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Economics and Finance

WORKING PAPER NO. 349

Immigration Restriction and Long-Run Cultural Assimilation: Theory and Quasi-Experimental Evidence

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December 2013



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Fausto Galli* and Giuseppe Russo**

Abstract

We study the effect of restrictions to immigration on the cultural assimilation of the second generation. Our theoretical model shows that restrictive policies incentivize to permanent immigration individuals with a stronger taste for their original culture. Permanent immigration implies reproduction in the destination country and transmission of cultural traits to the second generation, which will therefore experience a more difficult assimilation. We test this prediction by using the 1973 immigration ban in Germany (Anwerbestopp) as a quasi-experiment, since it only concerned immigrants from countries outside the European Economic Community. Thus, our treatment group is given by the second generation of non-EEC immigrants. Our estimates show that the Anwerbestopp has reduced the cultural assimilation of this generation. This result is robust to several checks, including a triple differences analysis. We conclude that restrictive immigration policies may have unwanted consequences on the process of cultural assimilation.

JEL Classification: D91, F22, J15, K37, Z13

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

Acknowledgments: We thank Toke Aidt, Alberto Bennardo, Gaetano Bloise, Michel Beine, Francois Bour-guignon, Vincenzo Carrieri, Andrew Clark, Francesco Magris, Claire Naiditch, Dimitri Paolini, Nicola Persico, Giovanni Pica, Enzo Pierro, Luigi Senatore, Sandra Sequeira, Filippo Taddei.

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1 Introduction

The political debate on the cultural impact of immigration is a spirited one. The diffusion of unfamiliar customs in many aspects of life such as religion, food and clothing feeds the demand for protectionism against immigration.¹

Card et al. (2012) find that worries for preserving shared religious beliefs, traditions and customs are 3-5 times more important than economic competition in shaping individual attitudes over immigration. Besides, public opinion is often afraid that immigrants cause crime, though empirical evidence is scarce.² Anti-immigration parties enjoy significant consent in many countries and bias immigration policies even without entering the governments (van Spanje, 2010).³

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 prediction, we point out that protectionism may instead produce larger and scarcely assimilated second generations 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).⁴ 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).⁵

Assimilation is indeed a multi-dimensional intergenerational process, which is not necessarily achieved in each component.⁶

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 the 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 the culture of both the origin

¹An often cited example is the referendum that has forbidden the construction of new mosques in Switzerland.

²See Jaitman and Machin (2013) for recent results and other references.

³According to Razin (2012), 'restrictions on international mobility of labor are arguably the single most important policy distortion that besets the international economy'.

⁴See Bisin, Topa and Verdier (2001) for a survey of the literature on interreligious marriages.

⁵Borjas (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.

⁶For 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.

and the destination country. (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.

In the literature, in fact, it is well-known that restrictive policies incentivize longer migration spells (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 push immigrants with a stronger commitment to their origin culture to settle abroad; 2) these individuals convey their cultural traits to their offspring.

As a consequence, restricting immigration can bring about the unwanted effect of encouraging 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 concerns for mass unemployment pushed most destination countries in Europe to suddenly close their borders. 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 workers outside the European Economic Community (henceforth EEC).⁷ 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 involve workers 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 children of non-EEC immigrants 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.

In addition, since the Netherlands did not change its immigration regulation after the oil shock, we are able to obtain a second control group. The triple differences analysis confirms the outcomes of the double-differences one.

We conclude that the transmission mechanism described by our theoretical model has been at work, and that the *Anwerbestopp* has reduced the cultural as-

⁷The European Economic Community was the free-trade agreement replaced by the European Union in 1993.

simulation of the immigrants' children. This finding warns about the unforeseen long-run effects of restrictive immigration policies.

The paper is organised as follows: section 2 develops a simple model of migration duration; section 3 shows the mechanism of intergenerational transmission of cultural values; section 4 contains our empirical analysis; section 5 is devoted to the robustness checks, and section 6 concludes the paper.

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 one 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.⁸

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; Beine and Parsons, 2012). 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 .⁹

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 unlikely¹⁰.

⁸For our results to hold we only need that labor productivity is higher in D .

⁹Introducing 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.

¹⁰With 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

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, which is 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.¹¹

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, 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 utility under 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

emigration occurs for all $\theta_j \leq 1$.

¹¹Though this assumption may look restrictive, it can be dropped by using a three-period 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.

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.

2.2 Comparative Statics

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

$$\frac{\partial \theta^*}{\partial \pi} < 0 \tag{4}$$

and

$$\frac{\partial \theta^*}{\partial p} < 0. \tag{5}$$

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 .¹²

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 $p = 1$.¹³ In other words, freedom of emigration creates an insurance against the risk of a crisis 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 special is *reproduction*.

¹²A permanent residence permit could undo this effect. However, all work and residence permits have limited duration, and they have to be periodically renewed.

¹³In 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.

Reproduction abroad has crucial implications because families convey cultural and ethnic traits across generations. This makes cultural minorities very persistent.¹⁴

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 individuals more committed to their native culture to settle in the destination country. Since cultural preferences tend to be conveyed to one's offspring, this mechanism reduces the cultural assimilation of the second generation.

3.1 The assimilation of the second generation

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 $n > 0$.

The second generation (SG) is simply

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

To what extent is this generation going to be assimilated?

The resilience of cultural traits across generations is one of the most pervasive phenomena in heterogeneous societies. In the literature, cultural transmission is explained through decisions inside the family (vertical socialization), and social interactions (horizontal socialization).

Since the choice of neighborhood and schools is generally a part of the family's vertical socialization effort (Ioannides and Zanella, 2008; Kremer and Sarychev, 2000), for our purposes it is sufficient to focus on the role of the family.¹⁵ Thus, we define an individual probability of cultural assimilation $a_j \in (0, 1]$ that depends negatively on the parents' home bias.

This can be easily motivated, for instance, on the basis of parental "imperfect empathy". Bisin and Verdier (2000) define imperfect empathy as a friction in parents' altruism such that while parents are altruistic with respect to their children, they use their own preferences to evaluate the children's choices. Imperfect empathy is sufficient to produce cultural transmission in the children's socialization.

Thus, without loss of generality, we can specify the individual probability of

¹⁴According to Borjas (1994, p.1711), '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'.

¹⁵Models of cultural transmission that also allow for network effects are in Patacchini and Zenou (2011a, 2011b).

assimilation as follows¹⁶:

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

If we indicate with $\bar{a}(\pi)$ the average probability of assimilation, we have

$$\bar{a}(\pi) = \frac{\int_1^{\theta^*} \frac{f(\theta_j)}{\theta_j} d\theta_j}{\int_1^{\theta^*} f(\theta_j) d\theta_j}, \quad (8)$$

then the share of the second generation that will be assimilated (*ASG*) is given by

$$ASG = \frac{\bar{a}(\pi)(1+n) \int_1^{\theta^*} f(\theta_j) d\theta_j}{(1+n) \int_1^{\theta^*} f(\theta_j) d\theta_j} = \bar{a}(\pi) \quad (9)$$

As a consequence, the effect of restrictions to the fathers' immigration on the children's cultural assimilation is nicely summarized by the derivative $\partial \bar{a}(\pi) / \partial \pi$. Since this derivative is positive, we can write the following proposition:

Proposition 2 (*Cultural assimilation of the second generation*): *in presence of intergenerational transmission of cultural traits, increasing immigration restrictions for the first generation of immigrants reduces the cultural assimilation of the second generation.*

Proof. see the appendix. ■

According to this proposition, more freedom of immigration (i.e. higher π) reduces the average home bias of permanent immigrants and favors the assimilation of the second generation (and viceversa). This is the transmission mechanism from immigration restriction to the cultural assimilation of the second generation we wanted to outline.¹⁷

It is crucial to observe that proposition 2 provides us with a testable prediction. In order to assess its empirical relevance, we have tried to exploit the major natural experiment occurred after the 1973 oil shock, when most destination countries in Europe 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.¹⁸ This provides

¹⁶For simplicity we do not model the parents' decision concerning the intergenerational cultural transmission. Our argument can be considered, for instance, a reduced form of the nice formalization by Epstein (2007), that shows the cultural transmission within the family in a plain framework.

¹⁷The assimilation effects we are describing emerge in the long run, and it is interesting to remark that they can be carried over to many generations before fading out

¹⁸This is the case of Germany, France, Luxembourg, Switzerland, and the Nordic countries, albeit with different rules and degrees of enforcement.

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 EEC 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 labour were received without stringent restrictions, and immigrants 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 husbands and fathers, creating a large second generation.

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

However, our most interesting prediction is that the *Anwerbestopp* has negatively affected the cultural assimilation of the second generation.

4.1 Data and identification strategy

Our database is given by waves 2-6 of the European Social Survey (ESS) collected between 2002 and 2012¹⁹.

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

We adopt a difference-in-differences approach, where the treatment group includes the children of non-EEC immigrants in Germany and the control group includes the children of EEC ones. Only respondents born in Germany were considered²⁰.

The members of the control group are therefore children of parents whose incentive to settle in Germany was *not* altered by the *Anwerbestopp*.

However, it may be worth 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* but reproduced after 1973. Since we are not able to pick up these persons, the treatment

¹⁹The first wave has been discarded because respondents were not asked their father's nationality.

²⁰As a robustness check we have excluded respondents born from immigrants from countries with significant German minorities (Poland, Czechoslovakia, Soviet Union, Austria). Results do not change qualitatively and are available upon request.

group contains some non-treated individuals and our estimates will be downward biased to a certain extent.

Figure 4.2.1 shows the father's nationality for the 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.

Finally, we exploit the offspring of immigrants in the Netherlands in order to obtain a second control group. This is possible because the Netherlands was also a major destination country, but did not change its immigration law after the oil shock (Bruquetas-Callejo et al., 2011).

The presence of two control groups enables us to perform a triple difference analysis.

4.2 Empirical results

4.2.1 Difference-in-differences estimation

In this experimental setup, the treatment group is given by the sons and daughters of immigrants from non-EEC countries. The control group is given by the children of immigrants from EEC countries. Figure 1 shows the fathers' origin country for the 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.

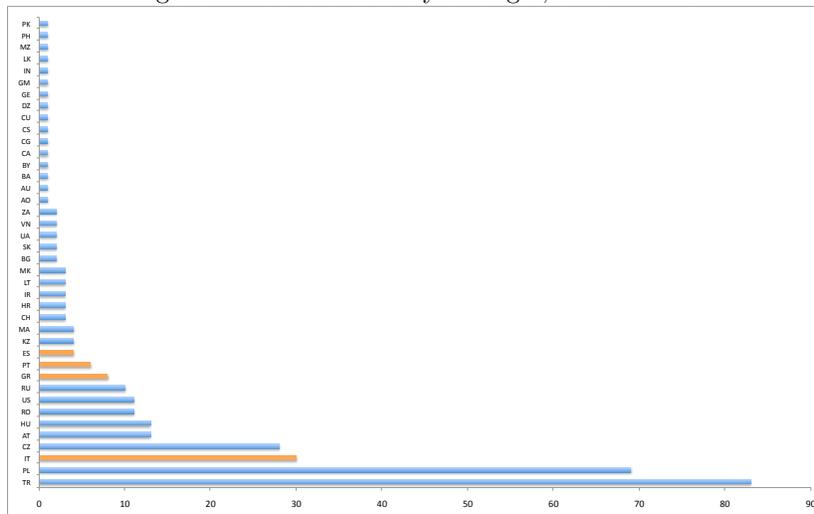
It is worthwhile to remark that the remaining countries in the control pool entered the EEC after 1973, therefore their immigrants were considered as non EEC citizens before entrance and as EEC ones afterwards. This is the case of Greece and Spain, that entered the EEC in 1981 and in 1986 respectively.

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 children 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.²¹

²¹A quadratic trend was also included but results were comparable, so we present the linear trend specification only.

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



The following diff-in-diff estimation is performed for different windows centered around 1973:

$$discrim_i = \beta_0 + \beta_1 noeec_i * post73_i + \beta_2 post73_i + \beta_3 noeec_i + controls + u_i. \quad (10)$$

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 1986.²²

Equation (10) has been estimated by logit 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.²³ In the logistic regression we used the penalized likelihood proposed by Firth (1993) to avoid separation issues.

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

²²Results with asymmetric windows are shown in our robustness analysis. The largest window covers the 1957-1990 period.

²³We show the results of both the logit 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.

name	type	meaning	mean	st dev
discrim	binary	perceived discrimination status	0.12	
post73	binary	born after 1973	0.48	
noeec	binary	father not born in EEC country	0.83	
noeec.post73	binary	interaction variable	0.41	
male	binary	male	0.51	
round3	binary	interviewed in 2006	0.16	
round4	binary	interviewed in 2008	0.22	
round5	binary	interviewed in 2010	0.23	
round6	binary	interviewed in 2012	0.21	
yrbth	discrete	year of birth of the respondent	1973.7	8.99

Table 1: Variables in the difference-in-difference estimation, window 1960-1986.

Though the sample size is rather limited (353 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 might 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 section 5, where we test our models for several windows around 1973.

4.3 Triple difference estimation

As we mentioned in section 4.1, the Netherlands did not modify its immigration regulation after 1973. This provides us with a suitable second control group and enables us to perform a triple difference analysis. The equation that we estimated is the following:

$$\begin{aligned}
discrim_i = & \beta_0 + \beta_1 de * noeec_i * post73_i + \beta_2 de * post73_i + \beta_3 de * noeec_i + \\
& + \beta_4 noeec_i * post73_i + \beta_5 de + \beta_6 post73_i + \beta_7 noeec_i + controls + u_i.
\end{aligned}
\tag{11}$$

In this estimation, all issues concerning the pre-treatment of data and the statistical methodology have been handled as in equation (10). Notice that the triple difference parameter is still β_1 . Results are reported in Table 4: the coefficients for the 1960-1986 window are significant at levels below 5% and they always display the predicted sign.

Summarizing, it seems correct to argue that the triple difference analysis provides further support to the results of the double difference one.

5 Robustness checks

In a quasi-experimental setup, 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.

In Table 5 the same windows are applied to the triple difference estimation.

The coefficients always have the right sign, and they are significant as soon as sample size is sufficiently large. These results are confirmed for all regression models, and for both symmetric and asymmetric windows.

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

Finally, we estimated the diff-in-diff specification by including controls which could be dependent on the experiment (religion, education, employment status...) but were interacted with the *post73* dummy. The resulting estimated experimental parameter was not qualitatively different from the one described above in terms of sign and significance.²⁴

6 Conclusions

As far as we know, this paper is the first attempt to identify the effect of immigration restriction on the cultural assimilation of the second generation. Our theoretical model shows that protectionism against immigration incentivizes permanent migration 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 destination 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 offspring of the immigrants. According to our evidence, this mechanism has been at work in Germany after the 1973 *Anwerbestopp*.

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

Repeating our analysis in a different setting (country or policy) might be useful for further research.

²⁴All our estimates are available upon request.

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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.
- 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%).
- Proof of proposition 2

$$\bar{a}(\pi) = \frac{\int_1^{\theta^*(\pi)} \frac{f(\theta_j)}{\theta_j} d\theta_j}{\int_1^{\theta^*(\pi)} f(\theta_j) d\theta_j} \quad (12)$$

We know that the derivative of $\int_1^{\theta^*(\pi)} f(\theta_j) d\theta_j$ with respect to π is

$$\frac{\partial \int_1^{\theta^*(\pi)} f(\theta_j) d\theta_j}{\partial \pi} = f(\theta^*(\pi)) \frac{\partial \theta^*}{\partial \pi} < 0 \quad (13)$$

(see eq. (4)). The derivative $\partial \bar{a} / \partial \pi$ is given by

$$\frac{\partial \bar{a}}{\partial \pi} = \frac{f(\theta^*(\pi)) \frac{\partial \theta^*}{\partial \pi} \left[\int_1^{\theta^*(\pi)} \frac{f(\theta_j)}{\theta^*(\pi)} d\theta_j - \int_1^{\theta^*(\pi)} \frac{f(\theta_j)}{\theta_j} d\theta_j \right]}{\left[\int_1^{\theta^*} f(\theta_j) d\theta_j \right]^2}. \quad (14)$$

since

$$\frac{f(\theta_j)}{\theta^*(\pi)} < \frac{f(\theta_j)}{\theta_j} \quad \text{for any} \quad \theta_j \in [1, \theta^*],$$

the term in square brackets on the numerator is negative, and $\frac{\partial \bar{a}}{\partial \pi} > 0$.

Dependent variable: discrim

	lpm robust (1)	lpm robust (2)	lpm robust (3)	lpm cluster (4)	glm logit (5)
(Intercept)	0.114** (0.055)	-11.975 (9.388)	-13.046 (9.450)	-13.046 (14.120)	-125.000 (87.954)
noeec.post73	0.340*** (0.069)	0.338*** (0.070)	0.330*** (0.071)	0.330*** (0.064)	3.335*** (1.234)
post73	-0.114** (0.055)	-0.201** (0.084)	-0.193** (0.086)	-0.193* (0.105)	-2.227* (1.315)
noeec	-0.084	-0.078 (0.059)	-0.070 (0.059)	-0.070 (0.049)	-0.987** (0.604)
yrbrth		0.006 (0.005)	0.007 (0.005)	0.007 (0.007)	0.062 (0.045)
male		0.003 (0.033)	0.004 (0.033)	0.004 (0.031)	0.016 (0.339)
round3			0.072 (0.053)	0.072** (0.031)	0.689 (0.626)
round4			0.085* (0.046)	0.085** (0.036)	0.830 (0.592)
round5			0.076 (0.048)	0.076** (0.034)	0.703 (0.571)
round6			0.096* (0.051)	0.096*** (0.036)	0.898 (0.586)
R ²	0.111	0.117	0.127	0.127	
Adj. R ²	0.104	0.104	0.104	0.104	
Num. obs.	353	353	353	353	353

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

Table 2: Estimation results for equation 10 on the window 1960-1986.

LPM ROBUST	1978	1980	1982	1984	1986	1988	1990
1954	336 0.27 (0.09)	367 0.26 (0.07)	396 0.28 (0.07)	417 0.29 (0.06)	440 0.3 (0.06)	469 0.3 (0.06)	493 0.3 (0.06)
1956	311 0.28 (0.09)	342 0.27 (0.07)	371 0.29 (0.07)	392 0.29 (0.07)	415 0.31 (0.06)	444 0.31 (0.06)	468 0.3 (0.06)
1958	281 0.29 (0.09)	312 0.28 (0.08)	341 0.3 (0.07)	362 0.3 (0.07)	385 0.32 (0.07)	414 0.31 (0.07)	438 0.31 (0.06)
1960	249 0.32 (0.09)	280 0.3 (0.08)	309 0.31 (0.07)	330 0.31 (0.07)	353 0.33 (0.07)	382 0.33 (0.07)	406 0.32 (0.07)
1962	219 0.26 (0.08)	250 0.24 (0.07)	279 0.25 (0.07)	300 0.26 (0.06)	323 0.27 (0.06)	352 0.27 (0.06)	376 0.26 (0.06)
1964	181 0.26 (0.09)	212 0.24 (0.08)	241 0.25 (0.07)	262 0.26 (0.07)	285 0.27 (0.07)	314 0.27 (0.07)	338 0.26 (0.06)
1966	151 0.25 (0.1)	182 0.24 (0.09)	211 0.25 (0.08)	232 0.26 (0.08)	255 0.27 (0.08)	284 0.26 (0.08)	308 0.26 (0.07)
LPM CLUSTER	1978	1980	1982	1984	1986	1988	1990
1954	336 0.27 (0.07)	367 0.26 (0.06)	396 0.28 (0.05)	417 0.29 (0.06)	440 0.3 (0.06)	469 0.3 (0.06)	493 0.3 (0.06)
1956	311 0.28 (0.07)	342 0.27 (0.06)	371 0.29 (0.05)	392 0.29 (0.06)	415 0.31 (0.06)	444 0.31 (0.06)	468 0.3 (0.06)
1958	281 0.29 (0.07)	312 0.28 (0.06)	341 0.3 (0.05)	362 0.3 (0.06)	385 0.32 (0.06)	414 0.31 (0.06)	438 0.31 (0.06)
1960	249 0.32 (0.07)	280 0.3 (0.06)	309 0.31 (0.05)	330 0.31 (0.06)	353 0.33 (0.06)	382 0.33 (0.06)	406 0.32 (0.06)
1962	219 0.26 (0.05)	250 0.24 (0.05)	279 0.25 (0.04)	300 0.26 (0.05)	323 0.27 (0.05)	352 0.27 (0.05)	376 0.26 (0.05)
1964	181 0.26 (0.05)	212 0.24 (0.05)	241 0.25 (0.05)	262 0.26 (0.05)	285 0.27 (0.06)	314 0.27 (0.06)	338 0.26 (0.05)
1966	151 0.25 (0.05)	182 0.24 (0.06)	211 0.25 (0.05)	232 0.26 (0.06)	255 0.27 (0.06)	284 0.26 (0.06)	308 0.26 (0.05)
GLM LOGIT	1978	1980	1982	1984	1986	1988	1990
1954	336 2.21 (1.7)	367 2.67 (1.61)	396 3.26 (1.56)	417 3.49 (1.54)	440 3.71 (1.54)	469 3.79 (1.54)	493 3.88 (1.54)
1956	311 2.31 (1.7)	342 2.76 (1.61)	371 3.33 (1.56)	392 3.59 (1.54)	415 3.81 (1.54)	444 3.9 (1.54)	468 3.98 (1.54)
1958	281 2.49 (1.7)	312 2.92 (1.61)	341 3.5 (1.56)	362 3.76 (1.55)	385 3.97 (1.55)	414 4.05 (1.55)	438 4.14 (1.55)
1960	249 2.46 (1.63)	280 3.22 (1.6)	309 3.18 (1.37)	330 3.34 (1.31)	353 3.33 (1.23)	382 4.31 (1.56)	406 4.4 (1.56)
1962	219 1.26 (1.41)	250 1.58 (1.26)	279 1.59 (1.05)	300 1.77 (1.02)	323 1.87 (0.99)	352 3.62 (1.62)	376 3.7 (1.62)
1964	181 1.33 (1.45)	212 2.04 (1.48)	241 1.9 (1.19)	262 2.12 (1.17)	285 2.08 (1.08)	314 3.48 (1.62)	338 3.55 (1.62)
1966	151 1.98 (1.77)	182 2.38 (1.68)	211 2.83 (1.64)	232 3.1 (1.62)	255 3.04 (1.5)	284 3.35 (1.63)	308 3.4 (1.63)
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 the difference in difference model in equation 10 performed on various windows.

Dependent variable: discrim

	lpm robust (1)	lpm robust (2)	lpm robust (3)	lpm cluster (4)	glm logit (5)
(Intercept)	0.111* (0.063)	-16.455** (8.155)	-17.158** (8.125)	-17.158 (11.087)	-125.000* (62.058)
de.noeec.post73	0.366** (0.154)	0.389** (0.153)	0.376** (0.151)	0.376*** (0.069)	3.625*** (1.484)
de.post73	-0.214* (0.129)	-0.241* (0.130)	-0.222* (0.127)	-0.222*** (0.056)	-2.082 (1.380)
de.noeec	-0.189* (0.099)	-0.197** (0.098)	-0.178* (0.099)	-0.178** (0.081)	-1.601* (0.874)
noeec.post73	-0.026 (0.138)	-0.052 (0.137)	-0.042 (0.134)	-0.042 (0.075)	-0.378 (0.876)
de	0.003 (0.084)	0.018 (0.083)	-0.003 (0.083)	-0.003 (0.053)	-0.053 (0.747)
post73	0.099 (0.117)	0.008 (0.126)	-0.003 (0.123)	-0.003 (0.067)	-0.107 (0.856)
noeec	0.104	0.121 (0.080)	0.108 (0.080)	0.108 (0.069)	0.639 (0.637)
yrbrth		0.008** (0.004)	0.009** (0.004)	0.009 (0.006)	0.062 (0.032)
male		-0.002	-0.001 (0.030)	-0.001 (0.025)	-0.034 (0.245)
round3			0.050 (0.049)	0.050** (0.024)	0.375 (0.418)
round4			0.083* (0.047)	0.083** (0.037)	0.613 (0.410)
round5			0.037 (0.043)	0.037 (0.029)	0.277 (0.392)
round6			0.106** (0.049)	0.106* (0.055)	0.726** (0.388)
R ²	0.088	0.096	0.106	0.106	
Adj. R ²	0.077	0.081	0.084	0.084	
Num. obs.	547	547	547	547	547

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

Table 4: Estimation results for equation 11 on the window 1960-1986.

LPM ROBUST	1978	1980	1982	1984	1986	1988	1990
1954	488 0.38 (0.21)	539 0.32 (0.17)	583 0.29 (0.15)	619 0.27 (0.14)	660 0.37 (0.14)	705 0.34 (0.14)	746 0.31 (0.13)
1956	455 0.39 (0.21)	506 0.33 (0.17)	550 0.3 (0.15)	586 0.28 (0.14)	627 0.38 (0.15)	672 0.35 (0.14)	713 0.32 (0.14)
1958	412 0.37 (0.21)	463 0.31 (0.18)	507 0.29 (0.15)	543 0.27 (0.15)	584 0.36 (0.15)	629 0.33 (0.14)	670 0.3 (0.14)
1960	375 0.39 (0.21)	426 0.33 (0.18)	470 0.3 (0.16)	506 0.29 (0.15)	547 0.38 (0.15)	592 0.34 (0.14)	633 0.32 (0.14)
1962	334 0.31 (0.21)	385 0.26 (0.18)	429 0.23 (0.16)	465 0.22 (0.15)	506 0.3 (0.15)	551 0.26 (0.14)	592 0.23 (0.14)
1964	282 0.3 (0.21)	333 0.26 (0.18)	377 0.23 (0.16)	413 0.22 (0.16)	454 0.3 (0.16)	499 0.27 (0.15)	540 0.24 (0.15)
1966	245 0.29 (0.22)	296 0.26 (0.19)	340 0.23 (0.17)	376 0.22 (0.17)	417 0.31 (0.17)	462 0.27 (0.16)	503 0.25 (0.16)
LPM CLUSTER	1978	1980	1982	1984	1986	1988	1990
1954	488 0.38 (0.11)	539 0.32 (0.1)	583 0.29 (0.08)	619 0.27 (0.07)	660 0.37 (0.08)	705 0.34 (0.07)	746 0.31 (0.06)
1956	455 0.39 (0.11)	506 0.33 (0.1)	550 0.3 (0.08)	586 0.28 (0.07)	627 0.38 (0.08)	672 0.35 (0.07)	713 0.32 (0.06)
1958	412 0.37 (0.11)	463 0.31 (0.1)	507 0.29 (0.07)	543 0.27 (0.06)	584 0.36 (0.07)	629 0.33 (0.07)	670 0.3 (0.06)
1960	375 0.39 (0.11)	426 0.33 (0.1)	470 0.3 (0.07)	506 0.29 (0.06)	547 0.38 (0.07)	592 0.34 (0.07)	633 0.32 (0.06)
1962	334 0.31 (0.1)	385 0.26 (0.1)	429 0.23 (0.07)	465 0.22 (0.06)	506 0.3 (0.07)	551 0.26 (0.07)	592 0.23 (0.06)
1964	282 0.3 (0.1)	333 0.26 (0.11)	377 0.23 (0.09)	413 0.22 (0.07)	454 0.3 (0.07)	499 0.27 (0.07)	540 0.24 (0.07)
1966	245 0.29 (0.1)	296 0.26 (0.11)	340 0.23 (0.1)	376 0.22 (0.07)	417 0.31 (0.08)	462 0.27 (0.08)	503 0.25 (0.07)
GLM LOGIT	1978	1980	1982	1984	1986	1988	1990
1954	488 3.05 (2.04)	539 3.27 (1.93)	583 3.57 (1.87)	619 3.69 (1.85)	660 4.36 (1.79)	705 4.26 (1.78)	746 4.22 (1.77)
1956	455 3.15 (2.04)	506 3.37 (1.93)	550 3.65 (1.88)	586 3.79 (1.86)	627 4.47 (1.79)	672 4.37 (1.79)	713 4.34 (1.78)
1958	412 3.17 (2.06)	463 3.43 (1.95)	507 3.73 (1.89)	543 3.88 (1.87)	584 4.5 (1.81)	629 4.37 (1.8)	670 4.34 (1.8)
1960	375 2.69 (1.92)	426 3.32 (1.87)	470 3.24 (1.69)	506 3.43 (1.66)	547 3.62 (1.48)	592 4.59 (1.82)	633 4.57 (1.81)
1962	334 1.45 (1.74)	385 1.74 (1.61)	429 1.67 (1.45)	465 1.82 (1.43)	506 2.19 (1.34)	551 3.72 (1.88)	592 3.7 (1.87)
1964	282 1.26 (1.69)	333 1.83 (1.67)	377 1.72 (1.5)	413 1.96 (1.5)	454 2.29 (1.39)	499 3.6 (1.88)	540 3.58 (1.88)
1966	245 2.16 (2.17)	296 2.53 (2.04)	340 2.84 (1.99)	376 3.03 (1.97)	417 3.64 (1.9)	462 3.5 (1.89)	503 3.47 (1.89)
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 the triple difference model in equation 11 performed on various windows.