

Bertocchi, Graziella; Strozzi, Chiara

**Working Paper**

## Citizenship laws and international migration in historical perspective

WZB Discussion Paper, No. SP II 2004-18

**Provided in Cooperation with:**

WZB Berlin Social Science Center

*Suggested Citation:* Bertocchi, Graziella; Strozzi, Chiara (2004) : Citizenship laws and international migration in historical perspective, WZB Discussion Paper, No. SP II 2004-18, Wissenschaftszentrum Berlin für Sozialforschung (WZB), Berlin

This Version is available at:

<https://hdl.handle.net/10419/51124>

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WISSENSCHAFTSZENTRUM BERLIN  
FÜR SOZIALFORSCHUNG

SOCIAL SCIENCE RESEARCH  
CENTER BERLIN

Graziella Bertocchi \*  
Chiara Strozzi \*\*

**Citizenship Laws and International Migration  
in Historical Perspective**

\* Università di Modena e Reggio Emilia and CEPR  
\*\* Università di Modena e Reggio Emilia

**SP II 2004 – 18**

December 2004

ISSN Nr. 0722 – 6748

**Research Area**  
**Markets and Political Economy**

**Research Unit**  
**Market Processes and Governance**

**Forschungsschwerpunkt**  
**Markt und politische Ökonomie**

**Abteilung**  
**Marktprozesse und Steuerung**

Zitierweise/Citation:

Graziella Bertocchi, Chiara Strozzi, **Citizenship Laws and International Migration in Historical Perspective**, Discussion Paper SP II 2004 – 18, Wissenschaftszentrum Berlin, 2004.

Wissenschaftszentrum Berlin für Sozialforschung gGmbH,  
Reichpietschufer 50, 10785 Berlin, Germany, Tel. (030) 2 54 91 – 0  
Internet: [www.wz-berlin.de](http://www.wz-berlin.de)

## ABSTRACT

### **Citizenship Laws and International Migration in Historical Perspective**

by Graziella Bertocchi and Chiara Strozzi \*

We investigate the origin, impact and evolution of the legal institution of citizenship. We compile a dataset across countries of the world from the 19th century, which documents how citizenship laws have evolved from the common and civil law traditions. Contrary to the predictions of legal theory, we show that the original, exogenously-given citizenship laws did not matter for migration flows during the early, mass migrations period. After WWII, citizenship-granting institutions are no longer exogenous as they are shown to be determined by international migration flows, border stability, the establishment of democracy, the welfare burden, cultural factors, and colonial history.

*Keywords: Citizenship laws, international migration, legal origins, democracy, borders*

*JEL Classification: F22, K40, N30, O15*

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\* Previous versions of this paper have been presented at the North American Summer Meetings of the Econometric Society in Evanston, the WDI/CEPR Conference on “Transition Economics” in Hanoi, the Conference on “Economic Growth and Distribution” in Lucca, the CEPR Conference on “Understanding Productivity Differences Across Sectors, Firms and Countries” in Alghero, and the AIEL conference in Modena. We thank conference participants for helpful comments and suggestions. Financial support from the Italian University Ministry and the European Commission is gratefully acknowledged.

Corresponding author: Graziella Bertocchi, Dipartimento di Economia Politica, Università di Modena e Reggio Emilia, Viale Berengario, 51, I-41100 Modena, Italy, phone 39 059 2056856, fax 39 059 2056947, e-mail bertocchi.graziella@unimore.it, web <http://www.economia.unimore.it/BertocchiGraziella/>.

## ZUSAMMENFASSUNG

### **Staatsbürgerschaftsrecht und die internationale Migrationsbewegung – eine historische Perspektive**

Wir untersuchen die Entstehung, die Bedeutung und die Entwicklung des Staatsbürgerschaftsrechtes. Es wird ein Datensatz von Ländern zur Zeit des 19. Jahrhunderts zusammengestellt, der dokumentiert, wie Staatsbürgerschaftsgesetze aus gewohnheits- und zivilrechtlichen Traditionen entstanden sind. Entgegen den Voraussagen der Rechtstheorie kommen wir zu dem Ergebnis, dass die ursprünglichen, exogen gegebenen Staatsbürgerschaftsgesetze keinen Einfluss auf die Migrationsströme der frühen Massenmigrationsperiode hatten. Seit dem zweiten Weltkrieg kann man die staatsbürgerschaftsrechtlichen Normen und Institutionen nicht mehr als gegeben betrachten. Vielmehr zeigt sich, dass sie durch internationale Migrationsbewegungen, die Stabilität von Grenzen, das Vorhandensein einer demokratischen Ordnung, die Belastung der Wohlfahrt, kulturelle Faktoren sowie die Kolonialgeschichte bestimmt werden.

# 1 Introduction

Each country of the world has established a complex system of legal rules that govern the attribution of citizenship. Because of the increasing pressure of international migration, citizenship laws have moved to center stage on policy agendas. By regulating the inclusion of newcomers within societies that exhibit unprecedented diversity, these legal institutions represent powerful tools to promote social cohesion and preserve common traditions, with implications not only for immigration policy, but also for labor markets, welfare programs, and international relations.

We investigate the origin, the impact and the evolution of the legal institution of citizenship from a political economy perspective with a specific focus on the laws that regulate the access to citizenship at birth. Such laws come from two broad traditions, common and civil law. The former applies the *jus soli* (i.e., through birthplace) principle, according to which the child of an immigrant is a citizen, as long as he is born in the country of immigration. The United States are the archetypal example of such an arrangement. The latter applies the *jus sanguinis* (i.e., through parental descent) principle, according to which a child inherits citizenship from his parents, independently of where he is born. Countries in Continental Europe have traditionally applied this kind of legislation.

Our first goal has been to assemble a new dataset covering citizenship laws in a large number of countries which also captures their evolution starting from the 19th century. Because of the sharp differences between Continental Europe and America, the institution of citizenship needs to be evaluated as one of the possible causes of the different historical experience, especially during the early, mass migration era. Our findings suggest that citizenship laws did not contribute to the economic forces that determined the early, mass migration waves. In the postwar period, citizenship laws have undergone a process of adjustment which is not yet completed. We investigated which factors can account for the observed patterns of evolution, and found that the institution of citizenship adapted endogenously and systematically to migration, the legal tradition, border stability, the consolidation of democratic institutions, the welfare burden, as well as to cultural factors and postcolonial history.

This paper represents a first application to the question of citizenship policy of the comparative-legal approach. More generally, it contributes to a research program which has focused on the

historical determinants of institutions. Moreover, it adds to research on international migration in a long-term perspective. It is therefore related to several separate branches of the literature.

The stream of research into which this paper perhaps fits more naturally is the literature on legal theory initiated by La Porta et al. (1998). The basic premise of this research line is the recognition that laws in different countries are adopted or transplanted from a few legal traditions, that the resulting legislative bodies reflect both the influence of the legal origin and the subsequent revision specific to individual countries, and that legal origins matter for a variety of economic issues.<sup>1</sup> Not only we test this theory by estimating the impact of the legal institution of citizenship on migration, but also we extend our investigation to the determinants of the dynamic adaptation of such rules. In a related vein, Barro (1999) and Barro and McCleary (2004) study the determinants of the institutions of democracy and state religion.

The historical experience of international migration has recently been the focus of a number of studies, which have addressed both the causes and the consequences of migration flows. O'Rourke (1991), Hatton (1995, 2003), Taylor and Williamson (1997), Hatton and Williamson (1998, 2002) and Chiswick and Hatton (2002) examine world migration over the past four centuries, exploring its determinants as well as its impact on the host countries' labor markets and income distribution. Timmer and Williamson (1998) and Hatton and Williamson (2004b) study the immigration policies enacted in the 19th century. Recent developments in the debate on immigration are surveyed by Borjas (1994). Within the literature on the historical determinants of institutions, Engerman and Sokoloff (2000) and Acemoglu et al. (2001) do consider colonial migration as one of the factors shaping institutions and in turn economic development. A related stream of the literature has modeled the political economy of migration, with contributions by Razin et al. (2002), Benhabib (1996), and Gradstein and Schiff (2004), while O'Rourke and Sinnott (2003) estimate voters' attitudes towards immigration. None of these papers, however, considers the role of citizenship laws.

Recent work by Alesina and Spolaore (1997) and Bolton and Roland (1997) on the optimal determination of the size of nations, and thus state borders, is also relevant to our approach, both

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<sup>1</sup>While La Porta et al. (1998) focus on legal protection of investor rights, legal theories have been tested in other areas, such as labor regulation in Botero et al. (2003) and the quality of government in La Porta et al. (1999). A model by Glaeser and Shleifer (2002) explains the origins of the two main original legal systems.

because country size in this literature is the same as population size and is potentially influenced by migration and by the legal status of immigrants, and also because borders play an important role on the determination of citizenship rules.

The rest of the paper is organized as follows. Section 2 reviews the historical and legal background for the issues we raised. Section 3 describes our dataset on citizenship laws around the world. Section 4 illustrates our empirical strategy, which is then applied in the next two sections. Section 5 focuses on the impact of citizenship laws on international migration in the early, mass migration period. Section 6 studies the recent evolution of citizenship laws and its determinants. While we focus primarily on legal tradition and immigration, we also control for border stability, democracy, the nature of the welfare state, national culture, colonial history, the level of development, and a number of geopolitical factors. Section 7 concludes and indicates directions for future research. The Data Appendix collects information about the data employed, other than those in the original dataset on citizenship laws.

## 2 Historical and legal background

Citizenship is a legal institution that designates full membership in a state and the associated rights and duties. There are several ways to acquire citizenship: at birth, by naturalization, by marriage. While we will consider all aspects of citizenship acquisition, we focus primarily on citizenship acquisition at birth, since these specific provisions can be linked directly to the two well-defined bodies of common and civil law, the first applying the birthplace principle (*jus soli*), the second the bloodline principle (*jus sanguinis*). Therefore we concentrate on citizenship acquisitions by second-generation immigrants, i.e., the children born of first-generation immigrants in the immigration country. In *jus soli* countries, an immigrant's child is automatically a citizen, while in *jus sanguinis* countries a child inherits citizenship from his parents independently of birthplace. Were a population and a territory to match each other exactly, the above distinction would be irrelevant but it does make a difference in the presence of international migration. In particular, regimes associated with *jus soli* are presumed to be more inclusive towards newcomers, while regimes based on *jus sanguinis* tend to embed an ethnic character.

In 18th century Europe *jus soli* was the dominant criterion, following feudal traditions which



linked human beings to the lord who held the land where they were born. The French Revolution broke with this heritage and with the 1804 civil code reintroduced the ancient Roman custom of *jus sanguinis*. Continental modern citizenship law was subsequently built on these premises. During the 19th century the *jus sanguinis* principle was adopted throughout Europe and then transplanted to its colonies. By imitation, Japan also adopted *jus sanguinis* in this phase. On the other hand, the British preserved their *jus soli* tradition and spread it through their own colonies, starting with the United States where it was later encoded in the Constitution. By the end of the 19th century, *jus soli* had become the norm in all common law countries, while *jus sanguinis* regulated citizenship law in most civil law countries. The adoption of these principles can therefore be viewed as exogenous. However, the next century witnessed a continuous process of transformation of citizenship laws across the world, with a marked acceleration after WW2. Therefore, current citizenship laws must be viewed as the endogenous outcome of a complex process involving several factors.

Political scientists and legal scholars have long acknowledged the importance of citizenship rules and have made significant contributions toward the understanding of the factors that shape them. In the face of the increasing scale and pace of international migration, the pioneering work by Marshall (1950), which defined membership within a bounded nation-state equipped with a common culture, has quickly become outdated. Modern sociopolitical theories have pointed to two main factors as the determinants of citizenship laws dynamics: legal tradition, and the disconnection between territory and population which is provoked by migration flows (Weil, 2001). When a legal tradition is perceived to fulfil the interest of the state in terms of migration, the core of national legislation is maintained. In the classic lands of immigration - the US, Canada and Australia - *jus soli* was therefore sustained for a protracted period of time, while Continental Europe long relied on *jus sanguinis* to maintain links with the descendants of its emigrants. However, the historical experiences of immigration and emigration gradually affected the original set of rules, with a tendency toward convergence which accelerated after WW2. Through a survey of 25 nationality laws, Weil (2001) shows that most *jus soli* countries have indeed become more restrictive while some *jus sanguinis* countries have added *jus soli* provisions. For instance, traditional *jus soli* countries such as Australia and the UK, pressed by unsustainable inflows of migrants, have turned toward more restrictive terms to gain citizenship by birthplace. By con-

trast, the presence of a growing immigrant stock pushed jus sanguinis countries in Europe toward the adoption of a more inclusive concept of citizenship. While France anticipated this tendency by almost two centuries, most other European countries in more recent days have at the very least formally included double jus soli (i.e., automatic citizenship acquisition for third-generation immigrants) in their legislation. On the other hand, the UK and Ireland, as countries of emigration, progressively added sanguinis provisions, while the presence of a large stock of emigrants may exert opposite pressure to restrict the prerequisites to acquire citizenship by descent. The overall tendency toward convergence around a combination of jus soli and jus sanguinis provisions inevitably occurs, again according to Weil, as long as a country starts perceiving itself as a country of immigration rather than of emigration, and provided that the following two additional conditions are satisfied: consolidation of democratic values and stabilization of state borders. A commitment to democracy leads naturally to a more assimilative attitude toward aliens, while the stabilization of borders tends to reduce the pressure to preserve a national identity through jus sanguinis. Achieving border stability after the fall of the Berlin wall was a decisive factor in pushing Germany towards the long-delayed adoption of jus soli elements in the face of a large stock of disenfranchised immigrants. Likewise, the attempt to preserve an ethnic heritage through jus sanguinis has played a crucial role in countries such as the former socialist in Eastern Europe and Asia, which have gone through a recent period of turmoil. The same tendency had emerged earlier on during the decolonization phase. To sum up, convergence of citizenship laws to a mix of jus soli and sanguinis has been linked to the presence of a large immigrant stock, stable borders and a consolidated democracy, and is prevented when one of these conditions are not satisfied.

An additional factor that has been the subject of debate is the influence of national character and culture. The theory advanced by Brubaker (1992) focuses on France and Germany as two antagonistic kinds of nationhood, the former more assimilationist, the latter more ethnocentric, which also differ in their definitions of citizenship. German citizenship law has always been restrictive toward non-Germans, while France, confident in transforming immigrants into French people, was expansionist toward them. Weil (2001), however, does not find evidence of the existence of a causal link between national identity and nationality laws.

Finally, since citizenship rights are linked to the ability to enjoy welfare benefits, and to determine them through voting, citizenship policy has been associated with the nature of the welfare

state, with a thick welfare state - as in Germany, or the Scandinavian countries - representing a potential obstacle to the application of jus soli (Joppke, 1998). The relative thickness of the concept itself of citizenship, if compared to residency, is a related, potentially relevant consideration: in the US, for instance, citizenship is relatively thin, in the sense that it confers few additional benefits if compared with residency.

In the next subsections we will discuss a few specific country cases in more detail, drawing mostly from Joppke (1998) and Aleinikoff and Klusmeyer (2000, 2001).

## 2.1 The United States

As previously mentioned, jus soli was encoded in the US Constitution through the 1868 Fourteenth Amendment, with the specific purpose to protect the birthrights of black slaves. Consistently with its history as a country of immigrants, and with a general positive attitude toward economic liberalism, the US approach is still remarkably inclusive in all its aspects, ranging from immigration policy to naturalization requirements. Debate about possible restrictions did arise recently, but never led to actual change.<sup>2</sup> In particular, jus soli came under attack in the 1980s regarding its applicability to the children of illegal immigrants. A relatively young and thin welfare state contributes to the fiscal sustainability of jus soli in this country. As a result of these combined elements, current citizenship law in America differs considerably from that of another classic land of immigration such as Australia, where jus soli had similarly been introduced by the colonists. In the postwar period, Australia went through numerous legislative and administrative reforms. Jus soli survived until 1986, while afterward a person born in Australia must have at least one parent who is either an Australian citizen or a permanent resident in order to acquire citizenship.

## 2.2 Latin America

In the face of a civil law tradition which had been transplanted by the European powers, this area has followed a rather peculiar pattern. At independence, most of the incipient states chose jus soli as a way to break with the colonial political order and to prevent the metropolises from

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<sup>2</sup>In his analysis of Mexican immigration, Huntington (2004) has criticized current nationality regulations on the grounds that they represent a “devaluation of citizenship”.

making legitimate claims on citizens born in the new countries. Jus soli was encoded in the Constitution of Brazil in 1824, of Venezuela in 1830, of Argentina in 1853. Therefore, most of Latin America was already a jus soli country before the 19th century immigration waves began. Jus soli is still the prevalent rule in the area, even if it is no longer attracting immigrants. Mexico represents a special case where jus soli was also adopted in the 1814 insurgent Constitution, but was then abandoned in 1836, only to come back to stay, in combination with jus sanguinis, with a Constitutional Amendment in 1937. Furthermore, in 1997 citizenship acquisition through jus sanguinis was restricted to children of Mexican parents born in Mexico even though, at the same time, Mexican emigrants were allowed to keep their Mexican nationality even after naturalizing abroad. The latter provision was introduced to facilitate the integration of Mexican emigrants in the countries of destination, without severing their bond with their homeland.

### **2.3 The United Kingdom**

British nationality law has been deeply affected by its imperial experience. Because of its colonial history, the concept of nationality in the UK was, up to WW2, particularly extensive, since all subjects of the British Empire had equal access to British citizenship simply by establishing residence in the UK. In 1948 six separate forms of citizenship were created (i.e., British Dependent Territories Citizen, British Overseas Citizen, British Subject, British Protected Person, Commonwealth Citizen, Citizen of the Republic of Ireland). Following a postwar wave of colonial immigration, this open-door policy was progressively restricted, even though special status is still attributed to citizens of the British Commonwealth. Redefinitions of national citizenship have been effectively employed, since the 1980s, as a form of selective immigration policy. The 1984 British Nationality Act restricts jus soli by establishing that a child born in the UK qualifies for British citizenship only if at least one parents is a British citizen or resident.

### **2.4 France**

The emergence of the nation-state in Continental Europe was the main factor that shaped citizenship law in this area. The revolutionary experience was particularly important for France, where jus sanguinis was first introduced with the 1804 Civil Code and maintained for the entire course

of the 19th century, even though military consideration introduced early on elements of *jus soli*. In order to secure immigrants' children born in France to the draft, in 1889 double *jus soli* became automatic. After WW2, large-scale immigration, especially from North Africa, raised concern regarding assimilation. Citizenship issues and the rights of immigrants became the object of heated debate in French politics. In 1993 Chirac introduced a restrictive revision to the legislation, that required a formal citizenship request from second-generation immigrants. With the Left regaining political power in 1997, however, these restrictions were considerably revised, with the automatic assignment of citizenship at age 18 to those immigrants' children born in France who had neither requested, nor declined it. The case of France is frequently compared with Germany. Brubaker (2002) has influentially argued that the different path followed by these countries has been shaped by their cultural difference, with France sticking to its tradition of inclusive, state-constituted nation, and Germany to its exclusive, non-statal, ethnic identity.

## 2.5 Germany

The single most relevant event in the history of German citizenship law is certainly the fall of the Berlin wall, which paved the way for the achievement of stable national borders. Prior to that, the massive guest-worker immigration of the postwar period, mostly from Turkey but also from Southern Europe, had started to put under strong pressure, but to no avail, the original Wilhelminian citizenship law of 1913, which had established strong *sanguinis* ties with German overseas emigrants. With the foundation of the GDR and the consolidation of the Eastern Block, Germany found itself in the paradoxical situation of having to live with a large population of disenfranchised foreigners born on its soil at home, and at the same time with millions of ethnic Germans living behind the Iron Curtain. Achieving border stability was a decisive factor in pushing Germany towards the long-delayed adoption of *jus soli* elements. A first step in this direction was the new Foreigner Law in 1990, which turned naturalization from the discretionary exception into the rule. A major overhaul of the legislation, following an intense political struggle, was finally approved in 1999. *Jus soli* is now the norm in Germany (under the mild requirement that one parent has lived in the country for eight years). In the evaluation of the German experience, other factors that may have delayed the introduction of *jus soli* are, as previously suggested, the strong ethnic-genealogical character of the German national identity, and the thick nature of the

German welfare state. The latter aspect may have played a role in shaping the evolution of citizenship policies in several other European countries and especially the Scandinavian ones, where *jus sanguinis* was functional to the large past emigration flows, but had recently to adapt to the quickly changing conditions, especially for high-immigration Sweden. As documented by Weil (2001), restricted forms of double *jus soli* are de facto applied, by now, in the vast majority of European countries, which recently adapted their legislation to the globalization of international migration and its increasing impact on Europe. In particular, in the entire EU, with the exceptions of Austria, Greece and Luxembourg, access to citizenship by second and third generation is facilitated.

## 2.6 Decolonization

Postwar decolonization had a major impact on citizenship rules applied around the world, and not only through the indirect impact on the metropolitan countries we previously examined. The vast majority of the African colonies that were subject to civil law countries practicing *jus sanguinis* stuck to this principle after independence. On the other hand, many former UK colonies rejected the British tradition of *jus soli* and switched to an often strongly ethnically tinged version of *jus sanguinis*. For instance, Sierra Leone's 1961 Constitution established that citizenship is transmitted only by descent and only to children whose father and a grandfather were Sierra Leoneans of African-Negro descent. In situations where instability was pushed to an extreme degree by the young age and the arbitrary borders of these countries, and was compounded with deep ethnic division, *jus sanguinis* tended to prevail as a way to control more easily the formation of national entities. At the same time, however, the associated exclusive notion of ethnic and tribal identity caused enormous problems in countries where colonial rule had left shaky democratic institutions. To these days, ethnic conflict lies at the roots of a chronic manipulation of citizenship rules in favor of one ethnic group over others. The 1964 Congolese Constitution, in an effort to exclude Rwandan immigrants, recognized citizenship only for persons whose parents were members of one of the tribes established within the territory by 1908. In 1981 Mobutu signed a new law on nationality requiring an ancestral connection to the population residing in the territory as far back as 1885. Marginalization and de-facto statelessness of significant strata of the population is the unavoidable outcome of these policies.

## 2.7 The disintegration of the USSR

Another major wave of citizenship law codification followed the disintegration of the USSR. The area had been sealed toward international migration but, as for all empires, there had been considerable migration within. The Soviet Union had occupied Estonia, Latvia and Lithuania in 1940. During the following decades millions of Russians were encouraged to settle in Latvia and Estonia (less so in Lithuania) in order to Russify them. To these days, large Russian-speaking, stateless, sizeable minorities are still present. After independence, the new citizenship laws of these three states reflected this heritage with an emphasis on *jus sanguinis* as the basis for acquiring citizenship. Lithuania, which was the least affected by Soviet immigration policy, showed the most inclusive, and Latvia the most exclusive attitude toward ethnic Russians. The issue for these states was how to balance a need to reconstitute their national identity around an ethnic model, and a commitment to democratic values with respect to the rights of minorities. Estonian and Latvian laws were sharply criticized by international organizations on the grounds of human rights. In the anticipation of EU integration, these recommendations were indeed fulfilled in the more recent legislation of the Baltics, while most other countries of the area still persist with discriminatory policies. By contrast, for the case of the Russian Federation, the salient fact in shaping current citizenship policy is the perception that many of its citizens are outside its borders, spread around the former regions of the USSR. Again, this perception as a country of emigrants pushes toward the persistence of *jus sanguinis* as the main principle, even though small concessions to *jus soli* have been made.

## 3 The data: Citizenship laws of the world

In this section we will present our dataset on citizenship laws for the two time periods covered by our investigation: the age of mass migration, i.e., from 1870 to 1910, and the post-WWII period, i.e., from 1950 to 1999. Our empirical strategy and the motivation for focusing on two distinct time periods will be illustrated in the next section.

### **3.1 The age of mass migration (1870-1910)**

The starting point for our investigation is - roughly speaking - the second half of the 19th century. By that time, the process of nation-state formation, and the associated codification effort, were completed in Continental Europe, while at the same time the revolutionary phase was over in those countries that had been the subject of the earlier colonization era. Soon after that, 19th century colonization would have extended the process of transplantation of legal tradition to the rest of the world. By the end of the century most countries of the world had established specific provisions regarding citizenship acquisition within a relatively well-developed legal system, which was exogenously determined with respect to each country's then current socioeconomic structure. For the 1870-1910 period our sample includes 17 countries: 12 current European OECD member countries plus three New World members - Australia, Canada and the US - and two New World nonmembers - Argentina and Brazil. For each country, we established which kind of citizenship law was in place at the beginning of the period under consideration. Since citizenship by the place of one's birth is a tenet of common law while *jus sanguinis* is associated with civil law, civil law countries were at that stage under a *jus sanguinis* regime, while *jus soli* applied in common law countries, with the only notable exceptions of Argentina and Brazil, which had introduced *jus soli* against a civil law tradition in the revolutionary period.<sup>3</sup> No significant change was introduced to the 1870 citizenship laws during the 40-year period under consideration. It is only after WW2 that the process of adaptation started to materialize.

### **3.2 The post-WWII period (1950-1999)**

#### **3.2.1 Citizenship at birth**

The main innovative input in our empirical investigation is the creation of a dataset covering current citizenship laws around the world. The principal source for the information we codified is a directory compiled by the Investigations Service of the United States Office of Personnel Management in 2001, which provides synopses of the citizenship laws currently practiced in 190 countries. The sources for this directory were Embassies, the Library of Congress, and the Department of State. We supplemented this information with additional one from the CIA World

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<sup>3</sup>In the empirical analysis we will also evaluate the impact of the common law heritage.



Factbook (2002), the United Nations High Commission for Refugees (2003) and the survey in Weil (2001).

Starting with citizenship acquisition at birth, which is our principal focus, we attribute to each country an appropriate code for citizenship laws in 2001 and for the citizenship laws at the beginning of the period. We take 1948 as the starting point, even though there were nearly no reforms in citizenship laws around the world after the revolutionary period in Latin America, so that most of the legislation in place in 1948 had actually been developed much earlier. On the other hand, 1948 predates the decolonization phase and the related legislative reforms. We also coded citizenship laws in the intermediate year 1974, which divides the postwar sample in two subperiods of equal length, where the first fully captures the initial phase of postwar decolonization, while the second witnesses the globalization of international migration flows and its impact on Europe. This classification system allows us to capture the evolution of a country's legislation from the original to the current legal code.

For 2001 and 1974 citizenship laws, we construct three groups of countries, ordered by increasing degree of inclusiveness toward immigrants. Inclusiveness is minimal for countries subject to *jus sanguinis* (Group 1),<sup>4</sup> while it is maximal for countries subject to *jus soli* (Group 3).<sup>5</sup> Since, for many countries, the current legislation reflects a mix of *jus soli* and *jus sanguinis*, we also introduce an intermediate group, Group 2, that includes all countries where elements of *jus soli* are recognized, albeit in a restrictive form, and coexist with varying degrees of *jus sanguinis*. For example, a frequent provision that limits *jus soli* is double *jus soli* (i.e., automatic citizenship for the children of those immigrants who were also born in the country). Another is the ability, for a child born in a country where *jus sanguinis* prevails, to acquire citizenship at some later point (e.g., the age of maturity) subject to either residence requirements or application. Moreover, we

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<sup>4</sup>In the application of *jus sanguinis*, countries may differ on some factors, for example on the father's vs. mother's right to transmit citizenship by descent, the requirement of citizenship for one or both parents, the relevance of the marital status of the parents. Most of these factors depend on the interaction between local family law and citizenship law. A common exception to the general principle of *jus sanguinis* is automatic citizenship attribution to children of unknown parents.

<sup>5</sup>Typically those countries that adopt *jus soli* combine it with *jus sanguinis* provisions for the children of their citizens born outside of their territory (although limitations to the ability to transmit citizenship acquired in this manner to the next generation usually apply through, for example, residence requirements).

interpret as an element of *jus soli*, that justifies the inclusion of a country within Group 2, the existence of a provision that birth in the country matters for naturalization. Since we focus on the degree of inclusiveness of the law towards immigrants, our classification does not emphasize how narrowly in turn *jus sanguinis* can be specifically applied. Examples of restrictions are generational requirements limiting the principle of citizenship by descent to the first or second generations of individuals born and residing abroad, residence requirements for parents, and the requirement that parents must be citizens other than by descent. Nevertheless, the following discussion will not neglect these aspects.

Turning to citizenship laws in 1948, we identified only two groups, pure *jus sanguinis* and pure *jus soli* countries. We also coded countries according to their legal origin. As previously noticed, our original citizenship laws often but not always coincide with the appropriate legal origin of the countries involved, with *jus soli* being associated with common law and *jus sanguinis* with civil law. The main exception to this pattern is - as previously mentioned - Latin America, where most countries adopted *jus soli* during the first half of the 19th century. From the La Porta et al. (1999) legal origin classification, we retained only the two main families of common and civil law. Therefore, we did not distinguish, within the broader civil law tradition, among the French, German, and Scandinavian versions, since they do not present any significant difference for the issue of citizenship. Moreover, while La Porta et al. (1999) introduce a separate class for socialist-law countries, we assigned them to their own class of common or civil law as it prevailed before the communist period.<sup>6</sup>

Our dataset includes those 159 countries for which we were able to collect information on both original and current citizenship law, and for which migration data were actually available for the postwar period.<sup>7</sup> We coded citizenship laws as follows. Citizenship laws in 1948 is a dummy variable which is equal to 0 if a country adopts *jus sanguinis* while it is equal to 1 if a country adopts *jus soli*. Citizenship laws in 1974 and in 2001 are two ordinal variables which can take three values: 1 if a country belongs to Group 1 (*jus sanguinis*), 2 if it belongs to Group 2 (mix) and 3 if it belongs to Group 3 (*jus soli*).<sup>8</sup>

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<sup>6</sup>In fact all socialist countries in our sample, with the only exception of Myanmar, come from the civil law tradition. Nevertheless, we did also experience, in the empirical analysis, with a socialist country dummy.

<sup>7</sup>For details on migration data see the Data Appendix

<sup>8</sup>The variables are ordered according to the degree of inclusiveness of their citizenship policy.

The differential patterns of evolution that citizenship laws generate in 1948, 1974 and 2001 are summarized by the transition matrices in Table 1. The table shows that in 1948 jus soli was the rule in about 42% (i.e., 67 out of 159) of the countries, while jus sanguinis dominated in the remaining 58% (i.e., 92 out of 159). Among the countries that were under jus soli in 1948, we find the United States and Canada, all the Oceanian countries, most of Latin America and, within Africa and Asia, the British colonies. Within Europe, only the UK and Ireland belonged to this group. Therefore, in 1948 jus sanguinis predominated in most of Europe, including its Eastern part, and throughout the world in the countries which were subject to other-than-British colonial rule.

By 1974, 31% of the countries had jus soli, 62% jus sanguinis, and 6% had introduced a mixed regime. As of 2001, 23% of the countries apply jus soli, 55% jus sanguinis, 22% a mixed regime. Among the countries that still adhere to the jus soli principle are the United States, Canada, New Zealand, Ireland (which introduced restrictions to jus soli with a June 2004 referendum). UK and Australia, on the contrary, no longer adhere to this principle. Nevertheless, jus sanguinis still predominates, with 69% of the countries in Africa, 83% in Asia, and 41% (down from 94%) in Europe. Indeed, the growing group where a mix of provisions is applied is particularly well-represented in Europe, with 56% of the European countries including the formerly jus soli United Kingdom.

The table also shows that a large number of countries (37%) have started and ended as jus sanguinis, reflecting a pattern of stability. In other words, it is 68% of the originally jus sanguinis countries that have remained so. By contrast, 25% are steadily jus soli countries: this means that only 48% of the originally jus soli countries have not changed their policies. There is also a sizeable proportion of countries (18%) that have switched from jus soli to sanguinis, by completely eliminating birthplace as a criterion: most of them are former African colonies of the UK, which made this radical choice at independence. To sum up, despite the pressure of international migration, jus sanguinis appears to be relatively more resilient than jus soli, and there is growing evidence of the emergence of a process of convergence to a soli/sanguinis mix, which affects 22% of the countries (of which 4% converge from jus soli by restricting it, while 18% converge from jus sanguinis by adding jus soli elements) and which intensifies in the second subperiod.

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Tables 2 and 3 show summary statistics and pairwise correlations, respectively, for citizenship laws in 2001, 1974, and 1948. The correlation between 2001 and 1948 citizenship laws is 0.39, which points to some persistence as confirmed by the even higher correlation between 1948 and 1974, and 1974 and 2001 laws. Our dummy for a jus soli origin is significantly but not perfectly correlated with the dummy for common law legal origin (0.75).

### 3.2.2 Citizenship by naturalization and dual nationality

Naturalization and dual nationality policies are also relevant to the issues at hand, because to facilitate naturalization for immigrant parents may represent a substitute mechanism to attribute citizenship to children born in jus sanguinis countries. Beside, the general attitude toward inclusiveness revealed by a country's regulation of citizenship at birth is also reflected in its naturalization laws, with jus soli countries traditionally making naturalization much easier, at least for resident aliens. Within jus sanguinis countries, naturalization requirements again tend to be correlated with the revisions introduced for citizenship at birth. Basic rules may include a period of residence, renunciation of other citizenship, familiarity with the language and customs of the country, the availability of adequate means of support.<sup>9</sup> We coded countries on the basis of the number of years of residence required for naturalization as of 2001, by constructing four classes (0-4, 5, 6-14, more than 14 years). Alternative ways to define classes yielded similar conclusions.<sup>10</sup> In our dataset 23% of the countries require five years of residence, which can be considered a relatively open attitude, while 48% require more time.

As of 2001, dual nationality was fully recognized in some countries, rejected in others, while in some other cases was in general not recognized but exceptions were allowed. The most common exception is majority divestiture, which involves recognition of dual nationality until the age of maturity for those children of citizens who obtain the nationality of the country of birth. We coded countries accordingly, by creating three groups. Dual nationality is not recognized for Group 1, which includes 31% of the sample, recognized only under some circumstances for Group 2, and fully recognized for Group 3 (27% of the sample).

Combining the information we collected on citizenship at birth, naturalization and dual na-

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<sup>9</sup>We do not consider naturalization by marriage, since it is heavily dependent on family law.

<sup>10</sup>For naturalization and dual nationality we have information on 140 of our 159 countries.

tionality, i.e., by averaging with equal weights an indexed version of the three classifications just described, we also constructed a general inclusiveness index defined on the 0-1 interval, with maximum inclusiveness being associated with 1. The corrected Cronbach's alpha of the indicator is 0.56, which assures sufficient reliability. Factor analysis indeed confirmed that our three variables share a common variance and are therefore generated by a single factor, which we interpret as degree of inclusiveness. Tables 2 and 3 also show summary statistics and pairwise correlations, respectively, for naturalization and dual citizenship in 2001 and for the inclusiveness index. As reported in Table 3, citizenship laws in 2001 and the inclusiveness index show a 0.77 correlation, while their correlation with dual nationality and naturalization (both indexed) is 0.22 and 0.38, respectively.

### 3.2.3 Border changes

Border stability has been indicated as a factor that favors the inclusion of *jus soli* elements, while *jus sanguinis* may be preferred otherwise. In order to measure the impact of border stability on citizenship laws, we constructed three border change dummies based on data collected from Polity IV (2002). In particular, from the Polity IV variable CHANGE we recorded information on the following four types of events, capable of affecting state borders, starting from the year 1943:<sup>11</sup> State Disintegration (e.g., Yugoslavia in 1991); State Transformation (e.g., Germany 1990, East Germany 1945, West Germany 1945, Russia 1992); State Demise (e.g., Germany 1945, East Germany 1990, West Germany 1990, USSR 1991); and State Creation. This last group of observations is clearly the most numerous since it includes all the new countries gaining independence - and therefore state borders - in the postwar decolonization phase, the new countries formed in Europe after the fall of the Berlin wall, plus a few additional observations not linked to these two waves. Clearly there is substantial overlap among the observations recorded in the Polity IV dataset. We adapted these data to our needs by matching them to the 159 countries appearing in our citizenship laws dataset. For instance, we count as a single event, occurring to Germany, the state transformation of East and West Germany in 1945 but also the state demise of Germany in the same year. Likewise, we treat as another single event, occurring again to Germany, the

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<sup>11</sup>Even if we set 1948 as the initial date for our citizenship laws analysis, for border changes we included a few earlier events that fit within the phase of post-colonial independence.

state transformation of Germany in 1990 and the state demise of East and West Germany in the same year. On the other hand, the separation of Bangladesh from Pakistan counts for two events, because it concerns two countries which are in our sample. Additional information when necessary was obtained from the CIA (2002). Overall, we distilled 104 events, occurred to 98 countries.<sup>12</sup> On this basis we constructed three border change dummies: decolonization, fall of the Berlin wall, and other types of boundary changes. 50% of the countries in the sample went through a post-colonial redefinition of their borders, of which 87% occurred during the first subperiod, while 11% went through a post-1989 Berlin wall border change and 4% through other types of border changes.<sup>13</sup>

## 4 Empirical strategy

From the brief survey of recent world history illustrated in Section 2, we can reach a few preliminary conclusions. While the adoption of *jus soli* vs. *jus sanguinis* can be viewed as exogenous, *jus soli* appears to fit the needs of the traditional countries of immigration, but only until immigration is desirable and fiscally sustainable, as illustrated by the diverging experience of the US and Australia. The presence of birthplace rights, proxying for civil rights and perhaps welfare benefits, may actually be viewed as a factor that encourages immigration. Where *jus sanguinis* is the rule, an upsurge of immigration flows, and the consequent rise in the stock of immigrants, pushes toward the introduction of *jus soli* elements. However, countries which are young, have a strong ethnic identity, and/or perceive their borders as unstable, tend to adhere to *jus sanguinis*. Democratization tends to promote integration and, as a consequence, *jus soli*. Therefore, adaptation of the exogenously-adopted rules has to be accounted for.

Table 4 presents a long-term perspective of migration patterns for the 1870-1998 period for 14 countries, some from the Old and some from the New World. The source is Maddison (2001). The table confirms the magnitude of the early, mass migration wave, with high net flows of migrants

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<sup>12</sup>This discrepancy arises because a few countries were subject to more than one border changes during the time period under examination. This is the case for example of Germany, divided in 1945 and reunited in 1990, and of Pakistan and Bangladesh, which went through post-colonial state formation first, and division later.

<sup>13</sup>Examples are the split between Pakistan and Bangladesh, and the unification of Vietnam.

for the 1870-1913 period.<sup>14</sup> Migratory movements slow down drastically in the interwar period, to resume in the 1950s. The table also reveals that over the 1870-1913 period *jus sanguinis* countries display negative migration rates on average while *jus soli* countries display positive ones.<sup>15</sup> By contrast, after WW2 and the globalization of the migration phenomenon, *jus sanguinis* countries also become countries of immigration. To sum up, there is clear-cut break between the early mass migration period and the post-WWII period, both in terms of their timing, and in terms of the characteristics of migration flows.

From the comparative legal literature we know that, as long as the main legal traditions can be taken as exogenous, they can be used as regressors to estimate their impact on economic variables. However, if we apply this approach to the specific branch of citizenship law, in order to satisfy the exogeneity assumption we must limit our perspective to the time period which predates the beginning of their change. On the other hand, once the evolution process has started, citizenship laws must be treated as endogenous, and entered in a regression as a dependent variable. Based on these general considerations, we will organize our empirical strategy in two separate steps.

First, for the early, mass migration period, which is historically well-defined and can be safely associated with exogenously-given citizenship laws, we will test the hypothesis that the citizenship laws in place at the beginning of that period, i.e., 1870, have affected subsequent migration flows. Our empirical investigation on this point is presented in Section 5.

Second, for the postwar period, which has witnessed the process of evolution and adaptation of the original citizenship laws, we will test how current citizenship laws are determined, including among the regressors the two main candidate determinants, i.e., the legal tradition and immigration rates, as well as the additional factors previously identified, i.e., border stability, the consolidation of democracy, national culture, and the nature of the welfare state. We will also introduce additional controls such as colonial history, country size, and the general level of economic development, as well as geopolitical dummies which have often been found relevant in related research on the determinants of institutions. This part of the empirical work is in Section 6.

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<sup>14</sup>Chiswick and Hatton (2002) explain the differences among the 1870-1913 mass migration and the previous historical waves of contracted and coercive migration in 1600-1790, and pioneer migration in 1790-1850.

<sup>15</sup>However, a similar conclusion can be drawn if we divide countries between Western Europe and Western Offshoots.

A final consideration concerns the choice of the relevant measure of migration. Ideally, since gross immigration has been suggested as a factor that favors the application of *jus soli*, while emigration should tighten *jus sanguinis* provisions, one would want to gauge their importance separately. However, as detailed in the Data Appendix, data availability is a serious constraint, since reliable and complete information is available only for net immigration for the postwar period. On the other hand, migration theory has demonstrated that the same factors that should favor immigration into a country should also discourage emigration from the same country, suggesting a high positive correlation between net and gross immigration, and a high negative correlation between net immigration and emigration.<sup>16</sup> To be noticed is also that the UN definition of migrant covers cases where the decision to migrate is taken freely, and therefore should not include refugees. Often, however, the distinction between these two cases is a blurred one in the data.<sup>17</sup>

## **5 The impact of citizenship laws on migration in the age of mass migration (1870-1910)**

The age that precedes the First World War is usually depicted as the age of free and unrestricted immigration. While Britain was the main source of emigration during the first half of the century, Germany, Scandinavia and then Southern and Eastern Europe joined in during the second half. The main destination was North America, followed by South America and Australasia. Most of the migrants were young, many took advantage of friends and relatives networks, and economic incentives were crucial determinants of their decision. Emigration rates were initially highest for Ireland, which then witnessed a decline from the 1860s. Emigration from Germany also declined from the 1880s, when Southern Europe started its rise.

Data availability has severely constrained any empirical research on the factors affecting international migration in this period. There are, however, a few notable exceptions. A stream of the literature has focused on emigration from a number of European countries. These studies typically analyze bilateral flows from one source country to one destination, or aggregate migration

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<sup>16</sup>In Section 5, we will discuss how for the early period results obtained for net migration are very similar to those for gross migration.

<sup>17</sup>Stark (2004) and Hatton and Williamson (2004a) specifically focus on refugees and asylum seekers.



from a particular source country or to a particular destination. Hatton (1995, 2003) estimates a time-series model of emigration from the United Kingdom and concludes that over the long run emigration was determined largely by the relative wage. Hatton and Williamson (1998, 2002) focus on emigration from 12 European countries for the 1860-1913 period. They explain emigration rates as a function of four key fundamentals: the wage gap, which displays a strong negative effect; the source country birthrate lagged 20 years, as a proxy for adult cohort size, with a large positive effect; the stock of previous emigrants, with a positive effect; and the share of labor in agriculture as a development indicator, with a weak negative effect. With a focus the impact of international migration on income convergence, Taylor and Williamson (1997) collect data on (decade averages of) gross and net migration rates for 17 countries.

We assembled a unique set of data based on the same 17 countries considered by Taylor and Williamson (1997) for the 1870-1910 period. For each country we collected data on net and gross migration rates, the wage gap with respect to the other countries, and the agricultural share, all in decade averages, and the young adult share at the beginning of each decade. Our regression analysis therefore adapts the basic specification in Hatton and Williamson (1998), even though we extend their framework to international migration. Moreover, for each country we were also able to establish the original citizenship laws in 1870 (i.e., *jus soli* vs. *jus sanguinis*), as well as their legal origin (i.e., common law vs. civil law).

A preliminary look at the data is provided by Table 5, which reports net migration rates (migrants/1,000 population) for the countries in our sample. In principle, *jus soli* should encourage immigration, by expanding the opportunities of the second generation, while *jus sanguinis* should do the opposite. Indeed, over the period of interest, *jus sanguinis* countries display negative migration rates on average, while *jus soli* countries display positive ones. This holds true despite large differences in the performance of countries within each group (particularly noticeable for Argentina and Ireland). However, the same pattern is replicated and reinforced when we group countries according to geography, i.e., Old vs. New World, which for that time period implies huge income differences. The following analysis will test if our measure of institutions, i.e., citizenship laws in 1870, displays any explanatory power besides that of more conventional factors such as earning differentials, demographic forces, network effects, and the level of development.

## 5.1 Empirical specification

To investigate the impact of citizenship laws on net migration flows we run OLS regressions using the following specification:

$$M_{it} = a_0 + a_1 S_i + a_2 X_{it} + a_3 D_i + \varepsilon_{it},$$

where  $M_{it}$  is the net migration rate in country  $i$  in period  $t$  (with  $i = 1, \dots, 17$  and  $t = 1, \dots, 4$  - each country observation corresponding to each of the four decades included in the period 1870-1910),  $S_i$  is a dummy for the presence of jus soli in 1870 (i.e. original citizenship laws),  $X_{it}$  are explanatory variables (wage gap, agricultural share, share of young population, lagged net migration rate, lagged wage gap, and interaction terms),  $D_i$  are country dummies (Argentina, Italy, Ireland), and  $\varepsilon_{it}$  is the error term.

The explanatory variables  $X_{it}$  include the set of variables that have been traditionally used to explain the evolution of migration flows in the age of mass migration, as previously described. The three country dummies were inserted to capture the special cases of Ireland, Italy and Argentina. In the Irish case, the extremely high emigration rate in our sample period can be explained by a specific, earlier shock, the great famine of the 1840s, which caused back then the emigration of two million Irish people (see O'Rourke, 1991). This migrant stock constituted a further stimulus to emigrate for the generations to come, through a powerful network effect. Faini and Venturini (1994) document the contrasting experience of Italy, where the emigrant stock effect was more important during the upswing of the emigration life cycle. The peculiarities of the Argentina experience with immigration are narrated by Landes (1998). In colonial times Argentina had an underdeveloped agricultural sector and chronic shortage of manpower, as a result of an unequal land distribution and a restrictive immigration policy. Immigration took off when agriculture was reorganized and developed during the last quarter of the 19th century, so what is special of Argentina is the positive association between immigration and the agricultural share.

## 5.2 Descriptive statistics

Table 6 reports summary statistics and Table 7 the pairwise correlations between the dependent and independent variables. For each variable, the maximum number of observations is 68, since we have 17 countries and four decades, but there are some missing data. To be noticed is the high

correlation between net and gross migration, that can be considered two alternative dependent variables. Focusing on net migration, it shows a positive and significant correlation with the wage gap, a dummy for Argentina and the New World dummy, and a negative correlation with dummies for Ireland and Italy. The high correlation between the jus soli dummy and the wage gap (0.68) reveals a serious collinearity problem - confirmed by the tests we performed - which could be solved by adding further information which is simply not available for this early period. The correlation between the wage gap and the common law legal origin is even higher, at 0.75, but one should be cautious in suggesting a causation, since a very high correlation (0.65) can also be found between the wage gap and the New World dummy including civil law Argentina and excluding common law Ireland. The correlation between common law and jus soli is 0.77, which is high but far from perfect. To be noticed is also that net migration appears significantly correlated with jus soli, but not with common law.

### 5.3 Results

Table 8 reports our OLS regression results on the determinants of net migration in the 1870-1910 period. In the first basic specification, jus soli has a positive but insignificant coefficient, despite its significant pairwise correlation with net migration, and it remains insignificant when the wage gap and the three country dummies are inserted in the second specification, where the dummies all display significant coefficients with the right sign. The coefficient of the wage gap is positive and significant, confirming its crucial role as uncovered in previous studies. Regression 3 displays a more complete specification with all relevant economic determinants, but without the jus soli dummy. Again the wage gap and the three dummies confirm their sign and significance. The agricultural share, which captures the level of development, and the share of the young population, which proxies for the emigration intensive cohort, both have a significant negative impact, as expected.<sup>18</sup> The lagged value of the dependent variable, reflecting network effects,<sup>19</sup>

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<sup>18</sup>The positive impact of their interaction could be due to the presence of non-linearities. We also checked directly for non-linear effects of the agricultural share by adding its square to the regression, but the coefficient turned out to be insignificant.

<sup>19</sup>Network effects are captured by Hatton and Williamson (1998) with the stock of previous emigrants, an information we do not have.

has a positive effect, as expected, but it is insignificant.<sup>20</sup> The next specification, regression 4, adds the *jus soli* dummy, i.e., the effect of the relevant institutions, to the previous regressors, but its coefficient is again insignificant. The only effect of the dummy is to make the coefficient of the wage gap lose significance. The overall pattern for the other regressors is unchanged.

While the wage gap has been recognized as a crucial explanatory variable in international migration regressions for this period, its gradual reduction due to convergence has also been acknowledged and is confirmed within our sample by the decline of its coefficient of variation from 0.47 to 0.40. To correct for its potential endogeneity, in regressions 5 and 6 we replicate 3 and 4 by replacing the wage gap with its lagged value. Its coefficient is always positive and significant and the adjusted  $R^2$  is improved. In regression 6, *jus soli* even reverses its sign.

Timmer and Williamson (1998) construct an index of immigration policy for the five destination countries included in our sample (Argentina, Australia, Brazil, US, Canada) in the 1860-1930 period. They find that policy tends to become more restrictive as the ratio of unskilled wages over average income declines, i.e., as inequality increases (while other non-economic factors such as xenophobia or racism had no impact). However, their policy index is designed to reflect attitudes toward immigration rather than effectiveness of regulation itself. Hatton and Williamson (2004b) confirm that, until WWI, policy did not change much even though attitudes changed a lot for the worse as a reaction to the fact that migrants tended to be less skilled. Since citizenship policy could be interpreted an immigration policy measure, we tried to clarify the link between our citizenship laws measure and the policy index in Timmer and Williamson (1998), which did not include citizenship laws. However, since no change in citizenship law occurred in the relevant sample, its contribution to policy change - which is the focus of their analysis - would have been absent anyway. Citizenship policy could also be conceptually related to democracy, because of its relationship with suffrage.<sup>21</sup> However, the correlation between the *jus soli* dummy and the two alternative democracy indicators (*democ* and *parcom*, from Polity IV, 2002) in Timmer and Williamson (1998) is limited to 0.34 and 0.37, respectively. Adding any of the indicators to our regressions did not produce any additional insight.

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<sup>20</sup>Brazil is dropped from the sample with lagged migration because we only have the information on its agricultural share in 1870.

<sup>21</sup>The importance of suffrage institutions in general, as a way to attract migrants has been highlighted by Engerman and Sokoloff (2002).

For the same set of regressions we performed sensitivity checks, which confirmed the overall patterns. In a version excluding three outliers identified through the Cook's d test and the leverage test (Norway 1880 and 1890, Canada 1900), the sign, size and significance of the coefficients were unmodified, but the adjusted  $R^2$  jumped up to over 0.80. We also run the analog of regression 1 with jus soli being replaced by common law legal origin, which also displayed a positive but insignificant coefficient. Finally, we also obtained similar results for a set of regressions with gross migration as the dependent variable (where the regressor reflecting the age structure of population was appropriately redefined as an average of the young population in the other countries). All these specifications are not reported for brevity.

Overall, we can conclude that there is no evidence of citizenship laws playing a significant role in explaining the massive migration flows that characterized the early period and confirm to be driven overwhelmingly by income, demographic and developmental differentials. Therefore, the evidence does not support the view that legal rules, and institutions more generally, play a relevant role, at least for this specific issue and time period.

## **6 The determinants of citizenship laws in the post-WWII period (1950-1999)**

We now turn to the postwar period, which has witnessed a profound process of evolution of citizenship laws in most countries of the world, as documented in Section 2,

### **6.1 Empirical specification**

To estimate the determinants of citizenship laws evolution in the postwar period we run ordered logit models with Current Citizenship Laws as the dependent variable. The sample we consider includes two cross-sections of our 159 countries: the first cross-section is composed by country averages over the 1950-1974 period while the second cross-section is composed by country averages over the 1975-1999 period. Let  $C_{it}$  represent the current citizenship laws in country  $i$  in period  $t$ , with  $i = 1, \dots, 159$  and  $t = 1, 2$  (where  $t = 1$  refers to the 1950-1974 period and  $t = 2$  refers to the

1975-1999 period).<sup>22</sup> Our dependent variable has three classes:  $C_{it} = 1$  if the country has a jus sanguinis regime,  $C_{it} = 2$  if the country has a mixed regime, and  $C_{it} = 3$  if the country has a jus soli regime. Since the increasing degree of inclusiveness from a jus sanguinis to jus soli regime has a progressive nature, the ordered logit model is an appropriate model in this case. The ordered logit models we run have the following form:

$$C_{it} = \alpha I_i + \beta M_{it} + \gamma Z_{it} + \eta_{it},$$

where  $I_i$  is a dummy for the presence of jus soli in 1948 (i.e. original citizenship laws),  $M_{it}$  is the net migration rate in country  $i$  in period  $t$ ,  $Z_{it}$  is a set of additional explanatory variables, and  $\eta_{it}$  is the error term. The set of explanatory variables  $Z_{it}$  can be divided into three groups. The first group includes country dummies capturing the country's past history of border changes (decolonization, Berlin Wall, other border changes). The second group includes country dummies capturing the country's geopolitical position. The geopolitical dummies that we consider are: British colony, capturing those 49 countries that were British colonies after 1918, Latin America, sub-Saharan Africa, Southern Europe, and small, oil and socialist countries. The third group of explanatory variables includes a measure of democracy, proxies for cultural characteristics such as religion and ethnolinguistic fractionalization, a measure of the size of government activity and quantitative and qualitative development indicators such as income per capita and inequality. Information on the definition and source of each variable is available in the Data Appendix.

## 6.2 Descriptive statistics

Table 9 reports summary statistics for all the variables we use in our study. Some of the key variables were already described in the data section, while here we also report additional dummy, categorical and continuous variables that we employed in our empirical analysis.

The net migration rates variable displays a large standard deviation which reflects complex and highly differentiated patterns, which can be explained as follows. Latin America is no longer a land of immigration, while the United States, Canada and Australia still display large immigration rates. Within Europe, and especially Southern Europe, we see a reversal from negative to positive

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<sup>22</sup>In particular, the variable Current Citizenship Laws corresponds to citizenship laws in 1974 if  $t = 1$  and to citizenship laws in 2001 if  $t = 2$ .

immigration rates, which is very noticeable in the second subperiod. Within Africa, we observe extremely large and volatile in and out flows, which can be linked to major events such as wars and famines. Oil countries absorb at enormous rates, which are determined both by the small size of the local population, and by the large economic opportunities generated by oil extraction. Very large and volatile in and out flows are observed for the smallest countries (often recently-formed city-states or island-states). A further look at the (unreported) summary statistics organized by subsamples (i.e., focusing on the 1950-1974 subsample and on the 1975-1999 subsample separately) reveals that the average net migration rate is much higher for the first subperiod, even though again this pattern hides enormous cross-continent variations. No relevant time variations appear for the other variables.

Pairwise correlations for the variables in the panel are presented in Table 10. Current citizenship laws, the dependent variable, is highly correlated with the initial 1948 laws, while they are only weakly correlated with the common law dummy. Current Citizenship Laws (as well as 1948 laws) are highly correlated with the Latin America dummy, since most of these countries switched to *jus soli* before 1948. The dependent variable is also significantly correlated with the proportion of Catholics, political rights and the GINI index of inequality. The 1948 laws are significantly positively correlated with the dummy for British colonies (0.51) and for common law (0.65, not reported in the table). Our border change dummies display interesting patterns. Decolonization shows a significant correlation with British Colony, since the British Empire was so extended, and is also associated with low income per capita, the sub-Saharan Africa dummy, ethnolinguistic fractionalization, and political rights. Berlin wall is of course highly correlated with the socialist country dummy (and this correlation is even higher in the second subsample). Democracy tends to be high in rich, Catholic countries,<sup>23</sup> low in highly fractionalized ones. The (unreported) correlation patterns for the two separate subsamples are in line with those for the panel. Overall, the stylized facts we report are in line with previous research and economic intuition. It is also clear that several of our independent variables are closely interrelated and that it may be difficult to disentangle their specific effect on the evolution of citizenship laws.

We can now derive a number of hypotheses regarding the potential impact of each factor,

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<sup>23</sup>Democracy is also high in Protestant countries, low in Muslim ones. These additional information is not reported.

starting with legal tradition and immigration. Legal tradition is identified here by the initial citizenship laws in 1948, for whose coefficient we expect a positive sign. We also expect immigration to push a country's legislation toward the inclusion of elements of jus soli. The coefficient of net migration should therefore display a positive sign, even though to reach a consensus over a change in the legislation may often take several decades, and may well follow an initial period in which the natives' reaction to the new immigration reality is less than welcoming: these considerations could weaken and even reverse the impact of migration on the law. Moreover, for each subperiod within the panel, we entered an average of net immigration rates over 25 years, which can hide very important fluctuations. For instance, most European countries showed small or negative, and relatively stable, immigration rates during the first subsample, while they have been experiencing quickly increasing inflows during the second, with most of the revision to the legislation occurring in the past 15 years or so. Therefore, the Southern Europe dummy should display a positive sign because of the relatively low average immigration in the second subperiod. Likewise, Latin America switched to jus soli long before our sample period, so its position is not justified by the current relatively moderate immigration flows and again we should expect a positive sign for the corresponding dummy. The dummy for oil countries should account for the fact that most of them have been experiencing huge immigration inflows which had no impact on their still very restrictive legislation (often based on Islamic family law): this would be confirmed by a negative coefficient for the dummy. Moreover, migration data reveal that countries with a small population tend to have large and erratic migration flows, with a disproportionately small impact on their legislation, so we also expect a negative sign for the small country dummy. Border stability is also perceived as a prerequisite for the introduction of birthrights for the immigrants, since having gone through a recent border change should favor the persistence of jus sanguinis, or its introduction when jus soli was the rule. Therefore, we expect a negative sign for the three border change dummies, even though several of the Berlin wall countries have recently accelerated a reform process leading to more inclusiveness. We also experimented with variables which have been found significant in related research on the determinants of institutions, so we introduced the sub-Saharan Africa dummy and the British colony dummy, both as a possible alternative to decolonization, and therefore with a potential negative effect on inclusiveness. The establishment of a consolidated democracy, viewed as a factor that favors the assimilation of foreigners on an



equal rights basis, should exert a positive effect on inclusiveness even though, one again, even in a democratic country exclusionary forces against outsiders may persist for a protracted period of time. The possible impact of cultural factors was proxied by a number of different regressors, in an effort to capture different dimensions of cultural differences.<sup>24</sup> The data will tell us which cultural differences matter and in particular if cultural homogeneity is more conducive to inclusiveness than diversity. The size of government is meant to proxy for the nature of the welfare state, with a thicker, more expensive and more redistributive structure representing an obstacle to the inclusion of immigrants. Finally, the rationale for including per capita GDP and the index of inequality is that a richer, more equal country might be more open to immigration. However, most of these variables tends to be associated with net immigration, and also with democracy and fractionalization, so they are unlikely to add independent explanatory power to a regression.

### 6.3 Results

Our results are presented in Table 11. The estimates we perform refer both to our panel and to each of the two subsamples we focus on. Starting with the panel, in the first column we present a basic specification including only the core variables, i.e., the original laws and the net migration rate. While for the original laws the coefficient is significantly positive, as expected, migration shows a negative impact. In the second specification, we add to the core variables the geopolitical dummies previously identified. The *jus soli* dummy still displays a positive and highly significant coefficient, while the coefficient of migration is now positive but insignificant. The coefficient of the dummy for Latin America has the correct, significantly positive sign, while the British colony dummy has a negative impact. While the sub-Saharan dummy is negative but insignificant, its interaction with net migration is significantly negative. The Southern Europe dummy is also positive, but insignificant, and so is the small country dummy, while the socialist and the oil dummies have the correct, significantly negative sign. In the third column, we add to the previous specification the other regressors previously selected, i.e., the three border change dummies, a measure of democracy, the proportion of Catholics, ethnolinguistic fractionalization, and the size of government. Border changes were expected to exert a negative effect on inclusiveness. For

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<sup>24</sup>For the costs and benefits of diversity see for example a recent paper by Ottaviano and Peri (2003).

decolonization and other border changes the coefficient is indeed negative, but insignificant, while for Berlin wall we observe a significantly positive coefficient: however, it turns out that for the estimated sample the only country captured by this dummy is Germany, which did shift from a *jus sanguinis* regime to a mixed one at the end of the sample, so the sign of the coefficient is consistent with the facts. The only other significant variable is government size, which displays a positive coefficient, contrary to our intuition. This could be explained by the fact that the size of government proxies for European-style, relative inclusive social-democracies, or because many of the countries with extended welfare systems may favor immigration because of their demographic crisis. It turns out, however, that when we run this regression again for a sample limited to rich countries (see below for more details), then government size acquires a significantly negative coefficient, as expected for Western-style democracies. Democracy has a positive but insignificant coefficient, while Catholic and highly fractionalized countries appear to have a positive but insignificant tendency towards inclusiveness.

Turning to the first subsample, the most relevant news is that ethnolinguistic fractionalization now has a significantly positive coefficient. To be noticed is that we did not include for this sample the Southern Europe and the socialist country dummies among the regressors, because during this period these countries did not display any special pattern in this dimension as they consistently maintained *jus sanguinis* in the face of moderate (and in fact, highly restricted for the socialist countries) immigration.<sup>25</sup> Finally, the second subperiod uncovers three new noticeable tendencies: the impact of the original laws is fading with the time distance, with their coefficient losing significance; democratic countries show a significantly positive tendency towards inclusiveness, while countries that went through decolonization tends to restrict their regulation. Sub-Saharan Africa and its interaction with migration did not add any significant explanatory power and were therefore dropped for this sample.

Table 12 reports the marginal effects for the most complete specification in Table 11 (i.e., the third one), again for each sample. The marginal effects confirm that coming from a *jus soli* tradition has a significantly negative effect on the probability of being a *jus sanguinis* country and a significantly positive effect on the probability of being either a *jus soli* or a mixed regime country. The results also show that net migration has always a significant positive effect on the probability

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<sup>25</sup>A version of the regression including these two dummies exhibited perfect predictions problems.

of being a jus soli country, and a significant negative one on the probability of being a jus sanguinis country (in all samples considered), confirming our predictions. In particular, a unit change in net migration rate increases the probability of being a jus soli country by 5 percentage points while it decreases the probability of being a jus sanguinis country by 6.9 percentage points. The fact that a country is in Latin America has a clear impact on its probability of adopting jus soli: Latin American countries are about 68% more likely to adopt jus soli than other countries. In the second subsample, decolonization has a negative significant effect on the probability of being a jus soli or a mixed regime country, and a positive one on the probability of being a jus sanguinis, while political rights exhibit a significant positive effect on the probability that a country is inclusive.

We also studied the direct impact of purely economic variables on citizenship laws evolution, following Timmer and Williamson (1998), who did so for the early period, and O'Rourke and Sinnott (2003), who estimate voters' attitudes towards immigration in 24 countries from a 1995 survey. Contrary to the former, the latter paper finds evidence that non-economic factors such as patriotism and chauvinism are extremely important in determining voters' attitudes towards immigration in the late 20th century, even though economic factors also play a role. For instance, as we move from more equal societies to less equal ones, skilled workers should become increasingly anti-immigration. While our dataset does not allow to address these issues in detail, we did experiment with economic variables such as per capita income and inequality, and also the agriculture share and the level of education. When added to the more complete specification of the regressions in Table 11, these variables did not add any explanatory value, which is not surprising given the complex pattern of correlations previously illustrated. When added one by one to the more parsimonious specification including only the core variables and the geopolitical dummies, per capita income displays a positive coefficient and inequality a negative one, as intuition would suggest, but both coefficients are insignificant and do not affect the others. The coefficients for the agriculture share and the level of education were always insignificant. An alternative way to gauge the importance of economic factors is to divide our sample between rich and poor countries. This exercise suggested that for rich countries the results from Table 11 are broadly confirmed, with a generally higher significance level (e.g., for Catholics and decolonization) and with the importance differences that government expenditures has now a significantly negative coefficient, while sub-Saharan Africa - unsurprisingly - has a significantly positive one. For poor countries,

migration becomes an insignificant factor in determining citizenship laws.

A variant of the more extended specification for the regressions in Table 11, where the initial citizenship laws are replaced by the legal origin, yield the following results: the dummy for common law is no longer significant for the panel, and makes the British colony and the Berlin wall dummies lose significance. In the first subperiod legal origin is significant (since the common law dummy is closer to the jus soli dummy for this subsample), while its standard error is very high, and higher than that of original laws, in the second. We also checked the consequences of taking citizenship laws in 1974, rather than in 1948, as the relevant initial condition for the second subsample. While again no substantial difference emerged in the overall results, because of the two zero entries in the transition matrix for 1974-2001 this option created zero cell problems.

We also run an analogous set of regressions for a cross-sectional sample composed by country averages over the period 1950-1999, where we included the more general index of inclusiveness which we described in Section 3 as the dependent variable. Standard OLS were employed in this case, and delivered similar qualitative results confirming that our variable reflecting citizenship at birth does capture a broader set of rules concerning citizenship.

The regressions in Table 11 were also rerun, without changing any result, excluding observations for which migration rates were larger than 20 in absolute value, in order to correct for outliers which can be determined by additional factors that we do not explicitly account for, such as wars, political prosecution, famines, and other environmental disasters. An alternative ordered probit model also delivered very similar qualitative results which are not presented here.

Finally, we repeated the exercise with a generalized order logit model, which allows the covariates to exert a different effect on the probability of moving across categories by relaxing the proportional odds hypothesis on which the standard ordered logit is based. Our (unreported) results for the panel show that the general tendency captured by the ordered logit coefficients in Table 11 is confirmed for the move away from jus sanguinis toward more inclusiveness, while the same covariates tend to have an ambiguous effect on the next move all the way to jus soli. We interpret this as evidence of convergence to a mixed regime, rather than of a drift towards maximum inclusiveness.

Overall, our empirical investigation over a large number of countries for the postwar period confirms that the legal tradition and migration do explain the evolution of citizenship laws towards

a higher degree of inclusiveness, but only after controlling for a number of factors which reflect border stability, the level of democracy and the welfare burden, as suggested by political scientists. The influence of cultural factors, at least in the sense of Brubaker (1992), is hard to detect with our proxies, but we do find some evidence that a more ethnolinguistically diverse country like France tends to be more inclusive than a more homogeneous country like Germany. We also found that post-colonial history matters but not necessarily in the direction that legal theory would suggest, because we show that a jus soli/common law transplanted heritage need not be retained after independence.<sup>26</sup>

## 7 Conclusion

We have studied the origin, the impact and the evolution of the legal institution of citizenship around the world from the end of the 19th until the turn of the 21th century. For the early, mass migration era, we found that citizenship rules did not contribute to the economic forces that determined it. In the postwar period, citizenship laws are shown to respond endogenously and systematically to migration and the legal tradition, as well as to border stability, the degree of democracy, the welfare burden, cultural factors, and postcolonial developments. At least for this specific branch of the law, some of the premises and of the implications of legal theory are therefore questioned by our results, since we show that, for the early period, the economic impact of the relevant legal institutions is absent and that, for the postwar period, such institutions cannot be taken as exogenous. We view these results as a first step toward a full understanding of the process of formation of legal rules and its interaction with economic factors as well as other forms of institutions.

Citizenship laws are still changing. One of our plans for future research is to project the future evolution of citizenship policy around the world for the next half century, by using projections of international migration in combination with the available work which has tried to predict the future course of democratization and of border changes.

Another question which we leave for future research is the following. What are the implications of citizenship laws evolution - and the consequent extension of political rights for immigrants -

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<sup>26</sup>Berkowitz et al. (2003) study the transplanting process for legal institutions.

for the welfare state? Continental Europe is historically characterized by a thick welfare state, while only recently it has been experiencing increasing immigration. In this context, the current evolution of the concept of citizenship and the consequent broadening of the voting franchise could introduce a new channel for a further deterioration of public accounts, which calls for further investigation.

Finally, citizenship laws can be viewed as a link, within a legal system, between the public and the private sphere of influence. Many issues that fall within the former - such as commercial law, labor regulation, and government activities - have already been investigated. We plan to extend our methodology to the study of other evolving bodies of the law, such as family law, rules of inheritance, and women's rights.

## DATA APPENDIX

### The age of mass migration (1870-1910)

**Migration:** We employ the series of decade averages of net and gross immigration rates elaborated by Taylor and Williamson (1997) for 17 countries for the 1870-1910 period, which are based on Ferenczi and Willcox (1929). Historical emigration and immigration data are collected by Mitchell (2003) from 1815 for Europe, the Americas and Africa (but Africa includes only South Africa and Zimbabwe for 1910-1999), from 1843 for Oceania. Asia is not included. His sources are essentially Ferenczi and Willcox (1929). The nature of these statistics varies greatly from country to country and many data are missing. This is the main reason why we used the Taylor and Williamson (1997) data. **Common law:** The source is La Porta et al. (1999). **Wage gap:** We compute the wage gap by taking decade averages of the log of the wage ratio, where the numerator is a country's real wage and the denominator is world average of the other countries' real wages. The source of the wage data is Williamson (1995). **Agricultural share:** We compute decade averages of annual figures obtained through linear interpolation of the available figures. The source is Banks (2001), with the exceptions of Argentina, Ireland and Brazil where data come from Mitchell (2003). **Young population:** For each country, we compute the share of the young (i.e., aged 15-29) population from Census data reported in Mitchell (2003), taking for each decade the Census closer to the year ending in 0. Note the following exceptions: for Ireland the age reported is 15-34, for the Netherlands 10-29 (except in 1900), for Spain 16-30.

## The post-WWII period (1950-1999)

**Migration:** The data we use are net international migration rates taken from the 2002 UN Common Database. These data are compiled by the UN Population Division, which provides estimates of annual average net immigration rates over five year intervals from 1950, with projections until 2050, for 192 countries. We use the available data for the 1950-1999 period. Information on international immigration and emigration rates was also provided from 1949 to 1995 by the UN Demographic Yearbook Database, compiled by the UN Statistics Division. However, collection was suspended due to the bad quality of the process. They are currently testing a revised questionnaire in order to resume collection starting with 2000 data. The available historical data were not even included in the UN Demographic Yearbook Historical Supplement, 1948-1997 (2000). The OECD (2002) has also been collecting migration data from some members countries since 1980, but the available sample is clearly inadequate for our purposes. **Common law:** The source is La Porta et al. (1999). **Political rights:** We use the political rights index (on a seven point scale) from Freedom House (1996) as elaborated by La Porta et al. (1999). **Ethnolinguistic fractionalization:** We employ a composite index of ethnolinguistic fractionalization which includes ELF60 and other 4 indexes. See Easterly and Levine (1997). **Catholic share:** We report the percentage of Catholics in 1980, taken from La Porta et al. (1999). **Government consumption:** We take the government share of GDP in current prices from the Penn World Table (2002). **GDP per capita:** We enter the log of the real GDP per capita at current international prices from the Penn World Table (2002). **GINI index:** The source is Deininger and Squire (1996). **Socialist countries:** Information is from La Porta et al. (1999). **Oil countries:** OPEC countries plus Oman, Angola, Qatar, Barhain, and Brunei. **Sub-Saharan Africa, Latin America and Southern European countries:** The classification is from UN (2002). **British colonies:** We count those countries that were British colonies any time after 1918. The source is the Correlates of War 2 Project (2004). **Small countries:** As in Easterly and Kraay (2000), small countries are defined as those with a population size of less than one million over all available years between 1960 and 1995.

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**Table 1**  
**Transition matrices for Citizenship Laws in 2001, 1974, 1948**

	Citizenship Laws in 2001			
Citizenship Laws in 1948	1	2	3	<i>Total</i>
0	59	28	5	92
1	28	7	32	67
<i>Total</i>	87	35	37	159
	Citizenship Laws in 1974			
Citizenship Laws in 1948	1	2	3	<i>Total</i>
0	78	9	5	92
1	21	1	45	67
<i>Total</i>	99	10	50	159
	Citizenship Laws in 2001			
Citizenship Laws in 1974	1	2	3	<i>Total</i>
1	79	20	0	99
2	1	9	0	10
3	7	6	37	50
<i>Total</i>	87	35	37	159

**Table 2**  
**Summary statistics for Citizenship Laws, Naturalization, Dual Citizenship, Inclusiveness Index and Common Law, 1950-1999**

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Citizenship Laws in 2001	159	1.686	0.828	1	3
Citizenship Laws in 1974	159	1.692	0.921	1	3
Citizenship Laws in 1948	159	0.421	0.495	0	1
Naturalization in 2001	140	2.457	0.924	1	4
Dual Citizenship in 2001	159	1.956	0.766	1	3
Inclusiveness Index	140	0.443	0.273	0	1
Common Law	159	0.321	0.468	0	1

**Table 3**  
**Pairwise correlations between Citizenship Laws, Naturalization, Dual Citizenship, Inclusiveness Index and Common Law, 1950-1999**

	Citizen. Laws in 2001	Citizen. Laws in 1974	Citizen Laws In 1948	Naturalizat. in 2001	Dual Citizen. in 2001	Inclusiv. Index	Common Law
Citizen. Laws in 2001	1						
Citizen. Laws in 1974	0.777*	1					
Citizen. Laws in 1948	0.387*	0.620*	1				
Naturalizat. in 2001	0.379*	0.302*	0.149	1			
Dual Citizen. in 2001	0.218*	0.232*	0.133	0.310*	1		
Inclusiveness Index	0.772*	0.630*	0.307*	0.713*	0.726*	1	
Common Law	0.017	0.290*	0.751*	-0.045	0.022	-0.012	1

**Table 4**  
**Net Migration (1,000), 1870-1998**

	<i>1870-1913</i>	<i>1914-49</i>	<i>1950-73</i>	<i>1974-98</i>
<i>Jus Sanguinis</i>	-7,581	-2,060	9,914	9,982
France	890	-236	3,630	1,026
Germany	-2,598	-304	7,070	5,911
Italy	-4,459	-1,771	-2,139	1,617
Japan	n.a.	197	-72	-179
Others*	-1414	54	1,425	1,607
<i>Jus Soli</i>	11,441	5,834	12,058	22,376
United Kingdom	-6,415	-1,405	-605	737
Australia	885	673	2033	2151
New Zealand	290	138	247	87
Canada	861	207	2,126	2,680
United States	15,820	6,221	8,257	16,721
<i>Western Europe</i>	-13,996	-3,662	9,381	10,898
<i>Western Offshoots</i>	17,856	7,239	12,663	21,639

\*Includes Belgium, Netherlands, Norway, Sweden and Switzerland. Source: Maddison, 2001.

**Table 5**  
**Net Migration Rates (migrants/1,000 population), 1870-1910**

<i>Jus Sanguinis Countries</i>	<i>-1.92</i>
Belgium	1.50
Denmark	-2.42
France	-0.09
Germany	-0.65
Italy	-6.47
Netherlands	-0.53
Norway	-4.73
Portugal	-0.96
Spain	-1.04
Sweden	-3.78
<i>Jus Soli Countries</i>	<i>2.13</i>
Argentina	10.57
Australia	5.95
Brazil	0.67
Canada	6.23
Great Britain	-2.02
Ireland	-10.12
United States	3.62
<i>Old World</i>	<i>-2.61</i>
<i>New World</i>	<i>5.41</i>

Source: Taylor and Williamson (1997).

**Table 6**  
**Summary statistics (panel data), 1870-1910<sup>§</sup>**

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Net Migration	68	0.024	6.192	-16.040	19.070
Gross Migration	65	-0.464	8.777	-17.970	25.470
Jus Soli	68	0.412	0.496	0	1
Common Law	68	0.294	0.459	0	1
Wage Gap	68	-0.084	0.432	-0.894	0.767
Young Population	64	27.012	3.273	23.338	35.846
Agricultural Share	55	43.414	15.381	8.900	69.730
Lagged Wage Gap	51	-0.086	0.440	-0.894	0.766
Lagged Net Migration	51	-0.037	5.829	-16.040	19.070
Argentina	68	0.059	0.237	0	1
Ireland	68	0.059	0.237	0	1
Italy	68	0.059	0.237	0	1
New World	68	0.294	0.459	0	1

<sup>§</sup>The panel sample is composed by four cross-sections of 17 countries. Each country observation is a decade average for each of the four decades included in the period 1870-1910. The only exception is Young Population, where we take the value of the Census survey for each decade. For details see the text and the Data Appendix.

**Table 7**  
**Pairwise correlations among dependent and independent variables (panel data<sup>§</sup>), 1870-1910**

	Net Migr.	Gross Migr.	Jus Soli	Comm. Law	Wage Gap	Young Popul.	Agric. Share	Lag. N. Migr.	Lag. W. Gap	Argent.	Ireland	Italy
Net Migration	1											
Gross Migration	0.749*	1										
Jus Soli	0.319*	0.522*	1									
Common Law	0.083	0.183	0.772*	1								
Wage Gap	0.474*	0.582*	0.681*	0.747*	1							
Young Popul.	-0.164	-0.034	0.367*	0.237	0.108	1						
Agric. Share	-0.259	-0.143	-0.408*	-0.395*	-0.487*	-0.157	1					
Lag. Net Migr.	0.665*	0.729*	0.281*	0.053	0.413*	-0.214	-0.261	1				
Lag. Wage Gap	0.496*	0.583*	0.680*	0.760*	0.955*	0.228	-0.555*	0.431*	1			
Argentina	0.477*	0.589*	0.299*	-0.161	0.028	0.020	-0.256	0.452*	0.016	1		
Ireland	-0.458*	-0.317*	0.299*	0.387*	0.005	0.502*	-0.029	-0.533*	-0.003	-0.063	1	
Italy	-0.294*	-0.258*	-0.209	-0.161	-0.426*	0.035	0.370*	-0.226	-0.435*	-0.063	-0.063	1
New World	0.629*	0.826*	0.772*	0.433*	0.648*	0.124	-0.077	0.620*	0.645*	0.387*	-0.161	-0.161

<sup>§</sup>The panel sample is composed by four cross-sections of 17 countries. Each country observation is an average over each of the four decades included in the period 1870-1910. For details see the text and the Data Appendix.

\* significant at 5%.

**Table 8**  
**The determinants of net migration, 1870-1910<sup>§</sup>**

Dependent variable: Net Migration Rate (1870-1910)						
	(1)	(2)	(3)	(4)	(5)	(6)
Jus Soli	3.982 [2.839]	0.556 [1.796]		1.697 [2.609]		-0.517 [2.016]
Wage Gap		5.465** [2.054]	3.704** [1.618]	2.231 [3.138]		
Argentina		10.879*** [1.445]	12.175*** [1.506]	11.186*** [1.864]	12.852*** [1.246]	13.157*** [1.391]
Ireland		-11.887*** [1.494]	-15.924*** [4.483]	-17.734** [6.660]	-16.094*** [3.684]	-15.539** [5.549]
Italy		-3.238** [1.330]	-8.153** [2.873]	-9.061** [3.857]	-7.313** [2.716]	-6.988* [3.779]
Agricultural Share			-1.320** [0.570]	-1.418* [0.681]	-1.323** [0.480]	-1.302** [0.550]
Young Population			-1.724** [0.762]	-1.849* [0.877]	-1.784** [0.638]	-1.761** [0.718]
Young Pop.*Agric. Share			0.052** [0.021]	0.056** [0.026]	0.053** [0.018]	0.052** [0.021]
Lagged Net Migration			0.321 [0.272]	0.305 [0.285]	0.25 [0.217]	0.252 [0.225]
Lagged Wage Gap					4.917*** [1.413]	5.391* [2.843]
Constant	-1.616* [0.782]	0.502 [0.725]	44.570** [20.749]	47.170* [23.044]	45.681** [17.399]	45.290** [18.927]
Observations	68	68	40	40	40	40
Adjusted R-squared	0.09	0.61	0.62	0.62	0.66	0.65

<sup>§</sup>Pooled OLS estimates. Robust standard errors in brackets assume clustering at country level.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 9**  
**Summary statistics (panel data<sup>§</sup>), 1950-1999**

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Current Citizenship Laws	318	1.689	0.874	1	3
Citizenship Laws in 1948	318	0.421	0.495	0	1
Net Migration	301	0.157	9.584	-69.708	85.770
Berlin Wall	318	0.053	0.225	0	1
Decolonization	318	0.252	0.435	0	1
Other Border Changes	318	0.022	0.147	0	1
British colony	318	0.308	0.462	0	1
Latin America	318	0.164	0.370	0	1
Sub-Saharan Africa	318	0.264	0.442	0	1
Southern Europe	318	0.044	0.205	0	1
Oil	318	0.088	0.284	0	1
Socialist	318	0.176	0.382	0	1
Small Country	318	0.151	0.359	0	1
Political Rights	318	4.346	2.230	1	7
Ethnolinguistic Fractionalization	266	0.355	0.299	0	0.89
Catholic Share	318	30.821	35.185	0	97.3
Government Consumption	258	19.001	10.407	2.465	60.096
Log GDP per capita	258	7.446	1.243	4.958	10.06
GINI Index	152	40.420	9.832	20.495	62.3
Common Law	318	0.321	0.468	0	1

<sup>§</sup>The panel sample includes two cross-sections of our 159 countries. The first cross-section is composed by country averages over the period 1950-1974 while the second cross-section is composed by country averages over the period 1975-1999. The variable Current Citizenship Laws includes two observations for the laws at the end of each period, i.e., citizenship laws in 1974 for the first period and citizenship laws in 2001 for the second period.



**Table 10**  
**Pairwise correlations among dependent and independent variables (panel data<sup>§</sup>), 1950-1999**

	Current Citizen. Laws	Citizen. Laws in 1948	Net Migr.	Decolo- nization	Berlin Wall	Other Border Changes	British Colony	Latin America	Sub- Saharan Africa	South Europe	Oil	Socialist	Small Country	Political Rights	Ethno. Fraction.	Catholic Share	Govern. Cons.	Log GDP Per cap	GINI Index
Current Citizen. Laws	1																		
Citizen. Laws in 1948	0.509*	1																	
Net Migration	-0.136*	-0.017	1																
Decolonization	-0.059	0.063	0.008	1															
Berlin Wall	-0.075	-0.203*	-0.023	-0.138*	1														
Other Border Changes	-0.069	0.002	0.007	0.061	-0.036	1													
British Colony	0.020	0.506*	0.085	0.288*	-0.159*	0.086	1												
Latin America	0.577*	0.484*	-0.158*	-0.139*	-0.105	-0.066	-0.001	1											
Sub-Saharan Africa	-0.089	-0.078	-0.062	0.310*	-0.142*	-0.090	0.064	-0.265*	1										
Southern Europe	-0.082	-0.183*	-0.038	-0.124*	0.085	-0.032	-0.077	-0.095	-0.129*	1									
Oil	-0.131*	-0.040	0.375*	0.050	-0.074	-0.047	0.081	-0.077	-0.086	-0.067	1								
Socialist	-0.251*	-0.328*	-0.033	-0.173*	0.477*	0.043	-0.273*	-0.160*	-0.277*	0.062	-0.144*	1							
Small Country	0.120*	0.174*	0.005	0.140*	-0.100	-0.003	0.365*	0.099	0.066	-0.005	-0.007	-0.195*	1						
Political Rights	0.308*	0.119*	-0.101	-0.207*	0.038	-0.014	-0.073	0.176*	-0.253*	0.215*	-0.347*	-0.079	0.148*	1					
Ethno. Fraction.	-0.057	0.057	0.041	0.241*	-0.064	-0.091	0.128*	-0.270*	0.634*	-0.169*	0.091	-0.192*	0.017	-0.312*	1				
Catholic Share	0.383*	0.153*	-0.157*	-0.192*	-0.044	-0.107	-0.218*	0.536*	-0.071	0.265*	-0.155*	-0.144*	0.017	0.346*	-0.170*	1			
Govern. Consumpt.	0.003	-0.080	0.027	-0.009	0.230*	0.055	0.136*	-0.064	0.118	-0.068	-0.022	0.175*	-0.014	-0.211*	0.116	-0.122*	1		
Log GDP per cap.	0.038	-0.080	0.192*	-0.522*	0.262*	-0.090	-0.127*	0.027	-0.474*	0.176*	0.075	0.190*	0.120	0.389*	-0.406*	0.082	-0.006	1	
GINI Index	0.244*	0.412*	-0.123	0.034	-0.288*	-0.116	0.165*	0.504*	0.285*	-0.155	-0.006	-0.448*	0.190*	-0.199*	0.23* <sup>9</sup>	0.244*	0.054	-0.342*	1
Common Law	0.160*	0.751*	0.029	0.176*	-0.163*	0.035	0.650*	-0.049	0.077	-0.148*	0.024	-0.282*	0.237*	0.039	0.239*	-0.253*	-0.020	-0.075	0.082

<sup>§</sup>The panel sample includes two cross-sections of our 159 countries. The first cross-section is composed by country averages over the period 1950-1974 while the second cross-section is composed by country averages over the period 1975-1999. The variable Current Citizenship Laws includes two observations for the laws at the end of each period, i.e., citizenship laws in 1974 for the first period and citizenship laws in 2001 for the second period.

\* significant at 5%.

**Table 11**  
**The determinants of citizenship laws, 1950-1999<sup>§</sup>**

	PANEL			FIRST SUBSAMPLE			SECOND SUBSAMPLE		
	Current Citizen. Laws	Current Citizen. Laws	Current Citizen. Laws	Citizen. Laws in 1974	Citizen. Laws in 1974	Citizen. Laws in 1974	Citizen. Laws in 2001	Citizen. Laws in 2001	Citizen. Laws in 2001
Citizenship Laws in 1948	2.024*** [0.325]	2.112*** [0.562]	1.945** [0.852]	2.857*** [0.402]	3.519*** [0.875]	3.547** [1.593]	1.362*** [0.338]	1.393** [0.677]	1.204 [0.860]
Net Migration	-0.040* [0.023]	0.079 [0.062]	0.278* [0.150]	-0.037 [0.035]	0.075 [0.060]	0.345* [0.183]	-0.054** [0.027]	0.066 [0.091]	0.164** [0.075]
Latin America		2.666*** [0.903]	3.337*** [1.157]		2.360** [0.921]	4.271*** [1.524]		2.993*** [1.043]	3.237*** [1.131]
British Colony		-1.637*** [0.600]	-1.698* [1.009]		-1.921** [0.936]	-2.276 [2.568]		-1.798** [0.809]	-1.514 [0.994]
Sub-Saharan Africa		-0.123 [0.420]	-0.094 [0.541]		0.248 [0.609]	0.147 [0.899]			
British Colony*Net Migr.		-0.075 [0.077]	-0.436* [0.258]		-0.056 [0.062]	-0.739** [0.371]		-0.202 [0.166]	-0.328 [0.262]
Sub-Sah. Africa*Net Migr.		-0.139** [0.070]	-0.339** [0.159]		-0.282* [0.146]	-0.570* [0.301]			
South Europe		0.332 [0.365]	0.587 [0.508]					0.473 [0.455]	0.342 [0.500]
Socialist		-0.929** [0.437]	-0.857 [1.195]					-0.711 [0.459]	-1.172 [1.296]
Oil		-1.466** [0.596]	-1.881** [0.828]		-1.123 [0.743]	-2.307** [1.161]		-1.815** [0.915]	-1.301 [0.867]
Small Country		0.564 [0.615]	-0.062 [0.935]		0.947 [0.815]	0.443 [1.281]		0.044 [0.800]	-0.680 [1.117]
Political Rights			0.201 [0.145]			0.136 [0.302]			0.367** [0.179]
Catholic Share			0.002 [0.007]			-0.012 [0.013]			0.008 [0.006]
Ethno.Fractionalization			1.278 [0.960]			2.478* [1.296]			0.859 [0.926]
Government Consumption			0.047** [0.022]			0.090*** [0.030]			0.057* [0.030]
Decolonization			-0.066 [0.385]			-1.176 [1.872]			-1.883* [1.093]
Berlin Wall			0.843* [0.492]						0.51 [0.484]
Other Border Changes			-0.42 [1.377]			0.558 [1.461]			
Cut Point 1	1.113*** [0.191]	0.766** [0.303]	3.193** [1.262]	1.706*** [0.283]	1.886*** [0.356]	4.033 [2.792]	0.701*** [0.204]	0.305 [0.282]	3.764** [1.473]
Cut Point 2	1.967*** [0.189]	1.885*** [0.298]	4.442*** [1.281]	2.186*** [0.252]	2.511*** [0.321]	4.966 [2.827]	1.857*** [0.193]	1.950*** [0.315]	5.496*** [1.576]
Observations	301	301	225	144	144	102	157	157	123
McFadden's R2	0.13	0.27	0.34	0.25	0.37	0.5	0.07	0.26	0.33
Count R2	0.67	0.75	0.75	0.77	0.83	0.85	0.57	0.68	0.78

<sup>§</sup>Ordered logit estimates. Robust standard errors in brackets. In the panel sample, robust standard errors assume clustering at country level. The panel refers to the period 1950-1999 (see also footnote to Table 10). The first subsample refers to the period 1950-1974 while the second subsample refers to the period 1975-1999. In the panel, the variable Current Citizenship Laws includes two observations for the laws at the end of each period, i.e., citizenship laws in 1974 for the first period and citizenship laws in 2001 for the second period.  
\*significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 12**  
**Marginal effects, 1950-1999<sup>§</sup>**

	PANEL			FIRST SUBSAMPLE			SECOND SUBSAMPLE		
	Jus Sanguinis	Mix	Jus Soli	Jus Sanguinis	Mix	Jus Soli	Jus Sanguinis	Mix	Jus Soli
Citizenship Laws in 1948	-0.449*** (0.170)	0.094* (0.054)	0.355** (0.143)	-0.709*** (0.198)	0.057 (0.042)	0.652*** (0.206)	-0.290 (0.195)	0.113 (0.082)	0.176 (0.135)
Net Migration	-0.069* (0.038)	0.019 (0.015)	0.050** (0.025)	-0.086* (0.046)	0.017 (0.014)	0.069* (0.036)	-0.041** (0.019)	0.018 (0.012)	0.023** (0.010)
Latin America	-0.582*** (0.099)	-0.098 (0.088)	0.680*** (0.166)	-0.672*** (0.105)	-0.108* (0.063)	0.780*** (0.120)	-0.559*** (0.092)	-0.078 (0.143)	0.637*** (0.205)
British Colony	0.394** (0.197)	-0.142 (0.099)	-0.252** (0.110)	0.489 (0.408)	-0.138 (0.139)	-0.352 (0.277)	0.360* (0.210)	-0.180 (0.133)	-0.180* (0.096)
Sub-Saharan Africa	0.023 (0.135)	-0.007 (0.040)	-0.017 (0.095)	-0.037 (0.225)	0.007 (0.041)	0.030 (0.184)			
British Colony*Net Migration	0.109* (0.065)	-0.031 (0.026)	-0.078* (0.042)	0.185** (0.093)	-0.037 (0.032)	-0.148** (0.069)	0.082 (0.066)	-0.035 (0.037)	-0.046 (0.032)
Sub-Sah. Africa*Net Migration.	0.085** (0.040)	-0.024 (0.017)	-0.061** (0.027)	0.142* (0.075)	-0.029 (0.022)	-0.114* (0.062)			
South Europe	-0.142 (0.117)	0.022 (0.019)	0.120 (0.111)				-0.083 (0.118)	0.030 (0.036)	0.053 (0.087)
Socialist	0.206 (0.263)	-0.083 (0.132)	-0.123 (0.134)				0.277 (0.263)	-0.159 (0.188)	-0.118 (0.085)
Oil	0.386*** (0.118)	-0.186** (0.079)	-0.201*** (0.058)	0.419*** (0.127)	-0.165** (0.073)	-0.254*** (0.076)	0.300* (0.172)	-0.178 (0.117)	-0.122* (0.068)
Small Country	0.016 (0.234)	-0.004 (0.070)	-0.011 (0.163)	-0.110 (0.311)	0.015 (0.024)	0.095 (0.291)	0.168 (0.268)	-0.086 (0.167)	-0.082 (0.104)
Political Rights	-0.050 (0.036)	0.014 (0.013)	0.036 (0.026)	-0.034 (0.075)	0.007 (0.016)	0.027 (0.060)	-0.091** (0.045)	0.039 (0.030)	0.052** (0.022)
Catholic Share	-0.001 (0.002)	0.000 (0.000)	0.000 (0.001)	0.003 (0.003)	-0.001 (0.001)	-0.002 (0.003)	-0.002 (0.002)	0.001 (0.001)	0.001 (0.001)
Ethnolinguistic Frationaliz.	-0.319 (0.240)	0.090 (0.079)	0.230 (0.173)	-0.619* (0.324)	0.124 (0.102)	0.495** (0.252)	-0.213 (0.231)	0.092 (0.103)	0.121 (0.137)
Government Consumption	-0.012** (0.005)	0.003 (0.002)	0.008** (0.004)	-0.023*** (0.008)	0.005 (0.003)	0.018*** (0.006)	-0.014* (0.008)	0.006 (0.005)	0.008** (0.004)
Decolonization	0.017 (0.096)	-0.005 (0.028)	-0.012 (0.068)	0.286 (0.430)	-0.055 (0.069)	-0.231 (0.367)	0.401** (0.159)	-0.247** (0.123)	-0.154** (0.063)
Berlin Wall	-0.196* (0.104)	0.015 (0.029)	0.181 (0.119)				-0.122 (0.109)	0.038 (0.027)	0.084 (0.097)
Other Border Changes	0.104 (0.335)	-0.037 (0.141)	-0.067 (0.194)	-0.137 (0.345)	0.014 (0.016)	0.123 (0.346)			

<sup>§</sup>The marginal effects are calculated from the estimated coefficients in Table 11, third column of each sample. They are computed at the mean of our sample. The marginal effect of a dummy variable is calculated as the discrete change in the expected value of the dependent variable as the dummy variable changes from 0 to 1. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.