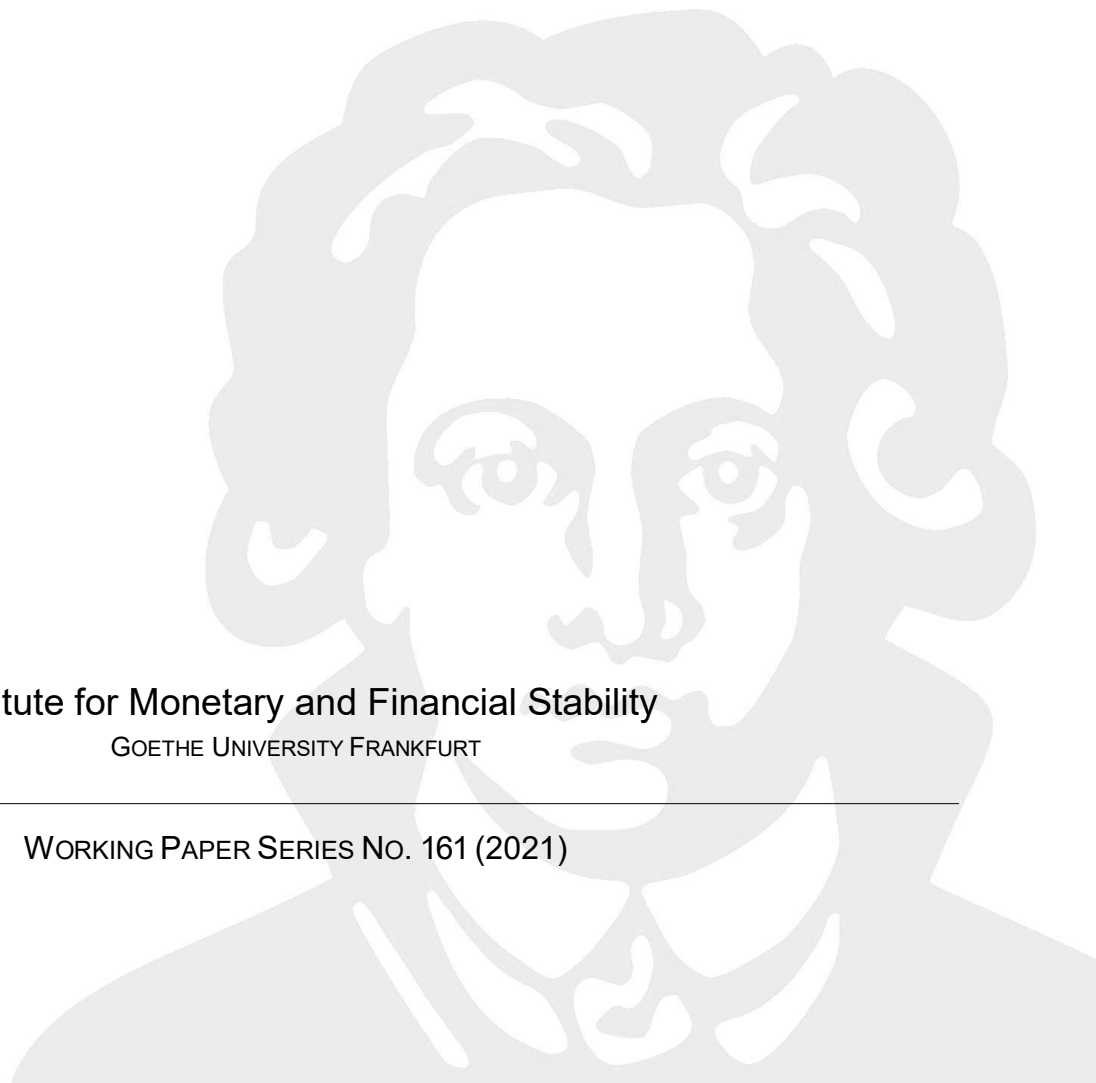MICHAEL HALIASSOS, THOMAS JANSSON, YIGITCAN KARABULUT

Wealth Inequality:

Opportunity or Unfairness?

Institute for Monetary and Financial Stability

Institute for Monetary and Financial Stability
Goethe University Frankfurt
House of Finance
Theodor-W.-Adorno-Platz 3
D-60629 Frankfurt am Main
www.imfs-frankfurt.de **|** info@imfs-frankfurt.de

Wealth Inequality: Opportunity or Unfairness?[*]

Michael Haliassos, Thomas Jansson, and Yigitcan Karabulut[†]

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Abstract

This paper presents evidence for a new propagation mechanism of wealth inequality. Motivated by cross-country survey evidence, it uses unique administrative microdata and a quasi-field experiment of exogenous assignment to test the hypothesis that, in the presence of significant opportunities for wealth mobility, the more educated respond to greater wealth inequality at the start of economic life by taking more financial, real, and self-employment risks and achieving higher wealth, thereby propagating wealth inequality. We find no evidence for alternative channels of propagation through labor income, unemployment risk, or human capital investment, nor for inspiration, imitation, or learning from the rich.

JEL classification: G5, E21, E44, D31, D1.

Keywords: Household finance, wealth inequality, propagation of inequality, education, opportunity, refugees.

1 Introduction

Important recent work on wealth inequality has shown that household historical wealth returns explain most of the level and volatility of changes in top wealth shares (Benhabib, Bisin, and Luo, 2019; Benhabib, Bisin, and Zhu, 2011; Gabaix, Lasry, Lions, and Moll, 2016). Those who are wealthier tend to earn persistently higher rates of return on wealth, both expected (Bach, Calvet, and Sodini, 2020) and actual, even across generations (Fagereng, Guiso, Malacrino, and Pistaferri, 2020). This is one way in which wealth inequality tends to propagate itself. Our paper asks if there is an additional mechanism that propagates wealth inequality and social polarization: a link between exposure to greater wealth inequality at career launch and divergent wealth outcomes ten to twenty years later, under similar initial resources.

Our premise is that exposure to wealth inequality and to its considerable concentration at the top provides a signal to individuals who are about to launch their economic life but leaves interpretation of this signal open. In environments where wealth mobility is present, some career launchers may interpret an unequal wealth distribution as a signal of how high *their own* wealth can be, while others may read it as a signal of what *take-all winners* can achieve in a (possibly unfair) world. The motivational implications of these interpretations are very different: a perception of opportunity can motivate suitable actions to generate wealth, e.g., through investments in risky assets, while a perception of unfairness can lead to self-validating inactivity. In environments that allow wealth mobility, differential responses to wealth inequality exposure can boost the chances of the motivated to generate higher wealth and to reach higher positions in the wealth distribution, leaving the inactive group behind.These differential wealth outcomes can validate, reinforce, and spread divergent perceptions of opportunity versus unfairness, thus exacerbating divergence in wealth outcomes over a long horizon. By contrast, in environments with limited wealth mobility, wealth inequality fails to generate perceptions of opportunity and thus differential tendencies to invest in risky assets, perpetuating the limited incidence of wealth transitions. The paper proposes this new propagation mechanism for wealth inequality, provides empirical evidence in its support, and finds educational attainment under similar initial resources to be a key factor for the population split it involves. It also studies channels through which differential perceptions of

wealth inequality at the start of economic life translate into divergent wealth outcomes.[1]

A trigger for our study has been the discovery of a novel pattern of cross-country survey evidence on the relation between wealth inequality and perceptions of opportunity or unfairness, controlling for income inequality and a number of other country and individual characteristics. Using data from the OECD, the Eurobarometer survey, and other sources, we find that college-educated individuals living in countries where a greater share of household wealth is held by the top 10% of the wealth distribution are more likely to perceive equality of opportunities for all, while those without college education do not link wealth inequality to opportunity. By contrast, those without college education who live in countries with greater wealth inequality are less likely to respond that the system is fair, i.e., that, by and large, people get what they deserve. Yet, the college educated do not link wealth inequality to their perception of fairness.

Understanding the precise nature and causes of this difference and its implications presents a number of econometric challenges, that include unobserved factors, differential sorting into desirable locations by education, differential involvement in the development of institutions and policies, and differential access to education by wealth, to name a few.

Motivated by this novel pattern of correlations and by the challenges in interpretation, the paper sharpens the focus and asks whether and how exposure to local wealth inequality, at the launch of one's economic life in the country and under similar initial resources, differently affects the economic and financial behavior and wealth outcomes of college- versus non-college educated individuals in the medium to longer term. Our hypothesis is that the more educated who are located in environments that exhibit wealth mobility tend to interpret wealth inequality as a source of opportunity to generate wealth through suitable risk taking, and they thus end up wealthier, leaving behind the less educated people, who do not respond. If this hypothesis is valid, it provides a mechanism whereby wealth inequality and concentration in the hands of the more educated propagate, as does polarization in perceptions of opportunity and unfairness. Understanding and remedying the sources of such differential responsiveness can then be a complement, if not a substitute, for politically challenging redistributive measures.

To address the econometric challenges posed by this question, the paper considers a unique,

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[1]This mechanism, linking exposure to wealth inequality and risk taking, has some interesting parallels with models of motivated beliefs (Bénabou and Tirole, 2006), originally proposed for work behavior and income inequality.

quasi-random field "experiment" of exogenous placement of refugees to different geographical areas upon arrival in Sweden, focusing on those refugees who had no resources and thus no choice but to accept the apartment assigned to them in the first instance. In addition to being interesting on its own, a refugee sample provides unique identification advantages for our analysis. First, exogenous allocation of people to dwellings on such a scale does not occur in other contexts in modern democratic societies. Second, refugees find themselves at the start of their economic life in the new country. Third, based on our sample definition, they are all homogeneous in terms of resources: destitute and starting from scratch. Finally, while natives may vary considerably with respect to the time at which they form impressions about their economic environment as they are growing up, refugees have a clear incentive to observe their new environment carefully upon entering the country and their allotted municipality.

We study systematic effects of exogenous exposure to different wealth inequality levels in the assigned municipality upon refugee arrival on economic and financial behavior and outcomes ten to twenty years later. Their wealth trajectory is particularly interesting, as the refugees start from practically nothing and reach very different wealth levels in the medium to longer run. We are able to control for aggregate conditions at the time of arrival and at the time behavior is observed, fixed common environmental factors in the municipality of arrival, a set of time-varying features of the initial municipality, its degree of wealth mobility, as well as cultural origins and household characteristics of the refugees. We study the refugees' medium to longer term responses to an environment created by others (the host country and initial municipality) and to which they had to adjust.

Consistent with our hypothesis, we find that initial exposure to a greater top 10% wealth share leads to greater wealth levels and cohort-specific wealth percentiles for the college-educated refugees, while failing to trigger similar effects for the less educated. If this differential outcome is to be interpreted as differential response to opportunity, we would expect to find it in areas that exhibit wealth mobility. Indeed, we find significant positive effects in the municipalities exhibiting above-median wealth mobility, while effects on the less educated are largely absent, regardless of the degree of mobility.[2] Consistent with responding to risk-taking opportunities for wealth cre-

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[2]We split municipalities according to the share of households who were in the top 10% of the municipality's wealth distribution right before the allocation of refugees started in 1986, and who were also in the top 10% of the wealth distribution after the allocation of refugees was completed in 1992.

ation, we find a positive effect of initial exposure to wealth inequality on participation in risky financial and real assets and on risky occupational choice into self-employment.

We provide evidence against explanations that compete with our hypothesis of responding to opportunity for wealth generation through risky financial and real assets. First, the effect of exposure to wealth inequality is robust to controlling for mean income, mean wealth, and income inequality in the municipality of placement at the time of arrival and does not simply reflect those factors. Further, We do not find a response via key labor market variables, such as household income, unemployment risk later in life, or investment in human capital following exposure to wealth inequality. Our findings on the role of wealth inequality also do not reflect imitation or learning from those at the top of the wealth distribution, nor of other local investors in risky assets. Indeed, we find that local wealth inequality is *negatively* related to the local share of stockholders and homeowners, as a higher share provides more widespread access to higher expected returns. We also do not find evidence of a response to role models rather than to opportunity: the effect of exposure to wealth inequality is robust to controlling for the share of educated people among the wealthiest 10% in the municipality.

The hypothesis of successful response to wealth generation opportunities via risky financial and real assets is consistent with, and further amplifies recent literature on the greater ability of the educated to generate high returns, on the greater pessimism of the less educated regarding stock, housing, and self-employment returns, as well as on their likely greater difficulties of perceiving wealth inequality and the degree of wealth mobility. A close positive correlation between educational attainment and returns on net wealth and on each of its main sub-components is found by Girshina (2019) in Swedish data and by Fagereng, Guiso, Holm, and Pistaferri (2020) using data from Norway, while Barth, Papageorge, and Thom (2020) find a positive relation between educational attainment and retirement wealth among US households. Kuhnen and Miu (2017) and Das, Kuhnen, and Nagel (2019) use experimental data and survey data from nearly forty years of the Michigan Survey of Consumers, respectively, and find that individuals with lower socioeconomic status (SES), in terms of education level and income rank within year-age groups, tend to have significantly lower subjective return expectations. They argue that these account for a large part of the total effect of the SES variables on the decisions to participate in stocks and in homeownership, with estimates of up to 47% and 25%, respectively.

In terms of policy implications, we view our findings as consistent with a multi-pronged approach to addressing the propagation mechanism we uncover, aimed at improving perception of opportunities among the less educated, financial knowledge and ability to handle existing risky investment products, as well as design of securities that help overcome biases, as illustrated in Calvet, Celerier, Sodini, and Vallee (2021). Whether an extension of mandatory education could be added to this arsenal depends on the outcome of the ongoing debate on an exogenous role of education on returns.[3]

Links to literature Our work relates to several strands of literature. One link is to the recent literature on the importance of asset returns for wealth inequality. Benhabib, Bisin, and Zhu (2011) showed that idiosyncratic rates of return govern the right tail of the wealth distribution, rather than income risk. Gabaix, Lasry, Lions, and Moll (2016) showed that persistently high returns can generate distributions with a fat right tail. The link between higher wealth level and higher returns was documented empirically by Bach et al. (2020), Fagereng et al. (2020), and Benhabib, Bisin, and Luo (2019) using Swedish, Norwegian, and US data, respectively. The importance of a link between investment in financial education and expected returns for wealth inequality was modeled by Lusardi, Mitchell, and Michaud (2017), and empirically validated by Altmejd, Jansson, and Karabulut (2022).

Our findings on differential financial response of the more educated to wealth inequality in areas with high wealth mobility parallel and extend to wealth inequality features of models of motivated beliefs (Bénabou and Tirole, 2006), originally built for work behavior and income inequality: some individuals perceive successes of others as signs of a fair world, use those as motivating drivers for their own efforts, and interpret their own successes as ratifying their beliefs. There is strong recent evidence in support of the relevance of the own position for assessing income distributions. Fisman, Kuziemko, and Vannutelli (2020) conduct an experimental study and find that subjects express preferences for income distributions by paying particular attention to incomes at the top of the distribution and to those adjacent to theirs. Hvidberg, Kreiner, and Stantcheva (2020) find a positive relation between an individual's current income position and the tendency to view income inequality within the reference groups as fair, along with evidence

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[3]There is debate as to whether educational attainment has an exogenous effect on returns (Girshina, 2019) or it is jointly determined with returns by innate ability (Fagereng et al., 2020), consistent with recent evidence on the importance of genetic markers (Barth et al., 2020).

pointing to a causal link.

Our paper also relates to a separate and multifaceted strand of literature highlighting the importance of exposure to surrounding conditions for subsequent behavior. Malmendier and Nagel (2011) demonstrate the link between stock return experiences and subsequent stock market participation, Malmendier, Tate, and Yan (2011) and Bernile, Bhagwat, and Rau (2017) show that early-life experiences of CEOs influence their corporate financial policies and risk taking, respectively. Kuhnen and Miu (2017) and Das et al. (2019) focus instead on the exposure to current macroeconomic conditions and to their variations over the business cycle.

The inequality propagation mechanism presented in this paper is established controlling for income inequality. Recent literature has considered the role of exposure to *income* inequality, and its consequences for consumption and borrowing behavior. Georgarakos, Haliassos, and Pasini (2014) find that self-reported perception of lower income than the average among peers makes people more likely to borrow and to worsen their financial indicators. Bertrand and Morse (2016) show that exposure to higher income levels at the 90th or 80th percentile of the local income distribution leads to higher consumption among the non-rich and higher bankruptcy rates. Roth (2021) shows that insolvency is positively related to the level of top incomes in different reference groups (municipality, workplace, age group, immediate neighborhood). Agarwal, Mikhed, and Scholnick (2019) consider exposure to lottery wins in the same zip code and find higher subsequent borrowing and bankruptcies, while Kuhn, Kooreman, Soetevent, and Kapteyn (2011) document higher consumption among neighbors of zip code lottery winners.

More broadly, the paper links to the fast growing literature on peer effects on financial behavior, recently surveyed in Gomes, Haliassos, and Ramadorai (2021) and in Kuchler and Stroebel (2021). The quasi-random experiment of refugee allocation has been fruitfully used in other papers for very different purposes.[4]

Section 2 presents the cross-country survey evidence on the relation between wealth inequality and perceptions of opportunity or fairness. Section 3 describes the identification strategy, in view of relevant features of the refugee allocation program and of the data, and presents the es-

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[4]Edin, Fredriksson, and Åslund (2003) study the consequences of living in enclaves for labor market outcomes. Åslund and Fredriksson (2009) study peer effects in welfare use among refugees, Åslund, Edin, Fredriksson, and Grönqvist (2011) focus on the extent to which immigrant school performance is affected by the characteristics of neighborhoods in which they grew up, while Haliassos, Jansson, and Karabulut (2020) study financial literacy externalities from neighbors with business or economics education.

timation model. Section 4 presents the estimated effects of exposure to wealth inequality and how they depend on wealth mobility opportunities. Section 5 tests for possible alternative mechanisms through which exposure to wealth inequality operates, while Section 6 considers policy implications of our findings in the context of potential reasons for non-responsiveness of the less educated. Section 7 offers concluding remarks.

2   Wealth Inequality and Perceptions of Opportunity

As motivation for formulating our hypothesis, we provide two suggestive, though by no means conclusive, empirical patterns. The first is novel cross-country evidence of a link between wealth inequality and perceptions of opportunity and of fairness that differs based on college education. The second refers to the historical evolution of household wealth shares, by educational attainment.

Table I presents estimates of the relation between wealth inequality in the country of residence and the probability that the respondent agrees with a respective statement: in columns (1) and (2), the statement refers to opportunity, while in columns (3) and (4) it refer to fairness. The data on perceptions are derived from the Eurobarometer Survey fielded in December 2017 (Eurobarometer, 2018). Perceptions on equality of opportunity are measured by whether the individual agrees or not with the statement:

"I have equal opportunities for getting ahead in life, like everyone else."

Analogously, we measure attitudes towards fairness of outcomes by whether the individual agrees with the statement:

"I believe that, by and large, people get what they deserve."

Wealth inequality is measured by the most recent available data on the share of total household wealth held by the top 10% of the wealth distribution prior to the Eurobarometer survey date, as reported in the OECD wealth distribution database (for most countries, this refers to 2014-15). For each concept and educational subsample, we control for relevant country characteristics, including income inequality measured by the Palma ratio,[5] GDP and national wealth per adult,

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[5]The Palma ratio is defined as the share of household income accruing to the top 10% of the income distribution, normalized by the share of income accruing to the bottom 40% of the income distribution.

unemployment, and social spending; and for a range of individual characteristics, including occupational and marital status, position in the income distribution, political beliefs, age, gender, and household size.

As Table I shows, the college educated relate wealth inequality to opportunity, while the non-college educated relate inequality to unfairness. Specifically, college-educated individuals living in countries where a greater share of household wealth is held by the top 10% of the wealth distribution are more likely to perceive equality of opportunities for all. By contrast, individuals without college education do not exhibit a systematic tendency to link wealth inequality to opportunity in either direction. When we turn to perceptions of fairness, we find that those without college education who live in countries with greater wealth inequality are less likely to respond that the system is fair. Yet, the college educated do not systematically link wealth inequality to their perception of fairness.[6]

Further suggestive evidence is provided by the historical evolution of wealth shares for different education groups. If the college educated respond to wealth-generating opportunities but the others do not, we might expect the wealth share of college graduates to be growing over time, at the expense of non-college graduates. This could serve to reinforce both perceptions of opportunity by the former and of unfairness by the latter. Data on the evolution of wealth shares by education are not readily available over a longer horizon and across countries, to the best of our knowledge. Such tracking is possible for the US, using the Survey of Consumer Finances and Financial Accounts, Figure O.A.1 shows that, between 1990 and 2020, the share of household wealth held by households whose financial respondent had at least a college degree grew at the expense of every other education category, but especially of those without any college education (see also Bartscher, Kuhn, and Schularick (2020)).

Although the striking cross-country survey evidence and the historical trends in wealth shares can serve to motivate our hypothesis, neither provides conclusive proof of it. Disentangling the relation between wealth inequality and perceptions of opportunity and fairness introduces various econometric challenges. First, there may be unobserved factors about the institutions and structure of some countries that happen to generate greater wealth inequality and at the same

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[6]This pattern of perceptions does not derive from income inequality, as this is included as a control and turns out to be statistically insignificant, suggesting that it is useful to study the role of wealth inequality on its own merits.

time make the more educated people happier about opportunities and fairness, without inequality itself influencing perceptions directly. Second, the observed pattern of correlations between wealth inequality and perceptions may be the result of differential ability of the two education groups to sort into desirable locations. The better educated may have been more successful in sorting into the geographies (environments, institutions, markets) that generate higher inequality and greater opportunities for them, while little such sorting has been possible for the less educated. Third, the educated may have had significant influence on creating the institutional and policy structures that give rise to greater wealth inequality and opportunities for them, and are thus more likely to defend them on the basis of fairness than the less educated, especially when they are seen to generate greater wealth inequality. Or, in highly unequal societies, the wealthy have dramatically greater opportunities to become educated and thus to regard the system as fair and open. Further, and perhaps most importantly, it is possible that there is a dynamic element linking wealth inequality, wealth outcomes, perceptions of mobility, and perceptions of fairness. Perceptions of mobility can inspire actions, resulting in wealth outcomes that validate or revise these perceptions, and also create perceptions regarding fairness. In turn, these can inspire further action or inaction and outcomes and perceptions, pushing the more educated to the top and leaving the less educated behind.

In our empirical analysis, we focus on a quasi-random field experiment of exogenous allocation of destitute refugees to areas whose local inequality they could not have anticipated, at a time that was - by definition - the launch of their economic life in the new country. This allows us to overcome several confounding factors in order to explore the relevance of others.

3   The Identification Strategy and the Data

3.1   Relevant Features of the Refugee Allocation Program

We exploit a unique natural experiment: a Swedish policy of exogenously allocating refugees to apartments shortly after they obtained the residence permit, in response to congestion arising from self allocation of refugees in major cities in the past.[7] The experiment was implemented between 1985 and 1994, but most strictly between 1987 and 1991, the period of entry on which we

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[7]For further details about this policy experiment, used in another context, see Edin et al. (2003) pp. 333-335.

are focusing. Participation of Sweden's municipalities in the program was extensive, with 277 out of 284 municipalities participating. The Swedish Immigration Board was authorized to allocate refugees who moved to Sweden for reasons other than family reunification to apartments, as these were becoming available. Using STATIV data, described in section 3.2, we are able to identify precisely the refugees, among migrants to Sweden in the relevant period, who were not being reunited with family members, had limited resources, and therefore little choice but to reside in the apartment allocated by the municipal officers. Nevertheless, about one third of the refugee sample had at least some college education. We are also able to observe any subsequent movements of the refugees to other areas for a period of about 20 years after the initial placement.

Our causal analysis relies on the assumption that, given the observed characteristics of the refugees, the wealth inequality to which they were exposed at the municipality of initial placement is independent of unobserved refugee characteristics that influence the probability of taking specific actions or experiencing specific individual outcomes ten to twenty years later in life.

The way in which the placement program assigned refugees to particular apartments is important for the validity of this identification assumption. Did the Board have information additional to what we observe in the data when allocating refugees to apartments? Importantly, no personal interviews were conducted, and our data include all refugee information available to the Immigration Board when deciding the initial allocation of refugees. According to the process narratives, the Board mainly based its decision on the random arrival of available apartments, but may have also taken into consideration the language spoken by the refugees, their marital status in view of the limited availability of smaller apartments, and their education level (Åslund and Fredriksson, 2009; Åslund et al., 2011). All three factors are included in our data. Specifically, we control for the country of origin and year of arrival of the refugee, the refugee's education level, marital status, household size, and number of children, in addition to other observable characteristics relevant for financial behavior. The Board also asked refugees to declare their location preferences, and these were not recorded in the data. However, as other studies based on this data have noted, personal preferences of refugees are unlikely to have played an important role in the allocation decision for at least three reasons. First, the program was implemented specifically because the unrestricted free choice of refugees resulted in extreme congestion in major metropolitan cities. Second, the initial refugee allocation generated by the Immigration Board was different from the

previous migrant concentration. Finally, about 60 percent of refugees had moved from the place of their initial placement by the year 2000. This move occurred despite the fact that their immediate relocation was essentially precluded by their limited means and short-term benefits, such as language classes; and that they ended up spending 8.7 years in their initial municipality.

As a further check of possible sorting, we regress our key measure of wealth inequality (the share of the top 10 percent in total household wealth at the time of refugee arrival) in the initial municipality on characteristics of the refugees observable to municipal officers. As seen in Table O.A.4, we include gender, marital status, household size, having children, educational attainment, and age group controls, as well as municipality, country of origin, and arrival year fixed effects. The measure of exposure to wealth inequality at the time of arrival is independent of initial refugee household characteristics observable to municipal officers, including those they might have reportedly taken into account.

Since we find considerable differences when we split our sample by educational attainment, into those with at least some college education and the rest, we also check the distributions of our measure of wealth inequality for the two refugee subsamples. As Panel A of Table II shows, the two educational groups faced very similar distributions of our measure of wealth inequality.

Finally, as we describe in detail in section 3.3, we also include in our model controls for specific time-varying conditions in the municipality of initial placement, as well as for time-invariant factors through fixed effects, and we estimate the effect of initial exposure to wealth inequality net of those conditions.

3.2   The Household Panel Data

We employ two datasets from Statistics Sweden, LINDA and STATIV. The period of interest spans the main years of operation of the immigration allocation program, 1987-1991, to the last year in the period 1999-2007 in which Sweden imposed the wealth tax and was collecting detailed financial data to compute taxable net wealth. This combination of two datasets allows us not only to observe a significant number of refugee households but also to identify those who had little possibility or prospect to not accept the offer of an apartment made by the immigration authorities, at least in the first instance. The advantage of using administrative data collected for

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the purpose of taxing net wealth is the high quality of reporting, both of the amounts of taxable assets and of debt that could be set off against assets in order to reduce the wealth tax liability. The data are not reported by households themselves, but by the relevant Swedish institutions.[8]

LINDA provides data on an annual sample of around 300,000 individuals (about 3% of the Swedish population) and their family members, and an additional sample of 200,000 immigrant individuals, representing about 20% of all immigrants. Importantly, the data include detailed demographic and financial characteristics, but also precise locational information over the entire period, tracking any relocations. The extensive financial data come from the data collected for purposes of wealth taxation and refer to the period 1999-2007 only. Given that we look at refugees with very limited means at the time of arrival, focusing on their medium to longer run financial profile and outcomes is relevant.

STATIV provides extensive data on immigrants, collected from a variety of Swedish registers. Particularly relevant for us are data on reasons for immigration, allowing us to distinguish between refugee and labor immigrants. Even within refugee immigrants, we are able to focus on refugees who were admitted for humanitarian reasons and with insufficient resources, and thus had little choice as to whether to accept the apartment offered to them by the immigration authorities, coupled with opportunities for integrating in Sweden (e.g., through language classes). Specifically, we are able to exclude refugees who have come to Sweden for reasons related to work, family ties, studies, other reasons, as well as those with sufficient living supplies. We also exclude those refugee households who first appear in LINDA with an adult member previously residing in Sweden or holding Swedish citizenship. As an extra step, we only consider immigrant households that first appear in LINDA in the year of immigration or in the immediately following year.

We also make sure that, for households included in the final sample, we can observe both the initial location and the full set of locations in the 1999-2007 period, as well as the year of arrival and the country of origin.

After taking all these steps to avoid misclassifying immigrants, we end up with a final sample of about 5,105 refugee immigrants per observation year (i.e., in the period 1999-2007). As shown in

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[8]Demographic characteristics relate to the "household head", as determined by the Canberra definition, while income, wealth, and its components refer to the household.

Table O.A.5, more than half of our refugee sample entered Sweden in 1988 or 1989, and relatively few entered in 1991, with all remaining refugees in the sample arriving in 1987 or 1990. Iran was the country of origin for the largest group of refugees (about 28% of the sample), but other relatively large groups came from Chile (about 12%), Iraq and Lebanon (about 9% each).

3.3 The Estimation Model

Our hypothesis is that exposure to greater local wealth inequality at the start of economic life causes the college educated to perceive opportunity for wealth mobility, where it exists, and to undertake investment in risky real and financial assets, thus achieving higher wealth level and rank in the medium to longer run. We take several steps to test this hypothesis, to rule out others, and to understand the mechanism at work.

We measure initial wealth inequality, $WINEQ_{m0}$, as reflected in the share of household wealth owned by the top 10% of the wealth distribution in the municipality of initial placement, m, at the time of the refugee's arrival, $0 \in [1987, 1988, 1989, 1990, 1991]$,[9] on various outcomes observed about ten to twenty years later, at time $t \in [1999, 2000, ..., 2007]$. Wealth outcomes are, in turn, the level of net wealth, the ratio of financial wealth to labor income, and the rank in the cohort-specific net wealth distribution.[10]

We then test the effect of initial exposure to wealth inequality on investment in risky real and financial assets and on debt behavior in the 1999-2007 period. Specifically, we test of an effect on stockholding, owning a business or practice (as indicated by self employment), homeownership, and on the ratio of household debt to labor income. Each of these variables appear, in turn, as the dependent variable, Y_{ikm0t}, in our regressions, where i denotes the household, and k the country of origin of the household head:

$$Y_{ikm0t} = \alpha_1 \cdot X_{ikm0t} + \alpha_2 \cdot X_{m0} + \beta \cdot WINEQ_{m0} + \gamma_m + \gamma_k + \gamma_0 + \gamma_t + \epsilon_{ikm0t} \tag{1}$$

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[9]We compute this top 10% wealth share from the full LINDA sample, by municipality and year of arrival. As this is taxable net wealth, it is bounded below by zero.

[10]The wealth rank is the percentile in which the refugee household finds itself in the net wealth distribution among all sampled households in LINDA with the same birth cohort year, regardless of the origin of the household head. Thus, it compares the refugee household to all households in Sweden whose household head had the same age in the year of observation.

In estimating the causal impact of this early exposure to wealth inequality, β, we control for various observed characteristics of the household, X_{ikm0t}. These include the age category and gender of the household head, the occupational status (distinguishing between those who are employed, unemployed, retired, or students), the marital status, as well as the household size and adult-children composition.

We introduce a municipality fixed effect, γ_m, to account for time-invariant institutional and other environmental features of the municipality where the refugee was initially placed, i.e., correlated effects that may have been relevant for household choices and later outcomes.[11] We are identifying the effect of exposure to local wealth inequality in the municipality from time variation of the wealth inequality measure over the range of years of initial settlement, 1987 to 1991. Figures O.A.2 to O.A.6 give a visual impression of this time variation, when viewed in sequence. In robustness exercises, we also introduce controls for other time-varying features of the initial municipality, X_{m0}, with $0 \in [1987, ..., 1991]$, namely average wealth, average household income, and income inequality in the initial municipality, so as to avoid that our local wealth inequality measure simply reflects such other potentially relevant factors that were also changing over the refugee arrival period.

In order to control for macroeconomic and other time varying aggregate factors, we include further time effects: for the arrival year of the refugee, γ_0, and for the observation year of the endogenous variable, γ_t. Finally, we introduce a fixed effect for the country of origin, γ_k, to capture language and other cultural considerations that may systematically influence refugee outcomes and economic choices, as well as social and professional interactions.

We present OLS regression coefficients when the endogenous variable is continuous, and coefficients from linear probability models when we study participation or unemployment probabilities. As placement in the initial municipality was exogenous to the refugee and implemented by the immigration authorities, we do not need to instrument initial wealth inequality to isolate the causal effect of interest. For skewed continuous variables, such as wealth and income, that may also include zeros, we adopt the inverse hyperbolic sine (IHS) transformation, which admits an elasticity interpretation for coefficients. We correct standard errors through clustering at the initial

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[11]Sweden had 284 municipalities at the time of implementation of the program, of which 277 participated in the refugee allocation process. Subsequent antagonism within some municipalities resulted in the somewhat larger number of 290 observed today.

municipality level. Our estimation allows wealth inequality in the initial municipality to influence subsequent outcomes and economic behavior through various channels other than those for which we explicitly control.

If college-educated households respond to mobility opportunities, we would expect wealth inequality exposure to encourage these risky choices in localities that exhibit relatively greater wealth mobility opportunities, and to be muted in localities where mobility is limited. To investigate this, we compute the share of households who were in the top 10% of each municipality's wealth distribution right before the allocation of refugees started, i.e., in year 1986, and who were also in the top 10% of the wealth distribution right after the allocation of refugees was completed, in year 1992. We then repeat our regression analysis, splitting the sample into municipalities with above- and below-median probability of wealth mobility.

To get a first impression of the data, we plot in Figure I, Panels (a) and (b), the evolution of average wealth during the years of observation (1999-2007), splitting the sample of refugee households by educational attainment; and the sample of municipalities by the degree of wealth mobility and by the extent of initial wealth inequality around the settlement years. The two panels show this evolution of household wealth for municipalities with high (i.e., above median) and with low wealth mobility, respectively. Even without controlling for any further regional or household characteristics, we see in the top panel that the college educated refugees, who were exposed to above-median wealth inequality and mobility in areas offering considerable wealth mobility opportunities, tend to grow their wealth more than their counterparts who were exposed to low inequality. The observed wealth gap grows over time, both relative to their college-educated peers, but especially relative to their less educated counterparts, who remain unresponsive to initial local wealth inequality, despite considerable mobility opportunities. The bottom panel shows the picture for municipalities with below-median local wealth mobility at the time of settlement. The difference is striking: in areas with limited wealth mobility opportunities, the pattern of wealth accumulation fails to register any significant growth or responsiveness to wealth inequality exposure for either education group. Our econometric findings below will be controlling for numerous factors but will not change the substance of this picture.

Our hypothesized mechanism envisages a link between wealth inequality exposure in areas providing wealth mobility opportunities, and portfolio behavior. We explore whether the wealth

generation mechanism extends to labor market behavior and human capital accumulation. Such an effect should be reflected in key labor market outcomes in the medium to longer run: the income level, the probability of unemployment, and investment in human capital after initial exposure. We test for the presence of a labor market channel by regressing these outcomes on wealth inequality, and we explore possible channels other than response to opportunity. Finally, in section 5, we take a closer look at possible reasons for the unresponsiveness of the less educated, bringing together econometric estimation and lessons from relevant available research.

4   Effects of Exposure to Local Wealth Inequality and Mobility

4.1   Effects on Household Wealth Outcomes

In this section, we present our findings regarding the effect of initial exposure to local wealth inequality on household wealth level and position observed about 10 to 20 years later (1999-2007), using the model described in section 3.3. We identify the effects out of the variation in top 10% shares across the five arrival years (1987-91). This time variation for each municipality is depicted graphically in Figures O.A.2-O.A.6 by means of successive geographical heat maps of Sweden.[12]

Interestingly, when we divide the population into the two subsamples by the level of education, we find a strongly statistically significant effect on the wealth level and percentile of those households who had at least a college education, but no statistically significant effect in the less educated subsample (Table III). In terms of economic magnitude, a one standard deviation increase in the initial wealth inequality to which a better-educated household was exposed upon settlement increases her rank in the birth cohort wealth distribution by 7 percentiles 10 to 20 years later, on average.[13] This estimate corresponds to a sizable 23% (7/30*100) increase in the net wealth rank of refugee immigrants.

Indeed, we also find a significant positive effect of initial exposure to wealth inequality on

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[12]Our data are consistent with aggregate data for the same period from Statistics Sweden ("Wealth distribution in Sweden 1997 looking back to 1975", ISSN 1400 - 3147). In these data, the top 10% wealth share in Sweden is reported at 56.7% in 1988 and 58.7% in 1990, with an average of 57.7% between 1988-92. In our data, the average wealth share of the top 10% is 55.1% with a standard deviation of of 8.4%.

[13]To compute the estimated effect of a one standard deviation change in the initial wealth inequality to which the refugee was exposed upon settlement, we need to multiply the coefficient estimate by 0.084, which represents a standard deviation of 8.4 percentage points. When the outcome variable is expressed in IHS, this represents a semi-elasticity.

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the wealth-to-income ratio for the more educated group but not for those without any college education (columns (5)-(6) of Table III).

Do educated households respond more to particularly high levels of wealth concentration in the top 10% of the wealth distribution? In our data, the wealth concentration observed in different municipalities ranges from 31% to 76%. In Table O.A.6, we have replaced the continuous measure of the top 10% wealth share with (three) quartiles of the size of this share. We find that initial exposure to wealth inequality registers significantly higher effects on the subsequent wealth level of refugees and on their position in the cohort-based wealth distribution when the top 10% share takes values in the third or fourth quartiles, i.e., when it falls in the range between 54% and 76% in our data.

4.2   Effects on Household Risk Taking

The second part of our hypothesis is that exposure to greater wealth inequality at the start of their career tends to encourage people to invest in risky real and financial assets in order to attain higher wealth levels and position. One such mechanism is for a household perceiving greater wealth inequality to be encouraged to undertake greater private risk through entrepreneurship, or self employment more generally. Indeed, Roussanov (2010) showed that investing in a private business would be an optimal response to status concerns, in an objective not just to keep up or catch up with the Joneses, but actually to "beat" them. Such a motive encourages one to engage in private risk, so as to get rich alone, if things do work out. This need not only apply to entrepreneurs but also to self-employed professionals, such as lawyers or medical doctors, who attempt to make it on their own. In our data, we observe self employment, as opposed to a breakdown between these two categories. Panel A of Table V reports estimates of the effect of exposure to wealth inequality on the likelihood to be self employed for the education split, both with and without a control for the household's position in the wealth distribution at the observation time. Regardless of whether we control for current wealth quartile, we find a significant effect of initial exposure to wealth inequality on the probability of becoming self employed for those with at least some college education, while it is insignificant for households without any college education.

While trying to get richer than their peers can push people towards private risk, stockholding

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opportunities provide another means to generate wealth: they are much more widely accessible, do not require sizable investments nor entail large downside risks, and they open up greater possibilities for risk diversification. Indeed, household-level survey data for the US show that stocks and mutual funds comprise a much bigger part of the portfolios of college graduates than of any other education category (see Fig. O.A.7). Panel B of Table V presents estimates of the effect of initial exposure to wealth inequality on the probability of exposed households to hold stocks in their portfolio later in life. Our estimates suggest that the college educated who were exposed to greater wealth inequality in the municipality of their initial placement were systematically more likely to be holding stocks in the medium to longer run. In terms of economic magnitude, a one standard deviation increase in initial exposure to local wealth inequality increases the probability to hold stocks by approximately 18% on average.[14]

Housing represents the primary saving instrument for most households, as described in Goodman and Mayer (2018). A home is a real asset offering services to homeowners, an important component of wealth for most, and it can also be a source of status. Panel C of Table V reports estimates of the role that exposure to wealth inequality in the municipality of initial placement plays in homeownership observed in the medium to longer run. These estimates control for marital and occupational status, age, and household size, in addition to the full set of fixed effects. Estimates in columns (3) and (4) also control for one's position in the wealth distribution and for level of income. When we split the sample, we again find a strongly statistically significant effect of initial exposure on the probability of subsequent homeownership among those with at least some college education. By contrast, we find no systematic effect on the incidence of homeownership among those who were exposed to greater wealth inequality but did not have any college education.

For any given level of assets, net wealth can also be boosted by keeping debt levels low. We have already seen in column (5) of Table III that greater exposure to wealth inequality leads to a higher wealth-to-income ratio for the more educated households. Table VI presents our corresponding estimates for the debt-to-income ratio observed later in life. Here we find that initial exposure to wealth inequality does have a statistically significant moderating effect on the debt exposure of those without any college education, controlling for household characteristics and the full array of fixed effects. We will revisit this finding below.

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[14]This is computed as (0.785*0.084)/0.504.

Taken together, our baseline estimates support our hypothesis that exposure to greater wealth inequality at career launch led those with at least some college education to take on more financial and real risk, while it failed to have a similar effect on those without any college education. The tendency of the less educated to participate in risky financial or real assets appears to be unresponsive to the wealth inequality they experienced, but for debt, our baseline estimates indicate a mitigating effect of exposure to greater wealth inequality. We next consider whether wealth inequality matters or is simply proxying for potentially relevant but omitted municipality characteristics.

4.3   Exposure to Wealth Inequality and Regional Wealth Mobility Opportunities

We have so far provided evidence in support of the hypothesis that initial exogenous exposure to wealth inequality contributes to better wealth outcomes only among the college educated and through greater tendency to invest in risky real and financial assets. The remaining part of our hypothesis is that these greater tendencies are generated in response to opportunities for wealth mobility. In this section, we provide evidence that the responses of the college educated to greater wealth inequality at the start of economic life are only observed in localities that provide considerable (above median) wealth mobility opportunities, but not in others.

As a measure of available wealth mobility opportunities in the locality, we compute the share of households who were in the top 10% of the municipality's wealth distribution right before the allocation of refugees started, i.e., in year 1986, and who were also in the top 10% of the wealth distribution right after the allocation of refugees was completed, in year 1992. We find that, across all municipalities, the median value of this share was about 67%. We then distinguish the municipalities of arrival into two groups: those providing considerable mobility opportunities, where the share of the initial wealthy in 1986 that remained in the top 10% of the distribution in 1992 was below the median of 67%; and those providing limited mobility opportunities, where this share was above the median.

We rerun our benchmark estimations separately for these two sets of initial municipalities. We find that our benchmark estimates (reported in Tables VII to X) are in general robust in the group of municipalities where greater wealth mobility is observed around the arrival times of refugees,

but exposure to greater wealth inequality does not generally contribute to better outcomes or more risk taking even among the more educated households in the less mobile municipalities.

Specifically, Table VII reports that exposure to greater wealth inequality tends to lead to larger wealth levels and to attainment of higher percentiles in the cohort-based wealth distribution later in life, but this systematic link is present only for the more educated refugees that arrive in municipalities with greater mobility. Quantitatively, a one standard deviation increase in the initial wealth inequality in high mobility areas, to which a better-educated household was exposed upon settlement, increases its rank in the birth cohort wealth distribution by 10.5 percentiles ten to twenty years later, on average.

Table IX shows that our benchmark findings on the positive role of exposure to wealth inequality for self employment, stockholding, and homeownership later in life are present only in the more mobile initial municipalities, and the economic magnitudes of the effects are larger than those observed in the base analysis, consistent with opportunity playing a key role in activating these risky choices. Lastly, Table X shows that the effects of exposure found in our benchmark analysis on the financial wealth-to-income ratio and on the debt-to-income ratio are not present among those allocated to municipalities with more limited wealth mobility.

All in all, our three sets of findings, on wealth outcomes, on risky assets, and on the relevance of wealth mobility opportunities provide a picture consistent with our hypothesis, namely that the more educated respond to wealth inequality by making risky asset choices that allow them to exploit opportunities for wealth mobility and to move up in the wealth distribution, validating their perceptions and actions. Our findings suggest that the less educated do not respond in the same way and are thus left behind, regardless of whether they are placed in a locality that provides above-median wealth mobility opportunities. Finally, the inaction of the college educated in areas with limited wealth mobility opportunities serves to validate the importance of opportunity for this propagation mechanism of wealth inequality. We turn next to the issue of whether other mechanisms, alternative to our hypothesis that the more educated respond to wealth mobility opportunities by adjusting their risk taking, might underlie the differential response to wealth inequality exposure between the more and the less educated.

5 Testing for Alternative Channels

In this section, we consider a variety of possible mechanisms propelling the college educated and leaving the less educated behind in the face of greater wealth inequality and mobility opportunities.

5.1 Is Wealth Inequality Proxying for Other Municipality Characteristics?

Could it be that the share of household wealth going to the top 10% of the wealth distribution merely proxies for other key features of the initial municipality and it is these features that actually produce the observed effects? Importantly, our estimations always include municipality fixed effects, and these control for all time-invariant aspects of a municipality that could be playing a role. In this section, we examine whether our time-varying wealth inequality measures could be proxying for omitted relevant time-varying municipality characteristics. In particular, we examine whether households are responding to how wealthy municipality residents are on average, or to average income in the municipality, or to local income inequality.

Table O.A.7 reports regression estimates that include, in addition to the usual controls and fixed effects, controls for mean (logarithms of) wealth and (of) income, and income inequality (measured by the share of total household income received by the top 10% of the income distribution) in the municipality of initial allocation. Columns (1) and (2) refer to the (inverse hyperbolic sine of the) level of net wealth, while columns (3) and (4) refer to the percentile of the household in the wealth distribution during the years of observation of financial behavior (1999-2007). We see that the pattern of effects of exposure to wealth inequality is unaffected by inclusion of these additional controls. Indeed, none of the three additional controls are statistically significant for the better-educated subsample.[15]

Table O.A.9 examines robustness of our findings on risk taking in occupation (columns (1)-(2)), financial assets (columns (3)-(4)), and homeownership (columns (5)-(6)). We find the same pattern of effects of initial exposure to wealth inequality across the two education subsamples, with initial wealth inequality encouraging all forms of risk taking only among the more educated households.

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[15]Initial mean income shows up as significant when initial wealth inequality does not play a systematic role, but higher initial mean income actually pushes in the opposite direction, discouraging wealth accumulation and lowering the subsequent position of the household in the net wealth distribution.

Moreover, the three additional controls turn out to be insignificant for self-employment across the two samples considered. Exposure to greater initial income inequality shows up as discouraging homeownership among the less educated, while initial mean income has a statistically significant but quantitatively very small estimated effect. Taken together, these findings suggest that wealth inequality is not a mere proxy for the overall standing of the municipality in terms of wealth and income nor for its income inequality, and that its relevance for the more educated is robust.

Finally, Table O.A.10 examines robustness of our findings on the ratios of gross financial wealth to income (columns (1)-(2)) and of debt to income (columns (3)-(4)). The findings reported in columns (1) and (2) confirm that exposure to initial wealth inequality encourages subsequent attainment of higher wealth to income ratios only among the more educated. However, column (4) shows that our finding that the less educated tend to limit their debt exposure relative to their income when faced with greater initial wealth inequality, is not robust when we also control for mean income in the municipality of initial placement. Interestingly, this finding on (lack of) robustness is more in line with the overall picture our results paint for responses of the less educated to experiencing greater wealth inequality at the launch of their careers in the country, namely a lack of significant response.

5.2   A Labor Market-Human Capital Channel?

One possibility is that differential wealth outcomes are linked to the labor market: the more educated, when faced with greater wealth inequality, are encouraged and able to access a higher age-income profile, and thus to accumulate more wealth. Our findings in Table IV suggest, to the contrary, that exposure to greater wealth inequality does not systematically result in higher labor income or lower probability of unemployment in the medium to longer term, even for the more educated population group. Further, Table O.A.8 shows that this finding is not an artifact of failing to account for other time-varying features of the initial municipality, which actually turn out to be statistically insignificant. Table VIII not only confirms our benchmark finding that initial exposure to greater wealth inequality does not affect the subsequent level of earnings or the probability of unemployment, but it also shows that this finding has little to do with the degree of

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wealth mobility in the region.[16]

Since the education split matters for our proposed propagation mechanism, it is natural to ask if exposure to wealth inequality triggers a response in terms of human capital accumulation. We, therefore, distinguish between education obtained prior to arriving in Sweden and that obtained after being exposed to the initial municipality. We want to know whether additions to human capital after arrival in Sweden were causally linked to exposure to greater wealth inequality in the initial municipality.

Out of the 5,031 household heads (by the Canberra definition) we include in our sample,[17] 1,261 (or 25% of the total) added at least one year of education between arrival and year 2000, the latter being the reference year we use for our education sample splits. At least half of those who pursued education after arrival were 25 years of age or younger when they arrived in Sweden.[18] We run a regression to examine whether exposure to initial wealth inequality significantly influenced the number of years of schooling accomplished between individual arrival and year 2000, controlling for demographics and income at time of arrival, and for fixed effects of municipality, arrival year and of cultural factors proxied by country of origin.

Table O.A.11 reports our findings for the full sample and for a sample breakdown based on whether the household head had attained at least some college education by year 2000. Our estimates do not support a systematic role of initial exposure to wealth inequality in determining the size of investment in human capital after arrival in Sweden.

All in all, the findings in this first section reinforce the view that exposure to wealth inequality in areas with mobility opportunities triggers portfolio responses that contribute to higher wealth levels and positions rather than labor market responses.

5.3   Relocation

Our benchmark findings highlighted the importance of local wealth mobility opportunities in the initial municipality of placement for wealth outcomes of the college educated later on. This might

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[16]We find one statistically significant coefficient, implying that better-educated refugees arriving in low-mobility regions with greater wealth inequality end up with lower probability of unemployment later on.

[17]We exclude from our main sample a small number of observations that do not state educational attainment both at arrival and in year 2000.

[18]The data include a few negative observations, which represent downgrading of educational qualifications after proper examination of their level by the Swedish authorities. We have set those to zero, as they do not represent investment in human capital.

sound like a purely mechanical effect: people cannot improve their wealth position in areas where there is no wealth mobility. Yet, people can relocate in principle: the educated who are exposed to greater wealth inequality even in less mobile regions could in principle move to more mobile ones, as part of their strategy to reach the top. In view of this, it is hard to understand why the mobility opportunities in the initial location matter so much for subsequent wealth outcomes. To shed light on this, we examine whether there is a systematic link between exposure to wealth inequality and relocation by the start of the observation period for wealth outcomes and portfolio behavior.

We know already from Section 3.1 that the time spent by a refugee household in the initial municipality was on average approximately 9 years. We define an indicator variable on whether the household has moved to a different municipality by the year of 2000, and regress this variable on the level of wealth inequality in the initial municipality, household controls as defined at the time of arrival, as well as on a battery of fixed effects.

The regression results for the full, better-educated, and less-educated samples are reported in Table O.A.12. As shown in column (1), we observe no significant effect of initial wealth inequality on the subsequent moving decisions of households in the full sample. When we split the sample by the level of education (see columns (2) and (3)), we observe similar insignificant effects.

This set of findings reinforces the importance of initial exposure for determining subsequent outcomes. The findings suggest that it is the combination of local wealth inequality and mobility opportunities that is key for the motivation of people at the start of their economic life. Their actions in response to wealth inequality exposure involve portfolio choices but we do not find evidence that they systematically extend to relocation decisions to pursue wealth mobility opportunities.

5.4 Inspiration, Imitation, and Learning from the Rich

In this section, we examine the role of the presence and actions of better educated people among the wealthiest segment of the local population for the responses of career launchers to greater wealth inequality. In principle, such people could provide role models for the better educated career launchers, prototypes of behavior to mimic, or sources of knowledge from which to learn.

We first investigate whether the differential response of the more educated career launchers

is partly explained by the share of those with at least some college education in the initial municipality's wealthiest 10%, serving as role models. Tables O.A.13 to O.A.16 introduce this share alongside the initial wealth inequality measure. We find that introduction of this additional control does not affect the sign or significance of initial wealth inequality found in our benchmark regressions. Wealth inequality in the initial municipality influences educated households in a similar way, even when we control for how successful educated people have been in general. In addition, the share of educated among the wealthiest does not have a significant effect on the subsequent level or rank of net wealth of either group of households.[19]

These results suggest that the presence (or absence) of role models does not seem to be the source of our exposure effects. However, we do find some evidence that a higher share of educated people among the top 10% of wealthy has a positive effect on stockholding participation among the more educated, and a mitigating effect on their debt-to-income ratio later in life. We also know from the literature on stockholding that the rich are significantly more likely to be holding stocks; and from the literature on peer effects that stockholding behavior can inspire peers to learn from it or, at least, imitate it. In our experiment, however, the educated refugees (career launchers) are not "peers" of the educated rich in the usual sense. Is there evidence that for an operative imitation or learning channel from the rich to the career launchers nevertheless?

Table O.A.17 introduces, as additional control to our regressions regarding the tendency to undertake self employment, stockholding, and homeownership risk, the respective shares of the wealthiest 10% in the initial municipality who made each choice. We find that none of these shares is statistically significant, in either of the two subsamples, while our benchmark measure of wealth inequality retains its role for the more educated subsample.

We probe further by examining whether initial exposure to greater wealth inequality has tended to help the more educated individuals to avoid investment mistakes, such as under-diversification or sluggishness in rebalancing their portfolios. Table O.A.18 reports estimates of the effect of greater initial exposure to wealth inequality on the extent of subsequent diversification and of portfolio adjustments. The former is proxied by the share of directly held stocks in the stock portfolio, while the latter follows Calvet, Campbell, and Sodini (2009) in considering the absolute

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[19]The share of the more educated among the wealthy does not affect the subsequent earnings level, either, but it registers a mitigating effect on unemployment risk among the better educated.

change in the risky portfolio share since the previous period. As indicated in the table, we find no evidence of such beneficial learning effects on the subsequent financial behavior of households.

All in all, our findings do not support a significant direct inspiration, imitation or learning mechanism from the rich to those exposed to greater wealth inequality at the start of their economic life. Indeed, if such a direct mechanism were operative for learning, and especially for imitation, it would be open also to the less educated, making it more difficult to understand why they tend not to respond. We next discuss what may be contributing to non-response to wealth inequality and mobility opportunities by the less educated, drawing both on existing literature and on relevant aspects of our data.

6 Policy Implications: Understanding Non-responsiveness

According to our hypothesis and our findings, the more educated tend to perceive wealth inequality and mobility opportunities and to turn them into risk taking actions that generate better wealth outcomes. Understanding reasons for non-responsiveness of the less educated is relevant for designing policies to contain the propagation mechanism we consider. This section explores what we can infer from our data and what we know from existing literature regarding a potentially limited ability of the less educated to perceive inequality and wealth mobility, as well as to generate high returns.

6.1 Limited Ability to Perceive Wealth Inequality and Mobility

Studies of the degree to which individuals perceive the extent of inequality have found evidence of ignorance regarding the nationwide level and trend of inequality.[20] Are there reasons to believe that less educated individuals have greater difficulty in perceiving local wealth inequality and wealth mobility at the municipality of initial entry, which could contribute to their unresponsiveness?

Recent research on perception, cognition, and developmental and social psychology focusing on (mostly income) inequality in people's minds stresses the importance of three types of infor-

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[20]Gimpelson and Treisman (2018), for example, examined nine large cross-sectional surveys and found that many respondents could not even approximately identify the nationwide average wage, national salaries in different jobs, the poverty rate, or the share of wealth of the nationwide top 1% of the distribution.

mational cues that people receive from their environment: interpersonal comparisons, attention of the media to inequality issues, and physical attributes of the built environment, such as houses, schools, and cars (Phillips et al., 2020).

Kraus et al. (2017) argues that social class signals, received from neighbors in the daily process of comparing one's own socioeconomic standing to that of others, are important for experiencing economic inequality. The findings of Haliassos et al. (2020) on financial literacy externalities using the Swedish refugee sample point to informative social interactions of the more educated refugees in Sweden with their new neighbors and to greater ability of the more educated to interpret signals derived from them. By contrast, the channels of informative social interaction are not found to be open for refugees without college education.

A second consideration is the role of news media in shaping perceptions of inequality. Diermeier et al. (2017), for example, use data from the German SOEP and find evidence that prolonged inequality-related media coverage tends to make people more likely to be concerned about social justice. In Sweden, it is in fact possible to observe wealth levels in the municipality directly. There are public listings of wealth levels by name, and local newspapers often fill their pages with reports on the wealthiest individuals in the locality. More limited access to Swedish local press among the less educated could deprive them of this very helpful source of information on local wealth inequality.

Beyond access to peers and to the press, observation of the environment in the locality can shape perceptions of inequality. Suss (2021) finds that housing value inequality is associated with income inequality perceptions of individuals in two UK surveys, even after controlling for political orientation, education, and other observables. Using text analysis on the factors that influenced respondents' perceptions of inequality, the author finds that local housing is about twice as important as income in shaping perceptions. Indeed, some respondents state that they base their assessment of inequality on things that they can observe, rather than on income that is unobservable to them.

Given that our granular administrative data do not include survey responses on perceptions of inequality, we examine systematic links between the objects of interest (actual wealth inequality and mobility) and municipality characteristics likely to be more readily available to people living there (Tables O.A.19 and O.A.20). To be sure, the object of the exercise is not to assess the deter-

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minants of local wealth inequality or mobility, as these are beyond the scope of the paper, but to find variables that correlate with the objects of interest and could thus be used by the refugees as indicators of both. The nature of these variables can then suggest whether they are less readily observable by those without college education.

Table O.A.19 presents panel OLS regressions of the top 10% wealth share in the five years of refugee arrival on contemporaneous time-varying characteristics of the municipality, as well as on municipality fixed effects and (in column 2) time fixed effects. We see that a modest number of municipality features correlate significantly with the time-varying part of wealth inequality in the municipality and explain close to 90% of the variation. While the number of new firms founded is positively correlated with wealth concentration at the top, greater shares of college attendees, of stockholders, and of homeowners are negatively related to wealth concentration. A higher average income, average wealth, and higher house price inflation in the municipality are associated with greater wealth inequality, whereas the number of firm defaults with lower inequality. In addition to more limited access to social class cues and to the local press, it is reasonable to expect the less educated to be less familiar with, or able to form impressions of such factors that correlate with the extent of local wealth inequality.

Table O.A.20 shows regressions of the indicator of wealth mobility that we used to split the sample of municipalities into high- and low-mobility subsamples, on various municipality characteristics.[21] In these cross-sectional regressions, capturing wealth mobility prospects in the municipality, control variables refer to 1986 values. Based on these estimates, the share of wealth held by the top 10% and the average income level in the municipality in 1986 are (negative) indicators of wealth mobility prospects, while a greater inflow of new firms and a greater share of college attendees, are positive indicators of future wealth mobility.

In view of the low explanatory power of this cross-sectional regression, it is fair to say that figuring out the extent of wealth mobility through indicators available at the time of initial location is not straightforward for any of the newly arrived refugees. It may not be unreasonable to conjecture, however, that as a result of homophily, college-educated refugees are more likely to come across college graduates and attendees, as they are to perceive wealth inequality and con-

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[21]This indicator is the probability of a municipality resident who was not in the top 10% of wealthy in 1986, one year prior to the first arrivals, to be in the top 10% in 1992, after the entry of refugees in our sample was completed.

centration at the top, as indicated by the wealth inequality regression. Indeed, our core findings in previous sections, on the importance of above-median wealth mobility and above-median wealth inequality for registering significant effects, are also consistent with observability being a relevant factor, even for college educated households able to generate high returns.

All in all, existing literature and the correlations of inequality and mobility with indicators found in this section suggest that difficulties in perceiving local wealth inequality and, especially, mobility opportunities do exist and could be part of the reason for non-response of the less educated, apart from any objective difficulties they may have in managing wealth and risky assets.

6.2   Limited Ability to Generate Wealth

A number of recent studies find a positive link between educational attainment and the level of returns on wealth and on its components. A close positive correlation between educational attainment and returns on net wealth and on each of its main sub-components is found by Girshina (2019) in Swedish data and by Fagereng et al. (2020) using data from Norway, while Barth et al. (2020) find a positive relation between educational attainment and retirement wealth among US households. In addition to limited ability, there is evidence that individuals of lower socio-economic status tend to form more pessimistic expectations of stock returns, and this discourages them from participating (Kuhnen and Miu, 2017).

If limited ability to generate wealth, combined with pessimism, is an important issue for the less educated, we would expect it to manifest itself even in areas that exhibit high wealth mobility specifically of the less educated. For this purpose, we split municipalities based on the (above- or below-median) wealth mobility of those without college education in particular. In unreported regressions, we find that the less educated in areas with high mobility for them are significantly more likely to enter into self employment, but no more or less likely to invest in risky financial or housing assets. Despite this greater tendency of the less educated to engage self employment, though, their exposure to greater inequality does not translate into higher levels of subsequent wealth or higher position in the cohort-specific wealth distribution. This suggests that, even when mobility opportunities are available to the less educated and some response in self employment is registered, they fail to use the full range of opportunities effectively, so as to boost their wealth

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level and position in the distribution.

Is education an independent causal factor for higher wealth returns among the more educated? Here views differ. Girshina (2019) uses three alternative instruments, namely family background and ability, within-siblings variation in educational attainment, and a reform of compulsory schooling to argue for a causal effect of education. Fagereng et al. (2020) employ an exogenous increase in schooling requirements from 7 to 9 years and show that, in their data, the correlation between educational attainment and returns disappears in instrumental-variable estimation. They argue that the positive relation between education and returns reflects a correlation between innate wealth management ability and educational attainment, with the former being ultimately responsible for the higher returns to wealth and its components. Barth et al. (2020) find that average US household polygenic scores (predictive indices aggregating multiple genetic markers) robustly predict educational attainment as well as retirement wealth in the US Health and Retirement Survey. Higher polygenic score households are found to be more likely to invest in stocks and in private businesses.

The continuing debate on whether the level of educational attainment is an independent factor that generates opportunities for more profitable participation in risky assets and eventual wealth creation, or a joint outcome of innate abilities for wealth management is important for whether extensions in compulsory education are part of the arsenal to mitigate the source of propagation of wealth inequality that we find.

7 Conclusions

This paper is motivated by a novel pattern of cross-country survey evidence linking wealth concentration at the top to differential perceptions of equality of opportunity and fairness by education. Our hypothesis is that the more educated, when exposed to greater wealth inequality at the start of economic life, tend to interpret inequality as a self-fulfilling opportunity to achieve higher wealth levels, while the less educated tend to remain unresponsive.

Using a refugee allocation program in Sweden over the period 1987-1991, the paper tests this hypothesis by studying whether and how exposure to wealth inequality at the launch of one's economic life tends to influence economic and financial behavior and outcomes 10 to 20 years

later.

We find that the college educated in areas with above-median wealth mobility opportunities tend to respond by being more likely to choose self employment, to hold risky financial and real assets, and thus to reach higher levels of wealth. By contrast, those less educated tend to be largely unresponsive to their initial exposure to wealth inequality. This difference tends to propagate wealth inequality. Furthermore, wealth inequality is not a mere proxy for the overall standing of the municipality in terms of mean wealth and mean income nor for its income inequality.

We do not find that exposure triggers labor market responses by the better educated, in the form of subsequent human capital accumulation, income level, or unemployment probability, nor relocation. While inspiration from college-educated "role models", imitation or learning from their risk taking choices could have an influence on the college educated, they do not appear to have systematic effects. The picture remains one of the more educated responding to wealth mobility opportunities through risk taking.

What should we make of the tendency of some to not respond to greater wealth inequality? We find that the less educated do not respond to wealth inequality even in areas where mobility opportunities for them are greater. Their lack of response is likely attributable to a combination of more limited ability to earn higher returns, associated pessimism, and greater difficulty in assessing local mobility opportunities.

The different reaction to wealth inequality at career launch tends to propagate wealth inequality, boost the share of the more educated at the top of the wealth distribution, and reaffirm their financial and economic choices. While redistributive wealth taxation distorts incentives for risk taking, empowerment of the less educated to perceive wealth mobility opportunities and to generate higher returns could be a significant component of a different strategy to limit propagation. To be successful, such a strategy is unlikely to be based on lengthening compulsory education, which may well be non-causal. More promising could be to develop a multi-pronged approach, that improves perception of opportunities among the less educated, as well as their ability to generate higher returns through participation in risky assets.

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Table I: Exposure to Wealth Inequality and Household Beliefs about Opportunity and Fairness: Survey Evidence

This table presents coefficient estimates from linear probability model regressions of household beliefs about opportunity and fairness in the society, respectively. In all regressions, we control for a rich set of household characteristics and a batter of country-level variables. Standard errors are clustered at the region (NUTS) level, and corresponding t-statistics are reported in parentheses. We consider a sample of 10,157 households from the EU15 countries. Better-educated Sample includes households with at least some college education, while Less-educated Sample consists of households with a high school degree or less. The country-level information for wealth inequality, income inequality, the share of public spending in the GDP, and unemployment rate comes from OECD. The per adult national wealth and per adult GDP come from the World Inequality Database. Observations are weighted by the relevant survey weights. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	Opportunity		Fairness	
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Top 10 Wealth Share (in %)	0.0035**	0.0012	-0.0026	-0.0078***
	(2.44)	(0.51)	(-0.84)	(-2.79)
Male	0.0068	0.0095	0.0863***	0.0529***
	(0.39)	(0.45)	(5.06)	(2.71)
Age	-0.0000	-0.0001	-0.0000	0.0009
	(-0.02)	(-0.12)	(-0.02)	(1.00)
Political beliefs: Centre	0.0790***	0.0825***	0.0992***	0.0338
	(3.81)	(3.50)	(3.99)	(1.48)
Political beliefs: Right	0.0923***	0.0634*	0.1803***	0.0856***
	(3.30)	(1.75)	(5.97)	(3.24)
Income quintile II	0.0474	0.0664**	0.0382	0.0177
	(1.31)	(2.42)	(1.01)	(0.60)
Income quintile III	0.0793*	0.1467***	0.0236	0.0422
	(1.84)	(4.71)	(0.66)	(1.17)
Income quintile IV	0.1166**	0.1229***	-0.0029	-0.0099
	(2.54)	(3.16)	(-0.08)	(-0.27)
Income quintile V	0.1233***	0.2678***	0.0388	0.0917
	(2.91)	(6.16)	(1.05)	(1.48)
Self-employed	0.0386	-0.0176	-0.0014	-0.0151
	(1.04)	(-0.35)	(-0.03)	(-0.33)
Employed	0.0696***	0.0400*	0.0207	-0.0210
	(2.74)	(1.67)	(0.55)	(-0.79)
Single living with partner	-0.0213	0.0050	-0.0322	0.0426
	(-0.74)	(0.11)	(-1.13)	(1.08)
Single	-0.0071	0.0952**	-0.0091	0.0848**
	(-0.19)	(2.30)	(-0.27)	(2.14)
Divorced/separated	-0.0093	0.1054**	-0.0342	0.0402
	(-0.24)	(2.43)	(-0.70)	(0.95)
Widow	0.1249**	0.0927**	0.0811	0.0748*
	(2.16)	(2.08)	(1.50)	(1.66)
HH Size (=2)	0.0449	0.0533	0.0311	0.0561
	(1.27)	(1.51)	(0.81)	(1.59)
HH Size (=3)	0.0910**	0.0250	0.0611	0.0546
	(2.34)	(0.69)	(1.43)	(1.38)
HH Size (>=4)	-0.0367	0.0719*	0.0110	0.1047*
	(-0.90)	(1.74)	(0.25)	(1.95)
Income Inequality (Palma)	-0.0558	0.1927	-0.0406	-0.0064
	(-0.48)	(1.34)	(-0.24)	(-0.05)
National wealth per adult	0.1401*	0.2099***	-0.0228	0.1004
	(1.84)	(2.69)	(-0.19)	(1.18)
GDP per adult	0.1480	0.3223**	0.2695*	0.0885
	(1.40)	(2.26)	(1.89)	(0.71)
Social spending (% GDP)	0.0035	0.0075	-0.0014	-0.0137***
	(0.88)	(1.38)	(-0.24)	(-2.73)
Unemployment rate	-0.0120***	-0.0122***	-0.0115***	-0.0115***
	(-3.55)	(-3.89)	(-2.68)	(-3.91)
Constant	-2.9667**	-5.9873***	-2.0748	-1.1287
	(-2.52)	(-4.80)	(-1.46)	(-1.12)
Observations	5,469	4,688	5,429	4,689
R-squared	0.0805	0.1066	0.0580	0.0390

Table II: Summary Statistics

This table presents summary statistics for the variables employed in the empirical analysis. The sample consists of 5,105 refugee immigrant households for the time period between 1999 and 2007. Panel A reports the mean, standard deviation, and number of observations for the outcome variables defined at the household level. Panel B reports the mean, standard deviation, and number of observations for the initial municipality characteristics observed between 1987 and 1991. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. For variable definitions, see Online Appendix A.

	Full Sample			Better-educated Sample			Less-educated Sample		
	Mean	SD	Obs	Mean	SD	Obs	Mean	SD	Obs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Initial Municipality Characteristics									
Initial Wealth Inequality	0.551	0.084	45,897	0.551	0.083	13,918	0.551	0.085	31,979
Initial Mean Wealth	12.32	0.226	45,897	12.32	0.234	13,918	12.32	0.223	31,979
Initial Income Inequality	0.263	0.024	45,897	0.264	0.024	13,918	0.263	0.024	31,979
Initial Mean Income	12.38	0.145	45,897	12.38	0.155	13,918	12.38	0.139	31,979
Panel B: Outcome Variables									
Net Wealth Level	64,140.5	759,561	45,897	120,765.4	1,180,413	13,918	39,496.02	468,645.4	31,979
Net Wealth Rank	30.84	21.72	45,897	30.71	24.79	13,918	30.90	20.242	31,979
(IHS) of Earnings	12.58	2.49	45,897	12.96	1.94	13,918	12.42	2.59	31,979
Unemployed	0.327	0.469	45,897	0.268	0.443	13,918	0.352	0.478	31,979
Self-employed	0.104	0.306	45,897	0.107	0 .309	13,918	0.103	0.305	31,979
Stock Market Participation	0.361	0.480	45,897	0.504	0.500	13,918	0.298	0.457	31,979
Homeownership	0.270	0.444	45,897	0.363	0.481	13,918	0.229	0.421	31,979
Wealth-to-Income Ratio	0.215	0.496	44,468	0.311	0.583	13,674	0.172	0.446	30,794
Debt-to-Income Ratio	0.705	1.29	44,468	0.834	1.37	13,674	0.648	1.25	30,794

Table III: Exposure to Wealth Inequality and Household Wealth

This table presents coefficient estimates from OLS regressions of household net wealth. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and net wealth in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	(IHS of) Net Wealth		Net Wealth Percentile		Wealth-to-Income Ratio	
	Better-educated	Less-educated	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)	(5)	(6)
Initial Wealth Inequality	33.373***	-2.097	85.741***	-10.342	1.745**	-0.467
	(2.71)	(-0.33)	(3.11)	(-0.81)	(2.49)	(-1.50)
Age 30-45	1.494	0.774*	-1.387	-9.250***	-0.003	0.054***
	(1.54)	(1.87)	(-0.52)	(-8.16)	(-0.04)	(3.82)
Age 45-60	5.649***	1.567***	1.320	-16.156***	0.032	0.025
	(4.87)	(3.26)	(0.44)	(-12.88)	(0.48)	(1.51)
Age 60-75	7.120***	2.590***	-8.292**	-27.348***	-0.024	0.011
	(4.40)	(3.84)	(-2.21)	(-18.86)	(-0.29)	(0.42)
Male	-1.032*	-0.825***	-1.697	-1.571***	0.043	-0.033***
	(-1.82)	(-2.90)	(-1.46)	(-2.75)	(1.44)	(-2.63)
Student	-2.054***	-1.236***	-5.834***	-3.140***	0.135**	0.047**
	(-3.09)	(-2.79)	(-3.92)	(-3.15)	(2.52)	(1.99)
Retired	0.663	0.841*	-0.286	-1.200	-0.043	-0.037*
	(0.82)	(1.85)	(-0.17)	(-1.59)	(-0.95)	(-1.95)
Employee	0.511	1.361***	0.628	1.911***	0.016	0.055***
	(1.11)	(5.49)	(0.73)	(4.06)	(0.78)	(5.00)
Married	1.618***	1.547***	2.984***	2.373***	-0.022	0.023*
	(2.93)	(4.79)	(2.67)	(3.85)	(-0.85)	(1.90)
Nbr of adults	-1.825***	-1.198***	-3.952***	-2.373***	0.001	0.005
	(-5.24)	(-7.06)	(-5.13)	(-7.50)	(0.09)	(0.65)
Nbr of children	-0.023	-0.071	-0.273	0.051	0.003	-0.005
	(-0.10)	(-0.55)	(-0.59)	(0.23)	(0.22)	(-1.33)
Income	4.745***	2.458***	11.249***	4.032***		
	(10.15)	(8.20)	(9.11)	(6.78)		
Constant	-92.796***	-35.639***	-175.411***	0.330	-1.259***	0.210
	(-11.51)	(-7.29)	(-8.74)	(0.03)	(-3.33)	(1.20)
Observations	13,918	31,979	13,918	31,979	13,674	30,794
R-squared	0.2663	0.1404	0.2471	0.2001	0.1728	0.1070
Arrival-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IV: Exposure to Wealth Inequality and Labor Market Outcomes

This table presents coefficient estimates from OLS regressions of labor market outcomes. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and labor market outcomes in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	(IHS of) Labor Income		Unemployment	
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(1)	(2)
Initial Wealth Inequality	0.071	0.129	-0.317	-0.046
	(0.13)	(0.31)	(-0.68)	(-0.17)
Observations	13,674	30,794	13,918	31,979
R-squared	0.5339	0.3876	0.1614	0.1193
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Table V: Exposure to Wealth Inequality and Household Risk Taking

This table presents coefficient estimates from linear probability model regressions of household risk taking. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and measure of risk taking in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	Panel A: Self-employment			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	0.756***	0.185	0.639***	0.204
	(3.05)	(0.95)	(2.60)	(1.08)
Observations	13,918	31,979	13,918	31,979
R-squared	0.1995	0.1466	0.2124	0.1650
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	No	No	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

	Panel B: Stock Market Participation			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	0.974**	-0.554	0.785*	-0.526*
	(2.15)	(-1.61)	(1.79)	(-1.66)
Observations	13,918	31,979	13,918	31,979
R-squared	0.2920	0.2057	0.3014	0.2284
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	No	No	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

	Panel C: Homeownership			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	1.163***	-0.118	1.072***	0.013
	(2.79)	(-0.41)	(2.60)	(0.06)
Observations	13,918	31,979	13,918	31,979
R-squared	0.3415	0.2197	0.4102	0.3444
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	No	No	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Table VI: Exposure to Wealth Inequality and Household Debt

This table presents coefficient estimates from OLS regressions of debt-to-income ratio. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and debt behavior in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	Debt-to-Income Ratio	
	Better-educated	Less-educated
	(1)	(2)
Initial Wealth Inequality	1.341	-1.260*
	(1.46)	(-1.91)
Observations	13,674	30,794
R-squared	0.3410	0.2340
Household Controls	Yes	Yes
Household Wealth	Yes	Yes
Arrival-year FE	Yes	Yes
Country-of-origin FE	Yes	Yes
Municipality FE	Yes	Yes
Time-year FE	Yes	Yes

Table VII: Exposure to Wealth Inequality and Household Wealth by Wealth Mobility

This table presents coefficient estimates from OLS regressions of household net wealth split by the degree of regional wealth mobility. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and household wealth outcomes in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	High Wealth Mobility		Low Wealth Mobility	
	Panel A: (IHS of) Net Wealth			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	52.278***	5.475	0.749	-8.053
	(3.68)	(0.64)	(0.05)	(-0.94)
Observations	7,323	17,523	6,595	14,456
R-squared	0.2790	0.1383	0.2889	0.1572
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes
	Panel B: Net Wealth Percentile			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	124.963***	-0.295	15.005	-17.679
	(3.56)	(-0.02)	(0.47)	(-1.04)
Observations	7,323	17,523	6,595	14,456
R-squared	0.2619	0.2074	0.2671	0.2068
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Table VIII: Exposure to Wealth Inequality and Labor Market Outcomes by Wealth Mobility

This table presents coefficient estimates from OLS regressions of labor market outcomes split by the degree of regional wealth mobility. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and labor market outcomes in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	High Wealth Mobility		Low Wealth Mobility	
	Panel A: (IHS of) Labor Income			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(1)	(2)
Initial Wealth Inequality	0.178	0.333	-0.191	-0.001
	(0.29)	(0.63)	(-0.19)	(-0.01)
Observations	7,171	16,926	6,503	13,868
R-squared	0.5606	0.3922	0.5224	0.3917
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes
	Panel B: Unemployment			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(1)	(2)
Initial Wealth Inequality	0.216	-0.085	-1.394**	-0.163
	(0.37)	(-0.26)	(-2.36)	(-0.37)
Observations	7,323	17,523	6,595	14,456
R-squared	0.1788	0.1298	0.1783	0.1193
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Table IX: Exposure to Wealth Inequality and Household Risk Taking by Wealth Mobility

This table presents coefficient estimates from linear probability model regressions of household risk taking split by the degree of regional wealth mobility. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households and measures of risk taking in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

|	High Wealth Mobility		Low Wealth Mobility	
	Panel A: Self-employment			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	0.652*	0.139	0.644	0.160
	(1.94)	(0.55)	(1.61)	(0.55)
Observations	7,323	17,523	6,595	14,456
R-squared	0.2075	0.1691	0.2445	0.1813
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes
	Panel B: Stock Market Participation			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	1.213**	-0.442	-0.146	-0.481
	(2.23)	(-0.97)	(-0.22)	(-1.09)
Observations	7,323	17,523	6,595	14,456
R-squared	0.3184	0.2274	0.3200	0.2414
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes
	Panel C: Homeownership			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	1.576***	0.260	0.342	-0.255
	(3.21)	(0.91)	(0.55)	(-0.69)
Observations	7,323	17,523	6,595	14,456
R-squared	0.4212	0.3501	0.4272	0.3470
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Table X: Exposure to Wealth Inequality and Household Financial Ratios by Wealth Mobility

This table presents coefficient estimates from OLS regressions of financial wealth-to-income and debt-to-income ratios split by the degree of regional wealth mobility. In all regressions, we control for household characteristics, arrival-year fixed effects, country-of-origin fixed effects, time-year fixed effects, and neighborhood fixed effects defined at the municipality level. Standard errors are clustered at the municipality level, and corresponding t-statistics are reported in parentheses. We consider a sample of 5,105 refugee immigrant households in the period 1999-2007. Better-educated Sample includes refugee immigrants with at least some college education, while Less-educated Sample consists of refugee immigrants with a high school degree or less. Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***, respectively. For variable definitions, see Online Appendix A.

	High Wealth Mobility		Low Wealth Mobility	
	Panel A: Wealth-to-Income Ratio			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	2.594***	-0.252	-0.194	-0.766
	(2.89)	(-0.71)	(-0.19)	(-1.48)
Observations	7,171	16,926	6,503	13,868
R-squared	0.1798	0.1122	0.1948	0.1135
Household Controls	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes
	Panel B: Debt-to-Income Ratio			
	Better-educated	Less-educated	Better-educated	Less-educated
	(1)	(2)	(3)	(4)
Initial Wealth Inequality	1.541	-1.450**	1.641	-0.983
	(1.27)	(-2.05)	(0.95)	(-0.81)
Observations	7,171	16,926	6,503	13,868
R-squared	0.3261	0.2550	0.3767	0.2198
Household Controls	Yes	Yes	Yes	Yes
Household Wealth	Yes	Yes	Yes	Yes
Arrival-year FE	Yes	Yes	Yes	Yes
Country-of-origin FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Time-year FE	Yes	Yes	Yes	Yes

Figure I: Exposure to Wealth Inequality in High vs. Low Mobility Regions

This figure plots the evolution of average net wealth of households during the 1999-2007 period based on their initial assignment to municipalities with relatively high versus low wealth inequality and relative higher versus lower wealth mobility, respectively. In Panel (a), we focus on the average net wealth of better- and less-households who were initially assigned to high wealth mobility regions. In Panel (b), we focus on the average net wealth of better- and less-households households who were initially assigned to low wealth mobility regions.
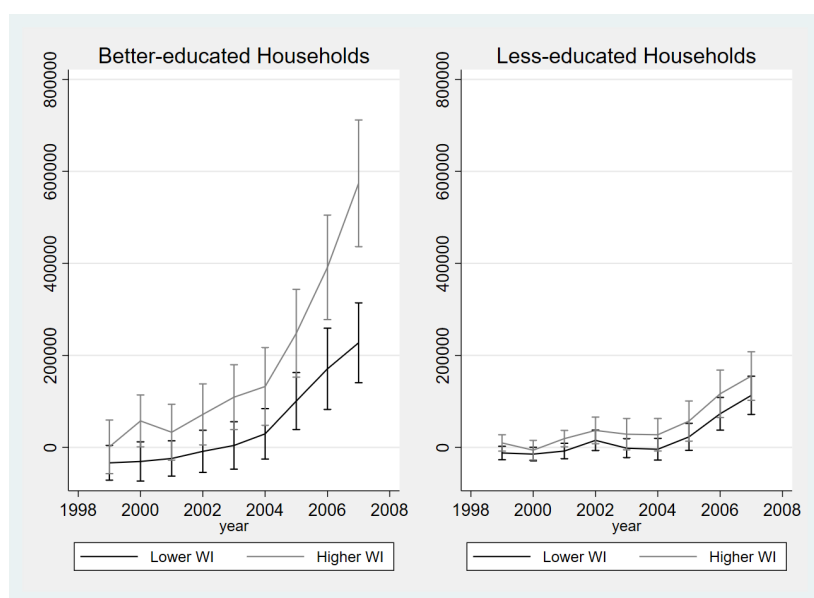
(a) Exposure to Wealth Inequality in High Mobility Regions
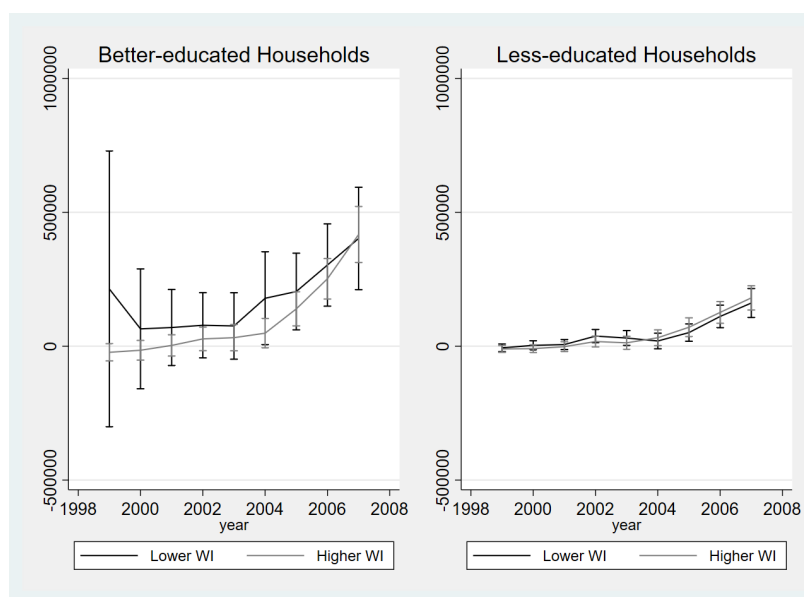
(b) Exposure to Wealth Inequality in Low Mobility Regions

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