

Immigration Restriction and Long-Run Cultural Assimilation: Theory and Quasi-Experimental Evidence ^{*}

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Abstract

We study the the effect of immigration restriction on the long-run cultural assimilation of the foreign-born. Our theoretical model shows that restrictive policies incentivize to permanent immigration individuals with a strong taste for their original culture. Permanent immigration implies reproduction abroad and cultural transmission to the second generation, who will therefore experience a more difficult assimilation. We test this prediction through a difference-in-differences approach, where the treatment group is given by the foreign-born in Germany after the 1973 ban to immigration (*Anwerbestopp*). Our estimates confirm that the *Anwerbestopp* had a negative impact on the cultural assimilation of these dynasties. This result is robust to several checks. We conclude that immigration policies may have very persistent effects that exceed the time horizon of any elected policymaker.

Keywords: return migration, cultural transmission, difference-in-differences.

JEL classification: D91, F22, J15, K37, Z13.

1 Introduction

The cultural impact of immigration is at the core of a spirited political debate in the receiving societies. The increasing cultural diversity stimulates discussions on the nature of the national identity. The diffusion of unfamiliar customs

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in many aspects of life such as religion, food and clothing fuels pressures to defend the domestic culture.¹ According to Card et al. (2012), worries for shared religious beliefs, traditions and customs are 3-5 times more important than economic competition in shaping individual attitudes over immigration. As a consequence, anti-immigration parties are booming in many countries and borders are being increasingly enforced.²

Fears that immigration would dissolve the receiving societies are not novel: for instance, the 1931 law regulating entry into Switzerland aimed at protecting the country against *Überfremdung* ('overforeignization'), namely a situation where the society had become 'stranger' to its own members because of immigration.

In contrast to this intuition, we point out that protectionism may backfire in the long run by producing larger dynasties of foreign-born that will support the persistence of foreign cultures in the receiving countries.

Scholars from different fields have devoted special attention to the assimilation of immigrants. In sociology, concerns that the low rate of interreligious marriages could hinder the assimilation process have been put forward since Herberg (1955).³ The concept of 'segmented assimilation' or 'downward assimilation' is used to depict the possibility that some ethnic groups can be incorporated into a society as permanently disadvantaged minorities (Alba and Nee, 2003; Portes and Rumbaut, 2001).⁴

Assimilation is indeed a multi-dimensional intergenerational process that is not necessarily achieved in each component.⁵ Early definitions of assimilation contemplate that minority groups would shed their own culture to adopt the cultural model of the receiving country. Contemporary sociologists, instead, define assimilation as the decline of an ethnic distinction, where 'decline' means that the individual's ethnic origin becomes less and less relevant in relation to the members of others ethnic groups (Alba and Nee, 2003).

Other authors use 'integration' as a weaker concept of assimilation, to denote the possibility that an immigrant is committed to two different cultures (see Algan et al., 2012; Constant et al., 2009).

A relatively unexplored issue is whether there is a role for immigration restriction in the assimilation process.

In this paper we develop a simple theoretical model to address this question. The mechanism we identify is based on the self-selection into temporary and permanent emigration.

¹A recent example is the referendum that has forbidden the construction of new mosques in Switzerland.

²According to Razin (2012), 'restrictions on international mobility of labor are arguably the single most important policy distortion that besets the international economy'.

³See Bisin, Topa and Verdier (2001) for a survey of the literature on interreligious marriages.

⁴Borjas (1993) reports evidence for the downward assimilation of Mexican immigrants. This issue is well-known since Chiswick (1978) and Carliner (1980). Further examples concern Afro-American or native-american minorities.

⁵For instance, with respect to religion, Bisin et al. (2004) prove the possibility of a steady-state equilibrium where the U.S. population is composed of a majority of Protestants and a minority of residual groups.

In the literature, in fact, it is well-known that restrictive policies incentivize permanent migration (see Koussodji, 1992; Hill, 1987; Magris and Russo, 2009). Even so, the implications of this result for the long-run cultural assimilation have not yet received sufficient attention.

Our transmission mechanism works in two steps: 1) restrictions to immigration force immigrants with a stronger commitment to the origin culture to settle abroad; 2) these individuals convey their cultural traits to their children.

As a consequence, restricting immigration can backfire through the creation of non-assimilated dynasties. Paradoxically, the effort to preserve the national identity by restricting immigration may ultimately *foster* the persistence of foreign cultures.

We provide an empirical assessment of such results by testing our predictions through the major natural experiment occurred after the 1973 oil shock, when most destination countries in Europe suddenly closed their borders to immigrants. At that time, West Germany (henceforth Germany) was already the most important immigration magnet in Europe.

In 1973 the German government swiftly reversed its liberal immigration policy and introduced the *Anwerbestopp*, namely a ban to the recruitment of citizens outside the European Economic Community (henceforth EEC).⁶ It is well-known that the *Anwerbestopp* fostered family reunion and permanent immigration (Constant et al., 2012).

What matters for our purposes is that the *Anwerbestopp* did not hit citizens from EEC, who were granted free circulation. This allows us to identify a treatment group and a control group, and treat the event as a quasi-experiment.

In terms of our model we expect that non-EEC foreign-born after 1973 show a lesser degree of cultural assimilation. This prediction is tested through a difference-in-differences approach based on European Social Survey data.

All estimates show that our proxy of cultural assimilation drops for the treatment group. This result is robust to wide changes in the pre-treatment and post-treatment intervals, and to several robustness checks.

We conclude that the transmission mechanism described by our theoretical model has been relevant, and that the *Anwerbestopp* has backfired by reducing the cultural assimilation of the foreign-born. This finding casts a shadow on the long-run consequences of restrictive immigration policies. Unfortunately, the backlash appears after a time span that exceeds the policymakers' horizon.

The paper is organised as follows: section 2 develops our model and comparative statics results; section 3 is devoted to the assimilation problem; section 4 focuses on the long-term effect of entry rationing; section 5 contains an analysis of the trade-off between less immigration in the current period and less assimilation in the future; section 6 contains the empirical analysis and section 7 concludes the paper.

⁶The European Economic Community was the free-trade agreement replaced by the European Union in 1993.

2 The Model

We use a simple two-period, two-country model with risk-neutral migrants.

Countries are an origin country (O), and a destination country (D). Individuals are endowed with a unit of labor they supply inelastically in each period. One unit of labour produces one unit of a storable good in D , and zero units in O . This shortcut is a very convenient way to simplify the algebra without loss of generality, and it assures that everybody wants to migrate at least for one period.⁷

However, labour productivity is not the only difference between D and O . Destination countries and origin countries also differ with respect to their economic and political stability. Natural disasters, political turmoils, economic crises, climate change are ever more important push factors (Naudé, 2009; Drabo and Linguère, 2011). We account for this effect by assuming that in O the state of the world is good with probability p , and bad with probability $(1 - p)$.

We assume that the bad shock (crisis) forces the emigration of the whole population in O .

Both productivity differentials and economic stability create a strong incentive to migrate. For this reason, D enforces entry rationing by requiring a one-period work permit. We depict this entry rationing as a lottery that allots a permit with probability $\pi \in (0, 1)$. One application per person is allowed in each period.

On the other hand, a preference for consuming at home (home bias) incentivizes the immigrants to return to O .⁸

The home bias is summarized by the individual parameter $\theta_j \in [1, \theta_{\max}]$, which rescales the utility of consuming in O , thus consuming at home weakly dominates consuming abroad for any j . Intuitively, for θ_j close to unity there is no reason to return to O , but when θ_{\max} is sufficiently high, permanent migration is unlikely⁹.

The endowed home bias θ_j is distributed according to the continuous pdf $f(\theta_j)$. The integral of $f(\theta_j)$ over its support gives the total immigrant population, normalized to unity.

Consider now the decision of the immigrants in D : they have to choose whether returning to O or settling permanently abroad.

For simplicity they do not discount the future, and the shock in O is revealed only *after* return migration.¹⁰

⁷For our results to hold we only need that a unit of labor is more productive in D .

⁸Introducing a home bias is common in the literature (see Dustmann 1997; Dustmann and Kirchkamp 2002). According to Borjas (1999) important non-economic factors like differences in language, culture and the costs of entering an alien environment reduce migration flows.

⁹With soft seductive speech she (Calypso) keeps tempting him, urging him to forget his Ithaca. But Odysseus yearns to see even the smoke rising from his native land and longs for death'. (Homer, The Odyssey, I, 75-79).

¹⁰We have chosen unity as the lower bound of θ_j because $\theta_j < 1$ would indicate preference for consuming abroad, that contradicts home bias. This is not restrictive because permanent emigration occurs for all $\theta_j \leq 1$.

¹⁰Though this assumption may look restrictive, it can be dropped by using a three-period

The utility of a permanent migration is given by

$$u_{PM} = 2 \tag{1}$$

(the immigrant consumes two units of good over her lifetime). The expected utility of returning to O (temporary migration) is given by

$$E[u_{TM}] = \underbrace{p\theta_j}_{\text{good shock}} + \underbrace{\pi(1-p)2}_{\text{bad shock}}. \tag{2}$$

In other words, return migration makes it possible to consume at home the good produced abroad and enjoy the home bias if the shock is good. If the shock is bad the consumption good is destroyed and re-migration is uncertain.

In this simplified world, the choice between permanent and temporary migration only depends on the home bias θ_j .

2.1 Permanent and temporary migration

By comparing the utilities of temporary and permanent migration it is straightforward to write the following proposition:

Proposition 1 (*Permanent migration and return migration*): *Given the cut-off value*

$$\theta^* \equiv \frac{2(1 - \pi(1 - p))}{p}, \tag{3}$$

individuals for whom $\theta_j < \theta^$ will be permanent migrants, and individuals for whom $\theta_j \geq \theta^*$ will be temporary migrants.*

Proof. The proposition is proved by solving the condition $E[u_{TM}] \geq u_{PM}$ with respect to θ_j . ■

Proposition 1 states that there exists a critical value θ^* that separates permanent migrants from temporary migrants. It is crucial to note that θ^* depends on the immigration policy: since $\frac{\partial \theta^*}{\partial \pi} \leq 0$, border closure incentivizes permanent migration. This finding is crucial in our framework, and its implications are analyzed in the remaining of the paper.

Since θ_j is distributed according to $f(\theta_j)$, permanent migrants are given by the integral $\int_1^{\theta^*} f(\theta_j) d\theta_j$, and returning migrants are given by the integral $\int_{\theta^*}^{\theta_{\max}} f(\theta_j) d\theta_j$.

We are now going to present some comparative statics results.

model, but this would complicate the algebra without changing our results. The intuition is as follows: consider a three-period model, and suppose that a successful migrant wants to return home after the first period: such an immigrant exists because it is always possible to find θ_j such that an individual wants to migrate for a single period. Though the state of the world in O is observed, the possibility of a shock in the third period and the uncertainty about the ability to re-migrate to D will affect the decision to return. To preserve simplicity, we have preferred a two-period model.

2.2 Comparative Statics

In this section we show the comparative statics properties of the model. It is straightforward to compute the derivatives

$$\frac{\partial \theta^*}{\partial \pi} < 0 \quad (4)$$

and

$$\frac{\partial \theta^*}{\partial p} < 0. \quad (5)$$

Derivative (4) implies that, as π grows, the share of temporary migrants increases. This happens because border openness makes it easier to harbor abroad in case of a shock, thus return migration occurs for a lower θ .¹¹

Derivative (5) shows that improved economic conditions at home incentivizes return migration.

It is interesting to remark that substituting $\pi = 1$ into θ^* is equivalent to set $p = 1$ ¹². In other words, freedom of emigration creates an insurance against risk in O .

3 Immigration and cultural assimilation

Notably, attempts to curb immigration are mostly targeted to *permanent* immigration. Temporary immigration is hardly considered as a source of concern. What is so special about permanent immigration?

There are of course many differences between temporary and permanent immigration. For instance, the net fiscal impact of immigration can be quite different in the short run and in the long run. However, for our purposes, we argue that what makes permanent immigration so special is *reproduction*.

Reproduction abroad has crucial implications because families convey cultural and ethnic traits across generations. This makes cultural minorities very persistent.¹³

In what follows we are going to show a mechanism through which restrictive immigration policies can strengthen the persistence of the foreign culture in the second generation.

In fact, according to eq. (4), restrictions to immigration push more reluctant individuals to settle in the destination country. Since cultural preferences are conveyed -at least in part- to the offspring, this creates the mechanism that reduces the cultural assimilation of the foreign-born.

¹¹A permanent residence permit could undo this effect. However, all work and residence permits have limited duration, and they have to be periodically renewed.

¹²In both cases we have $\theta^* = 2$. This means that the utility of consuming a single period at home equals the utility of consuming both periods abroad.

¹³Borjas 1994, p.1711, argues that 'the evidence suggests that the ethnic skill differentials will persist into the third generation and perhaps even into the fourth.[...] Ethnicity matters, and it seems to matter for a very long time'.

3.1 The non-assimilated population

The mechanism outlined in the previous section can be modelled intuitively as follows: suppose that permanent immigrants reproduce in the second period at the rate $(1 + n)$, with $n > 0$.

Foreign-born (FB) are thus given by

$$FB = (1 + n) \int_1^{\theta^*} f(\theta_j) d\theta_j \quad (6)$$

Obviously, intergenerational transmission of cultural preferences is far from being perfect: foreign-born children are educated in the destination country, they interact with natives, and perhaps they are not familiar with their parents' homeland. However, what we need for our purposes is only that family matters, and that the probability $a_j \in (0, 1]$ of being assimilated depends negatively on the parents' home bias¹⁴. Without loss of generality, we can specify this decreasing relation as follows:

$$a_j = \frac{1}{\theta_j}.^{15} \quad (7)$$

Then the assimilated foreign-born (AFB) are given by

$$AFB = (1 + n)\bar{a}(\pi) \int_1^{\theta^*} f(\theta_j) d\theta_j \quad (8)$$

where $\bar{a}(\pi) \equiv \frac{1}{\theta(\pi)}$ is the average probability of assimilation¹⁶. Since

$$\frac{\partial \bar{a}(\pi)}{\partial \pi} > 0, \quad (9)$$

it follows that

$$\frac{\partial AFB}{\partial \pi} > 0. \quad (10)$$

In other words, increasing immigration restriction (i.e. reducing π) increases the average home bias of permanent immigrants and it generates a less-assimilated second generation. This is the transmission mechanism from immigration restriction to the cultural assimilation of foreign-born generations. This crucial outcome is summarized in the next remark:

Remark 2 (*Immigration restriction and the cultural assimilation of the second generation*): *in presence of intergenerational transmission of cultural traits, increasing immigration restriction reduces the cultural assimilation of the second generation.*

¹⁴For simplicity we do not model the parents' decision concerning the intergenerational cultural transmission. Our argument can be considered a reduced form of the nice formalization by Epstein (2007), that shows the cultural transmission within the family in a plain framework.

¹⁵We use $a_j = 1/\theta_j$ for simplicity, but other decreasing functions would give similar results.

¹⁶ $\theta(\pi)$ is the average home bias of the population of permanent immigrants. It is increasing with immigration restriction, thus $\frac{\partial \theta(\pi)}{\partial \pi} < 0$.

The remark provides a testable prediction concerning the cultural assimilation of the foreign-born. It basically argues that

introducing a bias towards permanent immigration generates larger dynasties of non-assimilated individuals. This effect can be very persistent, and it could possibly need more than one generation in order to fade out.

In empirical terms, this means that a surge of immigration restriction should be observable through its impact on the foreign-born.

What is the empirical relevance of this outcome? We have tried to exploit the major natural experiment occurred after the 1973 oil shock, when most destination countries suddenly halted immigration.

4 The natural experiment

Concerns for mass unemployment after the 1973 oil shock quickly led to the introduction of immigration bans in many destination countries.¹⁷ This provides a natural experiment that can be used in order to assess the predictions of our model.

We focus on the German case because the *Anwerbestopp* halted immigration of workers from non-EEC countries, and Germany had a large population of immigrants both from the EEC countries and non-EEC countries. This nicely provides us with a control group and a treatment group.

In fact, the sustained economic growth after the 2nd World War had led Germany to a massive recruitment of foreign workers through bilateral agreements with source countries. The first of such agreements was signed in 1955 with Italy; Spain and Greece came in 1960 and Turkey in 1961. Over this period substantial inflows of immigrants were received without stringent restrictions, and they were free to move back and forth.

After the 1973 *Anwerbestopp*, immigrants lost the option to revert the choice of returning to their origin country. However, since the incumbents were entitled to family reunion, many of them decided to settle permanently. According to Constant et al. (2012), the composition of immigrants shifted from young males to women and children, who joined their husband and fathers so creating a large generation of foreign-born.

By 1974, 17.3% of all births in Germany were from guest workers, and 65% of total gross immigration was due to family reunion (Mehrlander, 1985; Velling, 1994). This shift towards permanent immigration coincides with the prediction of our model.

However, the model also predicts that the *Anwerbestopp* has negatively affected the cultural assimilation of the second generation.

¹⁷This is the case of Germany, France, Luxembourg, Switzerland, and the Nordic countries.

4.1 Data and identification strategy

Our database is given by waves 2-5 of the European Social Survey (ESS) collected between 2002 and 2010¹⁸.

In the ESS we can identify the individuals whose father was an immigrant.

We adopt a difference-in-difference approach, where non-EEC foreign born in Germany are the treatment group and EEC foreign born are the control group¹⁹.

The members of the control group are therefore children whose parents were not constrained to settle in Germany. However, it is crucial to stress that, while identifying the control group is straightforward, the treatment group will still include some children of immigrants who decided to settle in Germany *before* the Anwerbestopp. Since we are not able to pick up these persons, the treatment group contains some non-treated individuals and our estimates will be downward biased to a certain extent.

Table 4.2.1 shows the nationality of the fathers of individuals in our sample.

Our proxy of cultural assimilation is the answer to the question "would you describe yourself as being a member of a group that is discriminated against in this country"?

Though discrimination also concerns the behavior of the natives towards immigrants, we argue that a self-reported feeling of being discriminated is a good measure of cultural assimilation. In fact, feeling assimilated and discriminated at the same time would be contradictory.

In addition, if feelings of being discriminated were orthogonal to cultural assimilation, there would be no reason why they should change after 1973. Thus, we are confident that our proxy serves well our purposes.

4.2 Empirical results

4.2.1 Difference-in-differences estimation

In this experimental setup, the treatment group is represented by the sons and daughters of immigrants from non-EEC countries. The control group consists in children of immigrants from EEC countries. Table 4.2.1 shows the origin country of the fathers of individuals in our sample.

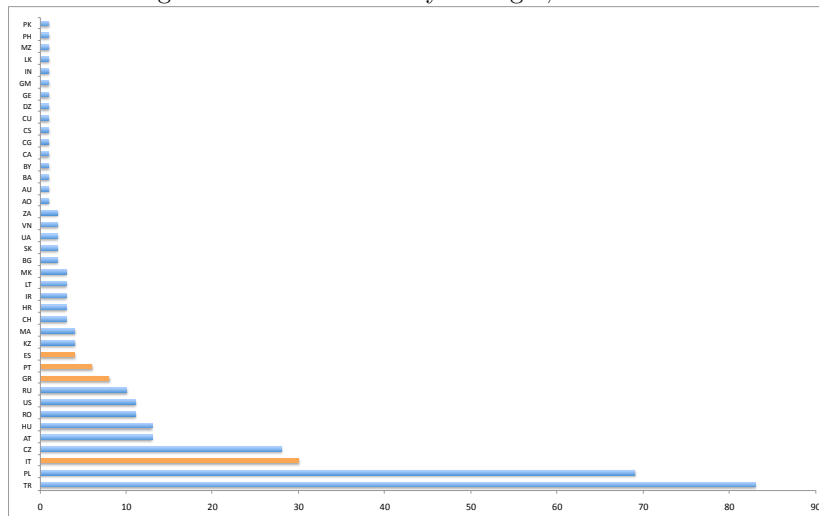
The sample is restricted to residents in Germany. Blue countries are in the treatment group, with Turkey and Poland being the most important sources of immigration. Orange countries are in the control group, where Italian immigrants are the majority.

It is worthwhile to remark that the remaining countries in the control pool entered the EEC after 1973, therefore their immigrants were considered as non

¹⁸The first wave has been discarded because respondents were not asked their father's nationality.

¹⁹Respondents with less than 20 years of residence in Germany, and respondents with fathers born in DE, FR, NED, BE, UK, have been discarded. Respondents from countries with significant German minorities (Poland, Czechoslovakia, Soviet Union, Austria) have been discarded.

Figure 1: Father’s country of origin, control EEC



EEC citizens before entrance and as EEC ones afterwards. This is the case of Greece and Spain, that entered the EEC in 1981 and in 1986 respectively.

A list of the variables we employed is provided in table 1. While the sample is reasonably balanced between born before and after 1973, there is a substantial majority of foreign-born from non EEC fathers.

It is also essential to remark that the year of birth of respondents (*yrbrth*) controls for the assimilation due to a longer exposure to the German culture and for the effect of other confounders that vary in time.²⁰

| name | type | meaning | mean | st dev |
|---------------------|----------|---------------------------------|------|--------|
| <i>discrim</i> | binary | perceived discrimination status | 0.14 | |
| <i>post73</i> | binary | born after 1973 | 0.43 | |
| <i>noeec</i> | binary | father not born in EEC country | 0.84 | |
| <i>noeec.post73</i> | binary | interaction variable | 0.36 | |
| <i>male</i> | binary | male | 0.51 | |
| <i>round3</i> | binary | interviewed in 2006 | 0.17 | |
| <i>round4</i> | binary | interviewed in 2008 | 0.26 | |
| <i>round5</i> | binary | interviewed in 2008 | 0.35 | |
| <i>yrbth</i> | discrete | year of birth of the respondent | 1973 | 8.87 |

Table 1: Variables in the difference-in-difference estimation, window 1960-1989.

The following diff-in-diff estimation is performed for different windows cen-

²⁰A quadratic trend was also included but results were comparable, so we present the linear trend specification only.

tered around 1973:

$$discrim_i = \beta_0 + \beta_1 noeec_i * post73_i + \beta_2 post73_i + \beta_3 noeec_i + controls + u_i. \quad (11)$$

The diff-in-diff parameter is β_1 . In this section we present the estimates for the 1960-1986 period. We have chosen this unusually large window because it complies with important economic considerations and provides us with a larger sample at the same time.

We believe that years 1960-1986 are decisive because Spain and Greece signed the bilateral immigration agreement in 1960, and Turkey in 1961. Therefore, 1960 can be considered as the beginning of the 'free immigration' era. Since we prefer to use symmetric windows, the end date has to be 1986.²¹

Equation (11) has been estimated by probit and by two linear probability specifications (LPM), one with heteroskedasticity-robust standard errors and another with clustering on the respondent father's country of birth.²²

Table 2 in the appendix presents the estimated diff-in-diff parameter (β_1).

Though the sample size is rather limited (335 observations), the parameter is positive and strongly significant regardless of the estimation technique. The effect of the *Anwerbestopp* on the treatment group seems therefore to have been quite large. This result is stronger than expected, given that our estimates suffer from a downward bias due to the inclusion of non-treated individuals in the treatment group.

We discuss the robustness of our results in the next section, where we test our models for several windows around 1973.

5 Robustness checks

In a difference-in-differences analysis, the choice of the time window to be used in order to identify the treatment group and the control group can be crucial. The window should be as narrow as possible so as to rule out causes alternative to the treatment.

In our case, though, the window is a large one. Despite a strong economic rationale behind our choice, it is necessary to get sure that our results do not vanish if different windows are used. This is done in Table 3, where we present the estimated diff-in-diff coefficient using several symmetric and asymmetric windows.

By observing the tables it is evident that the coefficients always have the right sign, and that they are significant as soon as sample size is sufficiently large.

²¹Results with asymmetric windows are shown in our robustness analysis. The largest window covers the 1957-1989 period, where the end date coincides with the German reunification.

²²We show the results of both the probit and the LPM models because the calculation of the marginal effect of an interaction term is a debated issue. A common solution is computing the interaction effect by leaving all the covariates at their mean. In practice, almost all the effects showed in economics journals have been estimated in such a way. Nonetheless, Ai and Norton (2003) argue that a simple summary measure of the interaction effect is difficult, since the effect and the sign change for each single observation (being dependent on the different values of the covariates). Our results, however, hold with both models.

These results are confirmed for all regression models, and for both symmetric and asymmetric windows.

We have performed placebo regressions as a further robustness check. We have used several experiment years different from 1973 and different windows, both symmetrical and asymmetrical. Signs are scrambled and hardly significant.²³

Finally, we exploit the foreign-born in the Netherlands in order to obtain a second control group. This is possible because the Netherlands was the only country in Europe that did not change its immigration law after the oil shock (Bruquetas-Callejo et al., 2011)²⁴.

The presence of two control groups enables us to perform a triple difference analysis, thus we have estimated the following equation:

$$\begin{aligned} \text{discrim}_i = & \beta_0 + \beta_1 de * noeec_i * post73_i + \beta_2 de * post73_i + \beta_3 de * noeec_i + \\ & + \beta_4 noeec_i * post73_i + \beta_5 de + \beta_6 post73_i + \beta_7 noeec_i + \text{controls} + u_i. \end{aligned} \quad (12)$$

The triple difference parameter is still β_1 . The results are reported in Table 4. Though the coefficients for the 1960-1983 window are significant only at the 15% level, they always show the predicted sign. When we expand our windows in order to increase the sample size (Table 5), we are able to get 5% significance in some cases (look, for instance to the results obtained when using the 1960-1986 window).

Summarizing, it seems correct to argue that, in spite of a low significance, the triple difference analysis never contradicts the results of the double difference analysis.

6 Conclusions

We developed a simple theoretical model that relates immigration restriction to cultural assimilation. It shows that protectionism against immigration incentivizes permanent migration, creates large foreign-born generations and fosters the transmission of the source country customs to the second generation and possibly beyond.

This outcome questions the consistency of restrictive immigration policies with the objective of protecting the host country's cultural homogeneity.

Both our model and our empirical findings suggest the existence of a trade-off between reducing current immigration and assimilating the foreign-born diasporas. This mechanism seems to have been at work in Germany after the 1973 *Anwerbestopp*.

²³Our estimates are available upon request. We have also removed all the individuals not born in Germany in order to discard second-generation individuals entered with family reunions. The estimates are unaffected.

²⁴Laws aimed at curbing immigration were approved in France, Belgium, Luxembourg and the Nordic countries. In Switzerland immigrants were not renewed their work permit.

Overall, these results suggest that border enforcement may have unintended consequences in the long run. Unfortunately, the backlash emerges with a lag that exceeds the time horizon of any elected policymaker.

We think that more empirical research is needed to assess the importance of these effects, and we hope to develop this point in the future.

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Appendix

In order to obtain a suitable sample for our regression, we further pruned the initial set of data. In particular:

- We discarded the first ESS round because the key question regarding the country of birth of respondents' fathers was introduced only in the second round.
- Respondents with fathers born in Germany and the Netherlands were discarded for the obvious reason that we restrain our attention on sons and daughters of immigrants. We considered the father's country of birth rather than the mother's because it was mostly men who were directly recruited as immigrants. Using the mother's country of birth did not change our results substantially though, as the percentage of mixed couples was low.
- Respondents who either did not provide an answer to the question "In which country was your father born?" or claimed to ignore it were discarded. It is conceivable that some selection bias could arise by removing these individuals from our sample, but we hope that the effect is negligible given the limited proportion (3%) of nonrespondents.
- Respondents that did not declare their year of birth were discarded. Here too the percentage of respondents is negligible (less than 1%).
- As we are interested in the second generation of immigrants, we discarded respondents that declared that were not born or have been in the country for less than 20 years. The 20-year limit is due to the fact that the survey asked to state only vaguely the period of permanence in the country. Limiting our analysis to individuals born in the country did not alter substantially the results.

Dependent variable: discrim

| | lpm robust (1) | lpm robust (2) | lpm robust (3) | lpm cluster (4) | probit (5) |
|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|
| (Intercept) | 0.128** (0.055) | -1.841 (9.146) | -1.476 (9.199) | -1.476 (9.005) | -3.293 (41.226) |
| noeec.post73 | 0.264*** (0.082) | 0.265*** (0.082) | 0.260*** (0.083) | 0.260*** (0.088) | 1.372** (0.562) |
| post73 | -0.087 (0.070) | -0.102 (0.096) | -0.089 (0.097) | -0.089 (0.111) | -0.574 (0.620) |
| noeec | -0.052 (0.058) | -0.052 (0.058) | -0.047 (0.058) | -0.047 (0.068) | -0.276 (0.290) |
| yrbrth | | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.021) |
| male | | 0.000 (0.034) | -0.002 (0.034) | -0.002 (0.033) | -0.004 (0.167) |
| round3 | | | 0.134** (0.055) | 0.134*** (0.038) | 0.715** (0.284) |
| round4 | | | 0.081* (0.043) | 0.081** (0.033) | 0.492* (0.274) |
| round5 | | | 0.076* (0.041) | 0.076*** (0.028) | 0.470* (0.258) |
| R ² | 0.058 | 0.058 | 0.073 | 0.073 | |
| Adj. R ² | 0.051 | 0.046 | 0.054 | 0.054 | |
| Num. obs. | 402 | 402 | 402 | 402 | 402 |
| Log Likelihood | | | | | -145.749 |

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: Estimation results for equation 11 on the window 1960-1986.

| LPM ROBUST | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|--------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1957 | 417 0.17 (0.09) | 432 0.19 (0.08) | 442 0.21 (0.08) | 460 0.22 (0.08) | 471 0.23 (0.07) | 485 0.23 (0.07) | 493 0.22 (0.07) |
| 1958 | 400 0.18 (0.09) | 415 0.2 (0.08) | 425 0.22 (0.08) | 443 0.23 (0.08) | 454 0.24 (0.08) | 468 0.24 (0.07) | 476 0.23 (0.07) |
| 1959 | 379 0.19 (0.09) | 394 0.21 (0.08) | 404 0.23 (0.08) | 422 0.24 (0.08) | 433 0.25 (0.08) | 447 0.25 (0.08) | 455 0.24 (0.07) |
| 1960 | 359 0.2 (0.09) | 374 0.23 (0.09) | 384 0.25 (0.09) | 402 0.26 (0.08) | 413 0.27 (0.08) | 427 0.27 (0.08) | 435 0.26 (0.08) |
| 1961 | 338 0.2 (0.09) | 353 0.23 (0.08) | 363 0.24 (0.08) | 381 0.25 (0.08) | 392 0.26 (0.08) | 406 0.26 (0.08) | 414 0.25 (0.07) |
| 1962 | 322 0.17 (0.09) | 337 0.2 (0.08) | 347 0.22 (0.08) | 365 0.23 (0.08) | 376 0.23 (0.07) | 390 0.23 (0.07) | 398 0.23 (0.07) |
| 1963 | 292 0.17 (0.09) | 307 0.2 (0.09) | 317 0.22 (0.09) | 335 0.23 (0.08) | 346 0.24 (0.08) | 360 0.23 (0.08) | 368 0.23 (0.08) |
| LPM CLUSTER | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| 1957 | 417 0.17 (0.07) | 432 0.19 (0.07) | 442 0.21 (0.08) | 460 0.22 (0.08) | 471 0.23 (0.08) | 485 0.23 (0.08) | 493 0.22 (0.08) |
| 1958 | 400 0.18 (0.07) | 415 0.2 (0.07) | 425 0.22 (0.08) | 443 0.23 (0.08) | 454 0.24 (0.08) | 468 0.24 (0.08) | 476 0.23 (0.08) |
| 1959 | 379 0.19 (0.07) | 394 0.21 (0.08) | 404 0.23 (0.08) | 422 0.24 (0.08) | 433 0.25 (0.08) | 447 0.25 (0.08) | 455 0.24 (0.08) |
| 1960 | 359 0.2 (0.08) | 374 0.23 (0.08) | 384 0.25 (0.09) | 402 0.26 (0.09) | 413 0.27 (0.09) | 427 0.27 (0.09) | 435 0.26 (0.08) |
| 1961 | 338 0.2 (0.09) | 353 0.23 (0.1) | 363 0.24 (0.1) | 381 0.25 (0.1) | 392 0.26 (0.1) | 406 0.26 (0.1) | 414 0.25 (0.1) |
| 1962 | 322 0.17 (0.09) | 337 0.2 (0.1) | 347 0.22 (0.1) | 365 0.23 (0.1) | 376 0.23 (0.1) | 390 0.23 (0.1) | 398 0.23 (0.1) |
| 1963 | 292 0.17 (0.1) | 307 0.2 (0.11) | 317 0.22 (0.11) | 335 0.23 (0.11) | 346 0.24 (0.11) | 360 0.23 (0.11) | 368 0.23 (0.11) |
| GLM PROBIT | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| 1957 | 417 0.86 (0.57) | 432 1.01 (0.56) | 442 1.07 (0.56) | 460 1.16 (0.55) | 471 1.21 (0.54) | 485 1.24 (0.54) | 493 1.23 (0.53) |
| 1958 | 400 0.91 (0.58) | 415 1.06 (0.57) | 425 1.13 (0.56) | 443 1.21 (0.55) | 454 1.26 (0.55) | 468 1.28 (0.54) | 476 1.28 (0.54) |
| 1959 | 379 0.96 (0.58) | 394 1.12 (0.57) | 404 1.19 (0.57) | 422 1.28 (0.56) | 433 1.33 (0.55) | 447 1.35 (0.55) | 455 1.35 (0.54) |
| 1960 | 359 1.07 (0.59) | 374 1.23 (0.58) | 384 1.3 (0.57) | 402 1.37 (0.56) | 413 1.43 (0.56) | 427 1.45 (0.55) | 435 1.44 (0.55) |
| 1961 | 338 1.12 (0.63) | 353 1.3 (0.61) | 363 1.33 (0.61) | 381 1.39 (0.6) | 392 1.43 (0.6) | 406 1.46 (0.59) | 414 1.45 (0.58) |
| 1962 | 322 0.96 (0.65) | 337 1.15 (0.64) | 347 1.17 (0.64) | 365 1.22 (0.63) | 376 1.25 (0.62) | 390 1.29 (0.62) | 398 1.28 (0.61) |
| 1963 | 292 0.94 (0.66) | 307 1.13 (0.65) | 317 1.17 (0.64) | 335 1.22 (0.63) | 346 1.26 (0.63) | 360 1.3 (0.63) | 368 1.29 (0.62) |
| Cell colors: | p<0.01 | p<0.05 | p<0.1 | p>0.10 | | | |
| Contents: | obs param (std err) | | | | | | |

Table 3: Experimental parameters, standard errors and sample sizes of the estimation of equation 11 performed on various windows.

| Dependent variable: discrim | | | | | |
|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | lpm robust (1) | lpm robust (2) | lpm robust (3) | lpm cluster (4) | probit (5) |
| (Intercept) | 0.077* (0.044) | -0.685 (7.640) | -1.276 (7.635) | -1.276 (7.523) | -5.364 (29.661) |
| de.noeec.post73 | 0.168 (0.139) | 0.171 (0.141) | 0.164 (0.139) | 0.164 (0.130) | 1.182 (0.773) |
| de.post73 | -0.127 (0.117) | -0.134 (0.119) | -0.124 (0.118) | -0.124 (0.114) | -0.809 (0.731) |
| de.noeec | -0.190** (0.081) | -0.192** (0.081) | -0.181** (0.081) | -0.181** (0.092) | -0.911** (0.435) |
| noeec.post73 | 0.096 (0.113) | 0.094 (0.114) | 0.097 (0.112) | 0.097 (0.090) | 0.184 (0.536) |
| de | 0.051 (0.070) | 0.053 (0.070) | 0.044 (0.070) | 0.044 (0.070) | 0.262 (0.396) |
| post73 | 0.041 (0.094) | 0.040 (0.104) | 0.034 (0.103) | 0.034 (0.069) | 0.211 (0.533) |
| noeec | 0.138** (0.057) | 0.140** (0.057) | 0.132** (0.058) | 0.132*** (0.051) | 0.627* (0.325) |
| yrbrth | | 0.000 (0.004) | 0.001 (0.004) | 0.001 (0.004) | 0.002 (0.015) |
| male | | 0.016 (0.029) | 0.014 (0.029) | 0.014 (0.028) | 0.057 (0.120) |
| round3 | | | 0.102** (0.044) | 0.102*** (0.024) | 0.466** (0.191) |
| round4 | | | 0.077** (0.039) | 0.077** (0.037) | 0.376** (0.189) |
| round5 | | | 0.072** (0.036) | 0.072** (0.030) | 0.357** (0.178) |
| R ² | 0.069 | 0.069 | 0.078 | 0.078 | |
| Adj. R ² | 0.059 | 0.059 | 0.061 | 0.061 | |
| Num. obs. | 676 | 676 | 676 | 676 | 676 |
| Log Likelihood | | | | | -287.236 |

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: Estimation results for equation 12 on the window 1960-1986.

| LPM ROBUST | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|--------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1957 | 696 0.08 (0.14) | 720 0.07 (0.13) | 737 0.08 (0.13) | 762 0.13 (0.13) | 779 0.16 (0.13) | 799 0.18 (0.13) | 817 0.17 (0.13) |
| 1958 | 665 0.06 (0.14) | 689 0.06 (0.14) | 706 0.07 (0.13) | 731 0.12 (0.14) | 748 0.15 (0.14) | 768 0.17 (0.13) | 786 0.16 (0.13) |
| 1959 | 638 0.06 (0.14) | 662 0.07 (0.14) | 679 0.08 (0.13) | 704 0.13 (0.14) | 721 0.16 (0.14) | 741 0.18 (0.14) | 759 0.16 (0.13) |
| 1960 | 610 0.1 (0.14) | 634 0.1 (0.14) | 651 0.11 (0.13) | 676 0.16 (0.14) | 693 0.2 (0.14) | 713 0.21 (0.14) | 731 0.2 (0.14) |
| 1961 | 575 0.08 (0.14) | 599 0.09 (0.14) | 616 0.1 (0.13) | 641 0.14 (0.14) | 658 0.17 (0.14) | 678 0.19 (0.14) | 696 0.18 (0.13) |
| 1962 | 548 0.07 (0.14) | 572 0.08 (0.13) | 589 0.08 (0.13) | 614 0.13 (0.14) | 631 0.15 (0.13) | 651 0.17 (0.13) | 669 0.16 (0.13) |
| 1963 | 507 0.08 (0.14) | 531 0.09 (0.14) | 548 0.09 (0.13) | 573 0.14 (0.14) | 590 0.16 (0.14) | 610 0.18 (0.14) | 628 0.17 (0.14) |
| LPM CLUSTER | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| 1957 | 696 0.08 (0.12) | 720 0.07 (0.12) | 737 0.08 (0.11) | 762 0.13 (0.13) | 779 0.16 (0.09) | 799 0.18 (0.1) | 817 0.17 (0.09) |
| 1958 | 665 0.06 (0.12) | 689 0.06 (0.12) | 706 0.07 (0.12) | 731 0.12 (0.13) | 748 0.15 (0.09) | 768 0.17 (0.1) | 786 0.16 (0.09) |
| 1959 | 638 0.06 (0.12) | 662 0.07 (0.12) | 679 0.08 (0.12) | 704 0.13 (0.13) | 721 0.16 (0.1) | 741 0.18 (0.1) | 759 0.16 (0.09) |
| 1960 | 610 0.1 (0.12) | 634 0.1 (0.12) | 651 0.11 (0.12) | 676 0.16 (0.13) | 693 0.2 (0.1) | 713 0.21 (0.1) | 731 0.2 (0.09) |
| 1961 | 575 0.08 (0.13) | 599 0.09 (0.13) | 616 0.1 (0.13) | 641 0.14 (0.14) | 658 0.17 (0.1) | 678 0.19 (0.11) | 696 0.18 (0.1) |
| 1962 | 548 0.07 (0.12) | 572 0.08 (0.12) | 589 0.08 (0.12) | 614 0.13 (0.14) | 631 0.15 (0.1) | 651 0.17 (0.11) | 669 0.16 (0.1) |
| 1963 | 507 0.08 (0.13) | 531 0.09 (0.13) | 548 0.09 (0.13) | 573 0.14 (0.14) | 590 0.16 (0.11) | 610 0.18 (0.11) | 628 0.17 (0.11) |
| GLM PROBIT | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| 1957 | 696 0.51 (0.84) | 720 0.58 (0.83) | 737 0.58 (0.82) | 762 0.96 (0.75) | 779 1.14 (0.72) | 799 1.22 (0.71) | 817 1.21 (0.71) |
| 1958 | 665 0.47 (0.85) | 689 0.55 (0.83) | 706 0.55 (0.83) | 731 0.93 (0.75) | 748 1.1 (0.72) | 768 1.18 (0.72) | 786 1.17 (0.71) |
| 1959 | 638 0.48 (0.85) | 662 0.57 (0.84) | 679 0.58 (0.83) | 704 0.96 (0.76) | 721 1.13 (0.73) | 741 1.22 (0.72) | 759 1.2 (0.72) |
| 1960 | 610 0.71 (0.86) | 634 0.81 (0.85) | 651 0.81 (0.84) | 676 1.18 (0.77) | 693 1.36 (0.74) | 713 1.43 (0.74) | 731 1.42 (0.73) |
| 1961 | 575 0.66 (0.89) | 599 0.78 (0.88) | 616 0.76 (0.87) | 641 1.12 (0.8) | 658 1.26 (0.77) | 678 1.35 (0.77) | 696 1.35 (0.76) |
| 1962 | 548 0.65 (0.93) | 572 0.8 (0.92) | 589 0.76 (0.91) | 614 1.08 (0.85) | 631 1.2 (0.82) | 651 1.29 (0.81) | 669 1.29 (0.81) |
| 1963 | 507 0.64 (0.93) | 531 0.79 (0.92) | 548 0.78 (0.91) | 573 1.12 (0.85) | 590 1.25 (0.82) | 610 1.34 (0.82) | 628 1.34 (0.81) |
| Cell colors: | p<0.01 | p<0.05 | p<0.1 | p>0.10 | | | |
| Contents: | obs param (std err) | | | | | | |

Table 5: Experimental parameters, standard errors and sample sizes of the estimation of equation 12 performed on various windows.