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Why do some individuals fear immigration more than others? The role of preferences and ancestral characteristics

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Abstract

This paper presents a novel approach to assessing the importance of preferences in shaping individual opinions about immigration. We rely on the emerging literature dealing with deep historical roots of preference formation, and control for a set of initial conditions experienced by ancestral populations that might have influenced the evolution of individual-specific traits. In addition, we explore the roots of preference variation embodied in the linguistic relativity hypothesis, and control for linguistic and genetic distances between populations. By considering a sub-population of native individuals with one or both foreign-born parents (*i.e.*, second-generation immigrants), we find that parental ancestral characteristics significantly correlate with the current attitudes toward immigration. In particular, historical and linguistic factors associated with higher risk aversion and weaker long-term orientation translate into a stronger concern for the economic consequences of immigration and the admission of poorer immigrants from outside Europe which are considered as closer substitutes for local labor market opportunities, especially among medium and low skilled workers. Risk aversion, on the other hand, has a negligible effect on cultural concerns of immigration. This evidence is robust to alternative definitions of second-generation immigrants and a rich set of geographical and regional fixed effect controls.

Keywords: immigration, immigration policies, preferences, ancestral characteristics, cultural traits.

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1 Introduction

The debate over immigration is now a prominent issue in many European countries. At the beginning of 2020, the number of people living in the European Union who were citizens of non-member countries was 23 million (5.1% of people living in the EU) and the number of immigrants who entered the EU from non-EU countries in 2019 was 2.7 million.[1] The involvement of immigrants in urban unrest and the growing body of evidence on their poor integration and assimilation in employment, education and health have contributed to increasing the interest in the topic.

Public attitudes about immigration are very important, both for policy makers and for society in general. This is because they are likely to influence public policy but also individuals' behavior, which in turn may affect the overall social climate (Esses, Medianu, and Lawson, 2013). Due to their crucial role in the public debate, an extensive body of literature has analyzed the potential determinants of public concerns, reaching different conclusions on the role played by economic and social factors (see, for instance, Scheve and Slaughter (2001); Gang, Rivera-Batiz, and Yun (2013); Fertig and Schmidt (2002); Mayda (2006); Facchini and Mayda (2009)). Several contributions focus on competition in the labor market (for instance, Scheve and Slaughter (2001)), while others (Mayda (2006); Facchini and Mayda (2014), Facchini and Mayda (2009), Bisin and Zanella (2017)) consider both economic and non-economic circumstances, such as national pride and cultural traits.

Together with the above mentioned and widely analyzed individual characteristics, some specific character traits such as patience and risk preferences might also play an important role in shaping attitudes to immigration. For instance, more risk averse individuals may perceive the uncertainties caused by immigration more intensely than less risk averse peers (Shim and Lee (2018)). In the same vein, more patient individuals who tend to delay gratification, may be more tolerant compared to their peers with lower levels of patience. This may be due to the fact that the costs associated with immigration occur in the short run, while the benefits tend to become evident in a long-run perspective (Peri (2016), Jaeger, Ruist, and Stuhler

[1] See for instance: http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics

(2018)).

Even though the relationship between risk and time preferences, and attitudes toward immigration can be considered economically relevant, little has been done to provide a solid empirical contribution to the topic. The lack of rigorous evidence is mainly due to difficulties in finding reliable measures for individual-specific traits. Indeed, isolating the effect of preferences is not an easy task, especially when data are collected by surveys (Ding, Hartog, and Sun, 2010) since the elicited self-assessed attitudes are almost always endogenous. Moreover, preferences are not context-independent and there are several potentially confounding ancestral characteristics that may have influenced their formation and transmission across generations. The fact that individual cognitive perception may be influenced by current and past experiences and/or one's cultural heritage, becomes particularly relevant when both the dependent variable (attitudes toward immigration in this case) and the explanatory factors belong to the same sphere of individual specific characteristics (preferences) are endogenous (Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018)). A further complexity arises from the fact that preferences are not necessarily orthogonal one to each other. Any identification strategy that seeks to solve this complex puzzle must take all these considerations into account.

Following this vein of thought, we take one step ahead in understanding the role of time and risk preferences in shaping the individuals' current opinion about immigration. There are at least two channels through which preferences might have an impact on immigration attitudes. First, natives may perceive immigrants as a threat to their national and cultural identity (*i.e.*, their system of values and beliefs) as well as to their economic well-being (Garcia-Faroldi, 2017). Besides socio-demographic characteristics, such as age, level of education, and occupational status, which may shape preferences over immigration (Card, Dustmann, and Preston (2012); Mayda (2006); Facchini and Mayda (2014), Facchini and Mayda (2009), Bisin and Zanella (2017)), it is plausible to think that individuals who share the same socio-economic and institutional circumstances, but who are generally less inclined to take risks may also have a less favorable perception of immigration than similar counterparts with less aversion to risk and uncertainty (Shim and Lee, 2018). The uncertainty arising from the immigration phenomenon, hence, may be perceived differently according to the intensity of the individuals' aversion to risk. Second, the perception of immigration as an imminent threat

for employment opportunities and economic life in general may also be associated with the overall tendency to discount the future and to delay gratification. Since the economic costs of immigration in terms of wage and employment reduction occur in the short rather than in the long-run when the effects of immigration inflows are either null or positive (Peri, 2010, Jaeger, Ruist, and Stuhler (2018), Ottaviano and Peri (2012); Borjas (2014); Edo and Toubal (2015)), individuals with a lower discount rate (higher patience) may put less weight on these immediate costs and, hence, be less reluctant to the admission of immigrants.

In order to test these conjectures we adopt an indirect approach to preference approximation on the heels of the emerging literature dealing with the deep historical roots of preference formation. We exploit an exogenous source of variation in a set of initial conditions experienced by ancestral populations that might have influenced the formation of preferences and their transmission across generations. First, relying on Galor and Özak (2016) and Sarid, Galor, and Özak (2017), we consider a set of factors related to agricultural potential during the pre-industrial era, and its change over time as a direct proxy of contemporary time preferences. Second, as an exogenous source of variation in attitudes toward risk, we rely on a novel approach based on the linguistic relativity hypothesis (Sapir (1921), Whorf and Carroll (1964), Chen (2013)), and use an innovative linguistic marker developed and empirically validated by Bernhofer, Costantini, and Kovacic (2021) as a proxy for risk aversion. Third, in order to improve the identification of the causal effect of risk preferences, we also control for genetic and linguistic distances between country of residence and parental country of origin. As shown by Becker, Enke, and Falk (2020), these measures significantly correlate with differences in preferences such as risk aversion, altruism, positive and negative reciprocity, patience and trust, with the effects being particularly pronounced for risk and prosocial traits. To isolate the causal effect of preferences we consider a sub-population of native individuals with either one or both foreign-born parents (*i.e.*, second-generation immigrants) as our main analytical sample. In such a way we are able to capture the part of variation in opinions about immigration that can be directly assigned to intrinsic attitudes, without running any risk of reverse causality. Moreover, we reduce any kind of a bias that may arise due to omitted characteristics of country of residence and parental backgrounds.

Our results suggest that ancestral characteristics play an important role in determining the degree of

tolerance toward immigration. Higher historical crop yield potential in the parental country of origin (used as a proxy for individual long-term orientation) has a positive effect on tolerance, accounting for a wide range of geographical characteristics, the number of years since the parental country of origin transitioned to agriculture as well as the confounding effect of a rich set of individual factors. As for risk preferences, individuals whose languages have a higher marker value indicating a higher level of risk aversion, register lower degrees of tolerance. Ancestral characteristics, however, absorb part of the effect of risk aversion which may indicate that agro-climatic factors also partially determine the individual perception of uncertainty and/or have triggered the gradual emergence of grammatical forms underlying the linguistic marker and fostered the transmission of these traits across generations. The results also suggest that the effect of risk and time preferences vary according to the type of immigration concerns. Risk averse and/or less patient individuals prove to be significantly more concerned about the economic consequences of immigration and admission of immigrants from poorer countries, which are considered as closer substitutes for their labor market opportunities, especially among low and medium skilled workers. On the other hand, risk has a negligible effect on cultural and general immigration concerns. The results are robust to several alternative definitions of second-generation immigrants, to the estimation method, and a wide range of controls.

The remainder of the paper is organized as follows. Section 2 introduces the literature on the relationship between ancestral characteristics and preference formation. Section 3 presents our identification strategy and the set of variables used in the empirical analysis. Section 4 describes the estimation strategy, followed by Section 5 which illustrates our main results. Section 6 concludes.

2 On the role of ancestral characteristics and linguistic variation in preference formation

Recent developments in the literature on the historical and cultural roots of preferences represent a significant potential for a better understanding of the role of individual traits in different contexts. Several contributions have tested hypotheses about how the historical characteristics of ancestral populations have influenced the

formation and transmission of preferences, such as patience, trust, cooperation, altruism, positive reciprocity, negative reciprocity and risk aversion. In particular, Galor and Özak (2016) show that higher historical crop yield potential experienced by ancestral populations had a positive effect on the descendants' long-term orientation. Moreover, they find that agro-climatic characteristics in the parental country of origin (such as crop yield, crop growth cycle, and their changes) have also had an impact on different economic behaviors such as technological adoption, education, saving, and smoking. Sarid, Galor, and Özak (2017) confirm the existence of a significant relationship between higher return on agricultural investment in ancestral populations and two different measures of long-term orientation in contemporary environments.

Becker, Enke, and Falk (2020) and Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018), on the other hand, explore the origins of the worldwide variation in preferences by linking genetic and linguistic distances to population-level differences in preferences, and show that these distance measures significantly correlate with differences in preferences between populations such as risk aversion, time preference, altruism, positive reciprocity, negative reciprocity and trust, with the effects being particularly pronounced for risk aversion and prosocial traits. Specifically, these distance measures capture the temporal patterns of ancient population "fission", *i.e.*, they proxy for the length of time since two populations shared common ancestors. As shown by the authors, differential time frames of separation have generated heterogeneity in preferences regarding risk, time and social interactions for two reasons. First, populations that have spent a long time apart from each other were exposed to different historical experiences and environments, which could affect preferences. Second, due to random genetic drift or local selection pressures, long periods of separation lead to different population-level genetic endowments, which might in turn shape attitudes.

Another strand of literature links preference variation to some specific features of linguistic backgrounds, following the so-called linguistic relativity hypothesis (Sapir (1921), Whorf and Carroll (1964)). The essential idea underlying the concept of linguistic relativity is that differences in grammatical structures and/or vocabulary may affect the way speakers perceive and interpret the world they observe and consequently how they behave. In this view, if speakers of different languages tend to think and behave differently depending on the language they use, some dimensions of linguistic structures may also shape their preferences and

decision-making. Chen (2013), for instance, shows that speakers of languages that separate the future from the present tense ("strong FTR" languages) are more prone to dissociate the future from the present compared to speakers of languages that do not employ that specific verb morphology when referring to future events ("weak FTR" or "futureless" languages). As a consequence, they save more, accumulate more wealth by retirement, smoke less frequently and are more physically active. This evidence remains reasonably robust even after controlling for geographical and historical relatedness of languages (Roberts, Winters, and Chen (2015)) and ancestral characteristics from the parental country of origin might have affected the formation of time preferences and triggered the gradual emergence of grammatical forms that fostered the transmission of these traits across generations (Galor and Özak (2016), Sarid, Galor, and Özak (2017)). Bernhofer, Costantini, and Kovacic (2021), on the other hand, analyze the impact of language differences on the cognitive domain by means of an innovative linguistic marker based on the intensity of use of specific linguistic categories in grammatical contexts involving uncertainty. The authors show that the likelihood of being risk averse among second-generation immigrants increases with the frequency of use of these forms, even after controlling for a rich set of controls related to parental linguistic backgrounds and ancestral characteristics from Galor and Özak (2016) and Becker, Enke, and Falk (2020). Moreover, by exploiting the orthogonality of the linguistic marker used by Chen (2013) and the proxy for individual attitudes towards risk and uncertainty, the authors show that the impact of risk aversion on investment decisions is five times larger than the impact of the individual discount rate.

The above contributions linking historical and linguistic characteristics to contemporary preferences represent a solid ground for addressing our research questions. In particular, the strong association between historical return on agricultural investment and long-term orientation on the one hand, and linguistic characteristics and the willingness to take risks on the other, allows us to explore the mechanisms through which individual time and risk preferences, approximated by these characteristics, may affect the formation of attitudes to immigration.

3 Data and sampling

Our empirical exercise relies on the European Social Survey (ESS, henceforth), a biennial cross-country survey covering a large set of European countries (plus Israel) since 2002. The survey contains nationally representative samples of individuals aged 15 or older who reside in private households regardless of nationality, citizenship, or language, and collects information on beliefs, attitudes and behavioral patterns. What makes ESS data particularly suited for the purposes of our analysis is the inclusion of a battery of questions regarding immigration attitudes including economic, cultural and policy aspects. The respondents were natives and first and second-generation immigrants. Moreover, by employing ESS data we are able to link the information on parental characteristics to each respondent, such as the parents' country of birth, educational level, type of occupation, and linguistic backgrounds. Our sample includes individuals residing in 33 countries and interviewed in six consecutive rounds carried out every two years starting from 2008 (round 4) to 2018 (round 9).[2]

3.1 Sample selection and identification strategy

The identification of the causal effect of time and risk preferences on attitudes to immigration is subject to several concerns. First, there could be a reverse causality between preferences and the outcome of interest (attitudes to immigration), both simultaneously extracted from survey data. To overcome this concern, we exploit a set of variables on parental ancestral characteristics as proxies for individual time preferences, and a set of linguistic markers associated with the respondents' primary language, and their parental linguistic backgrounds as proxies for the attitudes to risk and uncertainty. The choice of these exogenous factors is based on recent empirical evidence establishing their predictive potential in explaining the variation of attitudes to risk and time between individuals with different cultural backgrounds described in Section 2 (Galor and Özak (2016), Sarid, Galor, and Özak (2017), Galor, Özak, and Sarid (2020), Bernhofer, Costantini, and

[2]The list of the countries included in the analysis is set out in Table 12 in the Appendix. Four countries (Italy, Cyprus, Albania and Montenegro) were excluded because of the lack of a sufficient number of second-generation immigrants (less than 20). Round 1 was excluded because it indicated parental continent not country of origin. In addition, the information on parental education in rounds 1-3 does not match the methodology of later rounds, hence rounds 2 and 3 were also excluded.

Kovacic (2021)).

Second, the potentially omitted geographical, institutional and cultural characteristics related to ancestral populations (individuals' ancestors) may have influenced the formation and transmission of preferences across generations. To address this concern, we follow Galor and Özak (2016) and include a large set of geographical confounding characteristics of the parental country of origin such as absolute latitude, mean elevation above sea level, terrain roughness, distance to coast or river, and landlocked variables. Moreover, we control for continental fixed effects in order to account for unobserved time-invariant heterogeneity at the continental level, and a set of confounding individual demographic and socio-economic characteristics.

In order to isolate the effect of preferences on immigration attitudes, we rely on a sub-sample of second-generation immigrants, *i.e.*, native respondents with one or both parents not born in the country of interview, and exploit the variation in historical characteristics and cultural attributes related to their parents' country of origin. In such a way we rule out any kind of a potential bias due to omitted parental backgrounds and mitigate the effect of the unobserved heterogeneity in contemporary environments in which individuals live.

Our final sample comprises 9860 second-generation immigrants for which we have complete information on demographic, socio-economic, linguistic and ancestral characteristics, including 80 countries of origin of foreign-born mothers and 83 countries of origin of foreign-born fathers.

3.2 Attitudes to immigration

As for the individual opinion about immigration, the ESS asks respondents a battery of questions at distinct levels of generality. Dimensions of the respondents' opinions are captured by two specific questions related to the effects of immigration on the economy and cultural identity, as well as a general question about the overall perception of the immigration phenomena:

1. *Would you say it is generally bad or good for (this country's) economy that people come to live here from other countries?*

2. *Would you say that (your country's) cultural life is generally undermined or enriched by people coming*

to live here from other countries?

3. *Is (this country) made a worse or a better place to live in by people coming to live here from other countries?*

The answers were categorized on a 10 point scale, ranging from "very intolerant" (score 0) to "very tolerant" (score 10). Given the specific nature of our research question, we mainly focus on questions related to the overall effects of immigration on the economy and culture.[3]

As for the extent to which individuals agree or disagree with more receptive immigration policies, we focus on the following items:

1. *To what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here?*

2. *To what extent do you think [country] should allow people of a different race or ethnic group as most [country] people to come and live here?*

3. *To what extent do you think [country] should allow people from the poorer countries outside Europe to come and live here?*

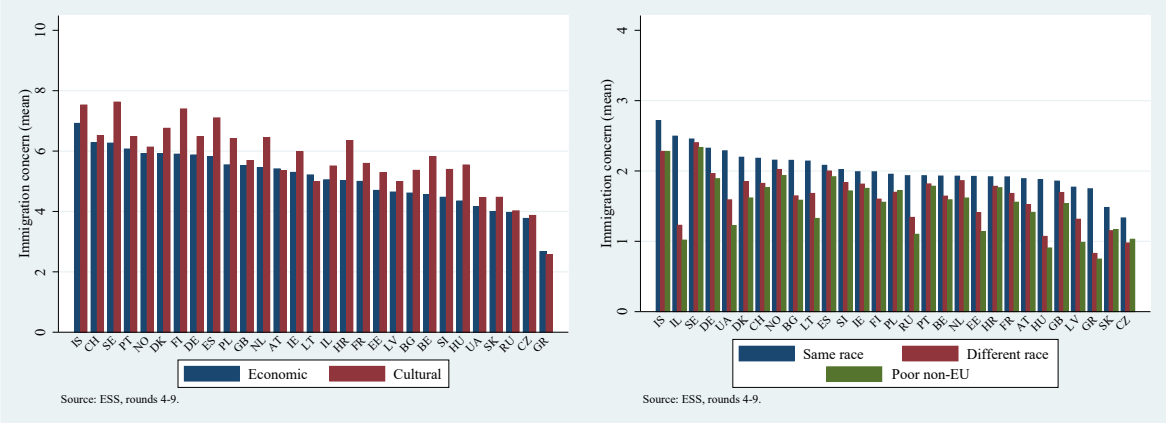
The answers were categorized on a 4 point scale, ranging from "Allow many to come and live here" (score 1) to "Allow none" (score 4). In order to make the scale comparable with the questions on immigration attitudes, we re-scale the answers so that 1 corresponds to "Allow none" (full disagreement) and 4 to "Allow many to come and live here" (full agreement).

Figure 1 displays the average level of tolerance toward immigrants (left-hand side panel), and the average level of agreement with more receptive immigration policies (right-hand side panel) among second-generation immigrants, by country and type of concern. It is worth noting that in almost all countries individuals tend to be more concerned about the economic consequences of immigration which may reflect the perceived or actual impact of immigrants on the labor market and welfare system of receiving countries (Bisin and

[3]In addition to our main specification based on questions 1 and 2, we also consider the overall perception of immigration in question 3 and report the results in the Appendix.

Zanella (2017)). As for the immigration policies, individuals generally tend to be less favorable to admission of poorer immigrants from non-European countries. In particular Hungary, Greece, and Latvia record the lowest level of tolerance while Sweden, Denmark and Israel are the most open to immigrants.

Figure 1: Average level of tolerance about immigration and immigration policies, by country



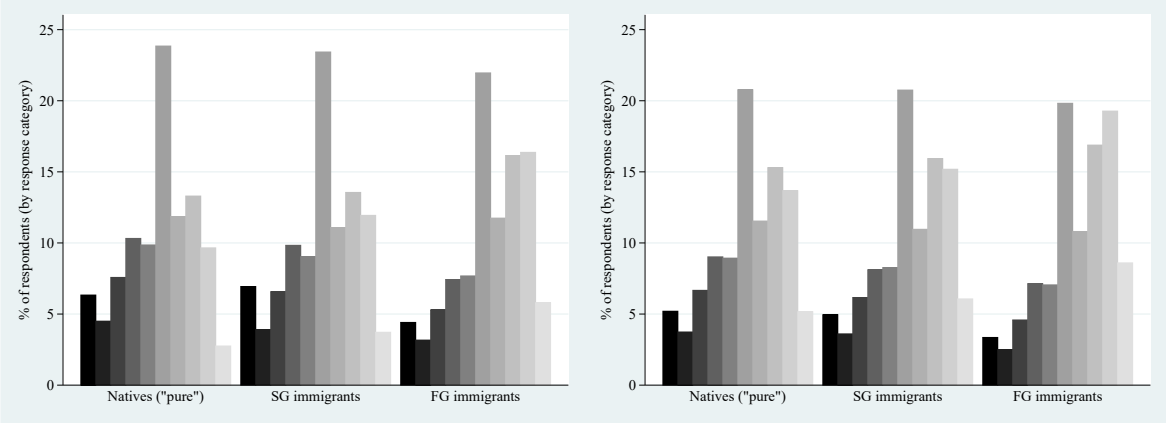
Different generations of migrants, however, may hold different attitudes compared to "pure" natives (*i.e.,* those whose parents were both born in the country of interview). Second generation immigrants, for instance, originate from families with one or both foreign-born parents, while first generation migrants were not born in the country of interview. It is reasonable to suspect that these two categories of migrants may be, on average, less stringent in terms of immigration opinions than "pure" natives. Figure 2 shows the distribution of attitudes to immigration (economic and cultural concerns) separately for "pure" natives, first and second-generation immigrants. For each sub-group of individuals, darker bars (left areas of the graphs) correspond to higher levels of intolerance with decreasing intensity as we move right along the tolerance scale.

The distribution of attitudes is very similar between "pure" natives and second-generation immigrants. These two sub-groups of the population, therefore, tend to have very similar perceptions of the impact of immigration on economic and cultural life.[4] This is not the case with first-generation immigrants where

[4]Differences between different sub-samples are statistically significant.

the distribution is more skewed towards the region of higher tolerance. This suggests that respondents who directly experienced migration are more likely to have favorable attitudes than native individuals because they identify themselves more closely with other immigrants due to their own migration background.

Figure 2: Attitudes to immigration of different sub-groups of the population: economic (left-hand side) and cultural (right-hand side) concerns



3.3 Agro-climatic characteristics and the IRR linguistic marker

To control for ancestral characteristics from parental country of origin that might have influenced the formation and transmission of time preferences, we rely on Galor and Özak (2016) and exploit a set of agro-climatic characteristics conducive to higher returns on agricultural investment: (i) the yield (measured in calories per hectare per year) and growth cycle for the crop that maximizes potential yield before the Columbian Exchange (Putterman and Weil (2010)), (ii) the yield and growth cycle for the crop that maximizes potential yield after the Columbian Exchange, and (iii) the changes in the yield and growth cycles of the dominant crop due to the Columbian Exchange. Pre-1500 agricultural conditions are based on the agro-climatic estimates under low level of inputs and rain-fed agriculture and, hence, do not reflect endogenous choices that may potentially be correlated with time preferences, such as irrigation methods or level of agricultural inputs. The evolution of crop yield in the post-1500 period, on the other hand, captures the expansion of agricultural potential when all regions were equally able to adopt all crops for agricultural production. Since crop yield

in the parental country of origin is distinct from the one of the country of residence, the estimated effect of the historical agricultural potential of the parental country of origin should capture the culturally embodied effect of crop yield on the formation of time preferences and their transmission across generations. Furthermore, we also include a set of geographical factors potentially correlated with agricultural productivity such as absolute latitude, mean elevation above sea level, terrain roughness, distance to coast or navigable rivers, as well as islands and landlocked region dummies.

In order to proxy individual risk preferences, we follow Bernhofer, Costantini, and Kovacic (2021). On the basis of the postulates of the weak version of linguistic relativity hypothesis, the authors develop a new linguistic marker (denominated as *IRR*) which correlates with individual perceptions of uncertainty and risk. More precisely, the marker is based on the intensity of use of specific grammatical categories (*moods*) in grammatical contexts involving uncertainty. In general, when explaining possible or hypothetical situations, speakers of different languages may use *indicative* or *non-indicative* grammatical moods (such as conditional, subjunctive, etc.). Since indicative moods are usually used to assert that a certain proposition is true (as of the actual world), when applied to hypothetical situations, the use of non-indicative moods, according to the linguistic relativity hypothesis, should induce speakers to perceive the situation as more uncertain compared to similar individuals using an indicative mood to describe the identical hypothetical situation. According to this conjecture, in sentences 1 and 2, for example, a hypothetical situation ("leaving event") should be perceived as less uncertain by an English speaker than by an Italian speaker, even though they describe the same possible situation:

1. *I think s/he has left.* [**English**] *Indicative (past-tense)*

2. *Penso sia partito/a.* [**Italian**] *Non-indicative (subjunctive)*

The former expresses the leaving situation by resorting to the indicative mood, while the latter has to use a non-indicative or *irrealis* - IRR mood (subjunctive). In general, by using non-indicative moods more often, speakers move from the region of certainty to that of uncertainty, *i.e.*, their latent area of the unknown is larger than for their peers who speak a less non-indicative mood-intensive language. As a consequence, they

are expected to be more risk averse as the semantic salience of their region of uncertainty increases.

From a cross-linguistic viewpoint there are six grammatical contexts involving hypothetical situations in which non-indicative moods are used more consistently.[5] In order to obtain an indicator measuring the intensity of use of non-indicative moods across languages, each syntactic environment is assigned the value of 1 when a non-indicative mood is used, and 0 when an indicative mood is required. Adding the values, we obtain an indicator of how frequently non-indicative forms are used in a language, so that languages can be ranked according to the intensity of use of non-indicative moods.[6] According to the marker, languages can be classified into three different categories: i) languages with no required non-indicative moods in contexts involving uncertainty (so-called "moodless" languages), ii) those with an intermediate intensity of non-indicative moods, and ii) languages where these moods are frequently required. Bernhofer, Costantini, and Kovacic (2021) show that intensity of displacement into uncertainty, as measured by the IRR marker, directly influences attitudes to risk, and indirectly their beliefs and behavior in uncertain environments. The higher the value of the marker the greater the likelihood of risk aversion and the lower the propensity to invest in risky assets.

In order to account for individuals' risk preferences, we assign the linguistic marker both to their first language (*i.e.*, the language they use on a daily basis) and to their parental linguistic backgrounds. As for the language assignment to the individual mother's and father's language of origin, we follow Hicks, Santacreu-Vasut, and Shoham (2015) and consider the official language spoken in their country of origin (if available) or the official language spoken by more than 80% of the population in these countries (in all those cases where the country of birth has more than one official language).[7] Finally, to capture the effect of the currently spoken language net of the influence of parental linguistic backgrounds we associate the IRR linguistic marker with the respondents' first language (i.e., the one usually spoken at home).

The linguistic assignment to parental backgrounds described so far may be biased since in many ethnically

[5] For more details, see Bernhofer, Costantini, and Kovacic (2021).

[6] The original linguistic mapping in Bernhofer, Costantini, and Kovacic (2021) covers 38 languages. The list of languages with the respective values of the marker as shown in Table 10 in the Appendix.

[7] Individuals whose parents originate from linguistically heterogeneous countries, such as Switzerland, Belgium or Canada or were born in countries (federations) which do not exist anymore (such as USSR, Yugoslavia, Czechoslovakia, etc.) are excluded from the analysis since we are not able to track their original language and/or the information on parental ancestral characteristics is not available.

heterogeneous (mostly non-European) countries, the members of ethnic minorities rather than majorities are the migrants since they tend to suffer from oppression and/or poor socio-economic conditions. One possibility to solve this issue would be to weight the IRR linguistic marker of each linguistic (ethnic) group by their relative population size in order to obtain a country weighted average. Unfortunately, this is not possible mainly for two reasons: i) the languages of minorities are usually dialects without an official grammar so the IRR linguistic marker cannot be assigned, and ii) the linguistic mapping in Bernhofer, Costantini, and Kovacic (2021) covers 38 mostly European officially recognized languages spoken around the world but does not include any other country or regionally specific language.

3.4 Other controls

To further control for the in-depth origins of the heterogeneity in preferences, we also account for genetic and linguistic distances between country of residence and parental country of origin which, as shown by Becker, Enke, and Falk (2020), significantly correlate with differences in preferences such as risk aversion, time preference, altruism, positive reciprocity, negative reciprocity and trust, with the effects being particularly pronounced for risk aversion. The construction of linguistic distances is based on the methodology proposed by Fearon (2003) which measure the degree to which two countries' languages differ from each other. Genetic distances, on the other hand, are drawn from Spolaore and Wacziarg (2009) and Spolaore and Wacziarg (2018) and quantify the expected genetic distance between two randomly drawn individuals, one from each country, according to the contemporary composition of the population. We use the composite measure of ancestral or temporal distance that is computed as the unweighted average of the standardized values (z-scores) of linguistic and genetic distances.[8] The inclusion of this measure enables a cleaner identification of the effects of risk aversion on attitudes to immigration. However, the coefficients on temporal distances cannot be directly interpreted since they refer to absolute instead of relative distances.

As for the other individual-level characteristics, we consider a rich set of demographic and socio-economic information. Among demographics, we include age, gender, marital status, household size, and number of

[8] For more details on the definition and construction of these distance measures, see Becker, Enke, and Falk (2020).

children. Marital status is dichotomized into a binary variable, assigning value 1 if the respondent says he/she is legally married, or in a legally registered civil union and 0 otherwise. Household size is a discrete variable ranging from 1 to 10. Socio-economic variables include the highest educational attainment and occupational status. In addition, using the ISCO-08 classification, we group occupations into "white collar" and "blue collar" categories. Moreover, we include a dichotomous variable indicating whether an individual has worked abroad for at least six months. We also control for the respondents' self-assessed health (SAH), which is a binary variable with value 1 if individuals declare that their health is very good or good, and 0 otherwise (see Balia and Jones (2008), and Di Novi (2010)).

Self-reported responses on topics such as religion, political involvement and trust are used to control for other non-economic determinants of attitudes to immigration, in addition to those (potentially) captured by ancestral controls and linguistic markers. As regards religion, we include a dummy indicator to capture the intensity of religious feelings. The degree of political interest is measured by individual responses to the following question: "How interested would you say you are in politics - Are you very interested, quite interested, hardly interested or not interested at all?". We dichotomize responses into a binary variable which has value 1 if the respondent is very interested or quite interested, and 0 otherwise. Trust attitudes are measured on a 10-point scale (from 0 - no trust at all - to 10 - trust). Individuals revealing a value greater than 5 are considered "trustful". In addition, we further control for belonging to an ethnic minority. Finally, we control for parental educational attainment and type of their last occupation (white or blue-collar).

4 Empirical strategy

To investigate the relationship between individual attitudes toward immigration and long term orientation and risk preferences, we empirically validate the following hypotheses:

Hypothesis 1 ***Patience and opinion about immigration***

Individuals with a higher general tendency to delay gratification (higher patience) are on average less concerned about the potential imminent (short-run) costs related to immigration, and hence less intolerant.

Hypothesis 2 ***Risk aversion and opinion about immigration***

Since immigration generates risk and uncertainty, both for migrants and host populations in the destination countries, individuals with lower levels of risk aversion are on average less antagonistic to immigration.

The empirical strategy consists in estimating three different sets of reduced-form equations.[9] The first block of models quantifies the potential effect of long-term orientation captured by a set of agricultural and geographical factors experienced by ancestral populations from Galor and Özak (2016), on the individuals' degree of tolerance toward immigration:

$$TOL_{i,p,c,r} = c_0 + \alpha AGR_{i,p,c,r} + \sum_j \gamma Geo_{i,p,c,r,j} + \lambda X_{i,p,c,r} + \theta F_{i,p,c,r} + \epsilon_{i,p,c,r}, \tag{1}$$

where $TOL_{i,p,c,r}$ is an ordinal variable ranging from 0 (full intolerance) to 10 (full tolerance) associated with individual i with parental ancestry p, born and currently residing in country c and region r, $AGR_{i,p,c,r}$ including potential crop yield and crop growth cycle in the parental country of origin, and $\{X_{i,p,c,r}\}$ is a full set of individual level characteristics, $\{Geo_{i,p,c,r,j}\}$ includes geographical characteristics j for individual $i's$ parental country of origin, while $F_{i,p,c,r}$ are the region of current residence and parental continent of origin fixed effects.

The second set of regressions aims at isolating a direct and independent effect of attitudes to risk and uncertainty:

$$TOL_{i,p,c,r} = c_0 + \beta IRR_{i,p,c,r} + \lambda X_{i,p,r} + \theta F_{i,p,c,r} + \epsilon_{i,p,c,r}, \tag{2}$$

where $IRR_{i,p,c,r}$ is the vector of IRR linguistic markers from Bernhofer, Costantini, and Kovacic (2021) associated with the language each respondent speaks most often at home, and with their parental linguistic backgrounds. We consider the lowest category of the marker ("moodless" speakers) as a reference indicator for low risk aversion (*i.e.*, risk takers).[10]

Since preferences are not necessarily independent of each other and some ancestral agricultural and geographic factors may have influenced the formation and transmission of risk preferences, in the last set of

[9] Our choice of reduced form models instead of a two-stage estimation was based on two main reasons. First, as stated in the introductory section, recent developments in the literature have largely established a strong link between the exogenous factors mentioned so far and individual preferences. Second, we do not have reliable preference measures, with the exception of risk aversion, whose strong and robust association with the IRR linguistic marker is documented in Bernhofer, Costantini, and Kovacic (2021).

[10] See Bernhofer, Costantini, and Kovacic (2021) for more details.

models we regress individual attitudes toward immigration on the entire set of preference-related factors:

$$TOL_{i,p,c,r} = c_0 + \alpha AGR_{i,p,c,r} + \beta IRR_{i,p,c,r} + \delta AD_{i,p,c,r} + \sum_j \gamma Geo_{i,p,c,r,j} + \lambda X_{i,p,c,r} + \theta F_{i,p,c,r} + \epsilon_{i,p,c,r}, \quad (3)$$

where $AD_{i,p,c,r}$ is a composite measure of ancestral distance between country of residence and parental country of origin from Becker, Enke, and Falk (2020). Given the specific nature of our empirical strategy, in all model specifications we cluster the robust standard errors at the parental country of origin level. In order to facilitate the interpretation of the estimated effects, we apply the ordered logistic estimation technique and report the coefficients as log odds ratios.

As a robustness check we correct for the fact that in some countries respondents are more or less likely to be part of the sample by applying a specific design and population size weights.[11] Moreover, we establish the robustness of results to the estimation method (ordered logit versus OLS) and clustering schemes, to the inclusion of additional country-level measures of long term orientation and uncertainty avoidance of the parental country of origin from Hofstede (1997), and to alternative categorizations of the linguistic marker.

5 Results

In Table 1 we first show the estimates of baseline specifications for the full sample of individuals (natives and immigrants). Since the estimations over a pooled sample may suffer from a potential bias due to unobserved heterogeneity in contemporary environments leading to an over- or under-estimation of the real effects of preferences, in Tables 2 - 4 we focus on the subset of second-generation immigrants and report the unbiased effect of parental backgrounds on opinions about immigration. Together with the standard definition of second-generation immigrants (*i.e.*, individuals with either one or both parents born in a country different from the respondent's country of birth and residence), we also consider three alternative definitions, namely, native individuals with a foreign-born mother and native father, those with a foreign-born father and native mother, and natives whose mother and father were born in the same foreign country. The comparison of the

[11] The design weights are computed as the inverse of the inclusion probabilities and then scaled such that their sum equals the net sample size. The population size weights are the same for all persons within a country but differ between countries. These weights correct for the fact that most countries taking part in the ESS survey have different population sizes but similar sample sizes.

empirical evidence based on a sub-sample of second-generation immigrants with the one obtained from the full sample alleviates potential concerns related to the representativity of our main analytical sample.

In order to isolate the effect of preferences we proceed as follows. Since agricultural proxies have been shown to influence the evolution of time preferences (Galor and Özak (2016), Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018)), we first consider them separately without controlling for attitudes to risk. As a second step, we estimate a direct and independent effect of risk aversion by means of a set of linguistic markers. In order to isolate the effect of one preference dimension net of another, in the full model we consider the entire set of ancestral agricultural factors and linguistic proxies. Since risk aversion has been shown to be affected to a large extent by deep historical roots embodied in linguistic and genetic distances (Becker, Enke, and Falk (2020)), finally we test the robustness of risk preferences to the inclusion of this specific control. Following our main conjectures we expect to find a positive effect of low risk aversion and higher degrees of patience on the individuals' level of tolerance.

In line with the evidence emerging from Figure 2, the results from a pooled sample in Table 1 show that first-generation immigrants are on average significantly more likely to be tolerant compared to the rest of the population, while this gap is four times smaller for second-generation immigrants. The estimated effect of long-term orientation is positive and statistically significant at the one percent level for economic consequences of immigration while it is not significantly different from zero for cultural concerns. In particular, an increase of one standard deviation in crop yield increases the probability of tolerance by 1.12 times (column 1). Risk aversion proxies, on the other hand, are not significantly different from zero. These effects, however, may reflect part of the unobserved heterogeneity related to native individuals with the same parental backgrounds as their current environments in which they were born and live.

In Table 2 we consider second generation immigrants who have at least one foreign-born parent, foreign-born mother, or foreign-born father, or whose mother and father were born in the same foreign country. The results establish the statistically and economically significant effect of long term orientation and attitudes to risk and uncertainty on economic concerns about immigration. The pre-1500CE crop yield in the parental country of origin positively influences the degree of tolerance. One standard deviation increase in the parental

potential crop yield increases the odds of high tolerance versus the combined intermediate and low tolerance by 1.05 times (column 1). Low levels of risk aversion, on the other hand, translate into a 1.8 times higher odds of high tolerance compared to intermediate and high aversion to risk. The effect of risk preferences is robust to the inclusion of linguistic and genetic distances between the respondents' country of birth and parental country of origin (column 5) independently of the definition of second-generation immigrants. Compared to the full sample, the estimated effect of long-term orientation is lower, while risk aversion turns out to be significant.

When accounting for individual risk preferences together with patience (columns 4), the coefficient of potential crop yield remains statistically and economically significant. The fact that historical potential crop yield remains significant even in the presence of risk aversion suggests that risk and time preferences cannot be considered as perfect substitutes. Moreover, the two aspects of preferences go in the same direction, and the effect of long-term orientation generally gains some power when risk preferences are taken into account, which implies that patience and risk cannot be completely separated. This evidence is in line with Andreoni and Sprenger (2012), Falk, Becker, Dohmen, Enke, Huffman, and Sunde (2018) and Bernhofer, Costantini, and Kovacic (2021). Risk aversion seems not to be relevant for individual opinions about the cultural consequences of immigration, while long-term orientation has only a limited influence (Table 3). This result suggests that other preference traits (such as trust and/or pro-sociality) rather than risk and patience, may be better candidates to explain individual concerns about the effects of immigration on local cultural identities.[12] Finally, the mediating effect of time preferences on economic concerns is significantly reduced for low and medium skilled workers (blue collar) compared to highly skill-intensive occupations (Table 4). The results are robust to the estimation method, design and population size weights, the inclusion of additional country-level measures of long term orientation and uncertainty avoidance of the parental country of origin from Hofstede (1997), and to alternative categorizations of the linguistic marker (Tables 8 and 9 in the Appendix).

Figures 3 and 4 show the estimated average marginal effects of crop yield and linguistic marker with

[12]The results for the overall perception of immigration is set out in Table 7 in the Appendix.

95% confidence interval (vertical axis) on economic and cultural attitudes to immigration (horizontal axis). The reported effects capture the variation in the probability of observing each separated degree of tolerance on a 0-10 scale due to a one standard deviation increase in ancestral crop yield, and for being a risk lover ("*moodless*" speaker) compared to intermediate and high risk aversion. In line with the results in Tables 2 and 3, the average marginal effects are negative for low levels of tolerance (*i.e.*, intolerance region), and increase monotonically along the tolerance scale, and become positive for higher values of tolerance (*i.e.*, tolerance region).

Figure 3: Average marginal effects of pre-1500CE crop yield on economic concerns about immigration, second-generation immigrants

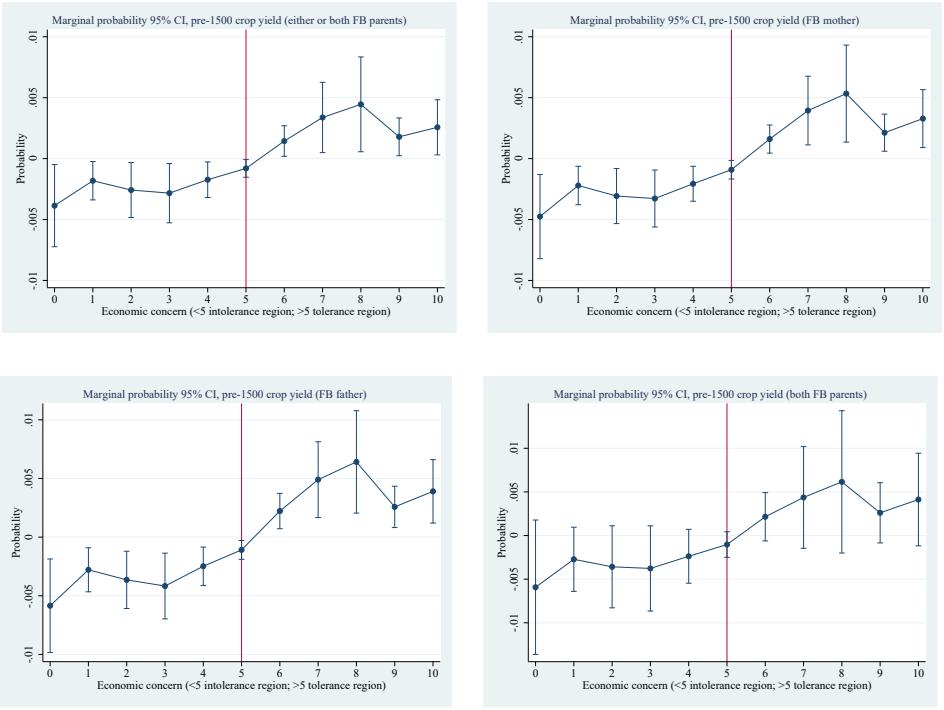
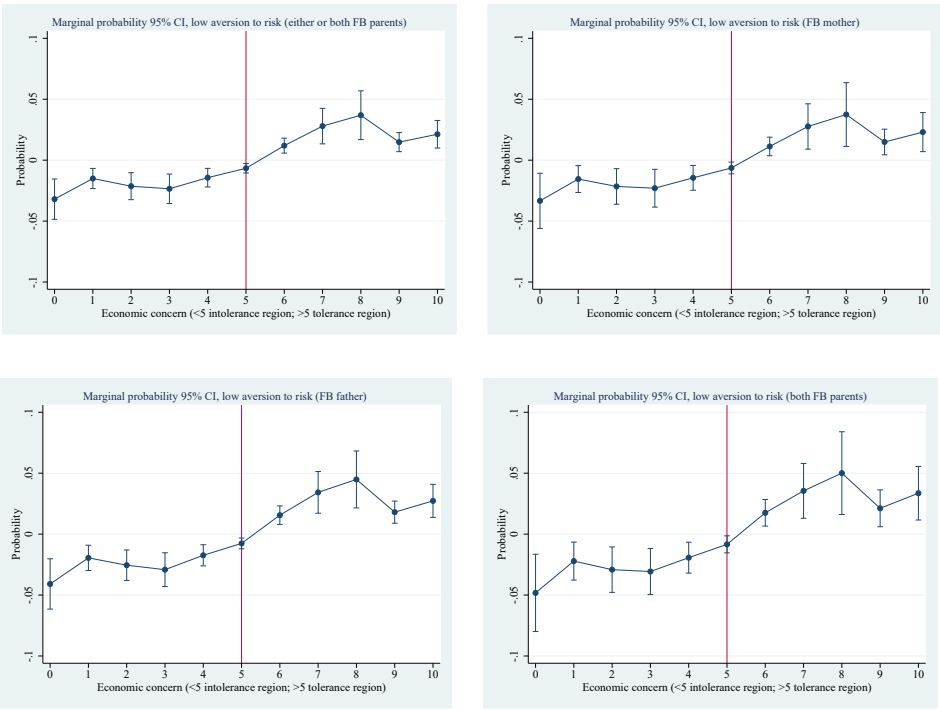


Figure 4: Average marginal effects of risk preferences (low aversion to risk) on economic concerns about immigration, second-generation immigrants



The effects of individual preferences established in Hypotheses 1 and 2, however, may be influenced by external shocks, such as the massive immigration inflows. One similar event occurred during and after 2015. According to the International Organization for Migration (IOM), over a million irregular migrants and refugees arrived in Europe in 2015, mostly from Syria, Africa and South Asia. This is nearly double with respect to the previous record set in 1992 after the fall of the Iron Curtain, and more than double with respect to 2014. This unprecedented increase in immigration inflows may have influenced the individual level of tolerance, making the most patient and less risk averse individuals less supportive.

In order to test the sensitivity of our results to the migration shock, we interact the proxies for time and risk preferences with a dummy variable assuming value 1 for individuals interviewed after 2015 (rounds 8 and 9), and 0 otherwise. The results in Table 5 suggest that the effects of preferences remained quite stable. The net effect of one standard deviation increase in crop yield on economic concerns is 1.042 (column 2) which is slightly lower than in Table 2 (column 4), while the effect of risk aversion remains almost unaltered.

Cultural concerns of immigration, on the other hand, do not seem significantly altered, which complements the evidence in Table 3 of a null effect of patience and risk preferences.

As for immigration policies, the effect of time preferences is particularly pronounced regarding the admission of immigrants from poor non-European countries (Table 6). This is an interesting result because it complements the evidence for the relevance of risk and time preferences in the context of economic concerns about immigration (Tables 2 - 5). Since less patient and low and medium skilled individuals are generally more concerned about the economic consequences of immigration, and perceive immigrants from poorer countries as a closer substitute for their labor market opportunities (Card, Dustmann, and Preston (2012)), they disagree to a large extent with more receptive immigration policies.

6 Concluding remarks

This paper analyzes the role of preferences in shaping current opinions about immigration. We rely on the emerging literature dealing with deep historical roots of preference formation, and find that parental ancestral characteristics play an important role in the determination of the individual degree of tolerance toward immigration. In particular, higher historical crop yield potential in the parental country of origin (used as a proxy for individual long-term orientation) has a positive effect on tolerance, accounting for a wide range of geographical characteristics, the number of years since the parental country of origin transitioned to agriculture as well as the confounding effect of a rich set of individual factors. As for risk preferences, individuals speaking languages with a higher value of the marker indicating a higher level of risk aversion, register lower degrees of tolerance. The results also suggest that the effect of risk and time preferences vary according to the type of immigration concerns. Risk averse and/or less patient individuals are significantly more concerned about the economic consequences of immigration and the entry of poorer immigrants, which are considered as closer substitutes for their labor market opportunities, especially among low and medium-skilled workers. On the other hand, risk has a negligible effect on cultural and general concerns about immigration, which are probably driven by other preference dimensions such as trust and pro-sociality.

Moreover, the effect of risk and time preferences prove to be stable after the initial immigration shock.. The robustness of our findings is further confirmed by considering several alternative definitions of second-generation immigrants, design and population weighting, alternative estimation methods and additional country-level measures of long-term orientation and uncertainty avoidance of the parental country of origin.

Regression results tables

Table 1: Attitudes to immigration: economic and cultural concerns. Baseline specification with proxies for individual preferences. Full sample.

Full sample	Economic	Economic	Economic	Cultural	Cultural	Cultural
Anc. factor/preference proxy	LTO	LTO	LTO/Risk	LTO	LTO	LTO/Risk
Crop Yield (Anc., pre-1500)	1.124***	1.098**	1.109**	1.060**	1.027	1.044
	(0.037)	(0.045)	(0.046)	(0.026)	(0.033)	(0.037)
Crop Yield Change (post-1500)	1.023	0.956	0.962	1.017	0.908	0.910
	(0.058)	(0.074)	(0.074)	(0.074)	(0.084)	(0.085)
Crop Growth Cycle (Anc., pre-1500)	0.991***	0.992***	0.992***	0.994**	0.997	0.996
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)
Crop Growth Cycle Change (post-1500)	0.953	1.016	1.011	0.980	1.082	1.076
	(0.046)	(0.072)	(0.070)	(0.057)	(0.075)	(0.075)
Neolithic Transition Timing		1.006	1.003		1.006	1.000
		(0.051)	(0.053)		(0.073)	(0.073)
Absolute Latitude		1.100	1.133		1.169	1.185
		(0.152)	(0.156)		(0.164)	(0.170)
Mean Elevation		1.134	1.132		1.308**	1.300**
		(0.134)	(0.132)		(0.138)	(0.133)
Terrain Roughness		0.940	0.952		0.959	0.973
		(0.083)	(0.080)		(0.074)	(0.072)
Distance to Coast or River		0.961*	0.963		0.924***	0.928***
		(0.021)	(0.022)		(0.020)	(0.021)
Landlocked		0.941**	0.939**		0.870***	0.871***
		(0.028)	(0.028)		(0.032)	(0.031)
Pct. Land in Tropics		1.288**	1.311**		1.380**	1.406**
		(0.140)	(0.140)		(0.190)	(0.199)
Precipitation		0.901	0.882		0.895	0.862
		(0.120)	(0.115)		(0.104)	(0.107)
IRR_FL (low aversion to risk)			1.226			1.284
			(0.227)			(0.264)
IRR_Parents (low aversion to risk)			0.945			1.008
			(0.077)			(0.111)
First-generation	1.659***	1.640***	1.641***	1.566***	1.559***	1.570***
	(0.095)	(0.090)	(0.091)	(0.108)	(0.088)	(0.092)
Second-generation	1.176***	1.164***	1.154***	1.269***	1.253***	1.244***
	(0.044)	(0.046)	(0.044)	(0.055)	(0.042)	(0.041)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	163724	163724	163724	164152	164152	164152

Notes: *The table shows the association between the main proxies for time and risk preferences, and attitudes to immigration (degree of tolerance) for the full sample of individuals. Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the country of residence level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Attitudes to immigration: economic concerns. Baseline specification with proxies for individual preferences. Second-generation immigrants.

EITHER or BOTH foreign-born parents	Economic	Economic	Economic	Economic	Economic
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.050**	1.058*		1.068**	1.095**
	(0.023)	(0.031)		(0.031)	(0.046)
Crop Yield Change (post-1500)	0.899**	0.880		0.882	0.771*
	(0.045)	(0.080)		(0.080)	(0.113)
Crop Growth Cycle (Anc., pre-1500)		0.999		0.999	0.994
		(0.002)		(0.002)	(0.006)
Crop Growth Cycle Change (post-1500)		1.021		1.021	1.042
		(0.061)		(0.060)	(0.098)
IRR_FL (low aversion to risk)			1.797***	1.723***	1.624**
			(0.235)	(0.246)	(0.352)
IRR_Parents (low aversion to risk)			1.061	1.169	1.321**
			(0.107)	(0.121)	(0.180)
Temporal distance					1.151***
					(0.049)
N. Observations	9860	9860	9860	9860	6001
Foreign-born MOTHER					
Crop Yield (Anc., pre-1500)	1.078***	1.080***		1.082***	1.074*
	(0.022)	(0.032)		(0.031)	(0.042)
Crop Yield Change (post-1500)	0.859**	0.954		0.967	0.837
	(0.053)	(0.092)		(0.093)	(0.131)
Crop Growth Cycle (Anc., pre-1500)		1.000		1.000	0.998
		(0.003)		(0.002)	(0.004)
Crop Growth Cycle Change (post-1500)		0.907		0.899	0.965
		(0.068)		(0.065)	(0.104)
IRR_FL (low aversion to risk)			1.812***	1.740***	1.930***
			(0.285)	(0.331)	(0.489)
IRR_Parents (low aversion to risk)			1.013	1.069	1.399
			(0.094)	(0.101)	(0.299)
Temporal distance					0.981
					(0.058)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	6904	6904	6904	6904	4546

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: cont.d

Foreign-born FATHER	Economic	Economic	Economic	Economic	Economic
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.043*	1.069**		1.058**	0.988
	(0.025)	(0.030)		(0.030)	(0.037)
Crop Yield Change (post-1500)	0.886**	0.874*		0.890	0.845
	(0.054)	(0.070)		(0.072)	(0.094)
Crop Growth Cycle (Anc., pre-1500)		0.997*		0.997	1.003
		(0.002)		(0.002)	(0.005)
Crop Growth Cycle Change (post-1500)		1.015		1.003	1.018
		(0.057)		(0.054)	(0.084)
IRR_FL (low aversion to risk)			2.091***	1.964***	2.124***
			(0.309)	(0.319)	(0.531)
IRR_Parents (low aversion to risk)			0.870	0.902	0.801
			(0.133)	(0.153)	(0.171)
Temporal distance					1.214***
					(0.067)
N. Observations	7418	7418	7418	7418	4721
BOTH foreign-born parents					
Crop Yield (Anc., pre-1500)	1.139***	1.120**		1.101	0.895
	(0.038)	(0.064)		(0.069)	(0.115)
Crop Yield Change (post-1500)	0.851*	0.896		0.977	0.868
	(0.075)	(0.144)		(0.162)	(0.295)
Crop Growth Cycle (Anc., pre-1500)		1.002		1.003	1.037**
		(0.005)		(0.005)	(0.017)
Crop Growth Cycle Change (post-1500)		0.953		0.898	0.936
		(0.095)		(0.091)	(0.189)
IRR_FL (low aversion to risk)			2.121***	2.181***	2.663**
			(0.448)	(0.531)	(1.081)
IRR_Parents (low aversion to risk)			0.620	0.602	0.370
			(0.202)	(0.260)	(0.337)
Temporal distance					1.132
					(0.104)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	2906	2906	2906	2906	1886

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Attitudes to immigration: cultural concerns. Baseline specification with proxies for individual preferences. Second-generation immigrants.

EITHER or BOTH foreign-born parents	Cultural	Cultural	Cultural	Cultural	Cultural
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.069***	1.029		1.029	0.963
	(0.027)	(0.026)		(0.026)	(0.051)
Crop Yield Change (post-1500)	0.854**	0.825**		0.828**	0.807
	(0.053)	(0.080)		(0.079)	(0.114)
Crop Growth Cycle (Anc., pre-1500)		1.006***		1.006***	1.011*
		(0.002)		(0.002)	(0.007)
Crop Growth Cycle Change (post-1500)		1.038		1.036	0.978
		(0.063)		(0.061)	(0.087)
IRR_FL (low aversion to risk)			1.235	1.287	0.806
			(0.351)	(0.348)	(0.262)
IRR_Parents (low aversion to risk)			0.888	0.982	0.914
			(0.070)	(0.091)	(0.127)
Temporal distance					1.191***
					(0.056)
N. Observations	9914	9914	9914	9914	6046
Foreign-born MOTHER					
Crop Yield (Anc., pre-1500)	1.078***	1.045		1.045	1.033
	(0.027)	(0.038)		(0.038)	(0.063)
Crop Yield Change (post-1500)	0.887*	0.870		0.873	0.905
	(0.058)	(0.096)		(0.094)	(0.149)
Crop Growth Cycle (Anc., pre-1500)		1.004		1.004	1.001
		(0.003)		(0.003)	(0.005)
Crop Growth Cycle Change (post-1500)		1.018		1.015	0.929
		(0.075)		(0.072)	(0.100)
IRR_FL (low aversion to risk)			1.320	1.304	1.008
			(0.373)	(0.333)	(0.325)
IRR_Parents (low aversion to risk)			0.911	1.024	0.883
			(0.117)	(0.127)	(0.209)
Temporal distance					1.060
					(0.062)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	6938	6938	6938	6938	4576

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: cont.d

Foreign-born FATHER	Cultural	Cultural	Cultural	Cultural	Cultural
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.082***	1.076***		1.063**	1.020
	(0.020)	(0.026)		(0.026)	(0.036)
Crop Yield Change (post-1500)	0.825***	0.829**		0.844**	0.779**
	(0.056)	(0.071)		(0.070)	(0.089)
Crop Growth Cycle (Anc., pre-1500)		1.001		1.001	1.003
		(0.002)		(0.001)	(0.004)
Crop Growth Cycle Change (post-1500)		0.994		0.981	0.978
		(0.056)		(0.053)	(0.074)
IRR_FL (low aversion to risk)			1.330	1.326	0.779
			(0.369)	(0.355)	(0.276)
IRR_Parents (low aversion to risk)			0.818***	0.827	0.953
			(0.063)	(0.102)	(0.116)
Temporal distance					1.231***
					(0.064)
N. Observations	7445	7445	7445	7445	4748
BOTH foreign-born parents					
Crop Yield (Anc., pre-1500)	1.141***	1.057		1.071	0.859
	(0.044)	(0.058)		(0.063)	(0.092)
Crop Yield Change (post-1500)	0.766***	0.703*		0.701*	0.497***
	(0.079)	(0.134)		(0.130)	(0.116)
Crop Growth Cycle (Anc., pre-1500)		1.009**		1.009**	1.052***
		(0.004)		(0.004)	(0.015)
Crop Growth Cycle Change (post-1500)		1.103		1.103	1.190
		(0.132)		(0.124)	(0.201)
IRR_FL (low aversion to risk)			1.249	1.247	0.588
			(0.451)	(0.376)	(0.250)
IRR_Parents (low aversion to risk)			0.846	1.267	0.608
			(0.318)	(0.550)	(0.381)
Temporal distance					1.293**
					(0.168)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	2906	2906	2906	2906	1892

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Attitudes to immigration: economic and cultural concerns. Time and risk preferences by type of workers.

	Economic	Economic	Economic	Economic	Economic	Economic
Anc. factor/preference proxy	Either	Mother	Father	Either	Mother	Father
Crop Yield (Anc., pre-1500)	1.067**			1.077**		
	(0.032)			(0.032)		
Crop Yield Change (post-1500)	0.878			0.881		
	(0.080)			(0.080)		
Crop Growth Cycle (Anc., pre-1500)	0.999			0.999		
	(0.002)			(0.002)		
Crop Growth Cycle Change (post-1500)	1.025			1.025		
	(0.061)			(0.060)		
Crop Yield (Anc., pre-1500) x Blue collar	0.952**			0.944***		
	(0.022)			(0.018)		
Crop Yield (Anc., pre-1500), M		1.065*			1.075**	
		(0.037)			(0.036)	
Crop Yield Change (post-1500), M		0.945			0.972	
		(0.101)			(0.103)	
Crop Growth Cycle (Anc., pre-1500), M		1.001			1.001	
		(0.003)			(0.003)	
Crop Growth Cycle Change (post-1500), M		0.932			0.917	
		(0.073)			(0.070)	
Crop Yield (Anc., pre-1500), M x Blue collar		0.949**			0.943***	
		(0.022)			(0.020)	
Crop Yield (Anc., pre-1500), F			1.087**			1.103**
			(0.040)			(0.044)
Crop Yield Change (post-1500), F			0.844			0.845
			(0.091)			(0.091)
Crop Growth Cycle (Anc., pre-1500), F			0.999			0.999
			(0.003)			(0.003)
Crop Growth Cycle Change (post-1500), F			1.065			1.067
			(0.072)			(0.069)
Crop Yield (Anc., pre-1500), F x Blue collar			0.956			0.944***
			(0.026)			(0.021)
IRR_FL				1.781***	1.771***	1.957***
				(0.245)	(0.312)	(0.324)
IRR_Parents				1.219*		
				(0.143)		
IRR_FL x Blue collar				0.939	0.972	0.887
				(0.085)	(0.146)	(0.104)
IRR_Parents x Blue collar				0.801		
				(0.125)		
IRR_Mother					1.130	
					(0.134)	
IRR_Father						1.256
						(0.200)
IRR_Mother x Blue collar					0.814	
					(0.166)	
IRR_Father x Blue collar						0.821
						(0.190)
Blue collar	1.103	1.078	1.069	1.214	1.155	1.218
	(0.201)	(0.190)	(0.231)	(0.167)	(0.172)	(0.200)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geo. controls interacted	Yes	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	9860	6118	6648	9860	6092	6648

Notes: *The table shows the association between the main proxies for time and risk preferences, and attitudes to immigration (degree of tolerance) for the full sample of individuals. Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the country of residence level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Attitudes to immigration: economic and cultural concerns. Impact of the 2015's immigration inflow.

EITHER or BOTH foreign-born parents	Economic	Economic	Economic	Cultural	Cultural	Cultural
Anc. factor/preference proxy	LTO	LTO/Risk	LTO/Risk	LTO	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.095***	1.092***	1.057	1.061**	1.059**	0.959
	(0.033)	(0.033)	(0.043)	(0.029)	(0.029)	(0.058)
Crop Yield Change (post-1500)	0.791**	0.792**	0.706*	0.761**	0.755**	0.688**
	(0.083)	(0.082)	(0.129)	(0.091)	(0.092)	(0.104)
Crop Growth Cycle (Anc., pre-1500)	0.996	0.997	0.999	1.003	1.003*	1.013
	(0.003)	(0.002)	(0.006)	(0.002)	(0.002)	(0.009)
Crop Growth Cycle Change (post-1500)	1.086	1.084	1.099	1.107	1.109	1.116
	(0.080)	(0.079)	(0.128)	(0.083)	(0.083)	(0.114)
Inflow 2015	1.106	0.994	1.893	0.851	0.713	1.187
	(0.330)	(0.352)	(1.727)	(0.243)	(0.236)	(1.634)
Crop Yield (Anc., pre-1500) x Inflow 2015	0.920**	0.950	1.104*	0.924**	0.926**	1.006
	(0.034)	(0.037)	(0.058)	(0.030)	(0.035)	(0.084)
Crop Yield Change (post-1500) x Inflow 2015	1.007**	1.007**	0.990	1.007***	1.007***	0.998
	(0.003)	(0.003)	(0.008)	(0.002)	(0.002)	(0.013)
Crop Growth Cycle (Anc., pre-1500) x Inflow 2015	1.239**	1.229**	1.209	1.173	1.215	1.439
	(0.125)	(0.116)	(0.205)	(0.171)	(0.189)	(0.331)
Crop Growth Cycle Change (post-1500) x Inflow 2015	0.886	0.901	0.894	0.870	0.853	0.740*
	(0.069)	(0.071)	(0.110)	(0.097)	(0.102)	(0.126)
IRR_FL (low aversion to risk)		1.594***	1.486*		1.230	0.723
		(0.229)	(0.337)		(0.347)	(0.236)
IRR_Parents (low aversion to risk)		1.135	1.296*		1.001	0.925
		(0.127)	(0.191)		(0.094)	(0.137)
IRR_FL x Inflow 2015		1.186	1.285		1.146	1.401**
		(0.158)	(0.218)		(0.153)	(0.200)
IRR_Parents x Inflow 2015		0.955	0.959		1.083	1.098
		(0.069)	(0.099)		(0.096)	(0.149)
Temporal distance			1.145***			1.182***
			(0.048)			(0.054)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geo. controls interacted	Yes	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	9860	9860	6001	9914	9914	6046

Notes: *The table shows the association between the main proxies for time and risk preferences, and attitudes to immigration (degree of tolerance) for the full sample of individuals. Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the country of residence level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Attitudes to immigration policies. Baseline specification with proxies for individual preferences. Second-generation immigrants.

EITHER or BOTH foreign-born parents	Poor	Poor	Diff. race	Diff.race	Same race	Same race
Anc. factor/preference proxy	LTO	LTO/Risk	LTO	LTO/Risk	LTO	LTO/Risk
Crop Yield (Anc., pre-1500)	1.066***	1.057***	1.032	1.026	1.007	1.001
	(0.020)	(0.019)	(0.020)	(0.019)	(0.026)	(0.024)
Crop Yield Change (post-1500)	0.908	0.918	0.904	0.910	0.936	0.951
	(0.055)	(0.054)	(0.067)	(0.066)	(0.073)	(0.068)
Crop Growth Cycle (Anc., pre-1500)	1.002	1.003	1.003*	1.003**	0.999	1.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Crop Growth Cycle Change (post-1500)	1.008	1.001	1.025	1.020	1.038	1.030
	(0.038)	(0.036)	(0.046)	(0.046)	(0.061)	(0.056)
IRR_FL (low aversion to risk)		1.408		1.136		3.564
		(0.452)		(0.198)		(2.976)
IRR_Parents (low aversion to risk)		0.861*		0.902		0.889
		(0.077)		(0.062)		(0.074)
N. Observations	9959	9959	9944	9944	9983	9983
Foreign-born MOTHER						
Crop Yield (Anc., pre-1500)	1.075**	1.067**	1.009	1.003	0.999	0.985
	(0.031)	(0.027)	(0.023)	(0.022)	(0.031)	(0.026)
Crop Yield Change (post-1500)	0.943	0.959	0.948	0.961	0.942	0.979
	(0.088)	(0.089)	(0.078)	(0.079)	(0.098)	(0.088)
Crop Growth Cycle (Anc., pre-1500)	1.000	1.000	1.004**	1.004***	0.998	1.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Crop Growth Cycle Change (post-1500)	0.972	0.963	1.011	1.005	1.073	1.052
	(0.059)	(0.056)	(0.052)	(0.051)	(0.083)	(0.072)
IRR_FL (low aversion to risk)		1.409		1.198		5.178*
		(0.491)		(0.240)		(4.982)
IRR_Mother (low aversion to risk)		0.816**		0.866		0.746**
		(0.082)		(0.123)		(0.107)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	6979	6979	6979	6979	7011	7011

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration policies (degree of acceptability). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: cont.d

Foreign-born father	Poor	Poor	Diff. race	Diff.race	Same race	Same race
Anc. factor/preference proxy	LTO	LTO/Risk	LTO	LTO/Risk	LTO	LTO/Risk
Crop Yield (Anc., pre-1500)	1.071***	1.053*	1.075***	1.059**	1.047	1.042
	(0.028)	(0.029)	(0.027)	(0.029)	(0.033)	(0.030)
Crop Yield Change (post-1500)	0.935	0.960	0.964	0.986	0.873*	0.886*
	(0.058)	(0.058)	(0.062)	(0.065)	(0.062)	(0.058)
Crop Growth Cycle (Anc., pre-1500)	1.001	1.001	0.998	0.999	0.999	0.999
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Crop Growth Cycle Change (post-1500)	0.962	0.946	0.967	0.953	1.077	1.069
	(0.054)	(0.053)	(0.057)	(0.057)	(0.070)	(0.066)
IRR_FL (low aversion to risk)		1.601		1.372*		3.834
		(0.519)		(0.251)		(3.696)
IRR_Father (low aversion to risk)		0.770**		0.785*		0.919
		(0.097)		(0.101)		(0.125)
N. Observations	7512	7512	7496	7496	7531	7531
BOTH foreign-born parents						
Crop Yield (Anc., pre-1500)	1.068	1.058	0.994	0.991	0.970	0.982
	(0.051)	(0.049)	(0.041)	(0.042)	(0.048)	(0.046)
Crop Yield Change (post-1500)	0.990	1.032	0.953	0.960	0.782	0.849
	(0.112)	(0.114)	(0.084)	(0.084)	(0.156)	(0.097)
Crop Growth Cycle (Anc., pre-1500)	1.007*	1.007**	1.008**	1.008**	1.004	1.004
	(0.004)	(0.003)	(0.003)	(0.003)	(0.006)	(0.004)
Crop Growth Cycle Change (post-1500)	0.906	0.881	0.980	0.975	1.267	1.200*
	(0.076)	(0.069)	(0.070)	(0.070)	(0.211)	(0.116)
IRR_FL (low aversion to risk)		1.575		1.051		8.737**
		(0.570)		(0.233)		(8.398)
IRR_Parents (low aversion to risk)		0.722		0.927		0.871
		(0.207)		(0.339)		(0.325)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	2948	2948	2953	2953	2962	2962

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration policies (degree of acceptability). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix

Table 7: Attitudes to immigration: general concerns. Baseline specification with proxies for individual preferences. Second-generation immigrants.

EITHER or BOTH foreign-born parents	General	General	General	General	General
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.023	1.019		1.020	1.024
	(0.024)	(0.029)		(0.029)	(0.053)
Crop Yield Change (post-1500)	0.918	0.818**		0.822**	0.678**
	(0.058)	(0.070)		(0.069)	(0.109)
Crop Growth Cycle (Anc., pre-1500)		1.001		1.001	0.995
		(0.002)		(0.002)	(0.006)
Crop Growth Cycle Change (post-1500)		1.123**		1.120**	1.143
		(0.063)		(0.061)	(0.122)
IRR_FL (low aversion to risk)			1.124	1.514	0.816
			(0.474)	(0.521)	(0.189)
IRR_Parents (low aversion to risk)			0.923	1.007	1.027
			(0.090)	(0.103)	(0.200)
Temporal distance					1.132***
					(0.049)
N. Observations	9826	9826	9826	9826	5963
Foreign-born MOTHER					
Crop Yield (Anc., pre-1500)	1.039	1.043		1.043	1.026
	(0.026)	(0.041)		(0.039)	(0.062)
Crop Yield Change (post-1500)	0.883*	0.844		0.848*	0.720*
	(0.060)	(0.087)		(0.083)	(0.130)
Crop Growth Cycle (Anc., pre-1500)		1.000		1.000	0.996
		(0.004)		(0.003)	(0.005)
Crop Growth Cycle Change (post-1500)		1.043		1.040	1.060
		(0.079)		(0.074)	(0.125)
IRR_FL (low aversion to risk)			1.672	1.568	1.076
			(0.587)	(0.454)	(0.314)
IRR_Parents (low aversion to risk)			1.004	1.037	0.964
			(0.126)	(0.126)	(0.278)
Temporal distance					1.022
					(0.060)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	6875	6875	6875	6875	4505

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: cont.d

Foreign-born FATHER	General	General	General	General	General
Anc. factor/preference proxy	LTO	LTO	Risk	LTO/Risk	LTO/Risk
Crop Yield (Anc., pre-1500)	1.028	1.042		1.026	1.009
	(0.028)	(0.036)		(0.035)	(0.041)
Crop Yield Change (post-1500)	0.940	0.900		0.923	0.858
	(0.062)	(0.064)		(0.067)	(0.091)
Crop Growth Cycle (Anc., pre-1500)		0.998		0.999	0.998
		(0.002)		(0.002)	(0.004)
Crop Growth Cycle Change (post-1500)		1.053		1.034	0.997
		(0.062)		(0.058)	(0.081)
IRR_FL (low aversion to risk)			1.595	1.535	0.729
			(0.752)	(0.651)	(0.176)
IRR_Parents (low aversion to risk)			0.804***	0.787*	0.838
			(0.068)	(0.113)	(0.147)
Temporal distance					1.228***
					(0.076)
N. Observations	7368	7368	7368	7368	4680
BOTH foreign-born parents					
Crop Yield (Anc., pre-1500)	1.029	0.981		0.982	0.851
	(0.038)	(0.049)		(0.051)	(0.099)
Crop Yield Change (post-1500)	0.885	0.774*		0.807*	0.587**
	(0.077)	(0.106)		(0.104)	(0.134)
Crop Growth Cycle (Anc., pre-1500)		1.006		1.006	1.030**
		(0.005)		(0.004)	(0.013)
Crop Growth Cycle Change (post-1500)		1.152		1.115	1.191
		(0.132)		(0.106)	(0.182)
IRR_FL (low aversion to risk)			1.823	2.158**	0.684
			(0.855)	(0.799)	(0.260)
IRR_Parents (low aversion to risk)			0.849	0.930	0.363
			(0.187)	(0.288)	(0.229)
Temporal distance					1.282**
					(0.146)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	2880	2880	2880	2880	1860

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: LTO - long term orientation, R - risk, FL - first language. The method of estimation is Ordered Logit with the coefficients reported as log odds ratios. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Attitudes to immigration: economic concerns. Additional robustness checks. Second-generation immigrants.

Full sample	Economic	Economic	Economic	Economic	Economic
Anc. factor/preference proxy	ologit	OLS	Risk cat.	LTO parents	Risk parents
Crop Yield (Anc., pre-1500)	1.114***	1.130**	1.104**	1.118***	1.065*
	(0.044)	(0.055)	(0.044)	(0.042)	(0.039)
Crop Yield Change (post-1500)	0.788	0.728*	0.790	0.791	0.949
	(0.123)	(0.127)	(0.120)	(0.130)	(0.192)
Crop Growth Cycle (Anc., pre-1500)	0.991	0.989	0.992	0.994	0.992*
	(0.005)	(0.007)	(0.005)	(0.006)	(0.004)
Crop Growth Cycle Change (post-1500)	0.998	0.996	0.990	0.995	0.886
	(0.095)	(0.108)	(0.091)	(0.096)	(0.104)
IRR_FL (low aversion to risk)	1.801**	2.184**		1.810**	1.773**
	(0.428)	(0.740)		(0.425)	(0.416)
IRR_Parents (low aversion to risk)	1.580***	1.606***		1.520***	1.575**
	(0.202)	(0.260)		(0.204)	(0.326)
Temporal distance	1.167***	1.223***	1.164***	1.177***	1.167***
	(0.048)	(0.059)	(0.048)	(0.053)	(0.064)
IRR_FL = 1			0.588**		
			(0.155)		
IRR_FL = 2			0.511***		
			(0.123)		
IRR_Parents = 1			0.643***		
			(0.082)		
IRR_Parents = 2			0.709**		
			(0.120)		
LTO parents				1.001	
				(0.001)	
Uncert. Avoid. Parents					1.001
					(0.003)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Design and population weights	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	6001	6001	6001	5993	5080

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: ologit - Ordered Logit, OLS - Ordinary Least Squares, Risk cat. - categorized IRR linguistic marker, LTO parents - Long Term Orientation index (Hofstede (1997)) of the parental country of origin, Risk parents - Risk Avoidance index (Hofstede (1997)) of the parental country of origin. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Attitudes to immigration: cultural concerns. Additional robustness checks. Second-generation immigrants.

Full sample	Cultural	Cultural	Cultural	Cultural	Cultural
Anc. factor/preference proxy	ologit	OLS	Risk cat.	LTO parents	Risk parents
Crop Yield (Anc., pre-1500)	0.997	1.013	0.999	0.998	0.912*
	(0.054)	(0.071)	(0.053)	(0.052)	(0.051)
Crop Yield Change (post-1500)	0.782	0.630**	0.777	0.787	0.737*
	(0.128)	(0.126)	(0.126)	(0.134)	(0.115)
Crop Growth Cycle (Anc., pre-1500)	1.007	1.008	1.007	1.010	1.000
	(0.006)	(0.008)	(0.006)	(0.007)	(0.008)
Crop Growth Cycle Change (post-1500)	0.946	1.009	0.950	0.950	0.975
	(0.098)	(0.135)	(0.098)	(0.093)	(0.099)
IRR_FL (low aversion to risk)	0.900	0.919		0.897	0.790
	(0.292)	(0.401)		(0.294)	(0.325)
IRR_Parents (low aversion to risk)	1.107	1.184		1.029	1.161
	(0.177)	(0.231)		(0.174)	(0.275)
Temporal distance	1.217***	1.284***	1.218***	1.220***	1.171**
	(0.058)	(0.078)	(0.058)	(0.062)	(0.076)
IRR_FL = 1			1.169		
			(0.404)		
IRR_FL = 2			1.047		
			(0.334)		
IRR_Parents = 1			0.896		
			(0.151)		
IRR_Parents = 2			0.883		
			(0.211)		
LTO Parents				0.999	
				(0.002)	
Uncert. Avoid. Parents					1.009*
					(0.005)
Full set of Individual characteristics	Yes	Yes	Yes	Yes	Yes
Full set of geographical controls	Yes	Yes	Yes	Yes	Yes
Design and population weights	Yes	Yes	Yes	Yes	Yes
Region (of residence) FE	Yes	Yes	Yes	Yes	Yes
Year (round) FE	Yes	Yes	Yes	Yes	Yes
N. Observations	6046	6046	6046	6038	5127

Notes: *The table shows the association between the main proxies for time and risk preferences, and second generation immigrants' attitudes to immigration (degree of tolerance). Abbreviations: ologit - Ordered Logit, OLS - Ordinary Least Squares, Risk cat. - categorized IRR linguistic marker, LTO parents - Long Term Orientation index (Hofstede (1997)) of the parental country of origin, Risk parents - Risk Avoidance index (Hofstede (1997)) of the parental country of origin. Robust standard errors are clustered at the parental country of origin level. Significance levels:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Number of non-indicative moods (IRR) by language

Language	Family	Sub-Family	#Moods	a	b	c	d	e	f	g	IRR
Albanian	Indo-Euro	—	>2	1	1	0	0	0	0	1	3
Arabic	Semitic	—	2	1	1	1	1	0	0	0	4
Basque	Isolate	—	2	1	1	0	0	0	0	1	3
Belorussian	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Bulgarian	Indo-Euro	Slavic	1	1	1	0	0	0	0	0	2
Catalan	Indo-Euro	Romance	1	1	1	0	0	0	1	0	3
Croatian	Indo-Euro	Slavic	1	0	0	0	0	0	1	1	2
Czech	Indo-Euro	Slavic	0	1	1	0	0	0	1	1	4
Danish	Indo-Euro	Germanic	0	0	0	0	0	0	0	0	0
Dutch	Indo-Euro	Germanic	0	0	0	0	0	0	1	1	2
Dutch (other)	Indo-Euro	Germanic	0	0	0	0	0	0	1	1	2
English	Indo-Euro	Germanic	0	0	0	0	0	0	0	0	0
English (other)	Indo-Euro	Germanic	0	0	0	0	0	0	0	0	0
Estonian	Uralic	Finno-Ugric	2	0	1	0	0	0	1	1	3
Finnish	Uralic	Finno-Ugric	2	0	0	0	0	0	1	1	2
French	Indo-Euro	Romance	1	1	1	0	1	0	0	0	3
French (other)	Indo-Euro	Romance	1	1	1	0	1	0	0	0	3
German	Indo-Euro	Germanic	1	0	0	0	0	0	1	1	2
German (other)	Indo-Euro	Germanic	1	0	0	0	0	0	1	1	2
Greek	Indo-Euro	—	1	0	1	0	0	0	0	1	2
Hebrew	Semitic	—	0	0	0	0	0	0	0	0	0
Hungarian	Uralic	Finno-Ugric	2	1	1	0	0	0	1	1	4
Icelandic	Indo-Euro	Germanic	1	1	1	1	0	1	1	1	6
Irish	Indo-Euro	Celtic	2	1	1	0	0	0	1	1	4
Italian	Indo-Euro	Romance	2	1	1	1	1	0	1	1	6
Latvian	Indo-Euro	Baltic	1	1	1	0	0	0	1	1	4
Lithuanian	Indo-Euro	Baltic	1	1	1	0	0	0	1	1	4
Macedonian	Indo-Euro	Slavic	1	1	1	0	0	0	0	0	2
Maltese	Semitic	—	0	0	0	0	0	0	0	0	0
Norwegian	Indo-Euro	Germanic	0	0	0	0	0	0	0	0	0
Polish	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Portuguese	Indo-Euro	Romance	2	1	1	1	1	0	1	1	6
Portuguese (other)	Indo-Euro	Romance	2	1	1	1	1	0	1	1	6
Romanian	Indo-Euro	Romance	1	1	1	0	0	0	1	1	4
Russian	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Russian (other)	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Serbian	Indo-Euro	Slavic	1	0	0	0	0	0	1	1	2
Slovak	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Slovenian	Indo-Euro	Slavic	1	0	1	0	0	0	1	1	3
Spanish	Indo-Euro	Romance	1	1	1	0	1	0	1	0	4
Spanish (other)	Indo-Euro	Romance	1	1	1	0	1	0	1	0	4
Swedish	Indo-Euro	Germanic	0	0	0	0	0	0	0	0	0
Turkish	Ural-Altaic	Turkic	>2	1	1	1	0	0	1	0	4
Ukrainian	Indo-Euro	Slavic	1	1	1	0	0	0	1	1	4
Welsh	Indo-Euro	Celtic	1	1	0	0	0	0	1	1	3

Notes: *Contexts: a = Modal; b = Desire; c = Attitude (non factive); d = Attitude (factive); e = Declarative; f = Protasis (counterfactual conditional); g = Apodosis (counterfactual conditional). "Other" stays for all those country in which a specific language is official and/or is spoken by more than 80% of the population.*

Table 11: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Economic concern	5.102	2.56	0	10	9860
Cultural concern	5.657	2.627	0	10	9695
General concern	5.086	2.392	0	10	9610
Crop Yield (Anc., pre-1500)	7.266	2.196	0	10.116	9860
Crop Yield Change (post-1500)	-0.359	0.503	-0.919	2.706	9860
Crop Growth Cycle (Anc., pre-1500)	122.679	22.165	0	178.482	9860
Crop Growth Cycle Change (post-1500)	0.114	0.659	-1.825	3.305	9860
Neolithic transition	0.451	0.734	-2.05	2.201	9860
Absolute latitude	0.748	0.631	-1.913	1.75	9860
Mean elevation	-0.288	0.512	-1.131	1.8	9860
Terrain roughness	-0.305	0.794	-1.315	2.864	9860
Distance to coast or river	0.560	2.107	-0.653	5.181	9860
Land locked	-0.165	0.820	-0.451	2.193	9860
Pct. land in tropics	-0.504	0.35	-0.558	2.202	9860
Precipitation	-0.482	0.461	-1.551	2.6	9860
Age	47.841	16.757	15	102	9860
Female	0.525	0.499	0	1	9860
IRR_FL = 0	0.237	0.425	0	1	9860
IRR_FL = 1	0.448	0.497	0	1	9860
IRR_FL = 2	0.315	0.465	0	1	9860
IRR_Parents = 0	0.096	0.295	0	1	9860
IRR_Parents = 1	0.258	0.438	0	1	9860
IRR_Parents = 2	0.646	0.478	0	1	9860
White collar_F	0.329	0.47	0	1	9860
White collar_M	0.347	0.476	0	1	9860
Edu_M low	0.492	0.5	0	1	9860
Edu_M medium	0.393	0.489	0	1	9860
Edu_M high	0.115	0.319	0	1	9860
Edu_F low	0.428	0.495	0	1	9860
Edu_F medium	0.416	0.493	0	1	9860
Edu_F high	0.156	0.363	0	1	9860
Minority	0.109	0.312	0	1	9860
Workout	0.07	0.255	0	1	9860
Edu low	0.153	0.36	0	1	9860
Edu medium	0.564	0.496	0	1	9860
Edu high	0.283	0.45	0	1	9860
White collar	0.721	0.448	0	1	9860
Trust	0.437	0.496	0	1	9860
Married	2.124	1.305	1	4	9860
HH size	2.732	1.403	1	10	9860
Number kids	0.719	1.061	0	8	9860
Unemployed	0.045	0.207	0	1	9860
Retired	0.225	0.417	0	1	9860
Permanently sick or disabled	0.035	0.184	0	1	9860
Homemaker	0.145	0.352	0	1	9860
Employed	0.617	0.486	0	1	9860
Still in education	0.077	0.267	0	1	9860

Variable	Mean	Std. Dev.	Min.	Max.	N
Very good health	0.647	0.478	0	1	9860
Interest politics	0.502	0.5	0	1	9860
Atheist	0.312	0.463	0	1	9860
Temporal distance	-1.383	0.810	-3.709	0.946	6001
LTO Parents	61.38	19.914	4	86	9319
Uncert. Avoid. Parents	75.72	19.401	13	104	7885
Africa	0.05	0.217	0	1	9860
Asia	0.041	0.198	0	1	9860
Europe	0.867	0.34	0	1	9860
North America	0.025	0.157	0	1	9860
Oceania	0.002	0.045	0	1	9860
Latin America	0.015	0.122	0	1	9860

Table 12: List of countries included in the analysis

Sample	Country of interview
Second-generation immigrants	Austria, Belgium, Bulgaria, Czech Republic, Switzerland, Germany, Denmark, Estonia, Spain, Finland, France, UK, Greece, Croatia, Hungary, Ireland, Israel, Iceland, Lithuania, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Sweden, Slovenia, Slovakia, Turkey, Ukraine, Kosovo.

Sample	Country of origin Mother
Second-generation immigrants	Albania, Angola, Argentina, Australia, Austria, Algeria, Bosnia and Herzegovina, Belarus, Bulgaria, Bolivia, Brazil, Cameroon, Chile, Colombia, Congo (Dem. Rep. of), Congo, Cote d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Germany, Denmark, Dominican Republic, Ecuador, Estonia, Egypt, Finland, France, Gabon, United Kingdom, Ghana, Guinea, Guyana, Honduras, Haiti, Hungary, Ireland, Iraq, Iceland, Italy, Jamaica, Jordan, Lebanon, Lithuania, Latvia, Libya, Moldova, Northern Macedonia, Mali, Malta, Mexico, Mozambique, Nigeria, Netherlands, Norway, New Zealand, Oman, Peru, Poland, Portugal, Qatar, Romania, Russian Federation, Sudan, Sweden, Slovenia, Spain, Slovakia, Senegal, Syrian Arab Republic, South Africa, Togo, Tunisia, Turkey, Ukraine, United States, Uruguay, Venezuela, Yemen.

Sample	Country of origin Father
Second-generation immigrants	Albania, Angola, Argentina, Australia, Austria, Algeria, Benin, Burkina Faso, Bosnia and Herzegovina, Belarus, Bulgaria, Bolivia, Brazil, Cameroon, Chile, Colombia, Congo (DR), Congo, Cote d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Germany, Denmark, Dominican Republic, Ecuador, Estonia, Egypt, Finland, France, Gabon, United Kingdom, Ghana, Guinea, Guyana, Honduras, Haiti, Hungary, Ireland, Iraq, Iceland, Italy, Jamaica, Jordan, Lebanon, Lithuania, Latvia, Libya, Moldova, Northern Macedonia, Mali, Malta, Mexico, Mozambique, Mauritania, Nigeria, Netherlands, Norway, New Zealand, Peru, Poland, Nicaragua, Portugal, Romania, Russian Federation, Sudan, Sweden, Slovenia, Spain, Slovakia, Senegal, Syrian Arab Republic, South Africa, Togo, Trinidad and Tobago, Tunisia, Turkey, Ukraine, United States, Uruguay, Venezuela, Yemen.

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