaas and Sprangers [2007] and Statistics Netherlands [2022] for a more detailed account).

The first immigration waves after the 1940s were the result of the decolonization process. Following the independence of Indonesia from the Netherlands in 1949, several large waves of Indonesian immigrants arrived in the late 1940s, the 1950s, and early 1960s. Immigration from Indonesia continued after the 19760s, but at a much slower pace than before.

The next immigration waves followed after a long period of labor market shortages in the 1950s and 1960s. In the 1960s, the Dutch government started actively recruiting workers from abroad, which resulted in immigration waves from Southern Europe, Morocco, and Türkiye. These waves were followed by family migration in the subsequent decades, mostly from Morocco and Türkiye, after the Dutch government allowed family reunification starting in 1974.

The next immigration waves were again related to the decolonization process. After Surinam became independent from the Netherlands in 1975, several migration waves to the Netherlands followed between 1975 and 1980. And as the economy of the Antilles went into a slump in the 1980s, there were several waves of migrants from the Antilles to the Netherlands. An important difference between the immigrants from the former Dutch colonies and other groups discussed above is that most of them were already proficient in Dutch upon arrival.

We focus our analyses on the groups of immigrants from Marokko, Türkiye, Surinam, the Antilles, and Indonesia, together with a more recent group of immigrants from China. However, let us briefly consider the subsequent waves of immigrants. Studying the intergenerational mobility of these more recent groups of immigrants is left for future research, when we can observe both the labor market

outcomes for the parents and the children in these groups. In the 1990s, there was a substantial inflow of refugee immigrants, most notably from Somalia and former Yugoslavia. Subsequently, the 2000s saw a large inflow of labor immigrants from Eastern Europe, after the expansion of the European Union in 2004, in particular from Bulgaria, Poland, and Romania. In the 2010s there were several new waves of refugee immigrants, in particular from Syria, and since 2022 from Ukraine.

Official statistics on the share of individuals born outside of the Netherlands are available from the mid 1990s. In 1996, 8.3% of the population in the Netherlands was born outside of the Netherlands, and 7.8% of the population was the child of an immigrant. By 2022, 13.7% of the population in the Netherlands was born outside of the Netherlands, and 11.5% of the population was the child of an immigrant. The majority of the growth in the share of immigrants in the Netherlands is seen among the group that hails from lower-income countries, their share in the population has grown from 4.9% in 1996 to 8.0% in 2022. Furthermore, 2.6% of the population was the child of an immigrant from a lower-income country in 1996. By 2022 this share had gone up to 6.3%. The share of immigrants and their children is expected to increase further in the population in the coming decades [Stoeldraaijer et al., 2022]. Hence, studying the intergenerational mobility of immigrants, in particular among immigrants from lower-income countries, is also becoming increasingly important over time.

3 Methodology

Following Chetty et al. [2014, 2020], we measure the level of intergenerational income mobility by assessing the correlation between the children's income rank and the parents' rank. This rank-based approach to characterize intergenerational mobility patterns starts by converting income to percentile ranks by ranking all children relative to other children in our estimation sample. We do the same for the parents. We then regress the income rank of the child on the income rank of the parents:

$$y_{i,t} = \alpha_r + \beta_r y_{i,t-1} + \epsilon_{i,t}, \tag{1}$$

where $y_{i,t}$ denotes child i's percentile rank in the income distribution of children (generation t), and $y_{i,t-1}$ is child i's parents' percentile rank in the income distribution of the parents (generation $t-1$). Furthermore, we estimate this relationship for each immigrant group separately, where r denotes the immigrant group. The income ranks are always based on the position in the entire estimation sample, also

when we consider the outcomes for subgroups (by country of origin for example). The main advantage of this rank-based approach is that the relationship between a child's income rank and their parents' income rank is well approximated by a linear function, in contrast to when using a log-log specification.[5]

The estimated parameters α_r and β_r can be interpreted as the absolute and relative rank mobility, respectively. The intercept α_r indicates the average income rank of children in immigrant group r whose parents have the lowest income position. A high intercept implies that children of parents in the lowest income percentile still reach a relatively high income position. The slope β_r measures the correlation between a child's position in the income distribution and the income position of their parents. This parameter indicates how much the average child income rank increases if the income rank of the parents increases by one. It takes values between 0 (the highest relative income mobility) and 1 (the lowest relative income mobility). If the slope equals 0, all children (on average) end up at the same position in the income distribution, independent of the income position of their parents. If the slope equals 1 (and the constant is 0), each child (on average) ends up at the same position in the income distribution as their parents. Lower values of β_r thus imply higher relative intergenerational mobility, which means that a child's income is less related to the income of the parents.

In this paper, we focus on differences in the estimated intergenerational parameters (intercept and slope) between natives and different immigrant groups. If the intercept varies strongly across groups, this implies large income differences for children with parents in the lowest income percentile. If the slopes are more or less equal across groups, such income differences are more or less equal across the entire parental income distribution. If the slopes differ across groups, income differences between groups vary across the parental income distribution.[6]

We can also make a long-run prediction of the average income positions of future generations of natives and different immigrant groups, under the assumption that the intergenerational mobility parameters are stable across generations. Specifically, we can derive the steady-state average income ranks $\bar{y}_r^{SS}$ for each group using

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[5]Earlier studies have estimated the intergenerational income elasticity by regressing log child income on log parent income [see e.g. Solon, 1999]. A disadvantage of this approach is that the relationship between log child income and log parent income is generally not linear, which leads to less robust estimates. Furthermore, estimates of the intergenerational income elasticity are also likely to be sensitive to the treatment of children with zero or small incomes [Chetty et al., 2014]. See Chetty et al. [2014] for a more detailed analysis of the relation between the two approaches.

[6]Note that high relative mobility (a low value for the slope) within a migrant group could be the result of relatively good outcomes for children of low income families and/or relatively bad outcomes for children of high income families. Hence, we need to look at differences in both absolute and relative income mobility.

Equation (1) [see Chetty et al., 2020]:

$$\bar{y}_{r,t} = \bar{y}_{r,t-1} = \bar{y}_r^{SS} = \frac{\alpha_r}{1 - \beta_r}. \qquad (2)$$

We are not able to test the stability of the parameters across three generations for the Netherlands due to data constraints.[7,8] Hence, the predicted steady-state outcomes should be interpreted with the appropriate care.

4 Data

We first discuss the selections we make to arrive at our estimation sample. Subsequently, we consider the definition of the variables in our analysis. We conclude with summary statistics of the estimation sample.

Data Sets and Sample Selection We use administrative data from Statistics Netherlands on the universe of individuals living in the Netherlands (in brackets are the abbreviatiated Dutch names of the data sets). Data on country of birth, age, gender, and position in the household for all members of the household, are taken from the municipal population registers (GBA). To these data, we link integral data on household income of the parents for the years 2003–2005 (IHI), personal and household income of the children for the years 2017–2019 (INPATAB and INHATAB), the highest completed level of education (Hoogsteopltab), and labor market outcomes (INPATAB and Spolisbus) of the children for the same years. We pool several years of data to limit the role of the business cycle and other transitory shocks. For a supplementary analysis, we also link data on parental wealth (VEHTAB). Because wealth data for all households in the Netherlands are only available since 2006, we pool these data for the years 2006–2008 (for the parents).

We make the following selections, we keep child-parents pairs with children who: i) live at home with their parents in 2003, ii) have parents that are younger than 65 in

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[7]The integral income data are only available from 2003 onwards. We have explored the Income Panel Study (*Inkomenspanelonderzoek*) of Statistics Netherlands to study intergenerational mobility for subsequent generations, which has personal identifiers since 1985. However, this is a sample of about 1.5% of the population, resulting in numbers of observations for immigrant groups that were too small.

[8]Also in other countries, information on the development of incomes over multiple generations is limited. However, at least in two countries, Belgium and Sweden, there is administrative data to study the relationship between labor market outcomes of children and labor market outcomes of their grandparents. These analyses suggest that the gaps between groups persist over three generations [OECD, 2017]. Furthermore, Adermon et al. [2021] show that there is also a direct link from grandparents to grandchildren (and also from other extended family members), next to the link between parents and children.

2003, iii) are born between 1983 and 1988, iv) live independently from their parents in 2017–2019, and v) have strictly positive parental household income (including income from social benefits) in 2003–2005. Furthermore, a child is allocated to different groups based on the parents' country of birth. The country group is defined by the mother's country of birth. When the mother's country of birth is the Netherlands and the father's country of birth is not, the country group is defined by the father's country of birth. The groups of immigrant children consists of first and second generation immigrants. Statistics Netherlands considers third generation immigrants to be Dutch, we therefore include them and their second generation parents in the group of natives. We refer to this group of child-parents pairs as Dutch, natives, or as native-born parents and their children interchangeably.

We define parents as the head of the household, the child belongs to in 2003, and their partner. Hence, the child lives with these adults at the moment we define groups, but these may not be the child's biological parents.[9,10,11]

Because we select children born between 1983 and 1988, these children are between ages 15 and 22 in 2003–2005, and between ages 29 and 36 in 2017–2019. We choose the birth cohorts 1983—1988 so that children are old enough in 2017–2019, for their income to be a valid proxy of their lifetime income, but young enough to still be living with their parents in 2003. Measuring incomes at earlier ages could lead to biases in the estimated intergenerational income mobility parameters.[12,13]

Our estimation sample consists of 636,690 child-parents pairs, among which 536,348 pairs with native-born parents and 110,342 pairs with immigrant parents. The group of immigrant children consists of 63,588 individuals with a parent from a lower-income country and 36,754 with a parent from a higher-income country. Moving to individual countries of origin, we have 14,837 children of Surinam parents,

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[9]Hence the parental income is informative for the amount of available resources to the child when they are growing up. Since children do not necessarily grow up with the same parents during childhood (e.g. due to divorce), it is not a priori clear what the best measure of the parental income should be, to be the most informative for the available resources to a child during childhood.

[10]We select children who live with their parents in 2003, which implies that parents living in an institutional household (such as homes for the elderly, nursing homes or other institutions) or a student household are excluded from the estimation sample.

[11]For immigrants, linking children to their biological parents is not feasible due to missing information in the administrative files on biological linkages.

[12]This bias is referred to as 'life-cycle bias' [Solon, 1999]. Chetty et al. [2014] investigate the life-cycle bias by estimating rank-rank slopes for different ages at which the child income is measured. They find that the estimates stabilize around age 30.

[13]A potential drawback of this choice is that some of the (eldest) children in these birth cohorts have already left the household in 2003, and hence, are not included in the estimation sample. This might affect our estimates if the fraction of home-leavers differs across migrant groups. Estimates could be affected, for example, if children with lower income mobility stay in their parental household longer.

13,058 children of Turkish parents, 11,913 children of Moroccan parents, 7,132 children of Indonesian parents, 5,711 children of Antillean parents, and 1,584 children of Chinese parents.

Variable Definitions   For the analysis of household income, we focus on equivalized disposable household income, both for parents and their children.[14] Equivalized disposable household income adjusts disposable household income for differences in household composition, using equivalence scales, so that the equivalized disposable household income is the single-person household equivalent of the disposable income of the household. In this way, households can be compared in their level of resources available per person. As a robustness check, we also consider non-equivalized disposable household income [as in e.g. Chetty et al., 2020]. The wealth variable we use in a supplementary analysis is net total household wealth, including net housing wealth.

For the children, we also consider a number of individual outcomes, which we study by gender. We show results for personal primary income, which is income from wages and profits ('market income' before taxes and transfers), employment (a binary indicator that is one when the child has non-zero wages or profits), hours worked (when employed), and hourly wages. The latter two outcomes are only available for employees. Furthermore, we consider whether the child has completed an intermediate or higher education, defined as having completed ISCED 3 or higher, and whether the child has completed a higher education, defined as having completed ISCED 6 or higher.[15]

Summary Statistics   Table 1 presents selected summary statistics for the estimation sample.[16] Starting with the parents in Panel A, we see that the median equivalized disposable household income of immigrant parents (in 2003–2005) is much lower than that of native-born parents.[17] This is particularly true for the (total) group of immigrants from lower-income countries,[18] and for the individual

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[14]Disposable household income consists of annual income from wages, profits, wealth, social insurance benefits and welfare benefits, minus income taxes and social security contributions, plus transfers.

[15]We do not use data on the highest completed level of education of the parents, because these data have many missings (whereas we have almost complete coverage for the children).

[16]A larger set of summary statistics are given in Table A.1 and A.2 in the Supplementary Material.

[17]Figure A.1 in the Supplementary Material shows where the parents of the different countries of origin are located in the overall income distribution of parents.

[18]Our definition for lower- and higher-income countries is based on the earlier classification used by Statistics Netherlands for so-called Western and Non-Western countries. Under this classification Indonesia is classified as Western [Statistics Netherlands, 2018a].

Table 1: Selected Summary Statistics Estimation Sample of Parents and Children

	Native-born (parents + their children)	Immigrant	Higher-income country	Lower-income country	Moroccan	Turkish	Surinamese	Antillean	Indonesian	Chinese
Panel A: Income and household composition parents										
Median equivalized household income	25,073	19,466	23,361	17,610	15,665	16,902	19,827	19,347	25,124	17,759
Median stand. household income rank	54	26	46	18	12	16	28	26	54	19
Share single parent	0.14	0.31	0.25	0.34	0.20	0.24	0.50	0.49	0.24	0.20
Panel B: Income and household composition children										
Median equivalized household income	31,014	26,867	29,692	25,112	22,148	25,051	25,167	23,987	30,598	33,122
Median stand. household income rank	53	36	47	30	20	30	30	26	51	61
Median personal income	34,637	29,901	33,013	27,955	23,829	27,082	28,320	26,767	34,137	38,831
Median personal income rank	52	41	48	36	27	34	37	34	51	62
Share single or single parent	0.30	0.40	0.37	0.42	0.42	0.26	0.50	0.50	0.37	0.42
Panel C: Education and labor market outcomes children										
Share higher educated	0.44	0.38	0.45	0.34	0.28	0.27	0.33	0.31	0.50	0.64
Share employed	0.94	0.86	0.91	0.83	0.72	0.82	0.86	0.85	0.93	0.95
Mean hours worked per week	30.8	26.4	29.3	24.7	20.1	23.8	25.7	25.0	30.4	32.5
Mean hourly wage	18.8	18.1	18.6	17.9	17.8	17.3	17.6	17.6	18.7	19.7
Median hourly wage rank	52	44	48	42	43	39	41	41	48	56
Observations	536,348	100,342	36,627	63,588	11,960	13,058	14,864	5,720	7,140	1,589

NOTES: This table gives summary statistics of key variables in the analysis. Mean household income is equivalized disposable household income. Mean personal income is personal primary income from wages and profits (including the zeros). Euro values represent 2019 euros. The income ranks are the ranks in the full estimation sample of parents and children. Single (parent) is determined by the set of individuals living in the same household. Higher educated is defined as ISCED 6 or higher. Employed is defined as having nonzero wages and profits. Hours worked and hourly wages are for employees only (so excluding the non-employed and the self-employed). The hourly wage ranks are the ranks in the full estimation sample of children. Outcomes for parents are averages for 2003–2005, outcomes for children are averages for 2017–2019. Observations are the number of child-parental household pairs.

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countries of origin reported in this table (parents from Indonesia being the notable exception). This is also reflected in the household income ranks of the parents. Part of the differences are due to the larger share of single parents among immigrants, for whom the share of single parents is often more than twice as high for immigrants from lower-income countries as for native-born parents, and the highest for parents from the Antilles and from Surinam.

Turning to the outcomes for children (in 2017–2019) in Panel B, the relative (percentage) differences in the median equivalized disposable household income between children of native-born and children of immigrants are smaller than for their parents. However, sizable differences remain for most groups. The notable exception are children of Chinese parents, who have a higher median household income than children of native-born, whereas their parents on average still had substantially lower median household income than the native-born. The differences in the median household incomes of the children are also reflected in the corresponding median household income ranks. The differences in household incomes also reflect the differences in personal primary incomes for children. The differences in the share that is single or a single parent is less pronounced for the children than for the parents. However, among those with parents from Surinam and the antilles, the relatively high share of singles may be an important factor behind the lower median rank for equivalized disposable household income than for personal primary income.

Panel C gives the educational and labor market outcomes for the children. Among children of immigrants, the share that has completed a higher education tends to be lower than among the children of native-born (though the share is similar to that of children of native-born, among children of immigrants from higher-income countries). The share that has a completed higher education is roughly 16 percentage points lower for children of parents from Türkiye and Morocco, and 11-13 percentage points lower for children of parents from Surinam and the Antilles, compared to children of native-born. On the flip-side, children of parents from Indonesia and China are respectively 6 and 20 percentage points more likely to have completed a higher education than children of native born.

Compared to children of native-born, children of immigrants tend to have lower employment rates and work fewer hours per week, although children of Indonesian and Chinese parents have similar employment rates and hours worked. The differences in hourly wages between children of immigrants and native-born are less pronounced in relative terms than differences in employment rates and hours worked, and hence seem to play a less important role in the differences in personal

primary incomes.

It is noteworthy that, while children of immigrants from higher-income countries are equally likely as their counterparts with native-born parents to be higher educated, there are (small) negative differences in their employment rates, hours worked and hourly wages, leading to lower personal and household incomes. A similar pattern is visible for children of parents from Indonesia and China relative to children of native-born, who despite greater shares of higher education have similar or modestly higher incomes. Thus, higher education does not seem to automatically translate into higher income for immigrant children, suggesting that there is inequality in the returns to education.

These descriptive statistics are already informative, however, they are not conditional on parental income. More relevant for the long-run/steady-state differences are the differences conditional on parental income, which also allow us to study differences in outcomes for children growing up in immigrant households with relatively low or high financial resources. We turn to these results next.

5   Results

We first consider the intergenerational mobility in household income for the pooled sample of all child-parents pairs, for natives and immigrants, and for immigrants from lower- and higher-income countries. Next, we look more closely into the intergenerational mobility by country of origin for the largest groups of immigrants from lower-income countries. We consider the heterogeneity in intergenerational mobility in household income by country of origin (for which we also present a number of robustness checks) and the corresponding predicted steady-state differences in household incomes. Also, we consider differences in household composition for children (the share that is single or a single parent, and the share that has a partner with a background in a lower-income country) and individual incomes (primary/market income), by parental income, where we focus on outcomes by gender for each country of origin. Finally, we consider potential factors that drive the differences in individual incomes, i.e. the highest level of completed education, employment shares, hours worked, and hourly wages ranks of employees.

5.1   Household Incomes

Native-Born and Immigrants   Figure 1(a) plots the mean (equivalized disposable) household income rank of the children (vertical axis) against the household

income rank of the parents (horizontal axis), both for the pooled sample and for natives and immigrants separately. All figures also show the best linear fit, and we include the estimated constant (absolute mobility coefficient) and slope (relative mobility coefficient) for each group in the legend.

In general, there tends to be an almost linear relationship between the average child income rank and the income rank of the parents. Indeed, the linear relationship seems to hold, except at the very bottom and top of the parental income distribution. A plausible explanation for these relatively favorable outcomes for children at the very bottom and top of the distribution, is the relatively high parental wealth at these ends of the distribution, see Figure A.2 in the Supplementary Material, which plots parental wealth rank against the parental income rank.[19] However, the intergenerational mobility results are very similar when we exclude the bottom 5% and top 5% of the parental income distribution, as we will see below in the robustness checks. Furthermore, note that the immigrant group is a bit more noisy around the linear approximation, which is likely to be due to the smaller sample size than for natives.[20]

In the pooled sample we find a relative income mobility of 0.26. This implies that a 10 percentile increase in the parents' income rank is associated with an average increase in the child's income rank of 2.6 percentiles. Chetty et al. [2020] report an estimated relative income mobility of 0.35 for the United States. This indicates that the incomes of children in the Netherlands are less dependent on the incomes of their parents than in the United States. Furthermore, when we use non-equivalized household income for parents and children instead, as in Chetty et al. [2014, 2020] (and most other studies), the relative income mobility for the pooled sample drops further down to 0.22.[21] This estimate of the overall relative income mobility (for the joint group of natives and immigrants) in the Netherlands is also lower than the 0.30 that Kenedi and Sirugue [2023] estimate for France, somewhat below the 0.24 and 0.25 that Corak [2020] and Acciari et al. [2022] estimate for Canada and Italy, respectively, and similar to the 0.22 that Deutscher and Mazumder [2020] estimate for Australia. However, the estimate for the Netherlands is still somewhat higher than in selected Scandinavian countries, like the 0.18 that Chetty et al. [2014] infer for Denmark and the 0.20 that Heidrich [2017] estimates for Sweden.

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[19]Figure A.3 plots the average wealth level (instead of the rank) of parents against the income rank of the parents.

[20]Statistics Netherlands prohibits presentation of means for cells with fewer than five households (individuals), due to identification risks. Those means are omitted from the scatter plots, but all regression analyses include all households (individuals).

[21]See Figure A.4 in the Supplementary Material for the outcomes using non-equivalized disposable household income for parents and children by country of origin.

Figure 1: Relationship Parent–Child Household Income Ranks: Natives and Immigrants
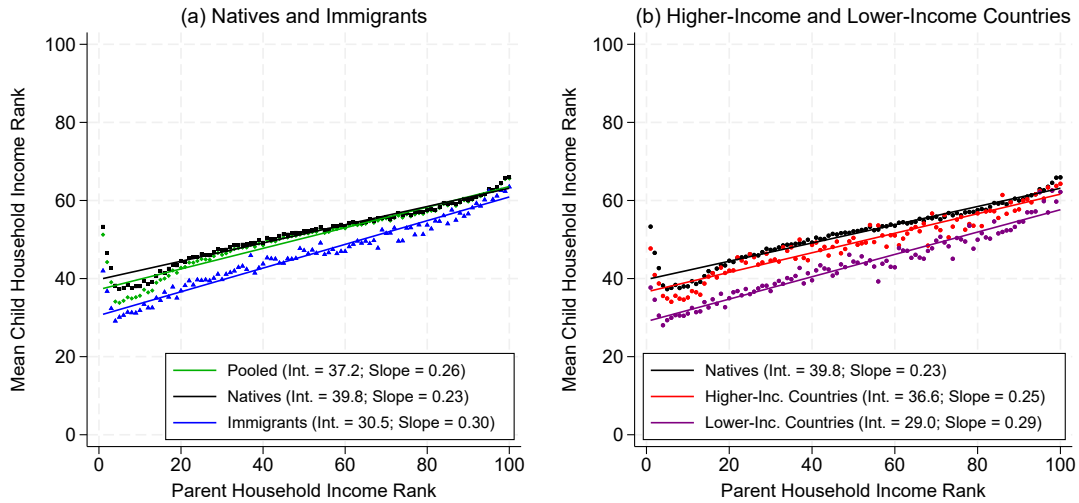
Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and that of the children using Equation (1).

Children of native-born parents have a higher absolute mobility in the Netherlands (α_r of 39.8) than children of immigrants (α_r of 30.5). They also have a higher relative mobility (β_r of 0.23) than children of immigrants (β_r of 0.30), hence the income of immigrant children depends more their parents' income than is the case for children of native-born in the Netherlands. Across the entire parental income distribution, children of immigrants have a lower mean income rank than the children of native-born, with larger gaps at lower parental incomes than at higher incomes. There are only a handful of studies considering intergenerational mobility separately for natives and immigrants, for Sweden and the US. Bratu and Bolotnyy [2023] find qualitatively similar results for natives and immigrants in Sweden as we find for the Netherlands, with higher absolute mobility for natives than for immigrants (α_r of 41.3 and 38.2, respectively) and also higher relative mobility for natives than for immigrants (β_r of 0.18 and 0.20, respectively). However, the differences in absolute and relative income mobility they find between natives an immigrants are much smaller than in the Netherlands. The picture for the US is quite different, where Chetty et al. [2020, Figure III in the Online Appendix] show that children of mothers born outside of the US have higher absolute and relative income mobility (higher α_r, lower β_r) than children of mothers born in the US. Abramitzky et al. [2021] show similar results for sons of fathers born outside the US relative to sons of fathers born

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in the US. Explaining these heterogeneous differences in intergenerational mobility between natives and immigrants across countries is an interesting topic for future research, where differences in composition, policies, and societal factors likely play a role. The analysis below may also be informative about the factors that underlie these cross-country differences between natives and immigrants.

As a first step, Figure 1(b) splits the group of immigrants into immigrants from higher-income and lower-income countries.[22] We find that the gaps are much larger for children of parents from lower-income countries than from higher-income countries, suggesting heterogeneity in the intergenerational mobility of immigrants relative to natives across countries of origin. In the remainder of the paper we will focus on the largest groups of immigrants from lower-income countries.

Selected Countries of Origin Figure 2 gives the intergenerational mobility for immigrants from Morocco and Türkiye (panel (a)), Surinam and the Antilles (panel (b)), and Indonesia and China (panel (c)), and as the reference also for children of native-born. We find substantial heterogeneity in the intergenerational mobility among these groups.

Absolute income mobility is much lower for children of parents from Morroco and Türkiye (α_r of 25.8 and 31.3, respectively) than for children of native-born parents (α_r of 39.8). To put this in perspective, the gap in absolute income mobility for children of parents from Morocco relative to children of native-born parents is larger than the gap in absolute income mobility between children of Black and white Americans in the US [25.4 and 36.8, respectively, Chetty et al., 2020, p. 732]. Relative income mobility for children of Moroccan parents is quite similar to that for children of native-born parents, and slightly higher for children of Turkish parents.[23] Hence, there is a sizable gap in incomes for children with a parent from Morocco or Türkiye relative to children of native-born parents across the entire parental income distribution (with the exception of children with parents from Morocco at the very top of the parental income distribution).

Absolute income mobility is also much lower for children of parents from Surinam and the Antilles (α_r of 26.9 and 20.4, respectively) compared to children of native-born parents (α_r of 39.8), despite their parents' higher proficiency in the Dutch language compared to other immigrants from lower-income countries. Hence, there

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[22]We follow the earlier classification as defined by Statistics Netherlands Statistics Netherlands [2018a]. The group of higher-income countries consists of countries in Europe, North-America, Oceania, Indonesia and Japan. The group of lower-income countries consists of countries in Africa, Latin-America, Asia (excluding Indonesia and Japan) and Türkiye.

[23]Chetty et al. [2020] find lower relative income mobility for children of Black and white Americans, 0.28 and 0.32 respectively [Chetty et al., 2020, p. 732].

Figure 2: Relationship Parent–Child Household Income Ranks: Selected Countries
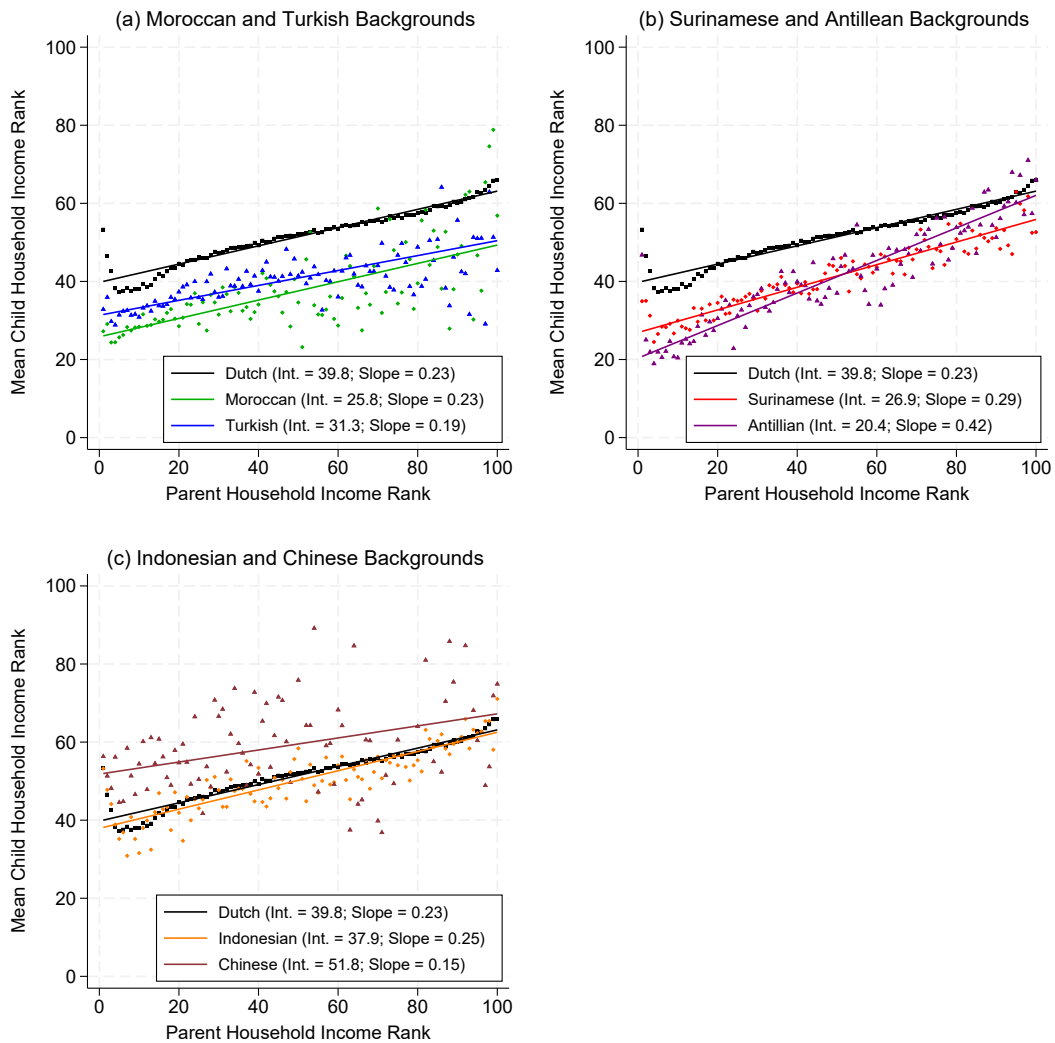
Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and that of the children using Equation (1).

is a large negative gap at lower levels of parental incomes for these groups, relative to children of native-born parents. The relative income mobility for children of parents from Surinam and the Antilles is lower (the slope is higher) than that for children of native-born (β_r of 0.29 and 0.42, respectively). Hence, for children of parents with a relatively high income, the gap is much smaller, in particular for children with parents from the Antilles (they reach higher income levels than children of native-born parents at the very top of the income distribution of parents).

The results are quite different for children with parents from Indonesia and

China. For children with parents from Indonesia, absolute income mobility is comparable to that of children of native-born (α_r of 37.9 vs. 39.8 for children of native-born), but is notably higher for children with parents from China (α_r of 51.8). Even at the lowest parental income rank, the children of Chinese parents make it into the top half of the income distribution of all children. Also, whereas the relative income mobility of children with parents from Indonesia (β_r of 0.25) is quite comparable to that of the children of native-born, the relative income mobility of children with parents from China is again higher (β_r is lower at 0.15) than of children of native-born. Therefore, mean income ranks of children with parents from Indonesia are quite comparable to that of the children of native-born all across the income distribution, whereas the mean income ranks for children with parents from China are always above those of the children of native-born, and considerably higher than for children of native-born at the lower end of the parental income distribution. This latter finding is consistent with the findings of Chetty et al. [2020] for the children of Asian parents.

Upward and Downward Mobility The income gaps between the children of native-born and immigrants from lower-income countries can arise from differences in upward mobility and/or downward mobility. Table 2 gives the transitions from the bottom and top quintiles of the parental income distribution to the bottom and top quintiles of the income distribution of the children, by country of origin.

Among children with parents in the bottom quintile, 13% of children of native-born move up to the top quintile, while only 5% of children with a parent from the Antilles makes it into the top quintile, and the shares are also much lower for children of parents from Morocco, Türkiye or Surinam. Among children of parents from Indonesia, the transition probability is quite comparable to the children of native-born. However, of the children with a Chinese parent, 27% go from the bottom quintile of the parental income distribution to the top quintile of the child income distribution, suggesting significant upward mobility for this group.[24]

Among children with parents in the top quintile, only 10% of children of native-born fall down into the bottom quintile, while 29% of children of Turkish parents do. This probability is also higher for children with parents from Morocco, Surinam, or the Antilles than for children of native-born. Downward mobility is also quite similar to that for children of native-born, for children of Indonesian and Chinese

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[24]For the US, Chetty et al. [2020, Table 1] find that 11% of children of white parents in the bottom quintile make it to the top quintile, and this share is much lower for children of Black parents (6%), but much higher for children of Asian parents (27%).

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Table 2: Transition Matrix: Upward and Downward Mobility by Immigrant Group

	Native-born (parents + their children)	Moroccan	Turkish	Surinamese	Antillean	Indonesian	Chinese
P(Child Q1 | Parent Q1)	0.31	0.53	0.43	0.50	0.61	0.34	0.21
P(Child Q5 | Parent Q1)	0.13	0.06	0.08	0.07	0.05	0.13	0.27
P(Child Q1 | Parent Q5)	0.10	0.28	0.29	0.20	0.15	0.11	0.11
P(Child Q5 | Parent Q5)	0.31	0.25	0.17	0.23	0.34	0.35	0.46

NOTES: Child income is the mean of 2017-2019 equivalized disposable household income (when the child is between 29 and 36 years old), while parental income is the mean of equivalized disposable household income in 2003-2005. Children are assigned percentile ranks relative to all other children in their birth cohort, while parents are ranked relative to all parents with children in the same birth cohort. Q1 and Q5 refer to the first and fifth quintiles of the relevant income distribution.

parents.[25] Hence, the differences in intergenerational mobility seem to be driven by both differences in upward and in downward mobility. The relative favorable outcomes for children with parents from China seem to be driven for the most part by relatively high upward mobility.

Steady-State Predictions The estimated parameters can also provide insight into the evolution of income disparities in the long run. Under the assumption that the absolute and relative income mobility parameters per group are stable over generations, we can make a prediction of the steady-state income gaps in the long-run. Plugging the estimated parameters presented in Figure 2 into Equation (2) gives us the steady-state mean income ranks for natives and for each of the immigrant groups. Figure 3 gives the mean household income rank of the parents, the mean household income rank of the children, and the predicted steady-state mean income rank, for each group.

The resulting steady-state income ranks suggest substantial income differences between natives and descendents of immigrants that persist in the long run. The steady-state income rank for natives is 52, while the steady-state income ranks for individuals with a Turkish, Moroccan, Surinamese, and Antillean background are 39, 34, 38, and 35, respectively. The persistence of these income gaps can be explained by the finding that these immigrant children have lower incomes than children of native-born even if their parents have similar income levels (see Figure 2). The steady-state prediction for future generations with a background in Indonesia is 51, and thus again very close to natives, and 61 for future generations with a background in China. Overall, differences between the average steady-state income rank and the (current) income rank of the children are small. Due to the high

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[25]For the US, Chetty et al. [2020, Table 1] find that 12% of children of white parents in the top quintile drop to the bottom quintile, and this share is somewhat higher for children of Black parents (14%), and quite comparable for children of Asian parents (11%).

Figure 3: Mean Parents, Mean Children and Steady-State Mean Income Ranks
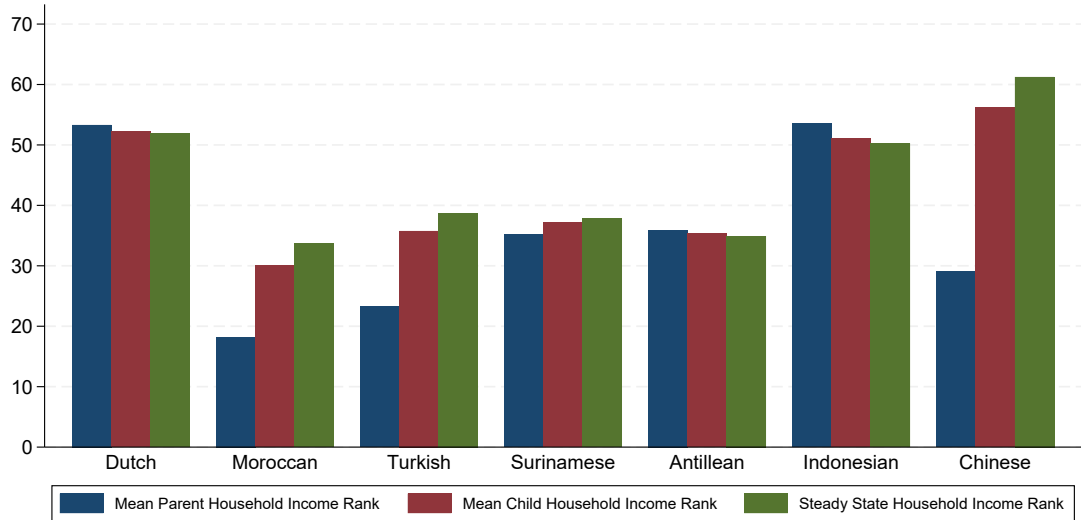
relative income mobility of most groups, the income distributions for the different groups converge relatively quickly to their steady state. Hence, when the parameters of absolute and relative income mobility continue to hold for subsequent generations, existing gaps between the different groups will persist for future generations.

Robustness Checks   Next, we consider how robust our findings are to different estimation samples or income measures. The results are shown in Table 3, where row 1) gives the baseline results.

In row 2) we restrict the sample to parents with an income rank between the 5th and 95th percentile (for parents outside this range, household income may work less well as a proxy for financial resources, as many of them have above average wealth levels, see Figure A.2 in the Supplementary Material). The results from this sample are very similar to the baseline results. In row 3) we restrict the age range of the parents to 35 − 55. This increases the homogeneity of the included households and reduces the risk of measuring the parental income too late in their career to be informative for lifetime income. Again, the results are very similar to the baseline results. In row 4) we investigate whether it matters if a child grows up in a single- or two-parent household. Especially children with parents from Surinam or the Antilles are more likely to grow up in single-parent families (see Table 1). We explore how these differences across migrant groups affect the results, by estimating the model on a sample restricted to two-parent households. This hardly affects the estimated parameters for the native-born, Moroccan, Turkish, Indonesian, and Chinese groups. However, children of parents from Surinam or the Antilles have

Table 3: Robustness Checks

	Native-born (parents + their children)	Moroccan	Turkish	Surinam.	Antillean	Indones.	Chinese
Estimated intercept and slope							
1) Baseline	39.8; 0.23	25.8; 0.23	31.3; 0.19	26.9; 0.29	20.4; 0.42	37.9; 0.25	51.8; 0.15
2) Excl. bottom and top 5%	39.1; 0.24	26.7; 0.21	31.7; 0.19	26.7; 0.29	20.3; 0.41	37.1; 0.25	52.1; 0.16
3) Age of parents 35-55	40.2; 0.23	25.6; 0.25	31.5; 0.20	27.5; 0.28	20.8; 0.42	38.0; 0.25	51.9; 0.15
4) Two-parent households	41.1; 0.22	26.4; 0.23	32.1; 0.18	31.0; 0.25	24.4; 0.37	39.4; 0.23	51.6; 0.16
5) Children born in the NL	39.8; 0.23	26.6; 0.25	32.0; 0.19	26.9; 0.30	24.5; 0.38	37.8; 0.25	53.9; 0.12
6) Pre-tax income	40.2; 0.22	29.4; 0.20	34.7; 0.20	28.6; 0.26	22.8; 0.38	38.3; 0.22	48.7; 0.16
7) Non-equiv. income	41.4; 0.20	29.9; 0.16	37.6; 0.17	29.9; 0.23	24.8; 0.33	39.3; 0.19	47.9; 0.14

Notes: This table shows the intercept and slope from rank-rank regressions by group. 1) The baseline analyses regress the rank of the children's equivalized disposable household income on that of the parents. The sensitivity analyses are run on: 2) the subsample without the top and bottom 5% of the parental distribution, 3) the subsample of households with parents between ages 35 and 55, 4) the subsample where the parental households consisted of two parents, 5) the subsample of children that were born in the Netherlands, 6) the baseline sample but with rank-rank regressions of pre-tax income, 7) the baseline sample but with rank-rank regressions of non-equivalized income.

higher estimated intercepts and lower slopes when restricted to two-parent households, indicating that lower mobility for their children (in the baseline results) is partially driven by the larger share of single-parents (and thus single-earner households) in these groups. In row 5) of Table 1, we address differences between first- and second-generation children. First-generation children (children born outside of the Netherlands) have lived in the Netherlands for a shorter period (on average) compared to second-generation children (children born in the Netherlands to parents born abroad), which may influence the results. We explore this by including only second-generation children and their parents in the analysis. If we focus the analysis solely on second-generation children, the estimated absolute mobility is slightly higher for the groups with a Moroccan, Turkish, or Chinese background. The difference with the baseline results is the largest for children with parents from the Antilles, among whom the share of first-generation children is significantly larger compared to the other groups (see Table A.2).

Using alternative income measures has a limited effect on the results. In row 6) we use pre-tax household income instead of disposable household income, which yields comparable results. In row 7) we use non-equivalized (disposable) household income instead of equivalized household income (see Figure A.4). This tends to yield higher estimated intercepts and lower slopes for most of the immigrant groups.[26] It

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[26]Results from a log-log model of equivalized (real) household income typically show results qualitatively similar to those from our baseline model. The slopes for groups with a background in Morocco and Indonesia are 0.20, which is very similar to the 0.18 for native-born, but with lower intercepts (8.01 and 8.29, respectively, compared to 8.45 for the native-born). These slopes are to be interpreted as elasticities (for an elasticity of 0.18, children whose parental income is 10% higher, their income is 1.8% higher). The groups with a background in Surinam or the Antilles

should be noted that the differences in absolute mobility are noticeably larger for the groups from Turkiye and China, when using equivalized disposable household income (baseline) instead of non-equivalized disposable household income. This means that equivalizing leads to lower absolute mobility for the group from Turkiye and to higher absolute mobility for the group from China.

The set of sensitivity analyses shows that the main findings are robust to the use of different samples and different income concepts. Indeed, all robustness checks point to large and persistent negative income gaps between natives and immigrants from Morocco, Türkiye, Surinam, and the Antilles, small gaps between natives and immigrants from Indonesia, and positive gaps in income for children of Chinese parents relative to children of native-born.

5.2 Household Composition and Personal Incomes

Chetty et al. [2020] show that a large part of the differences in household income between children of Black and white Americans is driven by a larger share of single parents (and non-parents) among children of Black parents.[27] Income differences are primarily driven by the fact that coupled households may be dual earner households, noting that we use equivalized disosable household income, which accounts for returns to scale in terms of e.g. food and housing, which can dampen income gaps. Chetty et al. [2020] also show that a smaller part is driven by differences in personal income, with small differences for women and larger differences for men. In this subsection we consider the differences in household composition, where next to being single or not, we also consider whether the child has a partner with a migration background in a lower-income country, and differences in personal incomes by gender.

Share Single Figure 4 shows that for most levels of parental income, children of immigrants from lower-income countries tend to be single more often than children of native-born. (This is similar to the findings of Chetty et al. [2020] who find substantial gaps in marriage rates between children of Black and white parents in the US across the income distribution of parents.) These groups will therefore have higher shares of single-earner households, leading to lower household income. The

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have steeper slopes (0.26 and 0.36 respectively) than the native-born, with lower intercepts (7.48 and 6.53). The results for the group with a Chinese background again shows a flatter slope (0.11) with a higher intercept (9.28) than natives. Perhaps somewhat surprisingly, the results for the group with a background in Türkiye also show a flatter slope (0.13) than natives.

[27]The difference in marriage rates is in the order of 32 to 34 percentage points [Chetty et al., 2020, Figure IV].

notable exception in our study are children with parents from Türkiye, who are typically less likely to be single than children of native-born.

The difference in the share of singles between immigrants and natives is particularly pronounced for children of parents with a relatively low income, with children of parents from Türkiye again being the notable exception. Indeed, it is striking to see how the share of singles among children of native-born is relatively flat across the income distribution of the parents, whereas the share of singles is typically declining with the level of parental income for children of immigrants. The difference is particularly strong for women with parents from Surinam or from the Antilles, and for men with parents from Morocco. Hence, part of the differences in equivalized disposable household income for children at the lower end of the parental income distribution stem from differences in the share that are single.

Share with Partner from a Lower-Income Country Figure 5 shows the share of children in couples that have a partner that is a first or second generation immigrant from a lower-income country. This may amplify differences at the household level, when e.g. both partners have a greater likelihood to have a lower income than children of native-born. We see that in particular children with parents from Morocco or Türkiye, but also children with parents from China, are more likely to have a partner with a migration background in lower-income countries than children of native-born. The difference is still pronounced, but somewhat smaller for children with parents from Surinam or the Antilles, and relatively small for children with parents from Indonesia. Interesting to note is the relationship with parental income. The higher the income of the parents, the lower the likelihood that the child's partner is a first or second-generation immigrant from a lower-income country. This is particularly true for children of parents from the Antilles. This also partially explains the steeper slope in household income rank for some of the groups of immigrants in Figure 2, in particular for the children with parents from the Antilles.

Personal Primary Incomes Besides differences in household composition, differences also arise from differences in personal incomes. Because the personal primary income (market income) ranks are very similar to the personal gross income (market income plus benefits) ranks, we only discuss one of these. We focus on ranks of primary incomes. The relationships between the ranks of personal gross income and parents' household income are provided in Figure A.6 in the Supplementary Material.

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Figure 4: Relationship Household Income Parents – Share Children Single
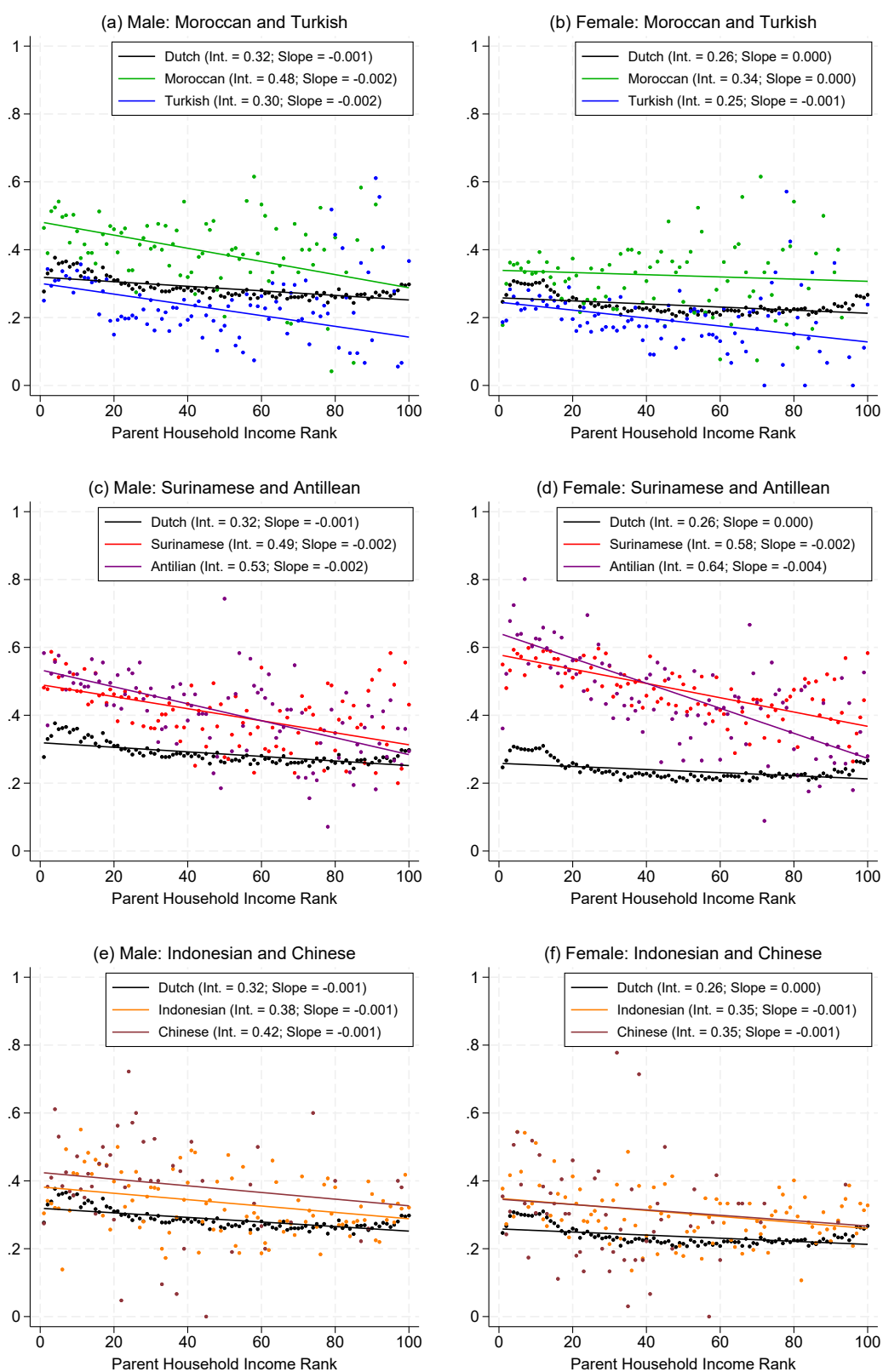
Notes: Estimated linear relationship between the household income rank of the parents and the probability that the child is single.

Figure 5: Relationship Household Income Parent – Partner Lower-Income Country

(a) Male: Moroccan and Turkish

Dutch (Int. = 0.04; Slope = 0.000)
Moroccan (Int. = 0.81; Slope = -0.002)
Turkish (Int. = 0.84; Slope = -0.002)

(b) Female: Moroccan and Turkish

Dutch (Int. = 0.05; Slope = 0.000)
Moroccan (Int. = 0.95; Slope = -0.003)
Turkish (Int. = 0.93; Slope = -0.001)

(c) Male: Surinamese and Antillean

Dutch (Int. = 0.04; Slope = 0.000)
Surinamese (Int. = 0.58; Slope = -0.002)
Antilian (Int. = 0.43; Slope = -0.004)

(d) Female: Surinamese and Antillean

Dutch (Int. = 0.05; Slope = 0.000)
Surinamese (Int. = 0.69; Slope = -0.003)
Antilian (Int. = 0.59; Slope = -0.005)

(e) Male: Indonesian and Chinese

Dutch (Int. = 0.04; Slope = 0.000)
Indonesian (Int. = 0.13; Slope = -0.001)
Chinese (Int. = 0.71; Slope = -0.002)

(f) Female: Indonesian and Chinese

Dutch (Int. = 0.05; Slope = 0.000)
Indonesian (Int. = 0.16; Slope = -0.001)
Chinese (Int. = 0.60; Slope = -0.003)

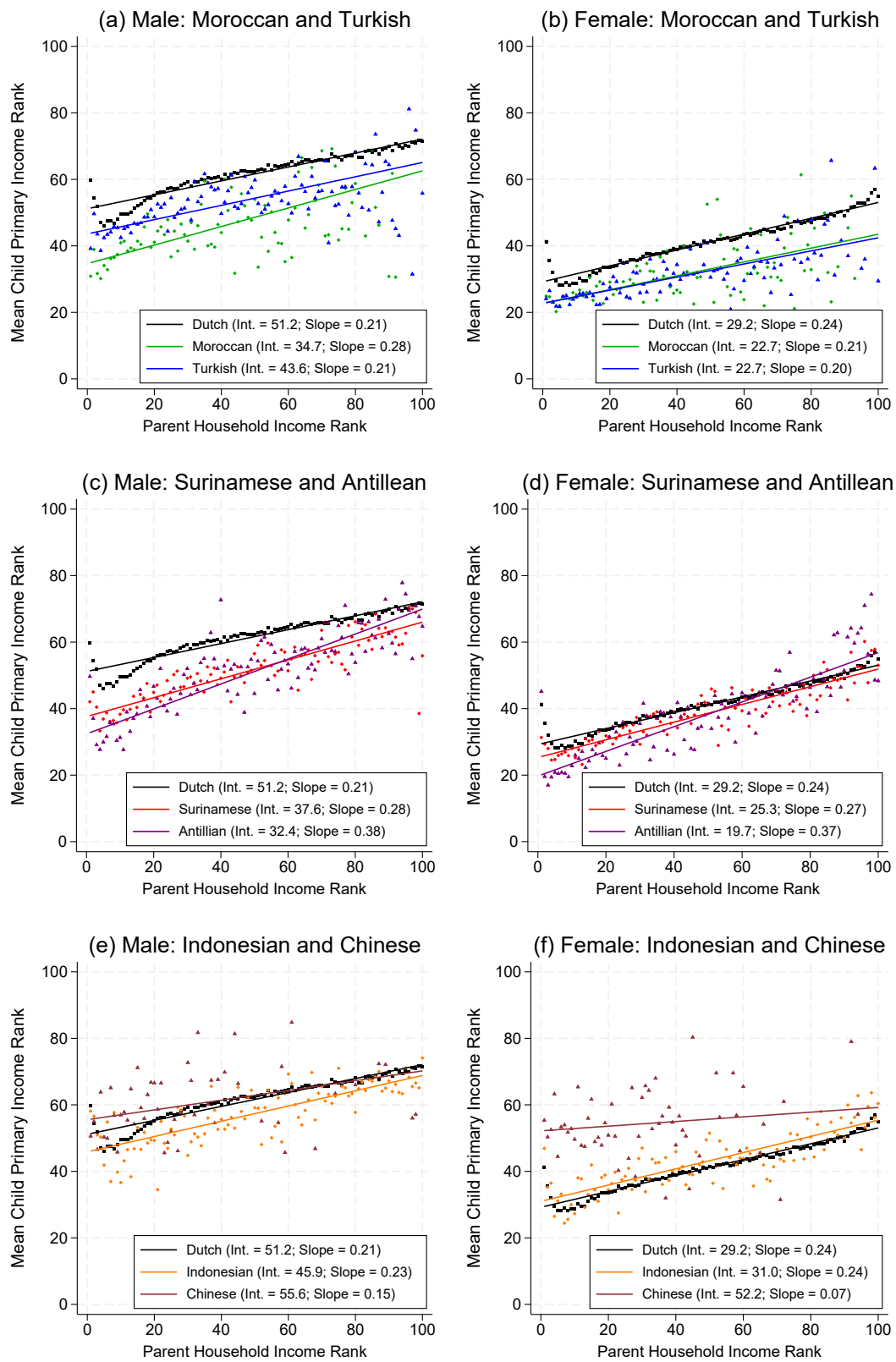*Notes:* Estimated linear relationship between the household income rank of the parents and the probability that a child in a couple has a partner with a migration background in a lower-income country.

Figure 6: Relationship Household Income Parents – Primary Incomes Children

(a) Male: Moroccan and Turkish

Dutch (Int. = 51.2; Slope = 0.21)
Moroccan (Int. = 34.7; Slope = 0.28)
Turkish (Int. = 43.6; Slope = 0.21)

(b) Female: Moroccan and Turkish

Dutch (Int. = 29.2; Slope = 0.24)
Moroccan (Int. = 22.7; Slope = 0.21)
Turkish (Int. = 22.7; Slope = 0.20)

(c) Male: Surinamese and Antillean

Dutch (Int. = 51.2; Slope = 0.21)
Surinamese (Int. = 37.6; Slope = 0.28)
Antillian (Int. = 32.4; Slope = 0.38)

(d) Female: Surinamese and Antillean

Dutch (Int. = 29.2; Slope = 0.24)
Surinamese (Int. = 25.3; Slope = 0.27)
Antillian (Int. = 19.7; Slope = 0.37)

(e) Male: Indonesian and Chinese

Dutch (Int. = 51.2; Slope = 0.21)
Indonesian (Int. = 45.9; Slope = 0.23)
Chinese (Int. = 55.6; Slope = 0.15)

(f) Female: Indonesian and Chinese

Dutch (Int. = 29.2; Slope = 0.24)
Indonesian (Int. = 31.0; Slope = 0.24)
Chinese (Int. = 52.2; Slope = 0.07)

Notes: Estimated linear relationship between the household income rank of the parents and the labor income rank of the children using Equation (1).

Figure 6 shows, by gender, the relationship between the equivalized disposable household income rank for parents and the (mean) personal primary income ranks for children. For men, we find substantially lower primary income ranks for children of parents from Morocco, Türkiye, Surinam, and the Antilles than for children of native-born. These differences become smaller for sons of Surinamese and Antillean parents with a higher income level (outcomes at the 25th and 75th percentile of the parental income distribution are given in Table 4 below), which also partly explains the steeper slope for equivalized disposable household income in Figure 2. Primary income gaps are much smaller for sons of Indonesian or Chinese parents, relative to sons of native-born, than they are for the other groups.

The results for women are more diverse. Women with a parent from Morocco or Türkiye, like men, also have substantially lower primary income ranks than women with native-born parents, and this difference actually increases somewhat when we consider parents with a higher income level. Women with a parent from Surinam or the Antilles have mean primary income ranks that are actually not that different from women with native parents, with a slightly steeper slope for women of parents from the Antilles. Women with parents from Indonesia also have quite similar mean primary income ranks as women with native-born parents. However, women with a parent from China have much higher primary incomes than women with native-born parents, especially daughters of parents with a relatively low income.

Hence, the differences in household income between children of native-born and immigrants are driven, in part, by both men and women among those with a background in Morocco and Türkiye (lower incomes), mostly by men for children of parents from the Antilles and Surinam (lower incomes), and mostly by women among those with a background in China (higher incomes). Differences between children of Indonesian parents and children of native-born are small for both men and women. These results differ from the findings of Chetty et al. [2020] for Black and white children in the US, who find that the results are driven primarily driven by differences for men, with only small differences for women.

5.3   Education and Labor Market Outcomes

The differences in children's primary incomes are the result of differences in labor market outcomes, in which differences in education are likely to play an important role. Below we consider the differences for the highest completed level of education, employment rates, hours worked per week, and hourly wages, using the same framework as before. The (predicted) outcomes are summarized in Table 4, which gives the predicted outcomes at the 25th and 75th percentile of the equivalized

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disposable household income rank of the parents using Equation (1). The figures, including the estimated absolute and relative mobility parameters, are given in the Supplementary Materials.

Highest Completed Level of Education   First we consider the share of children that has completed an intermediate or higher level of education (ISCED 3 or higher). Men with parents from Morocco, Türkiye, Surinam, and the Antilles are less likely to have completed this level of education than children of native-born. Figure A.7 (in the Supplementary Materials) shows that this negative gap shrinks at the top of the parental income distribution for sons of parents from Morocco, and even turns positive for sons of parents from the Antilles. Differences for men with parents from Indonesia and natives are again small, while men with Chinese parents are more likely to have completed at least an intermediate level of education than sons of native-born across the entire parental income distribution. For daughters of immigrants, gaps in having completed an intermediate or higher level of education are small relative to daughters of native-born.[28] However, women with parents from China with a relatively low income are much more likely to have completed an intermediate or higher level of education, compared to daughters of native-born.

Next, we consider the share of children that has completed a higher level of education (ISCED 6 or higher).[29] There are some marked differences compared to the gaps in intermediate or higher education. For both women and men with parents from Morocco and Türkiye, differences relative to children of native-born are small at the lower end of the parental income distribution but increase towards the higher end. However, children of high-income native-born parents are more likely to complete a higher education compared to children of high-income parents from Morroco or Türkiye.[30]

Differences for women and men with parents from the Antilles and Surinam are smaller relative to children of native-born, and as we saw in the income plots, the gap turns positive for women and men with Antillean parents in the highest income ranks. Women and men with parents from Indonesia are somewhat more likely to have completed a higher education than children of native-born, for all income groups. Also for all income groups, both women and men with parents from

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[28]This is consistent with the findings of Chetty et al. [2020] of small gaps in college attendance rates for Black and white daughters in the US (and somewhat larger gaps for Black and white sons).

[29]See also Figure A.8 in the Supplementary Material.

[30]This is likely related to the multitrack educational system for secondary school in the Netherlands [Kalmijn and Kraaykamp, 2003] and inequality in primary school teachers' track recommendations [Statistics Netherlands, 2022].

Table 4: Predicted Average Outcomes Children at the 25th and 75th Percentile Income Rank of Parents

	Native-born	Turkish		Moroccan		Surinamese		Antillean		Indonesian		Chinese	
	Level	Level	%-diff	Level	%-diff	Level	%-diff	Level	%-diff	Level	%-diff	Level	%-diff
Panel A: Men													
25th Percentile													
Primary Income Rank	57.1	51.7	-9.5	44.7	-21.7	46.2	-19.1	43.6	-23.7	52.3	-8.5	60.2	5.3
Share Intermediate or Higher Educated	86.5	80.1	-7.4	79.4	-8.2	82.6	-4.4	78.2	-9.6	86.4	-0.1	89.8	3.9
Employment Rate	94.2	89.4	-5.1	80.6	-14.5	87.8	-6.9	85.4	-9.4	92.5	-1.9	96.0	1.9
Hours per Week	34.7	30.5	-12.1	25.4	-26.8	29.0	-16.3	27.7	-20.0	32.3	-6.9	34.6	-0.1
Hourly Wage Rank	46.9	46.6	-0.5	47.2	0.8	43.2	-7.9	42.5	-9.3	45.1	-3.8	53.7	14.6
75th Percentile													
Primary Income Rank	67.3	61.4	-8.8	57.8	-14.1	60.1	-10.7	61.5	-8.7	63.5	-5.6	67.7	0.6
Share Higher Educated	47.1	32.0	-32.0	36.0	-23.5	43.0	-8.8	47.3	0.3	53.1	12.6	69.5	47.6
Employment Rate	97.7	93.8	-4.0	91.9	-6.0	94.9	-2.9	95.6	-2.1	96.6	-1.2	98.1	0.5
Hours per Week	36.7	34.2	-6.9	32.0	-13.0	33.7	-8.2	34.2	-6.8	35.1	-4.5	36.0	-2.0
Hourly Wage Rank	58.0	55.2	-4.8	57.2	-1.4	54.6	-6.0	56.4	-2.8	56.1	-3.3	63.6	9.7
Panel B: Women													
25th Percentile													
Primary Income Rank	34.7	28.6	-17.6	30.7	-11.6	33.9	-2.3	30.7	-11.6	37.4	7.7	53.0	52.7
Share Intermediate or Higher Educated	88.6	86.9	-1.9	88.0	-0.6	88.5	-0.1	86.7	-2.1	89.9	1.5	93.7	5.8
Employment Rate	88.8	75.5	-14.9	68.0	-23.4	81.1	-8.6	79.4	-10.5	88.3	-0.5	93.1	4.9
Hours per Week	24.0	18.6	-22.3	17.3	-27.6	21.4	-10.5	18.9	-21.1	25.2	5.2	30.6	27.8
Hourly Wage Rank	42.8	39.2	-8.4	45.0	5.3	40.8	-4.7	39.0	-8.8	40.5	-5.2	53.3	24.7
75th Percentile													
Primary Income Rank	46.5	37.9	-18.5	41.1	-11.7	46.2	-0.6	47.7	2.6	49.4	6.2	54.6	17.5
Share Higher Educated	57.0	45.2	-20.7	47.1	-17.5	54.5	-4.4	59.3	4.1	62.5	9.6	76.6	34.4
Employment Rate	95.4	85.4	-10.5	79.4	-16.8	91.8	-3.8	92.6	-3.0	94.4	-1.0	94.0	-1.5
Hours per Week	28.0	23.2	-17.0	22.2	-20.6	27.2	-2.8	24.6	-11.9	29.0	3.6	31.2	11.6
Hourly Wage Rank	53.7	47.8	-11.1	52.3	-2.6	51.0	-5.0	52.7	-1.9	52.9	-1.6	59.2	10.2

NOTES: This table gives the predicted personal of sons and daughters at the 25th and 75th percentile of the disposable household income rank of the parents, using a linear regression. The personal outcomes reported are the mean primary income (wages and profits, including the zeros) rank, the share that has completed tertiary education, the employment rate (wage and profit income unequal to zero), mean hours worked per week by employees (for the self-employed we do not observe the hours) and the mean hourly wage rank (of employees) of the children at the 25th and 75th percentile rank of the parents.

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China are (far) more likely to have completed a higher education than natives, for all income groups and in particular for women from parents with a relatively low income.

Overall, we see a correspondence between differences in outcomes in personal primary incomes and differences in the highest completed level of education. However, what is also interesting to note is that for all groups, differences in educational outcomes between women and men are much less pronounced than the differences in primary incomes. Actually, for all groups and across parental income ranks, women are typically more likely to have completed a higher education than men, whereas their primary incomes are typically lower than that of men from the same group. Hence, for all groups, including natives, gender gaps emerge between finishing initial education and the labour market.[31] Also note, that this gender gap in primary incomes appears to be the smallest for children of Chinese parents.[32]

Employment Rates   We now turn to the differences in labour market outcomes. Regarding employment rates, men with parents from Morocco, Türkiye, the Antilles, and Surinam are much less likely to be employed than sons of native-born, though the gap is smaller for children of high-income parents.[33] Differences for men with parents from Indonesia and China are small, with employment rates for men with parents from China being slightly higher at the lower end of the parental income distribution, and slightly lower for men with Indonesian parents across the entire distribution. Employment rates for women with parents from Morocco and Türkiye are much lower than for daughters of native-born, in particular for those with parents from Morocco. The gender gap in employment rates between men and women from Morocco and Türkiye is also the largest, at least for the countries of origin we consider here. Social and cultural norms regarding the division of work and care within households may play a role here. Employment rates for women with parents from the Antilles and Surinam are also substantially lower than for daughters of native-born at the lower end of the parental income distribution, though the gap disappears at the higher end. Employment rates for women with parents from Indonesia are again close to natives (though the gap is negative), whereas employment rates for women with parents from China are higher than for daughters of native-born with lower-income parents, but the gap turns negative for daughters of

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[31]Note that these differences may be particularly pronounced at the ages at which we measure the incomes and outcomes for children, as these are also the ages when many of them have children.

[32]Chetty et al. [2020, Online Appendix Table VIII] also find relatively high college attendance rates with a small gender gap for Asian children.

[33]See also Figure A.9 in the Supplementary Material.

higher-income parents.

Hours Worked per Week The differences in hours worked per week generally follow the same qualitative patterns as the differences in employment rates.[34,35] However, differences in hours worked per week are typically larger than differences in employment rates in percentage terms, see Table 4. In particular, women with parents from Morocco and Türkiye work fewer hours per week than daughters of native-born. On the other hand, women with parents from China work more hours per week than daughters of native-born (in particular for low-income parents), which partly explains their relatively high income levels.

Hourly Wages The results are more mixed for differences in hourly wage ranks.[36] For men with parents from Morocco and Türkiye, there are almost no gaps relative to sons of native-born at the 25th percentile of parental income in terms of the hourly wage rank, with a slight negative gap at the 75th percentile, but much smaller than the gap for hours worked per week. Sons with parents from Surinam and the Antilles have the largest gap in hourly wage rank of all the groups at the 25th percentile of parental income, but gaps are small for Antillean men at the 75th percentile. Differences for men with a parent from Indonesia are again small relative to sons of native-born. Men with parents from China have a positive gap in hourly wage ranks, which is likely related to having higher levels of education than sons of native-born.

For women with parents from Morocco, Türkiye, the Antilles, and Surinam the gaps in hourly wage ranks relative to daughters of native-born are typically smaller than for employment rates and hours worked per week (except for women from Türkiye and Surinam with high-income parents). The mean wage rank of women with parents from Indonesia is slightly lower than for daughters of native-born at the lower end of the distribution, but closes towards the higher end. Hourly wage ranks for women with parents from China are higher than for daughters of native-born, which is likely closely related to the higher educational outcomes for this group.

Overall, the most important driver of the gaps in primary income, seems to be difference in hours worked per week, though differences in employment rates and

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[34]See Figure A.10 in the Supplementary Material.

[35]Hours worked per week and hourly wages are only observed for employees. Differences in the share of self-employed are given in Figure A.11 in the Supplementary Material. Men with parents from Morocco, Türkiye and China are notably more likely to be self-employed than natives. For women, this is only the case for those with parents from China.

[36]See also Figure A.12 in the Supplementary Material.

hourly wage ranks also play a role.[37] For the groups that close the gaps in primary income, such as men with parents from China, the most important driver seems to be hourly wages, which is closely related to higher educational outcomes.[38] Among women, those with parents from Indonesia have a positive primary income gap that is mostly driven by hours worked per week, not by hourly wage rank, despite their higher education. For women with parents from China, the positive gap in primary incomes is driven by both higher wage ranks and more hours worked per week, which may be related to their higher educational outcomes relative to women with native-born parents.[39] The mean wage rank of women with parents from Indonesia is lower than for daughters of native-born, despite being more educated at both the 25th and the 75th percentile.

While educational outcomes are important for closing the income gaps, Table 4 suggests there might be inequality in the returns to education for these immigrant groups, especially for men. At the 75th percentile, men with parents born in the Antilles have lower employment rates, lower hourly wages, and lower weekly hours worked, leading to lower primary incomes, despite being equally educated as sons of native-born. For Indonesian men, the gaps are smaller, but we see a similar pattern despite being slightly higher educated than the sons of native-born. Chinese men are almost 50% more likely then sons of native-born to have completed a higher education, but this barely translates to higher primary incomes. This suggests that there are barriers (i.e. discrimination) in the Dutch labor market that lead to inequality in the returns to education for second generation migrants from the countries studied. For women, this pattern is less pronounced, though daughters of Antillean parents experience negative hourly wage gaps, despite higher educational levels at the 75th percentile of the parental income distribution as well.[40]

6 Conclusions

In this paper we have studied intergenerational mobility for natives and immigrants, with a focus on immigrants from lower-income countries, using administrative data on the universe of individuals and households in the Netherlands. We find that the

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[37]Chetty et al. [2020, Figure VI] find small differences in these outcomes for Black and white daughters, whereas differences for men seem primarily driven by differences in employment rates, though differences in hours worked and hourly wages (ranks) also play a role.

[38]Chetty et al. [2020, Online Appendix Table VIII] also find that differences in hourly wages are the main driver of differences in primary incomes for Asian sons.

[39]Chetty et al. [2020, Online Appendix Table VIII] find that differences in hourly wages are the main driver of differences in primary incomes for Asian daughters.

[40]See also Figure A.7, A.8, A.10 and A.12 in the Supplementary Material.

absolute income mobility is typically much lower for immigrants, and the relative income mobility is typically somewhat lower for immigrants as well. Based on our results, we predict large and persistent income gaps for future generations. However, we also uncover substantial differences by country of origin and gender. Indeed, children with parents from Morocco and Türkiye have notably lower household incomes than natives, while children with parents from China have higher household incomes than natives. Part of this is due to differences in household composition (with immigrant children being more likely to be single, and when they are in a couple, more likely to be with a partner who also has parents from a lower-income country and also tends to face negative income gaps) and part of this is due to differences in personal incomes. We show that the latter is closely related to the differences in the level of education of the children. In terms of labor market outcomes, we tend to find larger differences in hours worked than in employment rates, where the gap in these outcomes goes in the same direction as the gap in primary personal incomes, and more mixed results for differences in hourly wages. For all countries of origin, women typically have higher educational outcomes than men, but the labour outcomes tend to be worse for women than for men for each country of origin of the parents, in particular in terms of employment rates and hours worked per week.

Our results suggest that income differences between future generations of immigrants and natives are likely to persist. We have also explored which factors may play a role in these persistent differences. Interesting directions for future research remain on what can be done to improve the outcomes for (future generations of) immigrants and underlying factors. Differences in educational outcomes seem to play a key role. Even so, education only 'explains' part of the labor market differences we find. Indeed, gaps in outcomes on the labour market are also driven by differences in the opportunities children get, by differences in norms and preferences, and by potential barriers (i.e. discrimination) which likely play an important role in the heterogeneity in labour market outcomes we find, by country of origin and gender. This too remains an important topic for future research. Finally, it would also be interesting to study the role of the neighbourhood in which children of immigrants and natives grow up [following e.g. Chetty et al., 2020, Bratu and Bolotnyy, 2023], although the contrast in opportunities across neigborhoods is likely to be less pronounced in the Netherlands than in e.g. the US.

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Intergenerational Mobility of Immigrants in the Netherlands

Supplementary Material

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A.1 Supplementary tables

Table A.1: Descriptive Statistics Parents and Children Estimation Sample - Income Variables

	Native-born	Immigrant	Higher-income Country	Lower-income Country	Moroccan	Turkish	Surinamese	Antillean	Indonesian	Chinese
1. Median household income parents	48,925	36,509	43,589	33,188	32,223	32,453	34,359	33,915	47,268	34,236
2. Median rank parents (household income)	54.0	27.0	42.0	21.0	19.0	20.0	23.0	22.0	51.0	23.0
3. Median household income child	46,395	38,592	42,731	36,080	32,483	39,451	34,398	33,374	43,881	44,720
4. Median rank child (household income)	53.0	37.0	45.0	32.0	26.0	38.0	29.0	28.0	47.0	49.0
5. Median equivalized househ. inc. parents	25,073	19,466	23,361	17,610	15,665	16,902	19,827	19,347	25,124	17,759
6. Median rank parents (stand. househ. inc.)	54.0	26.0	46.0	18.0	12.0	16.0	28.0	26.0	54.0	19.0
7. Median equivalized household inc. child	31,014	26,867	29,692	25,112	22,148	25,051	25,167	23,987	30,598	33,122
8. Median rank child (stand. household inc.)	53.0	36.0	47.0	30.0	20.0	30.0	30.0	26.0	51.0	61.0
9. Median personal income child	34,637	29,901	33,013	27,955	23,829	27,082	28,320	26,767	34,137	38,831
10. Median rank child (personal income)	52.0	41.0	48.0	36.0	27.0	34.0	37.0	34.0	51.0	62.0
11. Number of observations	536,285	100,178	36,627	63,551	11,937	13,062	14,847	5,717	7,137	1,584

NOTES: This table gives summary statistics of key variables in the analysis. Mean household income is equivalized disposable household income. Mean personal income is personal primary income from wages and profits (including the zeros). Euro values represent 2019 euros. The income ranks are the ranks in the full estimation sample of parents and children, respectively. Single (parent) is determined by the set of individuals living in the same household. Higher educated is defined as ISCED 6 or higher. Employed is defined as having non-zero wages and profits. Hours worked and hourly wages are for employees only (so excluding the non-employed and the self-employed). The hourly wages ranks are the ranks in the full estimation sample of children. Outcomes for parents are averages for 2003–2005, outcomes for children are averages for 2017–2019. Observations are the number of child-parental household pairs.

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Table A.2: Descriptive Statistics Parents and Children Estimation Sample - Employment and Demographics

	Native-born	Immigrant	Higher-income Country	Lower-income Country	Moroccan	Turkish	Surinamese	Antillean	Indonesian	Chinese
Panel A: Education and labor market outcomes children										
1. Hours worked per week child	30.8	26.4	29.3	24.7	20.1	23.8	25.7	25.0	30.4	32.5
2. Median hourly wage child	18.82	18.12	18.57	17.85	17.77	17.35	17.63	17.65	18.65	19.74
3. Median hourly wage rank	52.0	44.0	48.0	42.0	43.0	39.0	41.0	41.0	48.0	56.5
4. Share employed child	0.94	0.86	0.91	0.83	0.72	0.82	0.86	0.85	0.93	0.95
5. Share completed secondary education child	0.91	0.88	0.90	0.86	0.83	0.83	0.87	0.85	0.92	0.92
6. Share completed tertiary education child	0.44	0.38	0.45	0.34	0.28	0.27	0.33	0.31	0.50	0.64
Panel B: Demographic variables										
7. Household size parent	4.2	4.1	3.9	4.2	5.2	4.3	3.7	3.8	3.8	4.1
8. Household size child	2.3	2.3	2.2	2.4	2.6	2.7	2.3	2.3	2.2	2.1
9. Share first-generation children	0.00	0.24	0.19	0.27	0.20	0.17	0.16	0.38	0.03	0.22
10. Share single parent	0.14	0.31	0.25	0.34	0.20	0.24	0.50	0.49	0.24	0.20
11. Number of observations	536,348	100,342	36,627	63,588	11,960	13,058	14,864	5,720	7,140	1,589

NOTES: This table gives summary statistics of key variables in the analysis. Mean household income is equivalized disposable household income. Mean personal income is personal primary income from wages and profits (including the zeros). Euro values represent 2019 euros. The income ranks are the ranks in the full estimation sample of parents and children, respectively. Single (parent) is determined by the set of individuals living in the same household. Higher educated is defined as ISCED 6 or higher. Employed is defined as having nonzero wages and profits. Hours worked and hourly wages are for employees only (so excluding the non-employed and the self-employed). Outcomes for parents are averages for 2003–2005, outcomes for children are averages for 2017–2019. The hourly wages ranks are the ranks in the full estimation sample of children. Observations are the number of child-parental household pairs.

4

A.2 Supplementary figures

## Figure A.1: Distribution of Parent Household Income Ranks by Immigrant Group
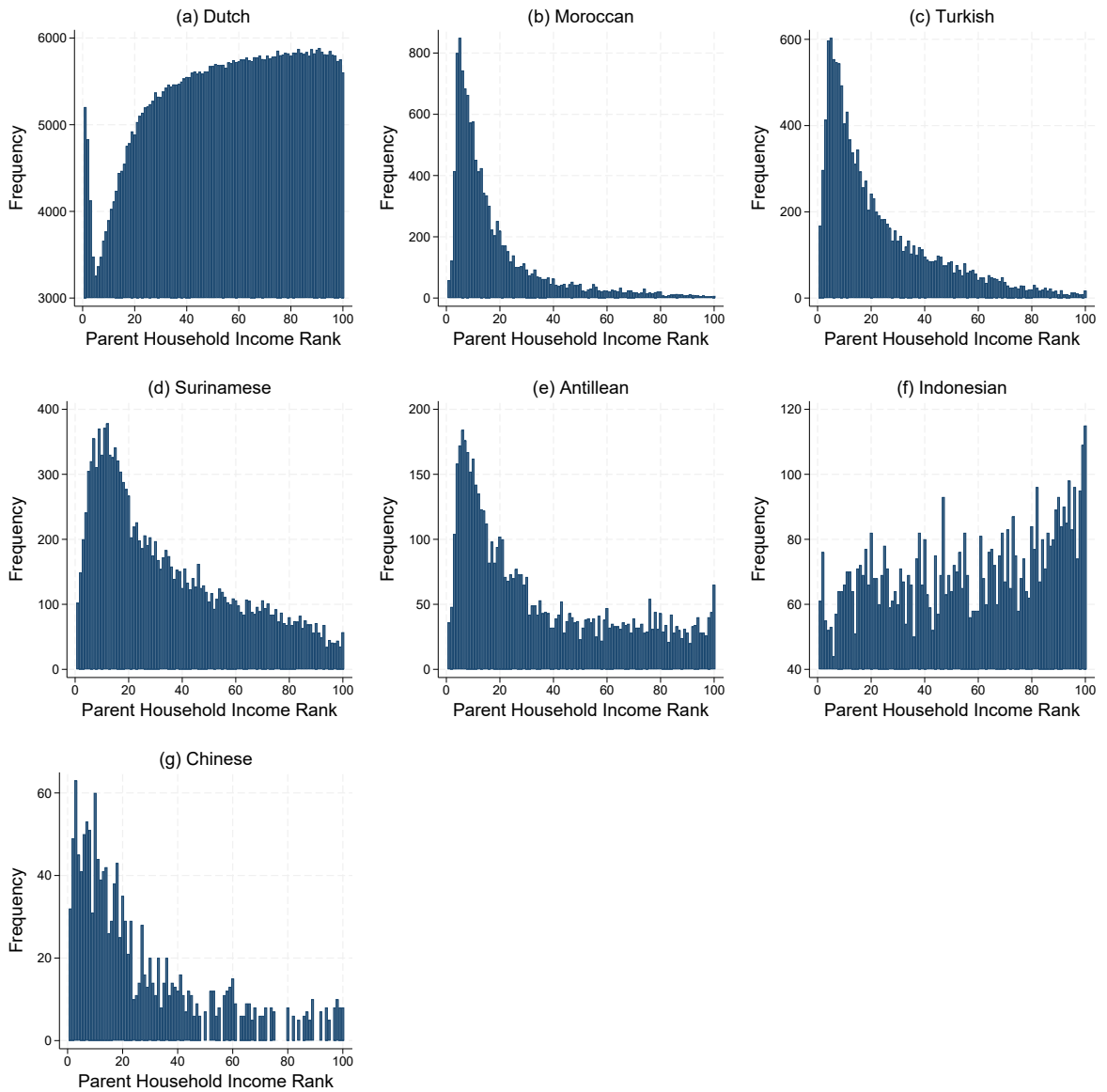
Notes: Frequency distribution of equivalized disposable household income ranks of parents by immigrant group.

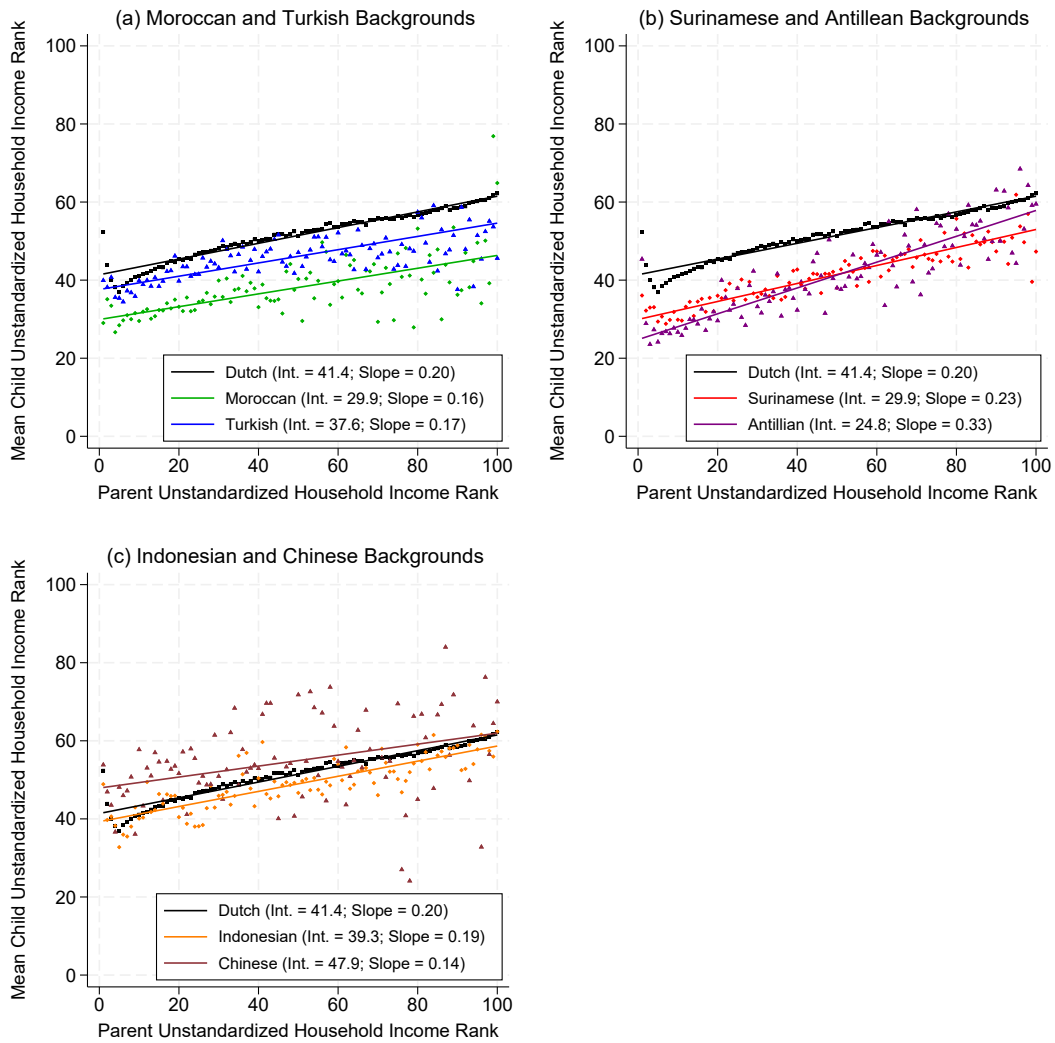Figure A.2: Relationship Parent Household Income Ranks–Parent Household Wealth Ranks: Selected Countries
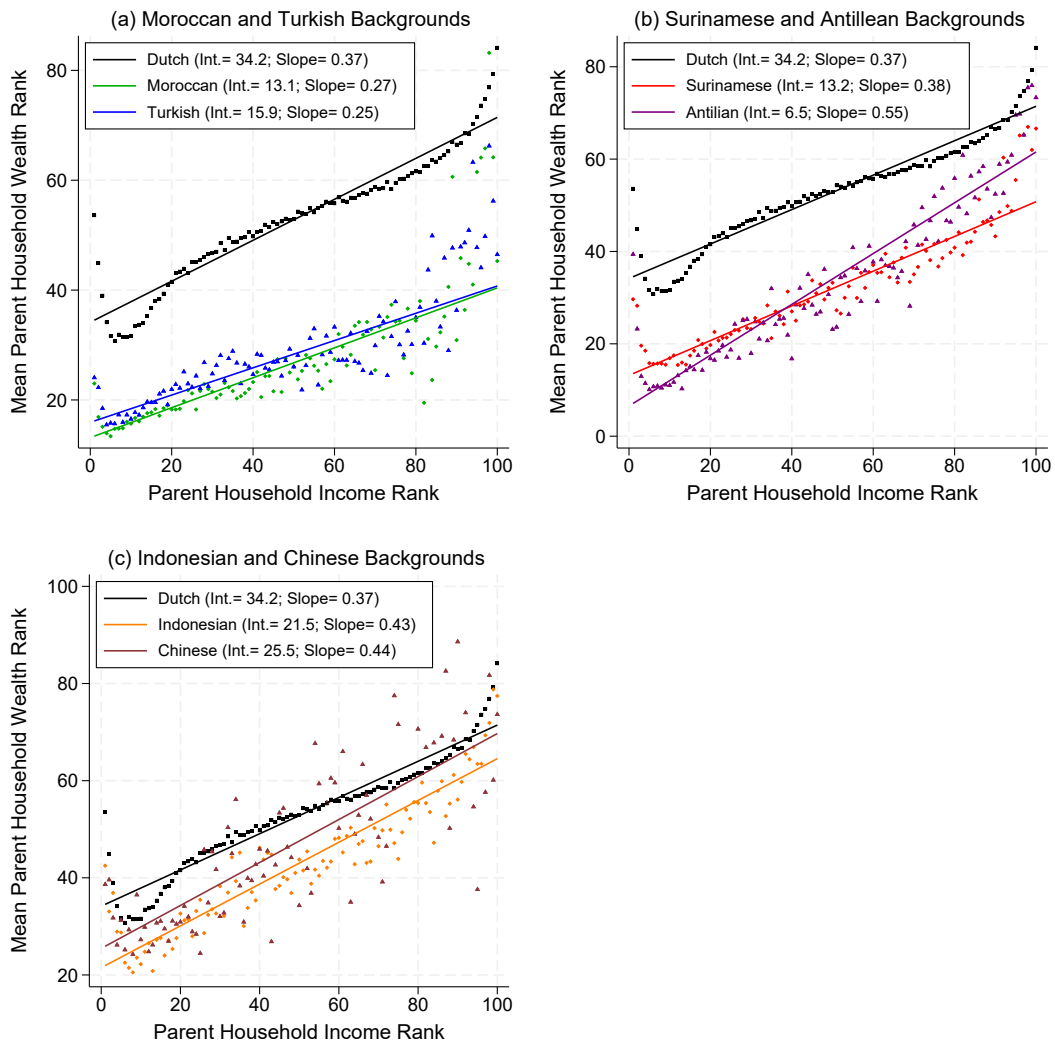
Figure A.3: Relationship Parent Household Income Ranks–Parent Total Household Wealth: Selected Countries
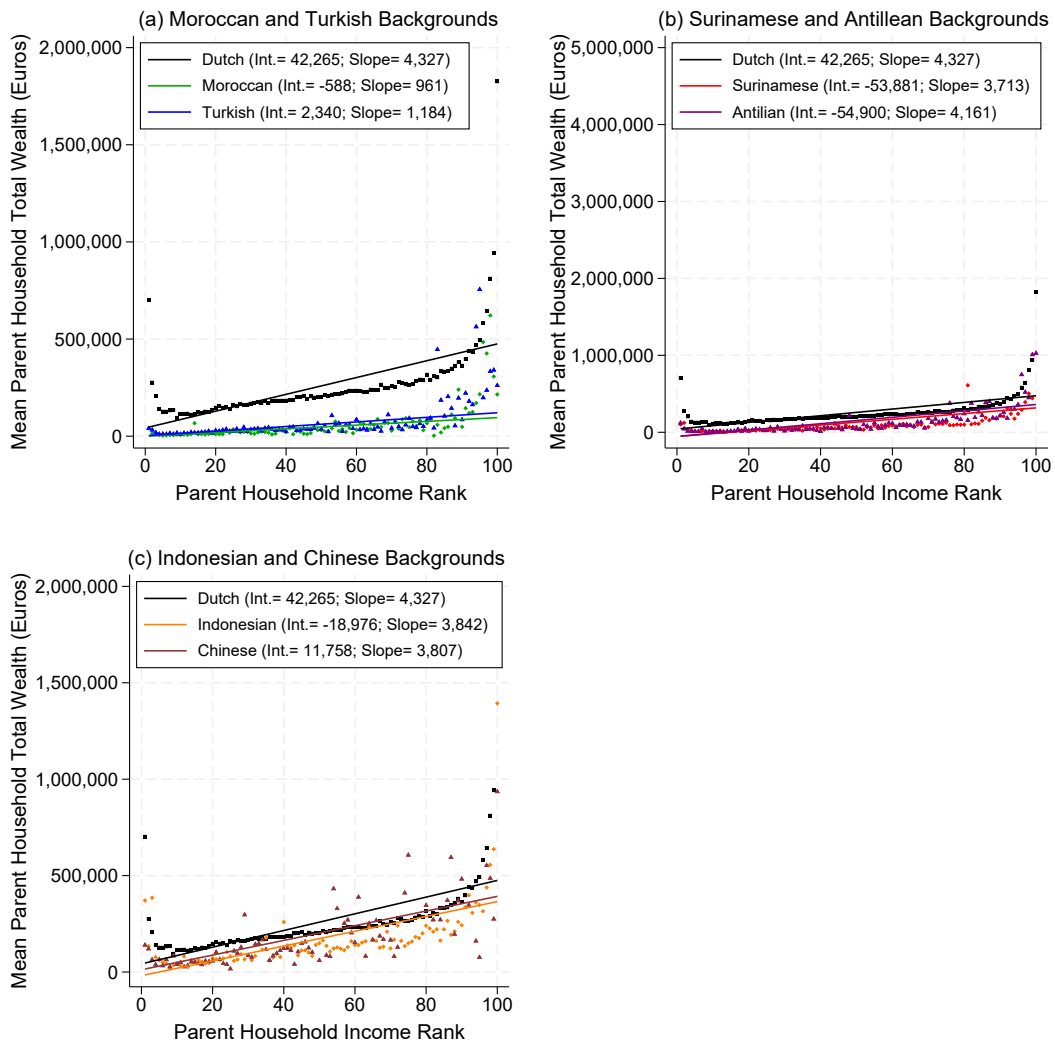
Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and their own total wealth. Wealth data is only available starting 2006, therefore the relationship is estimated between average income ranks for 2003–2005 and average total wealth for 2006–2008.

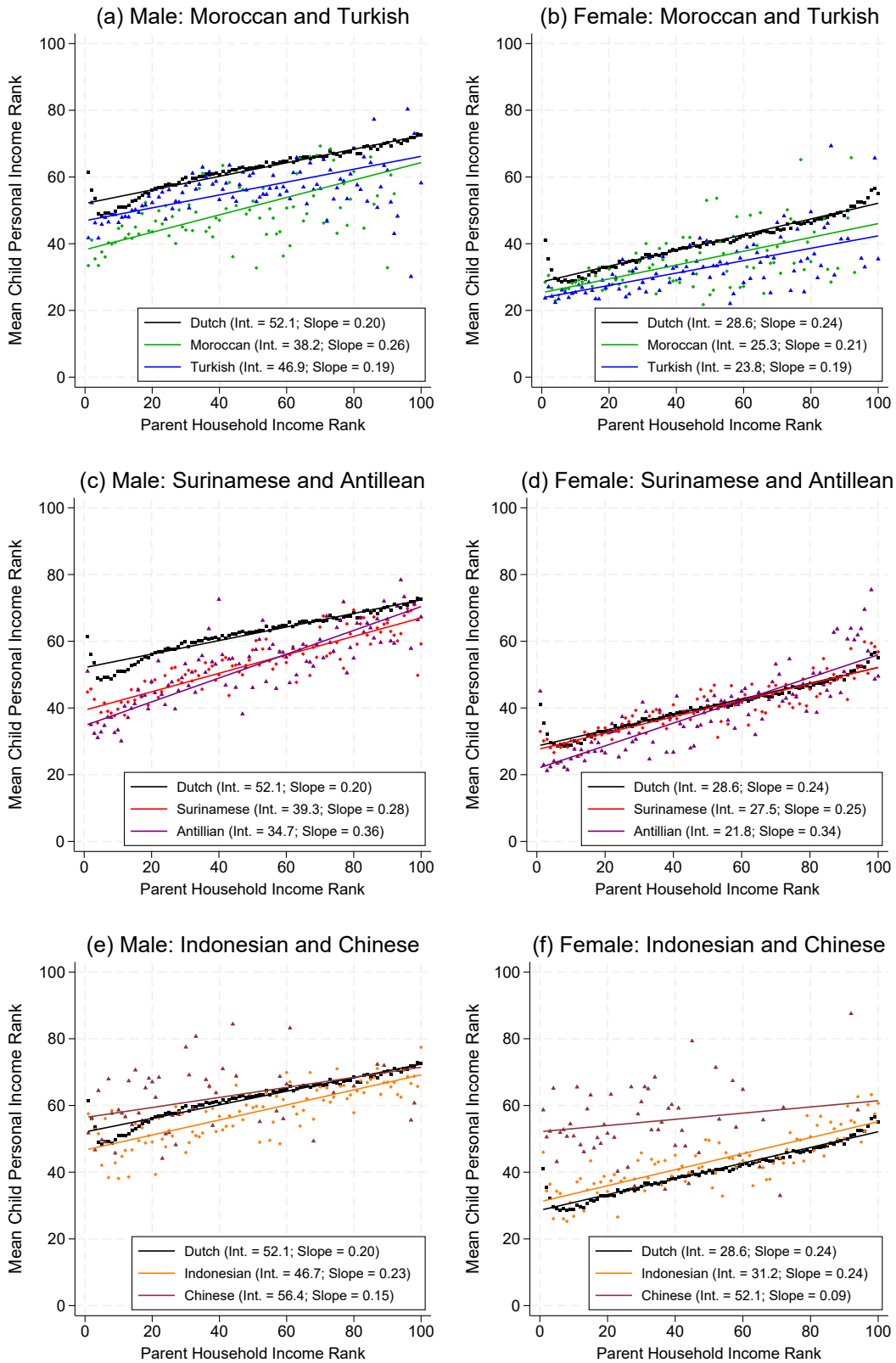Figure A.4: Relationship Non-Equivalized Disposable Household Income Parent — Child

Notes: Estimated linear relationship between the non-equivalized disposable household income rank of the children and the non-equivalized disposable household income rank of the parents.

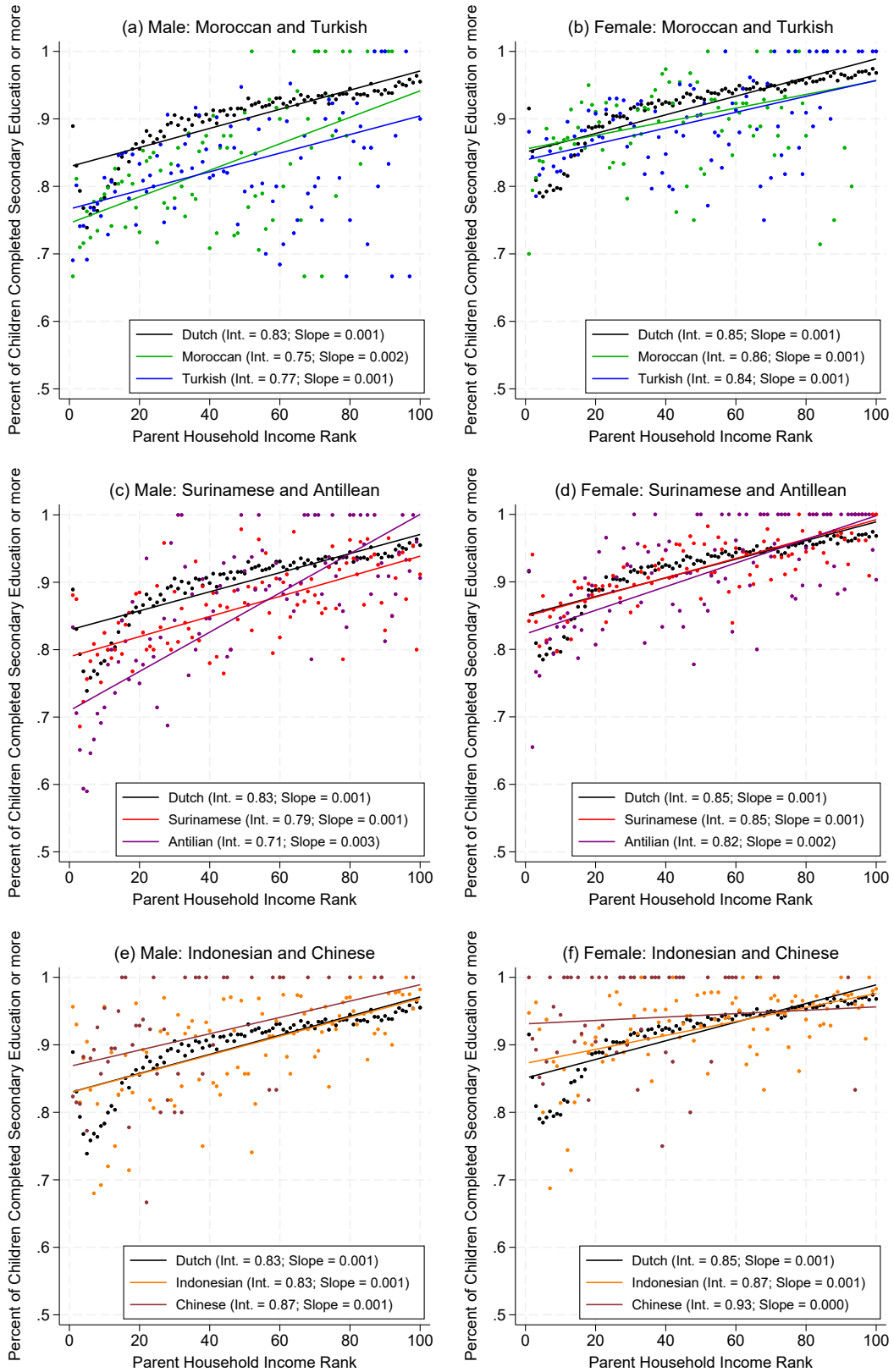Figure A.5: Relationship Household Income Parents – Primary Incomes Children Born in the Netherlands
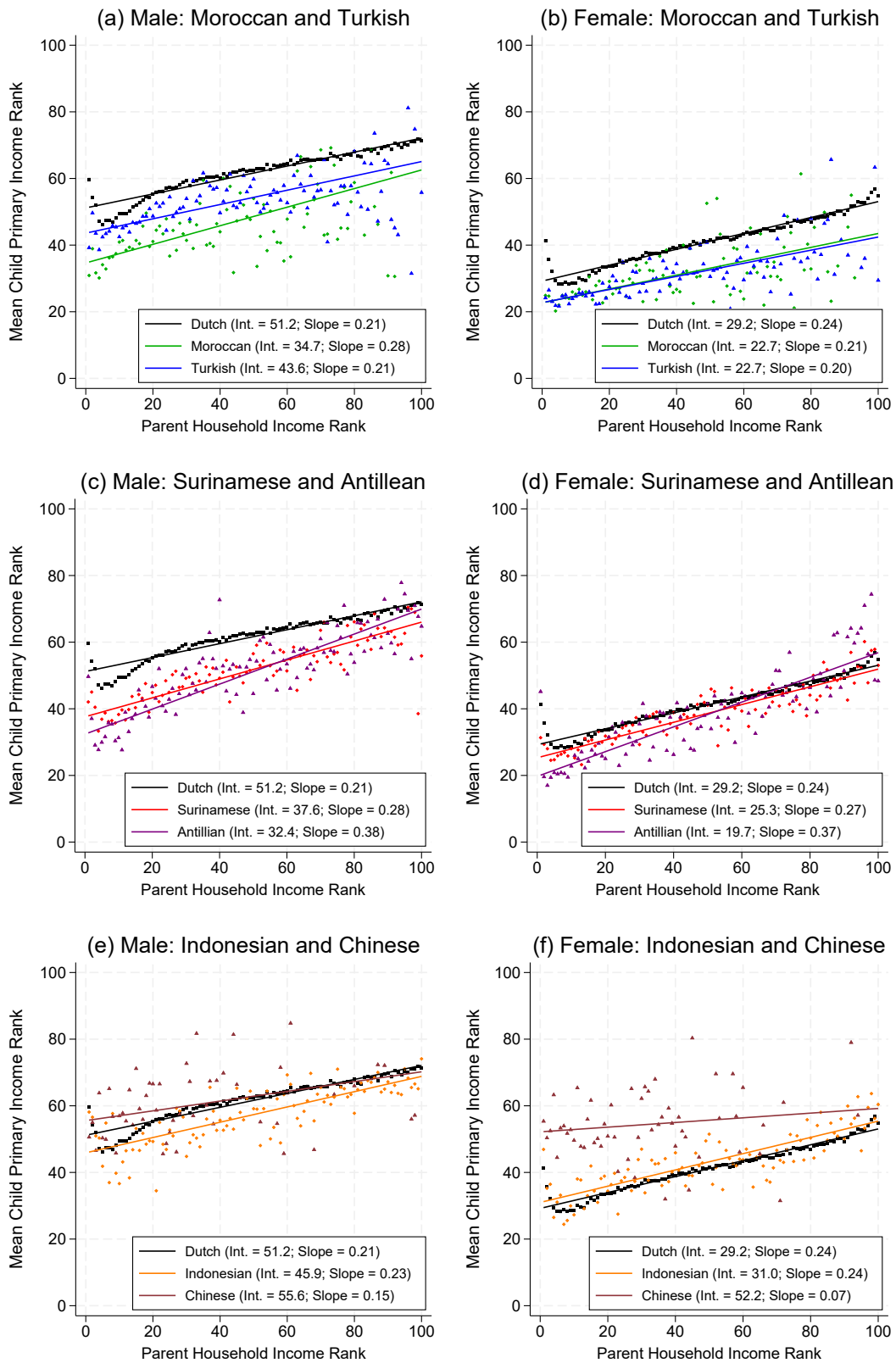
Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the personal primary income rank of the children.

Figure A.6: Relationship Household Income Parent – Personal Gross Income Children


(a) Male: Moroccan and Turkish

Dutch (Int. = 52.1; Slope = 0.20)
Moroccan (Int. = 38.2; Slope = 0.26)
Turkish (Int. = 46.9; Slope = 0.19)

(b) Female: Moroccan and Turkish

Dutch (Int. = 28.6; Slope = 0.24)
Moroccan (Int. = 25.3; Slope = 0.21)
Turkish (Int. = 23.8; Slope = 0.19)

(c) Male: Surinamese and Antillean

Dutch (Int. = 52.1; Slope = 0.20)
Surinamese (Int. = 39.3; Slope = 0.28)
Antillian (Int. = 34.7; Slope = 0.36)

(d) Female: Surinamese and Antillean

Dutch (Int. = 28.6; Slope = 0.24)
Surinamese (Int. = 27.5; Slope = 0.25)
Antillian (Int. = 21.8; Slope = 0.34)

(e) Male: Indonesian and Chinese

Dutch (Int. = 52.1; Slope = 0.20)
Indonesian (Int. = 46.7; Slope = 0.23)
Chinese (Int. = 56.4; Slope = 0.15)

(f) Female: Indonesian and Chinese

Dutch (Int. = 28.6; Slope = 0.24)
Indonesian (Int. = 31.2; Slope = 0.24)
Chinese (Int. = 52.1; Slope = 0.09)

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the personal gross income rank of the children.

Figure A.7: Relationship Income Parent – Children Intermediate or Higher Educated
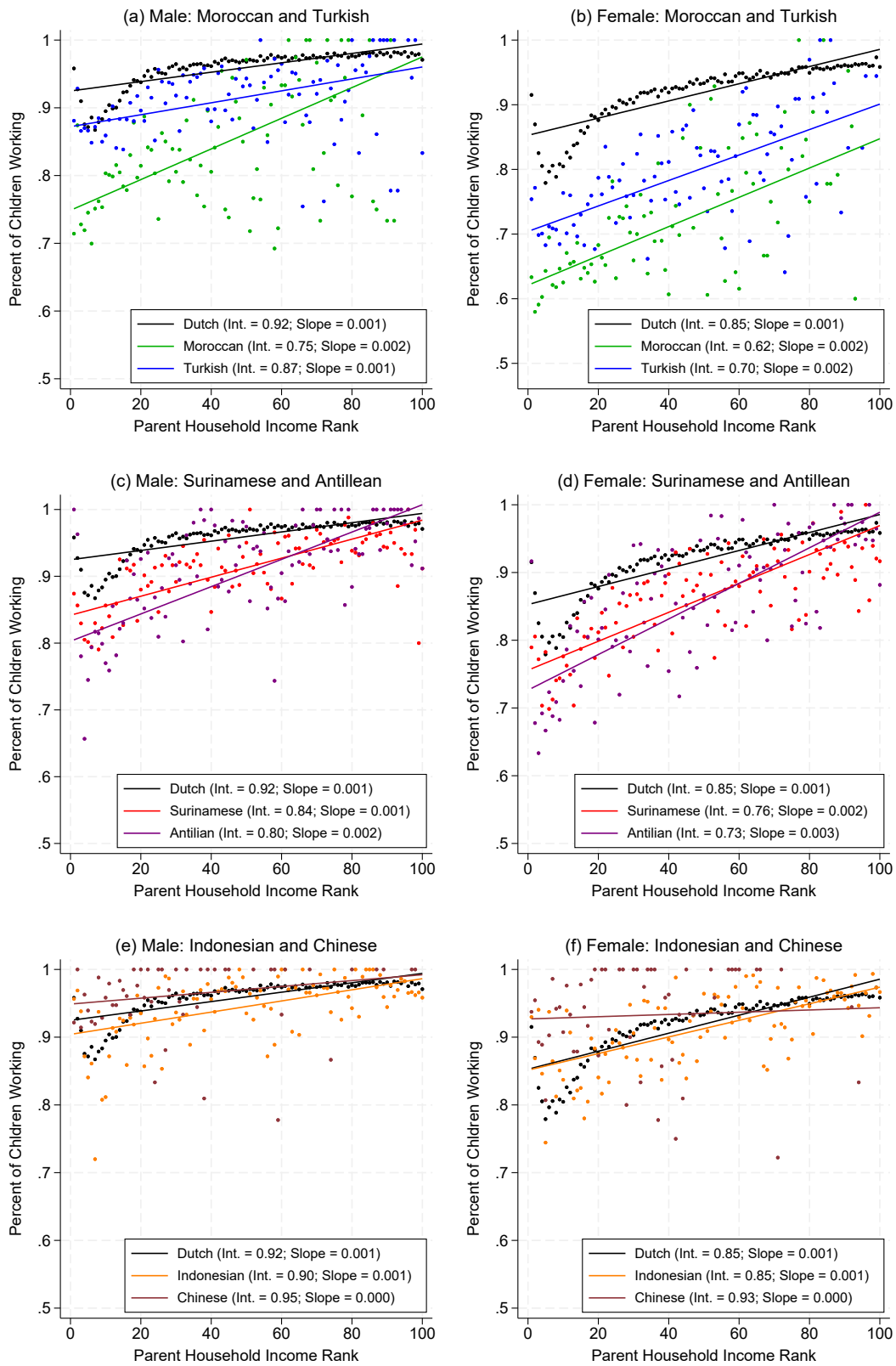

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the probability that the child has a secondary or higher level of education (ISCED 3 or higher).

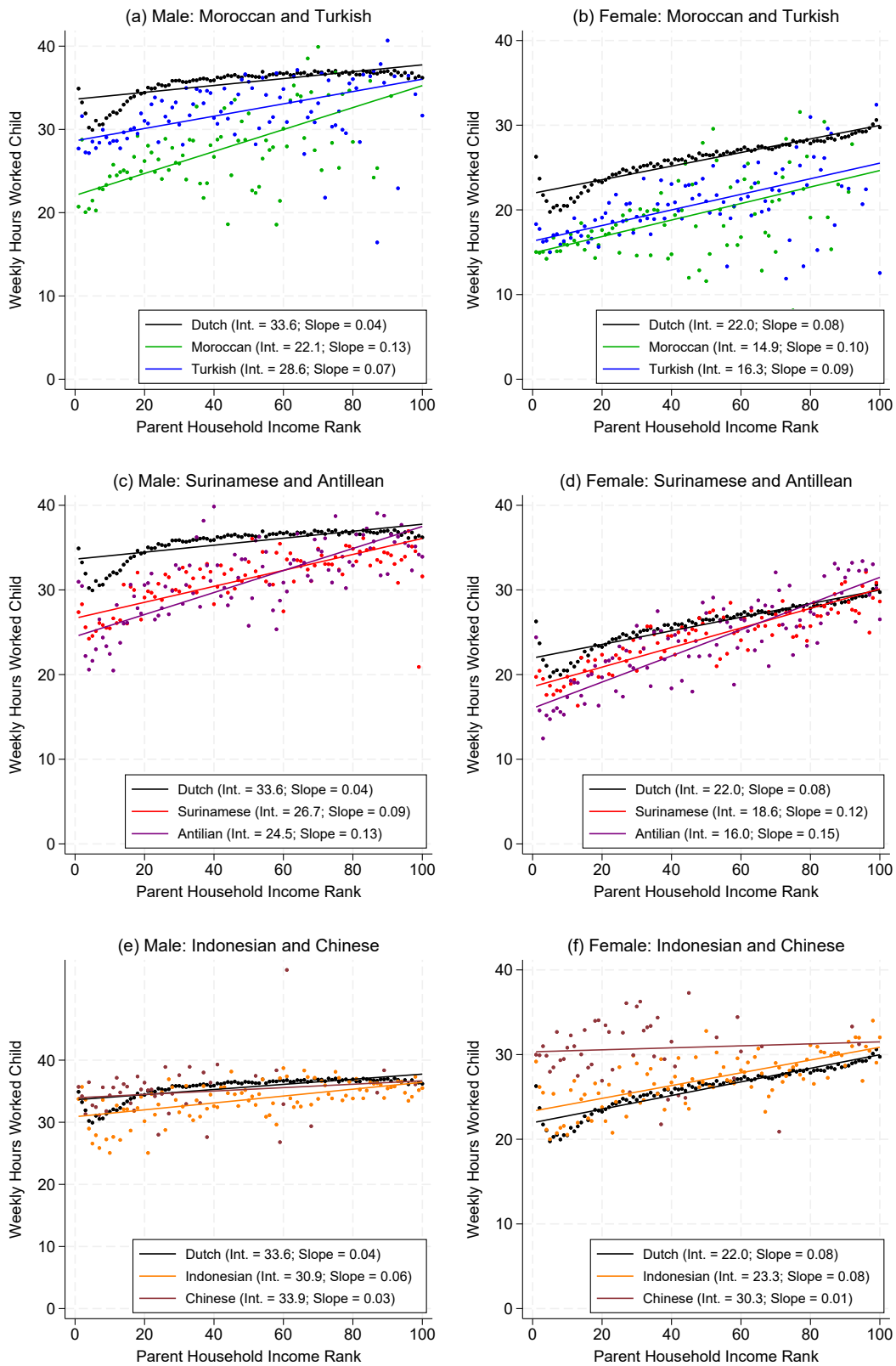Figure A.8: Relationship Household Income Parent – Children Higher Educated
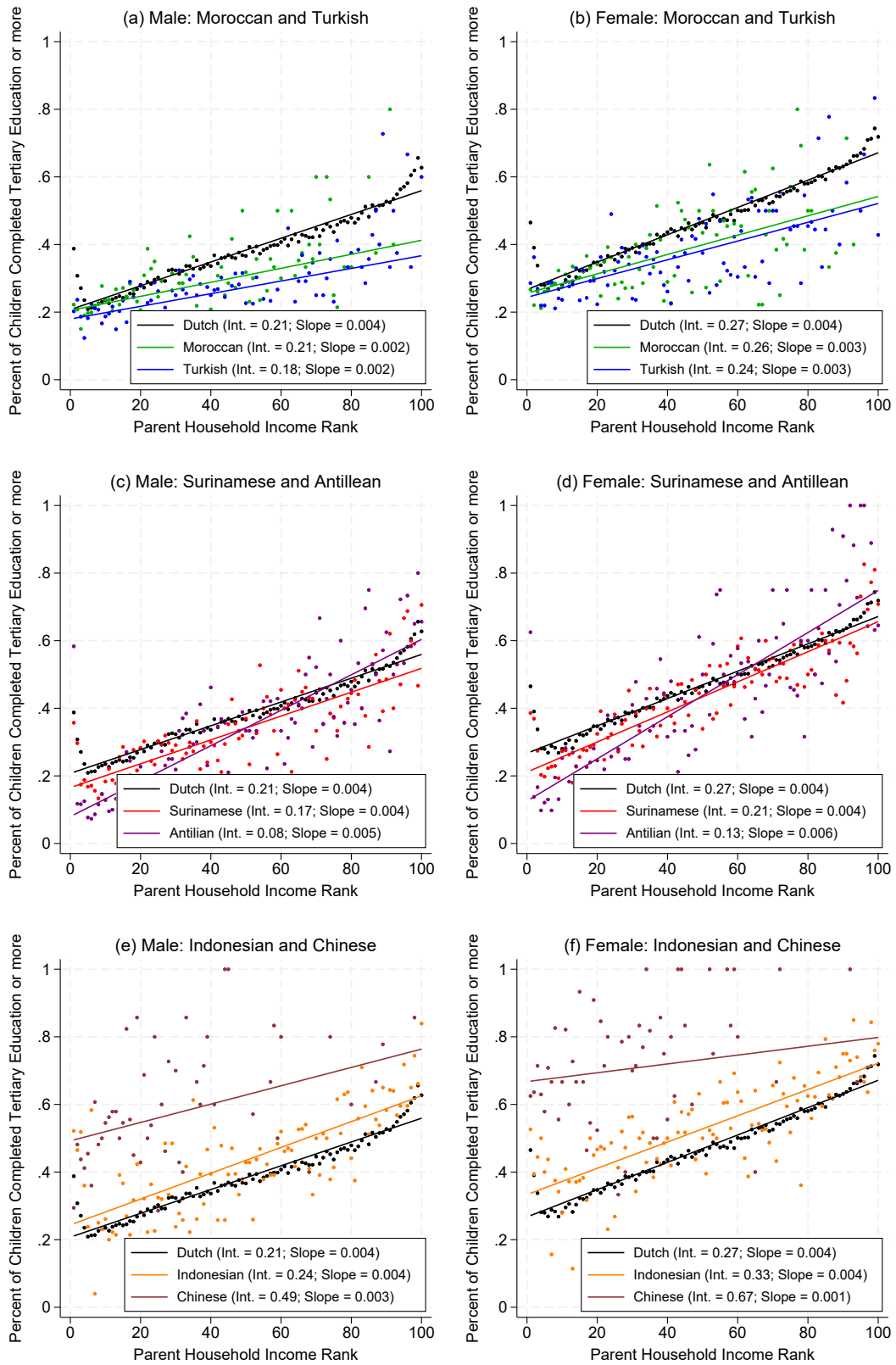
Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the probability that the child has a tertiary education (ISCED 6 or higher).

Figure A.9: Relationship Household Income Parent – Employment Rate Children
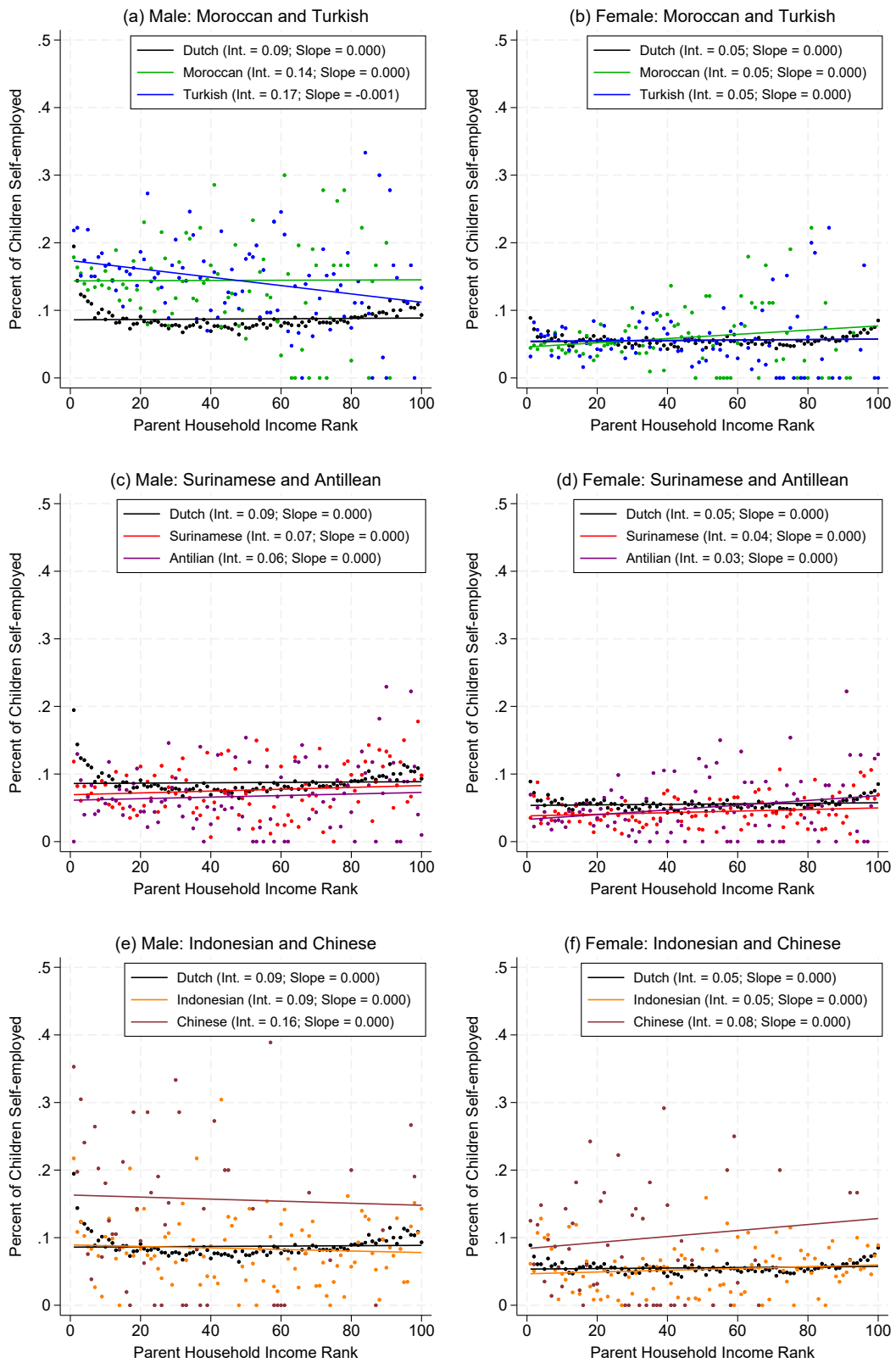

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and employment rates of the children (defined as having non-zero wage and/or profit income).

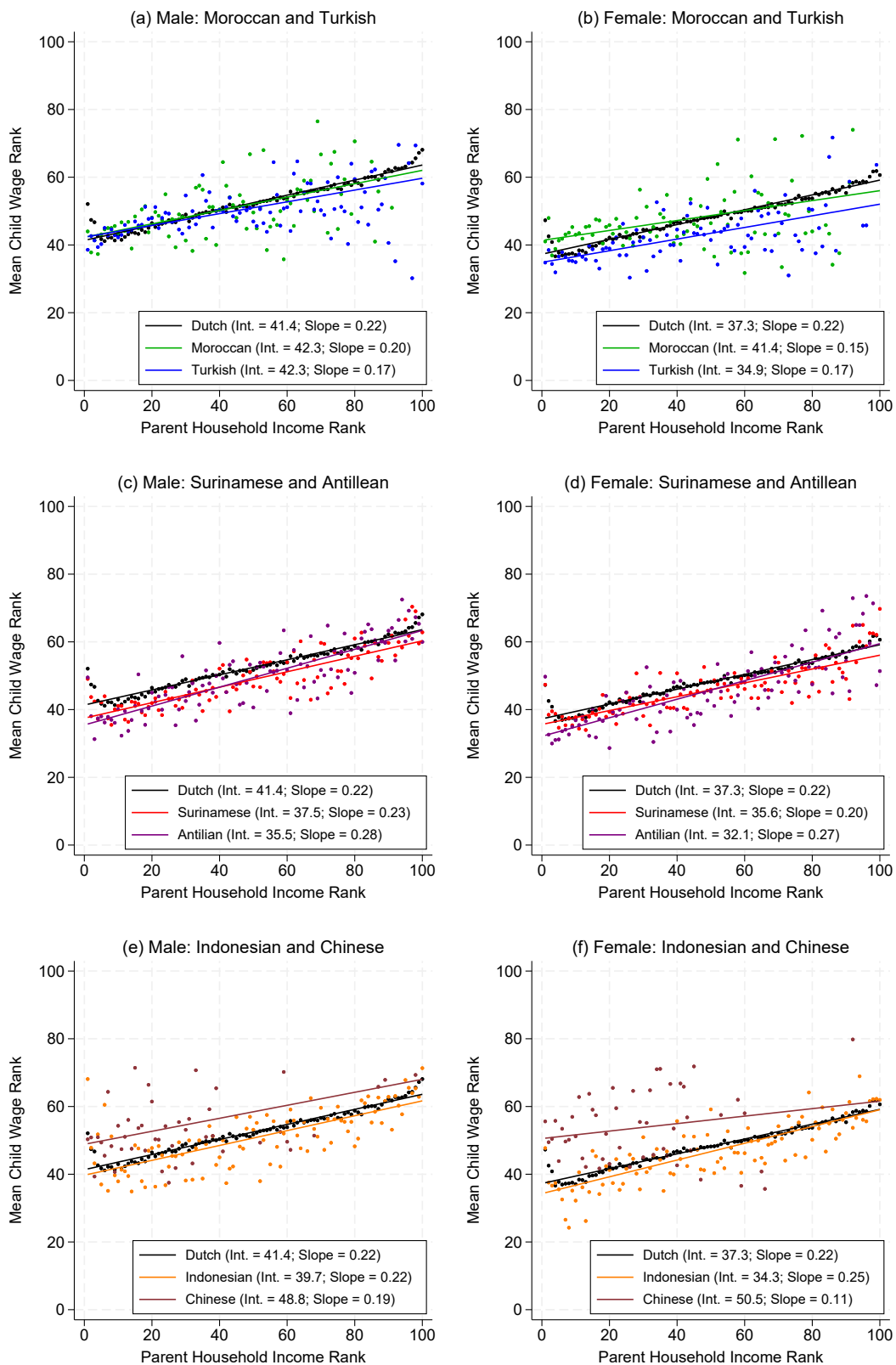Figure A.10: Relationship Household Income Parent – Weekly Hours Worked Children

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and hours worked per week by children (employees only).

Figure A.11: Relationship Household Income Parent – Child Self-Employed

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the probability that a child is self-employed.

Figure A.12: Relationship Household Income Parent – Hourly Wage Rank Children

Notes: Estimated linear relationship between the equivalized disposable household income rank of the parents and the hourly wage rank of children (employees only).