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IMF Working Paper

Does an Inclusive Citizenship Law Promote Economic
Development?

By Patrick A. Imam and Kangni Kpodar

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AFR and SPR

Does an Inclusive Citizenship Law Promote Economic Development?

Prepared by Patrick Imam and Kangni Kpodar¹

Authorized for distribution by Ali Mansoor

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Abstract

This paper analyzes the impact of citizenship laws on economic development. We first document the evolution of citizenship laws around the world, highlighting the main features of *jus soli*, *jus sanguinis* as well as *mixed regimes*, and shedding light on the channels through which they could have differentiated impact on economic development. We then compile a data set of citizenship laws around the world. Using cross-country regressions, panel-data techniques, as well as the synthetic control method and subjecting the results to a battery of tests, we find robust evidence that *jus soli* laws—being more inclusive—lead to higher income levels than alternative citizenship rules in developing countries, though to a less extent in countries with stronger institutional environment.

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"A healthy nation is as unconscious of its nationality as a healthy man is unconscious of his health. But if you break a nation's nationality it will think of nothing else but getting it set again" - George Bernard Shaw

I. INTRODUCTION

The world's population is becoming increasingly diverse and integrated, thanks to international migration. While largely beneficial, this phenomenon has sometimes also led to social tensions, as is currently visible in the West, and also in some lower-income countries. How the change in the composition of the population impacts economic development depends in large part on how newcomers are integrated into society. Does society assimilate new arrivals, try to treat them as equals, and provide them with job opportunities, or does it exclude them and treat them as outsiders, with limited possibility of integration? We will illustrate that the role of one institutions in general, the citizenship law, is crucial in determining how newcomers are integrated, which in turn conditions the level of economic development of a country.

Citizenship laws are relatively new. Prior to the nineteenth century, allegiance was to an ethnic group or a feudal lord. It is only with the emergence of the nation-states in the nineteenth century that the primary allegiance shifted to the nation. Membership of a nation state became conditioned on citizenship laws, which confer legal rights, separating full members from non-members, coming with privileges and responsibilities. These range from the right to vote and work, the ability to travel and reside on the national territory without restriction, to full legal protection. Responsibilities include paying taxes, and though increasingly uncommon, serving in the military, among others (see Bertocchi, and Strozzi, 2010; Weil, 2001).

Citizenship laws come in various forms: citizenship can be either acquired through parents, or through being born on the country's soil, or a mix of the two. By distinguishing citizens from non-citizens, a citizenship law, creates "ins" and "outs." A citizenship law is deemed inclusive if it can facilitate the integration of outsiders by providing an easy and transparent pathway to citizenship, and creating a level playing field for newcomers. If it excludes some citizens, it can, in extreme cases, lead to conflicts and hence hurt economic development. In a world of ethnic and religious diversity, citizenship laws are important to understand which groups are integrated in society, and which are not. In other words, by regulating the inclusion or exclusion of exiting populations of newcomers, citizenship laws are a valuable tool for inclusive growth. They can have deep-seated consequences on labor markets, welfare programs, and institutions in each country.

Some countries are traditionally better at integrating outsiders than others. Many countries, notably of the "new world," give citizenship to people born on their soil (*jus soli*). This is the case most famously of the United States, but encompasses in general countries in the Western Hemisphere that were settled largely by outsiders. This provides the basis for an "inclusive system," which ensures that newcomers, and their children, are assimilated, and can easily obtain citizenship and integrate. The ability to easily obtain the U.S. citizenship for instance has been one factor that explaining the gradual (and successful) integration of foreigners into the country (see also Timmer and Williamson, 1998).

Other countries, however, put the focus on the transmission of citizenship by blood (from parents to children) instead (*jus sanguinis*). This form of citizenship is more ethnocentric, and therefore by definition less inclusive. This leads to a phenomenon whereby individuals can have lived for generations in a country but are not citizens of their native land. Germany until recently with a large Turkish community, or Madagascar today, with Indo-Pakistanis that have been there for generations, are such examples. The *jus sanguinis* citizenship laws has led to a large Turkish community in Germany, and Indo-Pakistani community in Madagascar, that lack the nationality of the country, with consequences on integration. The choice between *jus soli* and *jus sanguinis* is not binary and is in fact starting to converge. A rising number of countries are adopting citizenship laws that are a mix of the two regimes. Germany is a case in point, which made a change at the end of the 1990s that made it easier to acquire the Germany nationality, if newcomers, or people born on German soil, fulfil certain requirements.

This paper aims to study whether this difference in citizenship law may be a reason for why some countries have higher levels of income, through its impact on integration? In many circumstances, the marginalization of segments of society, because they lack the nationality, could lead to political instability, or even civil wars, with long-lasting economic effects (see Tavares and Wazirag, 2001; Collier and others, 2003). When a society is polarized, or important groups are excluded from the main-stream because they are not nationals, this can negatively impact the rate of investment, and even induce rent-seeking behavior, that can distort public consumption (see Commission on Growth and Development, 2008). In the case of Africa, for instance, its growth failure is deemed to be due in part to the feeling of some segments of society that they are second class citizens, as a result of artificial borders left by former colonizers. This impacts how government behave—they typically overspend and under-tax as a result to buy social peace—and impacts private investment negatively.

The aim of this paper is to investigate empirically how citizenship laws impact economic development, especially in developing countries. This paper is related to several strands of the economic literature. It adds to the research on international migration (e.g. Timmer and Williamson, 1998), and notably the economic costs and benefits derived from citizenship acquisition (see DeVoretz and Pivnenko, 2006). More broadly, it also contributes to the recent literature on inclusive growth, which has focused on gender inequality (e.g., Buvinic, Lunde, and Sinha, 2010). The inclusive growth literature has illustrated that lower income inequality, gender inclusion, and policies that encourage them, contribute to faster economic growth, and hence economic development. This paper looks at inclusiveness in broader terms, by focusing on marginal groups that are not integrated into the mainstream of society as they lack the nationality of the country in which they reside. This paper illustrates that inclusion facilitated by citizenship laws, is likely to be an engine of economic development, and is a factor explaining why some countries are richer than others.

We will proceed as follows. Section II of the paper starts by reviewing the concept, and evolution of citizenship laws across the world. A new data set is also assembled to illustrate the complexity of citizenship laws around the world. In section III, using various econometric techniques, including cross-country and panel estimates, and subjecting the data to the counterfactual using the Synthetic Control Method, the paper finds that citizenship laws explain well differences in income levels in developing countries, although stronger institutions may help dampening the negative impact of a restrictive citizenship law. In other words, they are a crucial factor, that the growth

literature has not paid much attention to, that can explain why some countries are more developed than others.² The paper then concludes with policy implications.

II. CITIZENSHIP LAWS: *JUS SOLI* VS *JUS SANGUINIS*

A. General Principles

The notion of citizenship has varied considerably throughout the evolution of mankind, though there are some common elements of citizenship principles. A general definition of citizenship is membership in a political society or group. With the birth of the nation state in the nineteenth century came the need to find a distinction between who belongs to the state and who does not, and therefore to create a legal distinction between nationals and foreigners.³ The former benefitted from rights such as voting, circulating within the county, or rights to work in the country for instance. They also had responsibilities, such as serving in the military, or paying taxes and voting (see Weil, 2001).

Thus, most countries established in the nineteenth century, or at independence, a “code of nationality,” whose basic principles are often still intact today. This code, in most cases, defines who is a national, and if the nationality can be acquired, how it can occur (e.g., through marriage or through having lived for several years in the country). At the end of the nineteenth century, two visions of nationality laws were confronting each other. One vision, based on the declaration of human rights, is inclusive, and can extend, with certain conditions, the nationality to each type of citizen. The other view, more exclusive, defines a nation more as an ethnic community.

These two visions lead to three concepts of the citizenship laws.⁴ the inclusive version is reflected in the law of the soil (“*Jus soli*”); the principle being that a child born within a country’s territory acquires that country’s nationality—the norm in the “new world.” In this view, bonds of citizenship extend beyond basic kinship (and blood-ties) and encompass people of different genetic and geographical backgrounds. It describes the relation between a person and an overall political entity such as a nation and denotes membership in that entity. It is also generally characterized by some form of political participation, although the extent of such participation can vary considerably from minimal duties such as voting to active service in government. For males (and sometimes females), it is (was) often based on some form of military service or expectation of future military service.

² Nevertheless, the literature does investigate some of the candidates of growth determinants which presumably overlap with citizenship laws in concept or in mechanism (e.g., legal origins, political rights, civil liberties—see Masanjala and Papageorgiou, 2008).

³ In ancient times, citizenship was often restricted based on one’s family history or education, was largely the privilege of males, and conferred privileges (such as voting). It also required an active citizenry. Unlike the ancient patterns, modern citizenship is much more passive; actions are delegated to others; citizenship has often become a constraint on acting, rather than being an impetus to act. This is because modern citizens are aware of their obligations to power, and aware that these bonds limit their personal political autonomy (Hazareesingh, 1998).

⁴ In couples where the children are from a *jus sanguinis* and *jus soli*, complicated situations can happen. For instance, a Lebanese child born in the US from Lebanese parents would be both a US citizen—given the US law of *jus soli*—and Lebanese—given the Lebanese law of *jus sanguinis*. In the opposite case, a child born from American parents in Lebanon would only get the U.S. nationality.

When there are many different ethnic and religious groups within a nation, citizenship may be the only real bond which unites everybody as equals without discrimination—it is a "broad bond". In other words, *jus soli* citizenship links "a person with the state" and gives people a universal identity—as a legal member of a nation—besides their identity based on ethnic ties (see Turner and Hamilton, 1994).

The exclusive version of the law of the blood ("*Jus sanguinis*") promotes the principle that a child acquires the nationality from his parents (—and in some countries only from the father, not the mother), with the place of birth not being a factor.⁵ This is commonly the case in Europe, Asia and parts of Africa. In this philosophy, citizenship has legal aspects including rights (sometimes seen as a bundle of rights or a right to have rights). By definition, citizenship provided through *jus sanguinis* has an element of exclusion, in the sense that citizenship derives meaning, in part, by excluding non-citizens from basic rights and privileges. Citizenship is a powerful force to exclude persons, such as immigrants. In this sense, citizenship is not only about getting rights and entitlements, but it is a struggle to reject claims of entitlement for those residing outside the citizenry, such as migrants (Bertocchi and Strozzi, 2004).⁶

The third option, becoming increasingly common, is a mixture of these two, creating a hybrid system. Whereas countries often started as *jus soli* or *jus sanguinis* principles, in recent times, reflecting the rising immigration levels, many countries have changed their policies to move towards the other's philosophy. Germany, in 1999 significantly reformed its citizenship law which was based on the *jus sanguinis* principle, making it possible for foreigners residing in Germany for years, and particularly foreign children born in Germany, to acquire German citizenship. On the other hand, countries such as Britain have tightened the rules of *jus soli* law.

⁵ Gender can play an important role in the transmission of the nationality in *jus sanguinis* cases. In many patrilineal societies—such as in many Arab countries, Burundi, Nepal or Madagascar until 2016, women cannot, or it is extremely hard, to transmit the nationality to their children (or their husband for that matter). Note though that even countries such as Germany (1979) or Spain (1983) only lifted the restriction of giving the nationality to a spouse in recent times. The worldwide trend is a move away from discrimination, with women and men being able to increasingly transfer the nationality to the children (and spouses) in the same manner.

⁶ It is increasingly recognized that how citizenship is seen and understood depends on the viewpoint of the person making the determination, such that an educated upper-class person will have a different notion of citizenship than a person from the lower classes. One factor that the economic literature has paid scant attention to, is that while historically, populations identified with their ethnic, religious or kin group, with group membership often inherited at birth, concepts such as ethnicity—belonging to a social group that has a common national or cultural tradition—are far from static. The concept of ethnicity is dynamic and can be shaped by policy. The assumption that people's ethnicity can be easily identifiable can be called into question, as it can be changed or determined by economic or policy factors. Several studies, such as Horowitz (2001) and Humphreys, Posner, and Weinstein (2002) report evidence from case studies in Sri Lanka, Burundi and Ethiopia where identifying members from different ethnic groups was oftentimes difficult, even though local conflicts had their roots in ethnicity. Just dressing differently, or faking one's accent, made individuals indistinguishable (see also Caselli and Coleman, 2002, who formalize in an economic model the endogeneity of ethnic identity). As documented by Chandra (2005), individuals have multiple, not single, ethnic identities and the identity with which they identify varies depending upon the specific context. The ease with which attributes can change are defined as the "degree of stickiness." Tajfel and Turner (1979) give a psychological explanation for the existence of ethnic categories in terms of the tendency of people to create in-groups and out-groups in which to categorize themselves and others.

One consequence of the mixed regime is the modern emergence of “double nationalities.” Until the nineteenth century, the double allegiance was frowned upon, as it was viewed as a sign of potential traitor, or of a force of subversion, and hence prohibited in most countries. It also raised practical questions such as in which country should the person do his/her military service (some countries require military service from women). In case of war between the two countries, which camp would the person chose to fight for? While this attitude was understandable in a world ravaged by war, attitudes started changing in the second half of the twentieth century. These individuals would in fact increasingly be viewed as potential interlocutors in case of crisis. The United Kingdom was one of the first countries to recognize the dual citizenship in 1949, followed by France (1973) and others more recently. Some countries, such as Japan, Cameroon or the Republic of Central Africa, refuse the double nationality to this day (in the case of Japan, the child must choose at the age of 18), and can go as far as to deprive a child of its nationality if he/she seeks to be naturalized somewhere else. In many countries, formally colonized, such as in sub-Saharan Africa, this recognition of the dual-nationality started late, and only in the 1990s with the end of the cold war. This is in part a reflection of history. At independence, these countries wanted a clear break from their former masters and forced their people to choose their allegiance to the new country, or the former colonial power. This was especially an issue for colonialists who had been in the country for sometimes generations, and who didn’t want to choose between the two. The risk in many cases was that decedents of colonialists would pack their bags and take with them all their skills and knowledge. In addition, the other risk they faced was that the educated who had migrated overseas, may decide to acquire the nationality of the place where they reside, cutting the link between the country and its most experienced and educated citizens. This global phenomenon of increasing acceptance of the double nationality reflects in part the new reality emanating from the end of the cold war, with countries allowing for the double-nationality (e.g. Algeria, Burkina Faso, Mali) becoming the norm in sub-Saharan Africa, rather than the exception.

B. History of Citizenship Laws by Region

In continental Europe, *jus soli* law has historically been the dominant choice, a reflection of the feudal traditions linking a person to the lord, on whose land he was born (Bertocchi and Strozzi, 2004). This explains why during the nineteenth century, most of the European continent drafted their citizenship laws on this model. Japan, which modelled its constitutional law on continental Europe, followed in the same tradition. One exception is France. With the French revolution, this link was broken, and the law became one of *jus sanguinis*. France, at the end of the nineteenth century, switched back from *jus sanguinis* to *jus soli* to grow demographically, following the lost war against Prussia, as well as to integrate foreign communities—this would it was thought permit for a strong military. By contrast, the British, kept the *jus soli* tradition, and spread it throughout the British Empire. Before WWI therefore, a pattern emerged where common law countries tended to have *jus soli* laws, while civil law countries tended to have *jus sanguinis* laws (see also Weil, 2001).

The Western Hemisphere countries, such as the United States, chose the *jus soli* citizenship rule. Consistently with a country of immigrants, and with the specific purpose to protect the birthrights of black slaves, the fourteenth amendment in 1868 encoded the *jus soli* principle. The relatively limited benefits of U.S. citizenship versus US residency also means that the fiscal costs of providing citizenship to a newcomer were limited, with the potential upside of having an extra person working

(with the cost of education falling on the migrants' home country) (see Bertocchi and Strozzi, 2010).⁷ Similarly, Canada a large and sparsely populated country, welcomed migrants into the country with *jus soli* citizenship law, as more people ensure that the country can expand and get the right skills.

In colonized countries, citizenship laws were initially typically transferred from the colonial power (Bertocchi and Strozzi, 2010; Manby, 2016).⁸ Countries with a strong, and typically long national sense, such as China, Egypt, or Japan, typically make it hard to acquire the nationality, or to have a second passport. Others, as is typical in newer countries in the Western Hemisphere without necessarily a strong national sense of itself, make it typically easy to be naturalized, and typically provide for automatic citizenship if a child is born on the soil of that country, the US being the best example. Many SSA countries, which were created artificially by the French, British and Portuguese, lacked a sense of national cohesion. At independence, there were major revisions in citizenship laws: Most former French colonies initially stuck with the principle of *jus soli*. On the other hand, many former British and Portuguese colonies switched to *jus sanguinis* citizenship laws, driven by ethnic considerations. Given that many countries were artificially created without consideration for diverse local ethnic groups, leading to conditions of political instability, *jus sanguinis* had the advantage, it was thought, of more easily creating a "national identity". This was the case in Sierra Leone for instance, where the 1961 Constitution established that citizenship could only be transmitted by descent, and only to those whose father and grandfather were Sierra Leoneans and of Black-African descent (see Aleinikoff and Klusmeyer, 2000)⁹. The problem with such a law in a heterogenous ethnic environment was that it excluded various ethnic and tribal groups, causing enormous problems, especially in the context of weak institutions. The Congolese Constitution of 1964 for instance, in an effort to exclude Rwandan immigrants, recognized citizenship only for persons whose parents were members of tribal groups established within the territory before 1908 (see Bertocchi and Strozzi, 2010). Predictably, marginalizing certain groups, and in some cases creating de facto stateless people, who would in some circumstances rebel, was a consequence of such policies.

A look at Figure 1 illustrates the citizenship laws across the world. Citizenship laws, while marked by history, and changing only slowly, are not static. They evolved in some cases, often driven by economic or national considerations. As argued by Weil (2001), when the legal tradition fulfils the interest of a state in terms of migration, the national laws are maintained. Canada, a country of

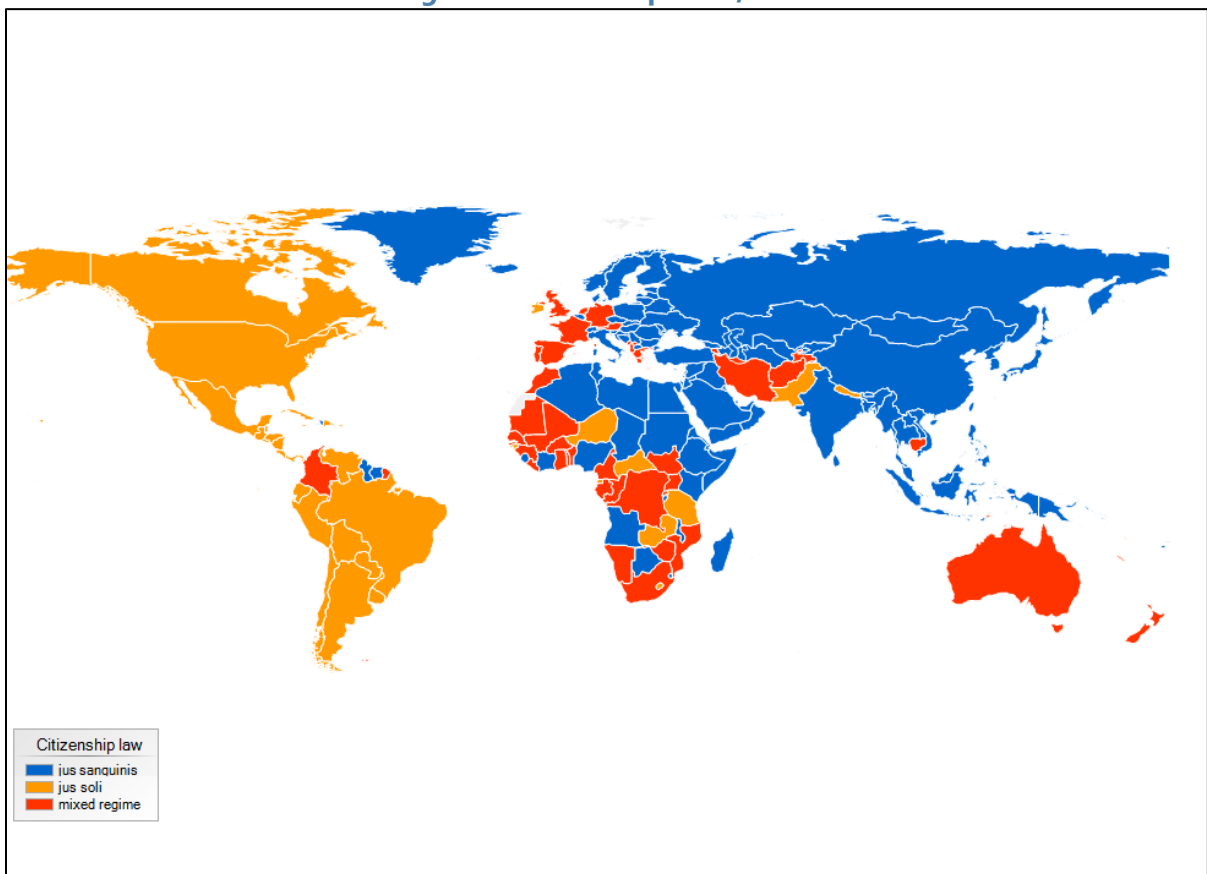
⁷ One has to nuance the close association between *jus soli* citizenship and inclusiveness. The 14th Amendment to the U.S. Constitution encoded citizenship to all born or naturalized in the United States, but it took several years before the Civil Rights Movement legally ended the segregation between US citizens. In addition, discrimination of minorities irrespective of citizenship status continues in many parts of the world.

⁸ The history of a country's immigration policy also matters. Countries with few emigrants' limit for instance the access to the *jus sanguinis* nationality across time. A person from a Canadian or Belgian parent born overseas will receive the nationality of the country only if the it is a first-generation person born outside of the country. On the other hand, countries with a strong history of emigration—from Algeria to Haiti to Vietnam—can transmit the nationality to all their descendants, which enables the creation of diasporas.

⁹ While gender discrimination in the inheritance of nationality is becoming ever rarer, there are some countries where racial/ethnic traits still matter. In Liberia for instance—a country founded by former American slaves—Whites cannot be naturalized. In Malawi, the nationality is reserved to children that have at least one parent that is a "citizen of Malawi" and "of African race." This is, however, the exception, and often explained by specific historical features.

immigration, has maintained its *jus soli* laws. In continental Europe, countries often historically a source of emigration—to keep a link to immigrants—the authorities have kept the *jus sanguinis* citizenship laws in place, such as Germany. However, as Germany became increasingly a country of immigration, with large Turkish and other communities, increasingly it was felt that to integrate these communities better, the law was changed. In some ways, while there remain big variations across countries and regions, there has been, starting from a low level at the end of the twentieth and beginning of the twenty-first century an increasing hybridization of *jus sanguinis* and *jus soli* laws, or a convergence. *Jus sanguinis* countries have increasingly accepted some form of naturalizations based on some tight criteria, while *jus soli* countries have tightened the requirements to citizenship, as was the case in the United Kingdom or Australia, for fear that migrants may burden too heavily the social welfare system for instance.

Figure 1. Citizenship Laws, 2014



Source: Authors (compiled from various sources).

In recent decades, most of the conventions of the acquisition of a nationality have evolved. As an example, many countries have in the past regarded marriage as an important status changing event in people’s lives. For spouses, the most widespread practice among states, until the beginning of the twentieth century, was that a woman should obtain the nationality of her husband upon marriage. In other words, when marrying a foreigner, the wife would automatically acquire the nationality of her husband and lose her previous nationality. Even after the nationality of a married woman was no longer dependent on the nationality of her husband, legal provisions were still

retained which automatically naturalized married women (and sometimes married men as well). This could lead to various problems, such as men becoming subject to military service obligations in another country—a major concern in times of international hostility. In more recent times, there has been a shift towards a principle that neither marriage nor dissolution of marriage automatically affects the nationality of either spouse, nor of a change of nationality by one spouse during marriage automatically affecting the nationality of their spouse. However, in many jurisdictions spouses can still obtain special and fast processing of applications for naturalization. Since the turn of the century, many countries have tightened the automaticity further, for fear of “marriage blanc”—a sham marriage—which permits the foreigner (often from a developing countries) to obtain the nationality of the spouses of an AE. Once the migrant has the nationality and divorces, the person is entitled to all the social benefits conferred by the country—creating a financial burden for society¹⁰.

C. Jus Soli vs Jus Sanguinis: Different Impact on Economic Development?

How do citizenship rights impact economic development? A citizenship law can be thought of as a conflict resolution or conflict generating institution. If it is inclusive, it can provide positive social capital, raising trust, reducing transaction costs and reducing the probability and intensity of conflict for instance. This is especially the case when other conflict resolution institutions are weak (e.g., government is corrupt, court of laws is weak), as is the case in most developing countries.

As a result, our hypothesis is that citizenship laws impact economic development in lower-income countries, but not so much in countries with robust institutions. In practice, we hypothesize that *jus sanguinis* makes integration more difficult, and hence negatively impacts economic development. Several channels can be identified:

Distorting Investment. There are several channels through which investment may be negatively impacted, by having residents that do not have the nationality. First, such investors have short-time horizons—communities without citizenship in countries with weak institutions are vulnerable and have an incentive to store their money overseas. Thus, they would not necessarily maximize their exposures to the country, and would, particularly around elections, be cautious. In addition, their investment would be distorted: if property rights are not well protected because one lacks the local citizenship, one goes for investments with a quick payback (e.g., some agricultural sectors) or with limited capital investment needs (e.g., trading). The incentive is also to have a diversified business empire—rather than being too big in one sector—to avoid predation, and to diversify risk. This also means lack of specialization: investors will not go into assets that are high specialized (e.g., biotech firm), but rather into assets that are easily re-deployable. While not quite the same as not possessing the nationality, Montalvo and Reynal—Querol (2005) find, using a polarization index, that ethnic (religious) polarization has a large and negative effect on economic development through the reduction of investment.

¹⁰ With the acceptance of modern lifestyles, some peculiar situations may arise: suppose a lesbian couple has a child, and the two women are from countries where the nationality is only transmitted by the father, and not the mother. In addition, if the child is born in a country where only *jus sanguinis* applies, then theoretically, the child could be without nationality. In most countries, one can presume that the government would make an exception to avoid the child becoming stateless.

Political Instability and Corruption. Marginalized minorities without nationalities are oftentimes at polar extremes, particularly in sub-Saharan Africa—either excluded from economic life or playing a disproportionately significant role in the local economy. Without citizenship, the marginalized minority cannot vote or impact public life through democratic means. One way for disenfranchised groups to draw attention to themselves is through protests and other forms of civil disobedience, or in other cases by a call to arms. As a result, governments may suppress minorities, spending more on military, etc., thereby weakening growth.

Conversely, when a non-national group plays a disproportionality significant role in the economy, their lack of protection by the state is a source of concern (given weak institutions and a potentially predatory state). Because of their vulnerabilities, influential minorities have an incentive to influence the political process through non-democratic means. They may have to use bribes, encouraging corruption, and therefore weakening institutions. In addition, investments must often be financed with local politicians, creating a patronage relationship. Thus, these communities don't necessarily benefit from a strong state that could potentially expropriate them, or tax them significantly for that matter: a weak state that doesn't tax (but also doesn't provide public goods) may in fact be—in the short-run—in their interest. This also means that these minorities may have an incentive to weaken the state, through the policy of divide and rule, by bribing rival political groups (Thomson, 1995). An inclusive citizenship law, on the other hand, is likely to align the interest of outsiders with those of the existing citizen, anchoring their longer-term interests on those of the nation.

One striking example is for instance the Lebanese diaspora, which is encountering different citizenship laws in the countries in which it is implanted. In Colombia, where a large Lebanese community exists, as *jus soli* applies, they have the citizenship and are well integrated: they are involved in local politics, and in businesses. Their long-term interest—in the rule of law, good infrastructure, good education of the local population—is aligned with their business interests. Even in case of political instability, they are unlikely to be expropriated because of their ethnicity. In Western Africa, however, the same business community is experiencing very different circumstances: In Sierra Leone for instance, the small Lebanese community, despite having been there for several generations as well, does not have the citizenship of the country due to the *jus sanguinis* law. Thus, it is not well integrated and not visibly present outside of businesses. Their longer-term interests are not necessarily aligned with those of the citizens of the country, as they know they can be expropriated any time. The result is that they may not, unlike in Colombia, benefit from the presence of a strong state. The risk of expropriation means that they are myopic in their investment decision, and will try to keep as much money out of the country as possible, rather than investing domestically. They are often involved in activities that don't require much capital, such as import-export, or activities where cash flow start rapidly to accumulate (e.g. cinema, hotels). Socially, they tend to also be an endogamous community, marrying little with the local community.¹¹

¹¹ The successful minorities are often blamed as scapegoats. During riots, these communities are often the first to be looted. Other examples, where individuals, despite having been in the country for generations, are treated like “anti-bodies” and mostly lack the nationality of the country, include Indo-Pakistani communities in countries Eastern African countries or Indian Ocean.

Reducing Public Sector Efficiency. Studies have documented how divisions, whether ethnic, religious or linguistic ones, often negatively impact public sector performance, increasing patronage, lowering level of trust among the population and ultimately impacting negatively on economic development (see Easterly and Levine, 1997; Alesina, Baqir, and Easterly, 1999). The literature argues that the underdevelopment of sub-Saharan Africa is due some of the citizens not feeling fully integrated or full members of the state. In addition, the lack of inclusion of some segments of the population could impact government activities and the quality of institutions as well. While there is no study to our knowledge on the impact of nationality laws on public sector efficiency, there are clear parallels from the ethno-linguistic literature that would suggest an analogous effect. Ethnic groups were often split into different countries, meaning that there was often a lack of national identity (Engleber, Tarango, and Carter, 2002). As a result, this may make it more difficult to reach on public goods delivery, as would be the case in a more homogenous society. Canning and Fay (1993) and Mauro (1995), have discussed the impact of ethnic fragmentation on government activities and quality of institutions. Mauro (1995) was among the first to illustrate that a high level of ethnolinguistic diversity implies a lower level of investment. Easterly and Levine (1997) have shown that per capita GDP growth is inversely related to ethnolinguistic fractionalization in a large sample of countries. A large literature on US localities show that in more ethnically fragmented communities, public goods provision is less efficient, participation in social activities and trust is lower, and economic success, measured by growth of city sizes, is inferior. Evidence that trust does not travel well across racial lines is also supported by experimental evidence. Alesina and others (2003) provide new measures of ethnic, linguistic and religious fractionalization for about 190 countries, and confirm most of these findings. These studies lead one to draw the conclusion that government spending may not be optimal in the presence of marginalized groups¹².

Distorting Labor market. Under *jus sanguinis* law, local minorities without citizenship may be excluded from parts of the labor market. In many countries, entire professions are not allowed to immigrants. For instance, in Thailand foreigners cannot become hairdressers, nor accountants. In Cambodia or Madagascar, foreigners are not allowed to purchase land. In a country like France, (non-EU) foreigners are not allowed to become directors of funeral companies. In these cases, a *jus soli* laws expands the labor market in a way that *jus sanguinis* law does not—providing a potentially larger pool of labor and creating a more efficient economy.

¹² In some cases, more inclusive citizenship laws can have a direct positive impact on government revenues. Smaller countries, often located in the Caribbean, but also Comoros or Malta more recently, sell citizenships to people, under certain conditions, such as a minimum amount of investment in the country, and/or paying a tax to their new country. The Economic Citizenship Programs (ECPs) as practiced in the Caribbean is a case in point. This offer opportunities to obtain citizenship in exchange for substantial contributions—tax payment of investments—in the domestic economy (see Xu, El-Ashram, and Gold, 2015). Some countries—typically sparsely population but wealthy—confer nationality also based on the “prestige benefits” they can get from migrants. Some rich Gulf countries have given the citizenship to migrants, who would integrate the football team or help represent the country at the Olympics for instance.

III. THE DATA, MODEL, AND ECONOMETRIC APPROACH

A. The Data and Sample

In the following section, we will assess empirically the impact of citizenship laws on economic development. How do we measure citizenship laws? We compile a data set of citizenship laws drawing on a series of sources, including the U.S. government report on citizenship laws of the World,¹³ the office of the United Nations High Commissioner for Refugees (UNHCR), constitutions and nationality laws released online by official country authorities, Manby (2016) and Bertocchi and Strozzi (2010). Using multiple sources enables us to document more accurately the features of different citizenship laws, avoid misinterpretations, and cover the largest sample of countries possible.

For this study, we collected data on the characteristics of the most recent citizenship laws (as of 2014), which for many countries have been in effect for decades as citizenship laws change little over time. We constructed a dummy variable taking one if a country has a *jus soli* regime or zero otherwise, as our main variable of interest. This variable is further refined subsequently, by distinguishing between a mixed regime and a *jus sanguinis* regime for countries where the *jus soli* dummy variable takes zero. We also compiled information on other features of citizenship laws, including the possibility or not to acquire citizenship by marriage, the existence of gender discrimination in the transmission of nationality, minimum requirements for naturalization such as period of residence, renunciation of other citizenship, and other requirements (e.g., language skills, income threshold).

Although the data are available for a worldwide sample, we restrict the main analysis in this paper to a sample of 105 developing countries for which data on citizenship laws and other variables are available.¹⁴ This is motivated by two factors. First, the literature section underscores how citizenship rights could harm economic development through exclusion, political instability, and lower private investment in countries with persistently weak institutions. These mechanisms are likely to be more prevalent in developing economies that lack the necessary institutional checks and balances to tackle these issues. Second, on a technical ground, bundling developing and advanced economies raises the challenge of sample heterogeneity, which model specifications and econometric techniques can only partially address.

B. Model Specification

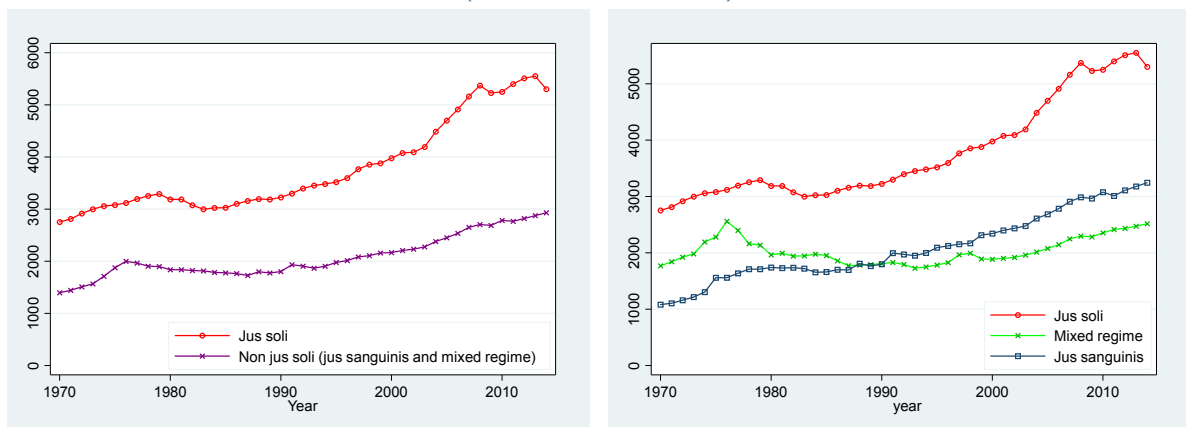
The basic idea is to assess to what extent citizenship laws explain differences in GDP per capita across developing countries, controlling for other factors. The underlying hypothesis we will test is that if a country has *jus soli* laws, it is presumably more inclusive in nature, and potentially more likely to be more prosperous, while a country with no *jus soli* laws is more likely to have disenfranchised groups that are not integrated in society and the economy, or that create tensions either because they are economically disenfranchised or are very successful compared to the dominant group.

¹³ Available at <https://www.multiplecitizenship.com/documents/IS-01.pdf>.

¹⁴ See Annex I.

Visualizing the data provides a vivid illustration of the striking difference in the average real GDP per capita in *jus soli* countries vs non-*jus soli* countries, with the gap having widened over the years (Figure 2). In 2014, income per capita in *jus soli* countries was 80 percent higher than in non-*jus soli* countries. Splitting the sample of non-*jus soli* countries in mixed regime and *jus sanguinis* countries confirms that *jus soli* countries are richer, but there is no clear pattern when comparing mixed regime to *jus sanguinis* countries. This may not be surprising as inclusiveness in many countries with a mixed regime might be similar to that of *jus sanguinis* countries, particularly in cases where the acquisition of citizenship by birth is subject to stringent requirements.

Figure 2. Average Real GDP Per Capita in Jus Soli and Non-Jus Soli Developing Countries, 1970–2014
(Constant U.S. dollars)



Sources: World Development Indicators, Authors' estimations.

The main purpose of the model will be to estimate how much of the real GDP per capita gap observed in Figure 2 is explained by the *jus soli* law. To do so, we build on the seminal paper of Acemoglu, Johnson, and Robinson (2001) which provides a starting point for our econometric model. The specification of the model is as follows:

$$y_i = \theta_0 + \theta_1 Jsol_i + \theta X_i + \varepsilon_i \quad \text{Eq (1)}$$

As in Acemoglu, Johnson, and Robinson (2001), the measure of economic performance retained as a dependent variable in this paper is the level of GDP per capita at the end of the period considered in the study (1970-2014). The dependent variable y_i is explained by our main variable of interest, which is the dummy variable $Jsol_i$ capturing the presence of a *jus soli* law, and a set of control variables X_i . A positive θ_1 , the coefficient of interest, would lend support to the hypothesis that a *jus soli* law is associated with higher economic performance. Consistent with Acemoglu, Johnson, and Robinson (2001) we include latitude and a measure of institutional quality (the index of rule of law) in the control variables. McArthur and Sachs (2011) argue that physical geography, which affects the disease environment and health characteristics of a country, matter for economic performance. Compared to the index of protection against expropriation used by Acemoglu, Johnson, and Robinson (2001), the rule of law indicator is available for a larger sample of countries, therefore we decided to use it to avoid losing data points. Other control variables include factors that have been widely shown as key determinants of growth (hence economic performance), such as education

(measured by the secondary school enrollment rate), trade openness (measured by the sum of imports and exports divided by GDP) and financial depth (measured by the ratio of credit to private sector over GDP). Although these variables are not considered in the original model of Acemoglu, Johnson, and Robinson (2001), we think it is important to include them given the potential impact of economic performance, and the added advantage of reducing the risk of omitted variable bias. ε_i is the error term of the country i .

One caveat to bear in mind is that the goal of this paper is not to look at the growth literature per se (for an extensive survey, see Durlauf and others, 2005, Johnson and Papageorgiou (forthcoming)). Therefore, the regression analysis only borrows a growth model that is one of the workhorses of the literature, and that is a priori the most suitable to the question addressed. We are mindful that issues of “model uncertainty” and the sensitivity of empirical results to small changes in specifications and samples (see Durlauf, 2009; Henderson, Parameter, and Papageorgiou, 2012), which this paper tries to address through robustness checks.

C. Econometric Strategy

At first sight, the ordinary least square estimator is an appropriate econometric approach to estimate Eq (1) as the citizenship law is considered as a time-invariant variable during the study period spanning from 1970 to 2014. In this case, GDP per capita is the level in 2014 and the control variables are averaged over the period 1970–2014.

However, our OLS specification does not control for time-invariant country specific effects that allows one to capture unobservable country characteristics affecting economic performance. To address this issue, we also run panel regressions. The period of study is split in seven sub-periods of five years each, with GDP per capita being the level at the end of each sub-period and the control variables averaged over the 5-year subperiods. Since the citizenship law variable is time-invariant—we estimated that less than 5 percent of the countries in the sample might have changed their citizenship law during 1975 to 2014—the panel specification can only be estimated by the random effect estimator,¹⁵ which nevertheless relies on the strong assumption of the absence of correlation between the right-hand side variables and the country specific effects. We relax this assumption by using the Hausman-Taylor estimator, while resorting to the Mundlak test (Mundlak, 1978) to identify which variables are likely to be correlated with the country specific effects.

The various econometric approaches discussed so far help shed light on the correlation between citizenship law and economic performance, but we also aim to see if this relationship can be characterized as causal to some extent. Indeed, with potential feedback effect from economic performance to citizenship law, and potential omitted variables that may be correlated with citizenship law, the coefficient of the latter may be biased if these endogeneity issues arise. As a result, we run additional specifications where the citizenship law variable is instrumented by the legal origin or the citizenship law regime of the colonial power with the view to isolating the impact of its exogenous component on economic performance.

¹⁵ A fixed-effect estimator will wipe out the variable of interest due to the collinearity with the country fixed effects.

Investigating the link between citizenship law and economic performance through the lens of the different econometric approaches discussed above allows us to compare how a country with a *jus soli* law performs on average relative to a country with alternative citizenship laws. Although quite informative, these approaches, however, do not consider the counterfactual outcome. Indeed, an interesting angle from which to reconsider the main research question of this paper, is to ask how a country with a *jus soli* law would compare to a situation where that country had adopted a different citizenship law. The counterfactual is obtained from a control group that has similar characteristics as the country of interest, but has not been “treated.” We exploit the fact that many countries had a *jus soli* law during the colonial period (by adopting the citizenship law of their colonizers),¹⁶ but at independence in the 1950s and 1960s, some countries decided to retain the *jus soli* law, while others chose to switch to *jus sanguinis* law. This exogenous change in citizenship law provides a “natural experiment” to gauge the effect of the citizenship law on economic performance. We will use the synthetic control method of Abadie and Gardeazabal (2003), and Abadie, Diamond, and Hainmueller (2010) to estimate the citizenship law’s treatment effect.

In sum, with the use of different economic estimators, different ways to slice the data and various model specifications, we aim to ensure that the impact of the citizenship law on economic performance observed in the empirical results is tangible and robust.

IV. THE RESULTS

A. OLS Estimates

Table 1 reports the OLS regressions of the log of per capita real income in 2014 on the citizenship laws, plus the control variables in a sample of developing countries. First, we start by running a simple regression with latitude as the only control variable, and then we control for the rule of law, and subsequently for the other control variables, namely education, financial development and trade openness (column 1 to 6). Regardless of the specification, the results show that the *jus soli* law is strongly associated with higher income per capita. To get a sense of the magnitude of the marginal impact of the *jus soli* law on income level, we take the specification in column 7 of Table 1 which includes all control variables. The coefficient on the variable of interest indicates that a shift to from a *jus sanguinis* a *jus soli* law could yield on average a 34 log point increase in income per capita (about a 40½ percent increase), which represents close to three-fifth of the gap observed between the income per capita in *jus soli* and non-*jus soli* countries in Figure 2.

When controlling for the rule of law, the coefficient on the *jus soli* variable drops slightly (column 2) which tends to support the idea that the benefits of a *jus soli* law would be weaker in countries with strong institutions. We further tested this hypothesis by interacting the rule of law and *jus soli* variables (column 3). Although the coefficient on the interaction term has the expected sign, it lacks significance at conventional levels. Nevertheless, the coefficient on the *jus soli* variable drops further. These results suggest that the rule of law may play a role in how a *jus soli* law affects economic performance, but it is only a part of the story as the coefficient on the *jus soli* variable remains statistically significant. It is worth noting that in both specifications, the rule of law variable

¹⁶ The concept of citizenship did not exist in most of these countries before the colonial period.

enters the regressions significantly, thus supporting the widely-shared view that institutional quality matters for growth (see for instance Acemoglu and Robinson, 2010).¹⁷

Turning to the other control variables, higher human capital and well development financial system are conducive to higher GDP per capita, as expected. However, we find little evidence for the geography to explain economic performance as the latitude variable is not statistically significant. Similarly, trade openness appears to have an ambiguous impact on income per capita.

In column 8 of Table 1, we substitute to the *jus soli* dummy variable a categorical variable taking the value of three for *jus soli* countries, two for mixed regime countries and one for *jus sanguinis* countries. The higher the value of the variable, the more inclusive the citizenship law. The coefficient of interest is positive and significant, supporting the above findings.

To address potential endogeneity issues given the potential feedback effect from income per capita to the control variables, we rerun the regressions in Table 1 using the average values in the 1990s (1990–99) for rule of law, education, financial development and trade openness. The regressions shown in the appendix (Table A1) yield comparable results.¹⁸

Table 1. Citizenship and Development: OLS Results

	Dependent variable: Log of real GDP per capita in 2014							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Latitude	0.001 [0.006]	0.002 [0.005]	0.002 [0.005]	-0.002 [0.003]	0.003 [0.006]	-0.002 [0.005]	-0.002 [0.004]	-0.003 [0.003]
Jusoli	0.768 [0.216]***	0.688 [0.210]***	0.507 [0.187]***	0.367 [0.156]**	0.685 [0.208]***	0.529 [0.201]***	0.339 [0.158]**	
Citizenship law								0.180 [0.085]**
Rule of law		0.668 [0.135]***	0.788 [0.153]***	0.160 [0.122]	0.576 [0.146]***	0.251 [0.154]	0.032 [0.146]	0.013 [0.151]
(Rule of law)*Jusoli			-0.372 [0.298]					
Education (log)				1.021 [0.097]***			0.944 [0.112]***	0.975 [0.112]***
Trade openness (log)					0.345 [0.215]		0.258 [0.187]	0.277 [0.190]
Private sector credit ratio (log)						0.648 [0.125]***	0.171 [0.132]	0.173 [0.133]
Constant	7.498 [0.128]***	7.866 [0.130]***	7.937 [0.132]***	4.073 [0.377]***	6.368 [0.961]***	5.815 [0.426]***	2.712 [0.780]***	2.276 [0.858]***
Observations	105	105	105	105	104	103	102	102
R-squared	0.11	0.27	0.28	0.59	0.29	0.37	0.62	0.62

Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1% Education is proxied by the secondary school enrolment rate. *Jusoli* is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise. Citizenship law is a categorical variable equal to 1 if *jus sanguinis* is applicable in the country, 2 if a mixed regime (both *jus soli* and *jus sanguinis*) is applicable, and 3 if *jus soli* is applicable. Rule of law, education, private sector credit ratio and trade openness are averaged over the entire period 1970–2014.

¹⁷ Nevertheless, the rule of law variable loses significance in subsequent regressions, suggesting that the quality of institutions tends to affect economic performance through other covariates.

¹⁸ The endogeneity of the *jus soli* variable will be discussed in the subsequent section.

B. Panel Estimates

The main purpose is to see if OLS results hold using different econometric techniques and augmenting the model with country specific and time dummies. We start with a pooling regression, and then use a random effect estimator (column 2 and 3, Table 2) as the *jus soli* variable does not change over time. The *jus soli* variable continues to be highly significant in all specifications, thus providing support to the idea that *jus soli* law countries tend to be more developed than countries with alternative citizenship laws. As the coefficients of the random effect model may be biased if there is a correlation between the explanatory variables and the country specific effects, we overcome this challenge by performing the Mundlak test to select the control variables that are likely to violate the assumption of the random effect model. The Mundlak test suggests that the rule of law, education and financial development variables are likely to be correlated with the country specific effects. As shown in column 4 of Table 2, rerunning the regression using the Hausman-Taylor estimator does not alter the results; the *jus soli* variable still comes out statistically significant.

Table 2. Citizenship and Development: Panel and Instrumental Variable Estimations

Dependent variable: Log of real GDP per capita (end of period)	IV Approach							
	Pooling (1)	Random effect (2)	Random effect (3)	Hausman- Taylor (4)	Hausman- Taylor (5)	Hausman- Taylor (6)	Hausman- Taylor (7)	Hausman- Taylor (8)
Latitude	-0.003 [0.002]	-0.000 [0.004]	0.000 [0.004]	-0.001 [0.006]	-0.001 [0.006]	-0.001 [0.006]	-0.002 [0.006]	-0.003 [0.006]
Jusoli	0.350 [0.089]***	0.575 [0.160]***	0.674 [0.167]***	0.739 [0.220]***	0.715 [0.218]***	0.751 [0.226]***	0.503 [0.234]**	0.478 [0.266]*
Rule of law	0.091 [0.076]	0.083 [0.049]*	0.172 [0.045]***	0.155 [0.041]***	0.037 [0.048]	0.083 [0.038]**	0.012 [0.050]	0.004 [0.053]
Education (log)	1.086 [0.068]***	0.406 [0.048]***	0.134 [0.052]**	-0.011 [0.048]	0.090 [0.066]	-0.004 [0.048]	0.212 [0.075]***	0.173 [0.073]**
Trade openness (log)	0.216 [0.071]***	0.050 [0.038]	0.036 [0.033]	0.033 [0.030]	0.032 [0.051]	-0.050 [0.040]	-0.044 [0.054]	0.035 [0.058]
Private sector credit ratio (log)	-0.003 [0.072]	0.105 [0.036]***	0.051 [0.033]	0.045 [0.030]	0.087 [0.035]**	0.052 [0.026]**	0.105 [0.034]***	0.118 [0.035]***
Constant	2.461 [0.351]***	5.375 [0.217]***	6.509 [0.238]***	7.383 [0.253]***	6.615 [0.309]***	7.644 [0.279]***	6.821 [0.350]***	6.370 [0.397]***
Country-specific effect	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-specific effect	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	331	331	331	331	248	331	239	235
Number of countries	97	97	97	97	97	97	94	91
R-squared	0.61	0.50	0.33	..	..	..	..	..

Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1%. Jusoli is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise. Education is proxied by the secondary school enrolment rate. In columns (1) to (4), the explanatory variables rule of law, education, private sector credit ratio and trade openness are the 5 year-averages in each sub-period. In columns (5), the lagged of the above variables are used as covariates and in column (6) their initial value in each sub-period are used. In column (7), the variable Jusoli is instrumented by the dummy variable for British and that of French legal origin, while the lagged value of the other variables is used as covariates. In column (8), the variable Jusoli is instrumented by the citizenship law regime of the colonial power before the country's independence, while the lagged value of the other variables is used as covariates.

This result is also robust to instrumental variable estimations (Table 2, column 5 to 7). We proceed with three different specifications to ensure that our results are not biased due to the presence of feedback effects, measurement errors and omitted variables. First, the control variables ranging

from rule of law to private credit ratio are lagged by one period (column 5). Second, we use the initial value of the control variables instead of the lags (column 6). Third, we use the lagged value of the control variables while instrumenting the *jus soli* variable by the British and French legal origins (column 7).¹⁹ The evidence that legal origin shapes a country's law has been popularized by La Porta and others (1998). Further, Bertocchi and Strozzi (2010) empirically show that citizenship law is influenced by the presence of civil and common-law systems.²⁰ Once again, the results confirm that *jus soli* countries outperform non-*jus soli* countries, and that the estimated effect of a *jus soli* law on income per capita can be interpreted as causal. This result is also confirmed when the citizenship law regime of the colonial power is used as instrument (column 8).

Finally, we rerun the regressions in Table 2 replacing the *jus soli* variable with the categorical variable taking the value of 1 for *jus sanguinis* countries, 2 for mixed regime countries and 3 for *jus soli* countries. The results presented in Table 3 remain in line with the above findings, including with the instrumental variable approach. Moreover, the results reveal that the mixed regime appears not to be associated with higher income per capita relative to *jus sanguinis* countries (column 5), consistent with Figure 2 which shows no clear evidence of consistently higher income per capita for mixed regime countries.²¹ This may not be surprising as in many mixed regimes, *jus sanguinis* remains the prevalent mode of acquisition of citizenship and getting citizenship through birth on the territory may be subject to numerous conditions. These include typically: (i) the requirement that one of both parents should be born in the country, (ii) the visa status of the parents, and (iii) a minimum period of residence for the parents and/or the child.

C. Additional Specifications

To test the robustness of our main result, we add three additional control variables, namely government consumption as a percent of GDP, an index of ethno-linguistic fractionalization and a measure of protection of property rights, in line with previous studies such as Alesina, Baqir, and Easterly (1999), Easterly and Levine (1997), and Montalvo and Reynal-Querol (2005). Interesting results emerged and are displayed in Table 4. Higher government consumption is associated with lower GDP per capita, as is a high ethno-linguistic fractionalization, whereas better property rights stimulate economic development. The *jus soli* variable retains its sign and significance, confirming our previous findings (Table 4, column 1 to 4).

¹⁹ Countries are typically classified in five broad categories of legal origin: British, French, German, Scandinavian, and Socialist. In this paper, the German, Scandinavian legal origins—representing less than 5 percent of the sample—are bundled in a residual category. Our sample does not have any countries with a Socialist legal origin.

²⁰ In the first-stage regression (shown in Table A2), the predicted value of the *jus soli* variable is obtained by regressing the *jus soli* variable on the legal origins (a dummy variable for the British legal origin and a dummy variable for the French legal origin) and the exogenous variables of Equation (1). In the second-stage regression (column 7, Table 2), the *jus soli* variable is replaced by its predicted value. The first stage regression is estimated with OLS (using a logit estimator do not change the results). The Hausman-Taylor estimator is used to estimate the second stage regression, while correcting the standard error of the predicted *jus soli* variable by bootstrapping.

²¹ This result also suggests that it was appropriate to focus the analysis of the paper on the broader groups of *jus soli* and non-*jus soli* countries.

Table 3. Citizenship and Development: Alternative Definition of Citizenship Law

Dependent variable: Log of real GDP per capita (end of period)	Pooling	Random effect	Random effect	Hausman-Taylor	Hausman-Taylor	IV approach			
						Hausman-Taylor	Hausman-Taylor	Hausman-Taylor	Hausman-Taylor
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Latitude	-0.003 [0.002]	-0.001 [0.004]	-0.000 [0.004]	-0.001 [0.006]	-0.001 [0.006]		-0.002 [0.006]	-0.002 [0.006]	-0.003 [0.006]
Citizenship law	0.178 [0.047]***	0.240 [0.087]***	0.265 [0.091]***	0.265 [0.124]**		0.268 [0.124]**	0.268 [0.127]**	0.228 [0.131]*	0.245 [0.135]*
Mixed regime					-0.275 [0.240]				
Jusoli					0.630 [0.238]***				
Rule of law	0.085 [0.076]	0.087 [0.050]*	0.172 [0.046]***	0.155 [0.041]***	0.155 [0.041]***	0.032 [0.045]	0.083 [0.038]**	0.045 [0.048]	0.024 [0.049]
Education (log)	1.127 [0.069]***	0.414 [0.048]***	0.148 [0.053]***	-0.010 [0.048]	-0.009 [0.048]	0.103 [0.063]	-0.003 [0.048]	0.148 [0.067]**	0.139 [0.068]**
Private sector credit ratio (log)	-0.007 [0.073]	0.104 [0.037]***	0.052 [0.034]	0.045 [0.030]	0.045 [0.030]	0.078 [0.032]**	0.052 [0.025]**	0.114 [0.035]***	0.123 [0.036]***
Trade openness (log)	0.226 [0.075]***	0.050 [0.038]	0.037 [0.034]	0.033 [0.030]	0.033 [0.030]	0.026 [0.048]	-0.049 [0.040]	-0.068 [0.057]	0.010 [0.054]
Constant	2.037 [0.378]***	5.069 [0.266]***	6.422 [0.305]***	7.105 [0.337]***	7.485 [0.273]***	6.316 [0.377]***	7.362 [0.361]***	7.155 [0.328]***	6.603 [0.335]***
Country-specific effect	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-specific effect	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	331	331	331	331	331	257	331	239	235
Number of countries	97	97	97	97	97	101	97	94	91
R-squared	0.61	0.52	0.33	..	..	..	..	..	..

Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1%. Education is proxied by the secondary school enrolment rate. Jusoli is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise. Citizenship law is a categorical variable equal to 1 if *jus sanguinis* is applicable in the country, 2 if a mixed regime (both *jus soli* and *jus sanguinis*) is applicable, and 3 if *jus soli* is applicable. In columns (1) to (5), the explanatory variables rule of law, education, private sector credit ratio and trade openness are the 5-year averages in each sub-period. In columns (6), the lagged of the above variables are used and in column (7) their initial value in each sub-period are used. In column (8), the variable Citizenship law is instrumented by the dummy variable for British and that of French legal origin, while the lagged value of the other variables is used. In column (9), the variable Citizenship is instrumented by the citizenship law regime of the colonial power before the country's independence, while the lagged value of the other variables is used as covariates.

Since in addition of the law of the blood or the law of the soil, a country's citizenship can also be acquired by marriage and naturalization, we constructed a composite index to measure the inclusiveness of the citizenship law along these dimensions. The index is obtained from the principal component analysis of several sub-indicators, namely: a dummy variable taking 1 if citizenship can be obtained through marriage and 0 otherwise; a dummy variable taking 1 if there are no restrictions for women with regard to the right to pass their nationality to a spouse of a child, and 0 otherwise; the number of years of residency required before being eligible to apply for naturalization; a dummy variable taking 1 when a country's naturalization law does not require renunciation of other citizenship, and finally the number of other conditions required for naturalization (including language skills and income threshold). For this composite index, the higher the score, the less restrictive is the acquisition of nationality by marriage and naturalization. As expected, and consistent with the previous results, this composite index enters the regression with a positive and significant coefficient (Table 4, column 5). Moreover, the interaction term between this composite index and the *jus soli* dummy variable is negative and significant, pointing to some substitutability among the different dimensions of a citizenship law as far as the economic effects are concerned. This implies that for a *jus sanguinis* country, the income loss relative to a *jus soli* country, could be reduced if the former has more favorable legal provisions on access to citizenship through marriage and naturalization, everything else being equal.²²

²² The sample size is lower due to limited data availability, but this does not affect the quality of the result as we also run the baseline regression (column 4, Table 2) with the reduced sample and found that the *jus soli* dummy variable has the correct sign and remains significant.

Table 4. Citizenship and Development: Additional Control Variables

Dependent variable: Log of real GDP per capita (end of period)	Hausman-Taylor estimator					
	(1)	(2)	(3)	(4)	(5)	(6)
Latitude	-0.002 [0.006]	-0.002 [0.007]	-0.000 [0.006]	-0.003 [0.007]	-0.002 [0.006]	0.000 [0.008]
Jusoli	0.713 [0.227]***	0.579 [0.282]**	0.729 [0.233]***	0.571 [0.288]**	0.793 [0.251]***	0.746 [0.352]**
Rule of law	0.150 [0.040]***	0.126 [0.044]***	0.079 [0.052]	0.067 [0.052]	0.130 [0.041]***	0.141 [0.068]**
Education (log)	0.015 [0.048]	0.021 [0.048]	-0.005 [0.049]	0.078 [0.051]	0.105 [0.047]**	0.129 [0.063]**
Trade openness (log)	-0.001 [0.047]	0.053 [0.028]*	0.026 [0.030]	0.020 [0.054]	0.162 [0.053]***	0.063 [0.079]
Private sector credit ratio (log)	0.064 [0.030]**	0.005 [0.031]	0.033 [0.030]	-0.003 [0.032]	0.081 [0.030]***	0.030 [0.042]
Government consumption ratio to GDP (log)	-0.167 [0.055]***			-0.151 [0.069]**		-0.026 [0.100]
Ethno-linguistic fractionalization		-0.008 [0.005]*		-0.008 [0.005]*		-0.007 [0.005]
Protection of property rights			0.004 [0.001]***	0.002 [0.001]		-0.000 [0.002]
Marriage and Naturalization					0.749 [0.366]**	0.875 [0.418]**
Jusoli*(Marriage and Naturalization)					-0.498 [0.296]*	-0.637 [0.349]*
Constant	7.825 [0.290]***	7.677 [0.383]***	6.839 [0.257]***	7.501 [0.429]***	6.176 [0.318]***	7.021 [0.560]***
Country-specific effect	Yes	Yes	Yes	Yes	Yes	Yes
Time-specific effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	320	240	307	232	187	127
Number of countries	95	70	95	68	54	37

Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1%

Education is proxied by the secondary school enrolment rate

Jusoli is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise.

Marriage and Naturalization is a composite indicator whose value increases as a country has less stringent conditions for acquiring nationality by marriage and naturalization.

The explanatory variables are the 5 year-averages in each sub-period

D. Accounting for the counterfactual using the Synthetic Control Method

As underlined in Bertocchi and Strozzi (2010), decolonization had a major influence on citizenship law. For instance, many Latin American countries switched to a *jus soli* law at the independence, a departure from the civil law of European settlers where acquisition of citizenship by blood is most common. Bertocchi and Strozzi (2010) noted that this move was a way to break with the colonial political order and to prevent the former colonial power from making legitimate claims on citizens born in the newly independent countries. Many former British and Portuguese colonies moved the other way at independence, by rejecting the *jus soli* law of their colonizers in favor of the *jus sanguinis* law. On the other hand, most African colonies that were subject to civil law countries kept *jus sanguinis* principles in the post-colonization period.

We exploit the change in citizenship rules at independence as a “natural experiment” to assess from a different perspective how citizenship law affects economic development. Table 5 presents

the dynamics of citizenship laws for the countries in the sample from the period before independence to 2014.²³ Countries along the diagonal, accounting for half of the sample, have not changed their citizenship law; a high number, reflecting the persistence of citizenship laws. It is also noteworthy that inclusiveness of citizenship laws has regressed over time. While only 6 percent of *jus sanguinis* countries (1 country) moved to a *jus soli* law after the independence, and 40 percent (seven countries) of *jus sanguinis* countries added *jus soli* elements to their citizenship laws, 33 percent (six countries) of mixed regime countries and 37 percent (19 countries) of *jus soli* countries tightened their citizenship laws by moving to a *jus sanguinis* law. Also, among the countries that have followed *jus sanguinis* principles in 2014, half of them used to have a *jus soli* law before the independence.

Table 5. Dynamics of Citizenship Laws in Developing Countries, 1948 vs. 2014

		Citizenship Law in 2014 (number of countries)			
		Jus sanguinis	Mixed regime	Jus soli	Total
Citizenship law in 1948 (number of countries)	Jus sanguinis	10	7	1	18
	Mixed regime	6	11	1	18
	Jus soli	19	9	24	52
	Total	35	27	26	88

Sources: Bertocchi and Strozzi (2010) and authors.

Ideally, the synthetic control method (SCM) allows to analysis the different regime changes but there are several considerations to account for. First, as we want to be selective by focusing on bold changes in citizenship laws, we leave out the transition to and from mixed regimes, allowing to reduce the number of different combination of regime changes from six to two. Second, since only one country²⁴ in our sample moved from a *jus sanguinis* law to a *jus soli* law, analyzing this regime change presents a major downside: the findings cannot be generalized to a large group of countries. Third, the SCM requires that the dependent variable and the covariates have no missing data points, which presents a challenge for a sample of developing countries over a long-time period. For this reason, it is important to focus on the regime change with the largest sample. Considering all these constraints, we narrow down the analysis to the pool of countries that had *jus soli* law in the colonial period, giving us a sample of 26 countries after dropping countries with insufficient data.²⁵ Then, we observe the most recent citizenship law to identify countries that have maintained the *jus soli* law (15 out of the 26 countries) and the rest that shifted to *jus sanguinis* law. The basic premise is that if a more inclusive citizenship law favors economic development as posited in this paper, one should expect a country that moved away from a *jus soli* law to be poorer than a comparable country which has maintained the *jus soli* law.

²³ We use the classification of Bertocchi and Strozzi (2010) for the year 1948 to determine the citizenship law before the independence.

²⁴ Equatorial Guinea, a resource rich country.

²⁵ See Annex 1.

The synthetic control method (SCM) developed by Abadie and Gardeazabal (2003) and extended in Abadie, Diamond, and Hainmueller (2010) provides a framework to construct the counterfactual of a country that moved to *jus sanguinis* law, drawing from the donor pool consisting of countries that did not change their citizenship rules after the independence. The underlying idea of the SCM is that, even though the counterfactual of the treated unit cannot be observed, a combination of the realized outcomes in the control units (units that do not undergo treatment over the sample period) may be able to produce a reliable estimate of that counterfactual. This assumes that the optimal weights are selected in such a way that the synthetic control unit matches certain pre-treatment characteristics of the treated unit as closely as possible.²⁶ Cavallo and others (2013) further extend the SCM to allow for multiple treated units and at possibly different times.

We adopt the Cavallo and others (2013) pooled SCM to look at the evolution of income per capita during the period 1960–2014 in the selected sample of countries.²⁷ For the sake of simplicity, we assume that the change in citizenship law occurred in 1970 for all treated units.²⁸ To match the treated units with the synthetic control, the covariates in Eq 1 are good candidates for the pre-intervention variables, but longer time series data are lacking for most of them. As a result, we used latitude, an index of human capital provided the Penn World Tables,²⁹ population size, real capital stock and the level of real income per capita in the pre-intervention period as covariates.³⁰

Figure 3 depicts the evolution of real income per capita in the median treated country and that of the counterfactual as estimated by the pooled SCM.³¹ Using the median smooths out noises in the estimates and ensures that the results are not driven by outliers. Consistent with the results from the standard regression techniques, countries that have switched to a *jus sanguinis* law ended up with a lower income per capita than where they would have been had they kept the *jus soli* law after they became independent. It is striking that the magnitude of the income gap is very close to the OLS estimate (Table 1, column 7). Indeed, the treatment effect of the median country estimated by the SCM points to a 37.8 log point loss in income per capita by

²⁶ For the technical details about the methodology, see Abadie and Gardeazabal (2003) and Abadie, Diamond, and Hainmueller (2010).

²⁷ The pooled SCM is implemented using the “synth_runner” package in STATA developed by Galiani and Quistorff (2016).

²⁸ Most colonies obtained their independence at the end of the 1950s and during the 1960s. However, no consistent data on income per capita are available for all the countries for the years prior to 1960. That said, since the effect of citizenship law on economic development tends to play out in the long run, the exact timing of the reform is less of a relevance. Assuming the change in the citizenship law for all the treated units arose in 1970 has a practical advantage. It allows us to have 10 years of data in the pre-treatment period, enough to perform the pre-intervention matching. It is worth noting that we carried out some sensitivity analysis by changing the assumed year of treatment to 1965 and then to 1975, but the findings remain qualitatively unchanged.

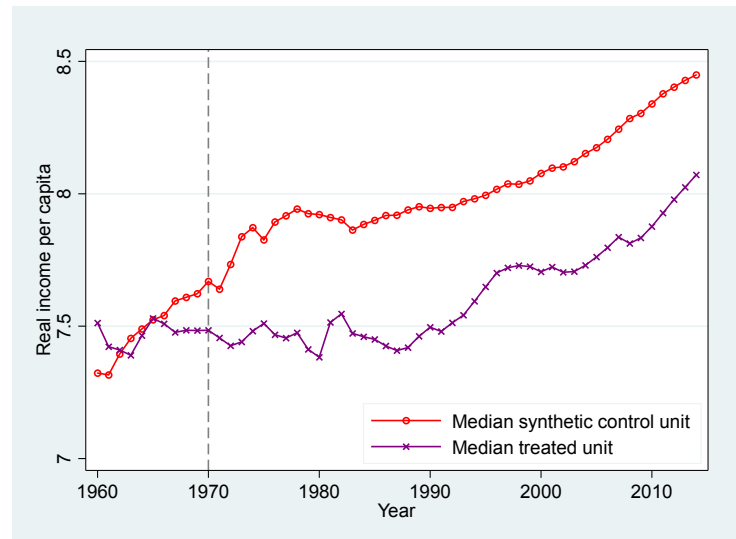
²⁹ As a proxy of the secondary school enrollment rate for which data are unavailable in the 1960s.

³⁰ We used the level in 1960, 1964 and 1969. Using the average during the pre-intervention period (1960–69) does not change the results. All covariates are in log form.

³¹ The median of the treated units and individual counterfactuals.

2014 (about a 46 percent decline) compared to a difference of a 34-log point found with the OLS regressions. This provides evidence of the robustness of the results across a range of econometric techniques.

Figure 3. Synthetic Control Method: Treatment Effect of Moving from a *Jus Soli* Law to a *Jus Sanguinis* Law



Source: Authors' calculations.

While Figure 3 provides a useful overview of the magnitude of the treatment effect, delving into country-specific results is also informative. Figure A1 shows some heterogeneity among the treated units, with the treatment effect of eight out of 11 having the expected sign as their income per capita is lower than that of the counterfactual. For those 8 countries, the income loss from having shifted away from a more inclusive citizenship law ranges from a 137-log point (The Gambia) to a 17-log point (Nigeria) in 2014. However, surprisingly 3 treated countries outperformed their counterfactual, probably because either the model fails to account for idiosyncratic factors in the post-treatment period or the matching during the pre-treatment period is weak.³²

³² For Namibia, Nicaragua has a heavy weight in the donor pool (97 percent), and although the matching is relatively good in the pre-treatment period, the economic crisis experienced by Nicaragua in the 1980s translated into a fall in income per capita, thus contributing to the widening gap with Namibia during the post-treatment period. A such idiosyncratic shock is difficult to capture with the SCM. Regarding India, the country's income per capita trailed behind that of the donor pool—consisting of Nepal and Pakistan with a respective weight of 51 and 49 percent—in the pre-treatment period, but this picture reversed in the 2000s with the surge in growth as the country benefited from deeper integration to the global economy. Moreover, unlike other emerging economies in Asia, India's growth has relied on services rather than manufacturing, and has been skill-intensive rather than labor intensive (Kochhar and others, 2006; Kumar and Subramanian, 2011). It may be that our model is not able to capture adequately the idiosyncratic pattern of India's development. This seems to be the case also for Malaysia, even though the matching during the pre-treatment period yield better results than for India (the donor pool is more diversified with 15 countries of which Argentina, Nepal and Pakistan have the highest weights, respectively 19, 23, and 11 percent).

We also run placebo tests to assess the statistical significance of the effect. The tests consist in running the same model on each country in the donor pool, assuming that unit was treated at the same time, while excluding the actual treated unit from the synthetic control. Figure A2 provides evidence of a lack of a strong treatment effect in placebo cases,³³ suggesting that the observed difference in income per capita between the treated and control unit is due to the actual treatment. To ensure that the synthetic control makes a good counterfactual, we exclude from the donor pool units for which the pretreatment root mean squared predictive error, is larger than that of treated unit. The results remain largely unchanged.

V. CONCLUSION

In this paper, we analyzed the history and evolution of citizenship laws around the world, differentiating between *jus soli*, *jus sanguinis* and mixed regimes. We compiled a new data set of citizenship laws, and then estimated econometrically, using OLS and panel-data estimations, whether nationality laws have an impact on economic development, and whether they can explain in part the root of significant differences in income per capita across countries, particularly in SSA. In addition to sensitivity tests, we also used Synthetic Control Methods, with the results all robust.

The findings are that in developing countries, particularly when institutions are weak, citizenship laws matter: *jus soli*, being more inclusive in nature, and making it easier to assimilate and integrate newcomers, has a statistically significant and positive impact on income levels.

The policy implications are clear, though they must be nuanced. Every country is unique, has a different history, a diverse ethnic mix and institutions that vary in quality. However, it appears that in an increasingly integrated world, and with developing countries increasingly sending emigrants and receiving immigrants, that integrating them effectively can positive spur economic development. Given that many sub-Saharan countries were artificially created by colonialists, and at independence many populations were marginalized, *jus sanguinis* laws have a negative impact on their development. For better integration, *ceteris paribus*, switching from *jus sanguinis* to *jus soli* citizenship law can positively contribute to developing lower-income countries.

Further research could study the various aspects through which citizenship laws impact economic development separately—its impact on investment for instance. Another challenge going forward could be to study the impact of citizenship laws on various institutions—family law (e.g., rules of inheritance, women’s rights), commercial law and labor regulations for instance.

³³ Except for the three countries with counterintuitive results.

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Appendix Table A1. Citizenship and Development: OLS Results

	Dependent variable: Log of real GDP per capita in 2014						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Latitude	0.002 [0.005]	0.002 [0.005]	-0.001 [0.004]	0.002 [0.006]	-0.001 [0.005]	-0.002 [0.004]	-0.002 [0.004]
Jusoli	0.678 [0.204]***	0.614 [0.195]***	0.299 [0.160]*	0.680 [0.202]***	0.542 [0.202]***	0.283 [0.158]*	
Citizenship law							0.179 [0.082]**
Rule of law	0.609 [0.114]***	0.647 [0.131]***	0.162 [0.131]	0.539 [0.131]***	0.373 [0.144]**	0.051 [0.128]	0.059 [0.127]
(Rule of law)*Jusoli		-0.148 [0.283]					
Education (log)			0.956 [0.097]***			0.892 [0.108]***	0.902 [0.107]***
Trade openness (log)				0.328 [0.216]		0.409 [0.183]**	0.441 [0.181]**
Private sector credit ratio (log)					0.409 [0.125]***	0.043 [0.107]	0.046 [0.108]
Constant	7.813 [0.122]***	7.836 [0.125]***	4.356 [0.366]***	6.444 [0.959]***	6.599 [0.411]***	2.729 [0.778]***	2.301 [0.786]***
Observations	105	105	98	100	99	91	91
R-squared	0.28	0.28	0.60	0.31	0.36	0.65	0.65

Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1%

Education is proxied by the secondary school enrolment rate

Jusoli is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise

Citizenship law is a categorical variable equal to 1 if *jus sanguinis* is applicable in the country, 2 if a mixed regime (both *jus soli* and *jus sanguinis*) is applicable, and 3 if *jus soli* is applicable.

Rule of law, education, private sector credit ratio and trade openness are averaged over 1990-1999

Appendix Table A2. First-Stage Regressions to Instrument the *Jus Soli* Variable

Dependent variable: Just Soli Dummy variable	Pooling	
	(1)	(2)
British legal origin	0.163 [0.072]**	
French legal origin	0.269 [0.056]***	
Citizenship law of the colonial power before the country's independence		
Mixed regime		0.108 [0.065]*
Jus soli		0.487 [0.064]***
Latitude	-0.002 [0.002]	0.003 [0.002]
Rule of law	-0.036 [0.061]	-0.085 [0.060]
Education (log)	0.176 [0.051]***	0.121 [0.050]**
Trade openness (log)	0.022 [0.035]	0.089 [0.040]**
Private sector credit ratio (log)	0.028 [0.042]	0.024 [0.041]
Constant	-0.749 [0.245]***	-0.963 [0.236]***
Observations	242	238
R-squared	0.11	0.26
Sargan-Hansen (p-value)	0.70	0.38

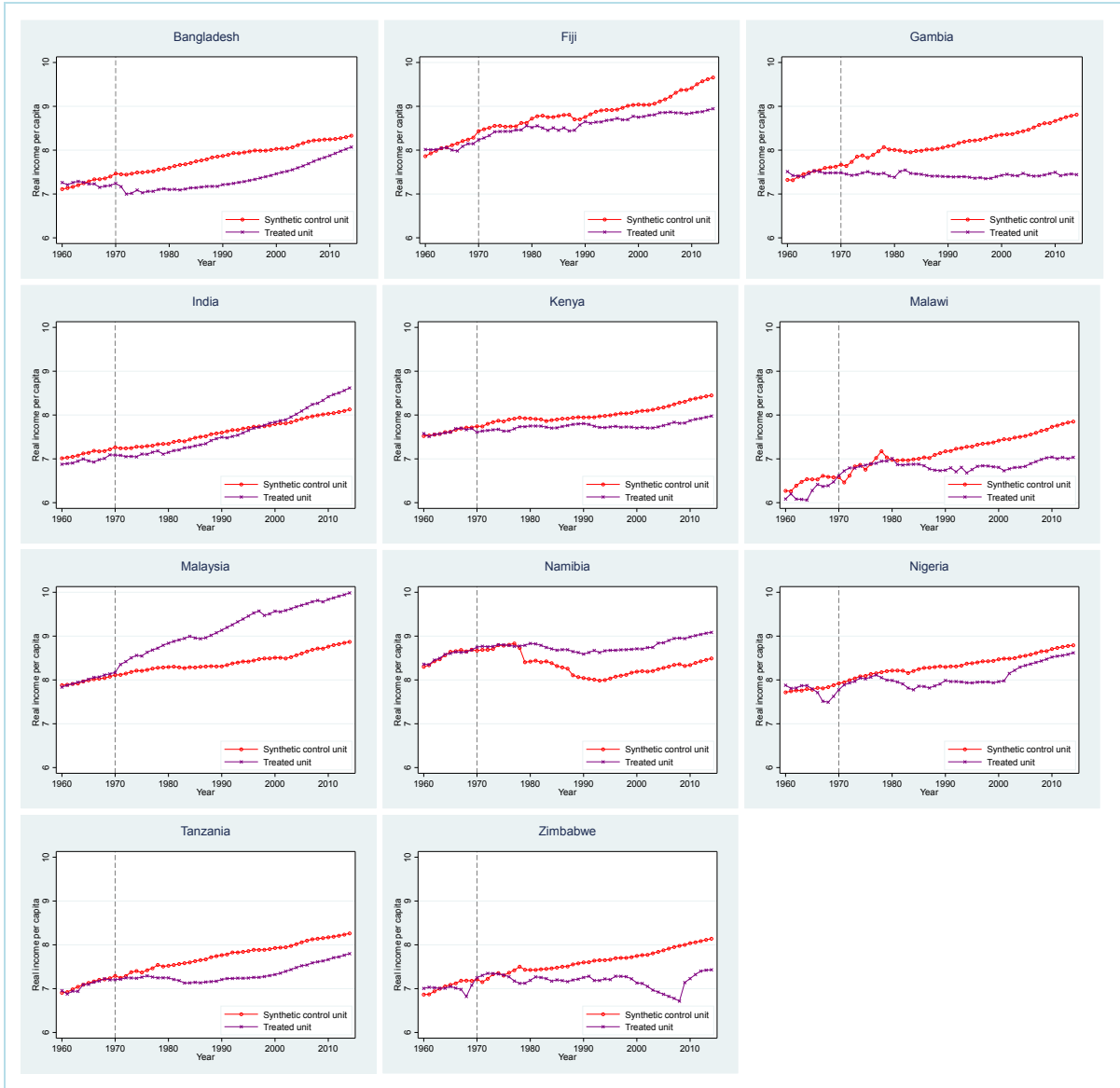
Notes: Robust standard errors in brackets; significant at 10%; ** significant at 5%; *** significant at 1%

Education is proxied by the secondary school enrolment rate

Jusoli is a dummy variable taking 1 when a *jus soli* law is applicable, and zero otherwise

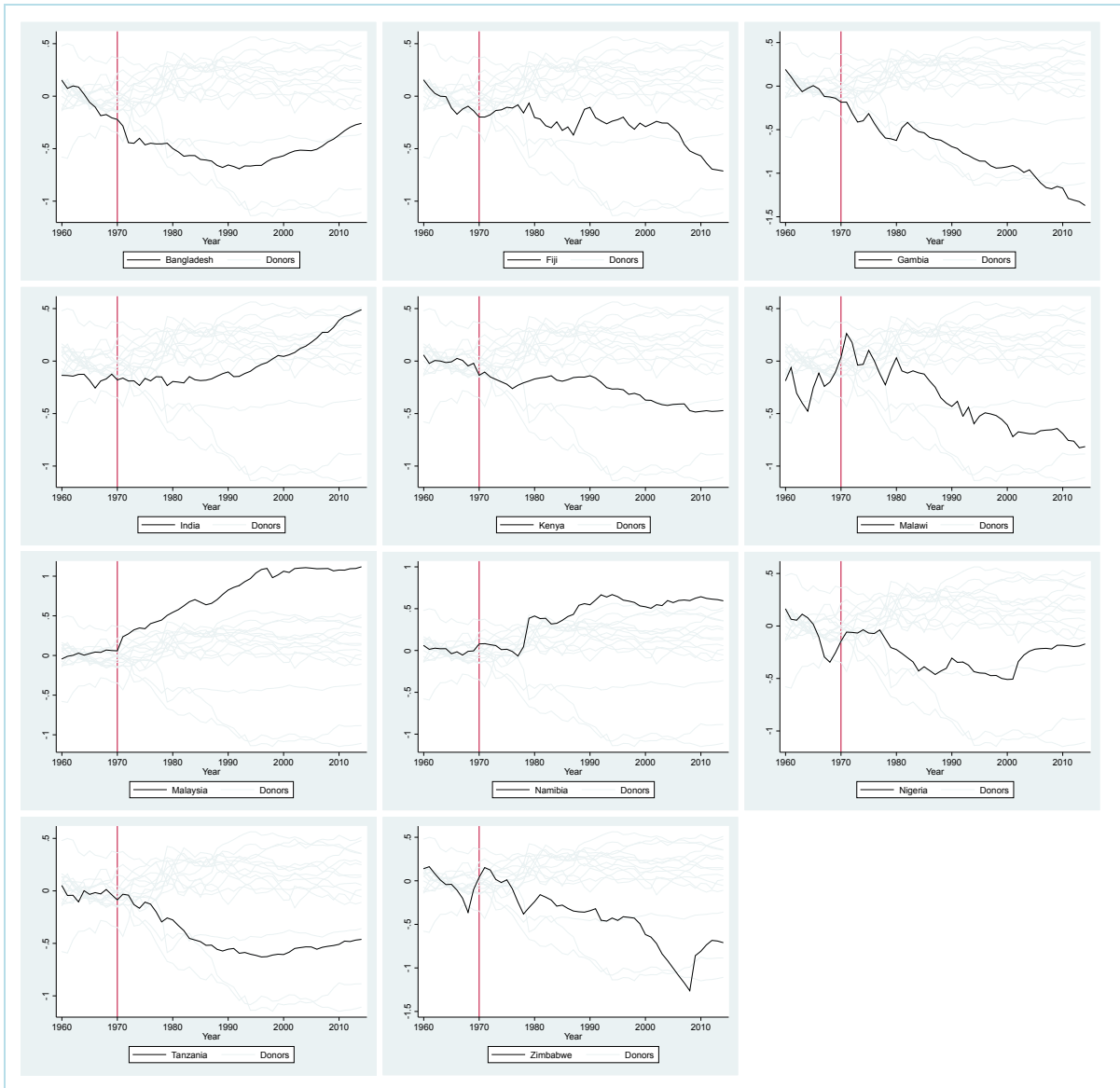
Rule of law, education, private sector credit ratio and trade openness are lagged one period

Appendix Figure A1. SCM Results: Real GDP per Capita (log) in Treated and Control Units, 1960–2014



Source: Authors' calculations.

Appendix Figure A2. Placebo Tests: Treatment effect for Treated Units and Donor Pool, 1960–2014



Source: Authors' calculations.

Annex I. Country Samples

Country Sample for the Cross-Section and Panel Regressions

<i>Jus soli</i>	Mixed regime	<i>Jus sanguinis</i>
Argentina	Benin	Algeria
Belize	Burkina Faso	Angola
Bolivia	Cabo Verde	Bangladesh
Brazil	Cambodia	Bhutan
Costa Rica	Cameroon	Botswana
Cuba	Central African Republic	Burundi
Dominican Republic	Chad	Comoros
Ecuador	Colombia	Cote d'Ivoire
El Salvador	Congo, Rep.	Djibouti
Equatorial Guinea	Egypt, Arab Rep.	Dominica
Grenada	Gabon	Eritrea
Guatemala	Ghana	Ethiopia
Guinea-Bissau	Guinea	Fiji
Guyana	Iran, Islamic Rep.	Gambia, The
Honduras	Mali	Haiti
Jamaica	Mauritania	India
Lesotho	Morocco	Indonesia
Mauritius	Mozambique	Iraq
Mexico	Peru	Jordan
Nepal	Rwanda	Kenya
Nicaragua	Sao Tome and Principe	Kiribati
Niger	Senegal	Lao PDR
Pakistan	Sierra Leone	Lebanon
Panama	South Africa	Liberia
Paraguay	Togo	Libya
Samoa	Tunisia	Madagascar
St. Lucia	Uganda	Malawi
St Vincent and the Grenadines	Vanuatu	Malaysia
Venezuela, RB		Maldives
Zambia		Micronesia, Fed. Sts.
		Mongolia
		Myanmar
		Namibia
		Nigeria
		Papua New Guinea
		Philippines
		Solomon Islands
		Sri Lanka
		Sudan
		Suriname
		Swaziland
		Tanzania
		Thailand
		Tonga
		Vietnam
		Yemen, Rep.
		Zimbabwe

Country Sample for the Synthetic Control Method

		Citizenship Law in 2014	
		<i>Jus soli</i>	<i>Jus sanguinis</i>
Citizenship law in 1948 (<i>Jus soli</i>)		Argentina	Bangladesh
		Brazil	Fiji
		Costa Rica	Gambia
		Dominican Republic	India
		Ecuador	Kenya
		Guatemala	Malawi
		Honduras	Malaysia
		Lesotho	Namibia
		Mexico	Nigeria
		Nepal	Tanzania
		Nicaragua	Zimbabwe
		Pakistan	
		Panama	
		Paraguay	
		Zambia	