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Measuring and Comparing Immigration, Asylum and Naturalization Policies Across Countries: Challenges and Solutions

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Abstract: Academics and policy makers require a better understanding of the variation of policies that regulate global migration, asylum and immigrant naturalization. At present, however, there is no comprehensive cross-national, time-series database of such policies, rendering the analysis of policy trends across and within these areas difficult at best. Several new immigration databases and indices have been developed in recent years. However, there is no consensus on how best to conceptualize, measure and aggregate migration policy indicators to allow for meaningful comparisons through time and across space. This article discusses these methodological challenges and introduces practical solutions that involve historical, multi-dimensional, disaggregated and transparent conceptualizing, measuring and compiling of cross-national immigration policies. Such an approach informs the International Migration Policy and Law Analysis (IMPALA) database.

Measuring and Comparing Immigration, Asylum and Naturalization Policies Across Countries: Challenges and Solutions

1   Resource deficits facing scholars and policy makers

Over the last half-century, immigration policies and law have expanded to accommodate and regulate the increasing number of people who migrate outside their countries of origin. While there were approximately 75 million people living outside their country of birth in 1960, by 2010 this number had nearly tripled to 214 million.[i] In 1960, 30 countries hosted more than half a million immigrants each. Forty years later, this number had more than doubled to 64 countries (UN 2013). While 'settler' states like Australia, Canada and the United States (US) have seen the proportion of overseas born residents climb sharply over this period, the immigration phenomenon has left few nations untouched. Countries everywhere have faced the twin challenges of devising policies to manage migrants' admission and determine whether and how to incorporate foreigners into the destination society. However, scholars, researchers, and policymakers have not had the resources to measure, evaluate or compare immigration policies and law across countries and time in a truly systematic manner.

Certainly, social scientists have worked on numerous small and medium-scale studies that highlight differences between 'settler' countries, 'post-colonial' countries like Britain, France and Germany and occasionally 'non-colonizing' countries like Switzerland and Sweden. However, the overall picture is only partially clear. We are still unable to answer such basic questions as whether there is a universal push to limit immigration; whether restrictive measures include some, most or all categories of immigration including family, humanitarian and student migration; how restrictions are imposed; and how admissions policies have varied over time. Nor, for instance, do we know the extent of 'managed migration' regimes

that seek to facilitate the admission of the highly skilled, restricting the entry of labour migrants, or featuring a 'skill shortage' programme that targets certain routine and manual workers. We also lack the tools to discern which countries facilitate student migration in order to attract university, vocational or language students from other countries.

Social scientists are no longer satisfied to consider immigration policy descriptively, or in single country cases: they are now seeking the means to measure and compare immigration policies globally. The challenge is that there is still no comprehensive, cross-national, time-series database of immigration policies. Such a database would allow us to build policy indicators of stringency and orientation to track important trends in immigration policy across countries and time, and to analyze the causes and consequences of immigration regulation more systematically.

The paper begins by reviewing how existing studies have conceptualized immigration policy in order to create cross-nationally comparative quantitative measures. Of particular interest is the selection of indicators and their combination or aggregation into summary indices.[ii]. Our discussion explores the most prominent indices of immigration and asylum policies (Timmer and Williamson 1996; Thielemann 2004, 2006; Hatton 2004; Lowell 2005; MIPEX 2011; Cerna 2008; Ruhs 2011; Ortega and Peri 2009; FrDB-IZA 2011) and naturalization policies (EUDO 2011; Howard 2005, 2006, 2009; Waldrauch and Hofinger 1997; Koopmans et al 2005, 2012; Helbling 2008; Janoski 2010) existing at the time of writing. Although the phrase 'immigration policy' generally refers to both policies of admission and integration, our focus is on admission policies. Even so, we review indices of integration because this is an area where some prominent developments have taken place (e.g. MIPEX 2011). We also consider naturalization policies, as citizenship may be construed as the final step of admission into the

state—the legal hurdle that separates immigrants from official membership. Having set out some of the methodological challenges of devising comparative measures of immigration policy, we describe how we propose to overcome these problems in order to measure the restrictiveness of admissions policy—the primary objective of the in-progress IMPALA Database. The article concludes with a discussion of the kind of contributions that are made possible by the availability of such data.

2   Conceptualizing and measuring migration policies: A review

Concept and Scoping

Any attempt to measure policy should be clear about the concept to be captured. When seeking to measure immigration policy, scholars identify the means by which governments aim to regulate the number and attributes of foreigners who enter and reside in their territory and their avenues for naturalization following entry. Beyond this core definition, there is little consensus over the conceptually essential elements of a country's migration, asylum and naturalization policies (See Table 1.).

Within the admissions field, the existing indices provide some innovative ideas on how to measure immigration policies. However, they are limited to particular areas of immigration admission such as those covering asylum policy (Hatton 2004; Thielemann 2004; Ortega and Peri 2009), labour migration (Cerna 2008; Lowell 2005) or the rights of migrant workers and their families (Ruhs 2011; EIU 2008; MIPEX 2011), The indices do not capture a comprehensive array of areas of immigration admission, and they typically include a limited number of indicators.

In the naturalization literature where many indicators have been built over the last decade, researchers apply very different conceptualizations (Bauböck and Helbling 2011). Some lead to indicators that focus on specific aspects of naturalization policies (Howard 2009). Others also include one or several aspects of *integration* policies (Huddleston and Niessen 2011; Koopmans et al. 2005; 2012 and Waldrauch and Hofinger 1997). This poses some content validity problems as the domain of the concept is not completely clear, nor it is apparent that a particular measure fully represents the domain (Blalock 1982).

Most databases aim to capture the relative openness or restrictiveness of government policy when it comes to the admission of foreigners, and the rights granted to new immigrants once they are within the territory of a host state. Yet, there is disagreement over what this openness or restrictiveness constitutes. This disagreement is manifest in the coding choices made by a small proliferation of comparative immigration and integration policy datasets. Waldrauch and Hofinger (1997) cover eight Western European countries for the year 1995. In a first project Koopmans et al. (2005) presented data for five Western European countries and three time periods (1980, 1990, 2002). More recently, this dataset has been expanded to ten Western European countries and a fourth time period (2008) (Koopmans et al. 2012). The "Migration Integration Policy Index" (MIPEX) (Huddleston and Niessen 2011) includes all member states of the European Union plus Australia, Canada, Japan, Norway, Switzerland and the USA for the year 2010. The project started with the EU-15 in 2004 and expanded to the EU-25, Canada, Norway and Switzerland in 2007. Howard's (2009) "Citizenship Policy Indicator" (CPI) covers the EU-15 for two periods in time (1980 and 2008). Janoski (2010) introduced two new output and outcome indices for 18 OECD countries and for the period 1970 to 2005. Most recently, Koning (2011) presented his index that measures naturalization

policies in 26 Eastern and Western European countries as well as Australia, Canada, New Zealand and the USA, and the European Union (EU) as a separate policy jurisdiction.

Measurement Validity

Inter-temporality creates particular validity challenges, as it requires the researcher to develop measures that are both meaningful conceptually and valid through time. This goal is complicated by the nature of the changes that have occurred in immigration policy. For example, between 1980 and 2010 admissions policies in many countries became much more complex with a proliferation of selection criteria and categories. This creates the challenge of devising indicators that are parsimonious and not unduly complex in relation to earlier periods, but that also capture current-day migration regulation in all its sophistication.

A good illustration of the issues around cross-sectional validity is provided by economists' attempts to capture restrictiveness in immigration policies regarding workers' mobility. Mayda (2010) and Ortega and Peri (2009) have developed restrictiveness indexes for economic migration in a set of OECD countries. Their inferred index of migration policy captures whether migration policy has become less or more restrictive as a result of policy reforms in the fields of family, economic and humanitarian migration. A major advantage of this approach is that it provides very useful information about the evolution of immigration policy through time *within* each destination country. For instance, Mayda (2010) covers 25 years ranging from 1980 to 2005. Nevertheless, by capturing only the occurrence of policy reforms and not the actual statute, this approach does not allow for comparison of the *content* of policies across the destination countries.

Prominent indices also cover a limited number of countries. Timmer and Williamson (1998) developed an index, which measures the changes in the general restrictiveness of labour migration policy on a ten-point scale. However, this measure was only assessed on a relatively small number of aspects for the period between 1860 and 1930 and for six countries: the United States, Britain, Argentina, Brazil, Canada and Australia. Ruhs' (2011) index is more elaborate and includes 35 indicators for 46 upper and middle-income countries. Yet, it remains restricted to one policy field and one year (2009). Building on Lowell's (2005) work, Cerna's (2008) study focuses on economic migration but covers only 20 high-income countries and an index with six items. While Lowell studied 12 countries for the year 2004, Cerna's data covers the year 2007.

To date, temporal and cross-sectional validity issues have scarcely been addressed in migration policy indicators, as existing indices are limited in their coverage of countries and time frames. Analysis is often restricted to recent years. For example, MIPEX covers the years 2004, 2007 and 2010 (MIPEX 2011), while Howard examines 2008 and "the 1980s" (Howard 2009).[iii] Martin Ruhs' study of openness, skills and rights considers the human rights of migrant workers and accompanying family members in 46 high and middle-income countries, for early 2008 and 2009 (Ruhs 2011, 6). An exception is Timmer and Williamson's (1996) work, which measures the changes in the general restrictiveness of labour migration policy on a ten-point scale and covers the years 1860 through to 1930. Yet, historical coverage across time often comes at the cost of country coverage. Timmer and Williamson's index of change in restrictiveness of immigration policy was only assessed on a relatively small number of aspects and only covered six countries.

Outputs vs. Outcomes

Closely related to the question of the conceptual, spatial and temporal ambit of the issue under investigation, is the analyst's decision about which aspects of policy products and processes to capture. The distinction between outcomes and outputs is well-rehearsed in policy studies. In the field of immigration policy, Hollifield, drawing on Easton (1965), characterized outputs as "the level of policy formulation", while outcomes are "a least in part the result of policy implementation" (Hollifield 1986, 114-5). As such, we conceive policy outputs as the laws and policies surrounding the regulation of immigration and naturalization legislated or ordered by government entities. In contrast, policy outcomes like immigration stock or flows—although potentially partially resultant from these outputs—are affected to some extent by legislation. They may also be caused by immigration push factors, and importantly in the migration field, by individual human agency.

There are obvious advantages to considering outcomes as well as outputs. As Money (1999: 22) notes, gauging only formal regulations (outputs) "leaves out important aspects such as the control, interpretation and implementation of laws as well as the consequences of formal regulations." Some indices have focused on outcomes and used immigration flows as a proxy for immigration policy outputs. For instance, Boucher and Gest (2014) employ a panel of demographic measures to typologize and explain the direction of immigration regimes across 50 countries. Money (1999) measured immigration policy as annual per capita immigrant inflows, examining twelve immigrant-receiving countries from 1962 to 1989. Kogan (2007) constructed a measure of the "relative selectivity" of immigration policy for 15 European Union countries between 1992 and 2000 by comparing the proportion of immigrants with tertiary education and against the tertiary educated native born. Neumayer (2004) uses asylum recognition rates as a proxy for asylum policies.

The drawback of using migration outcomes is at least twofold. First, while migration outcomes depend on policies, the reverse is also true. For instance, a country with a high rate of undocumented migration may have an elaborate set of restrictive policies attempting to prevent such migration. A policy index based on flows would spuriously classify the immigration policy as highly liberal. Second, migration outcomes are influenced by myriad factors, among which immigration policies constitute only one part. Indexes of stringency might therefore ascribe to immigration policies the compound effect of other determinants of migration. Doing so may thereby ignore the "liberal paradox" used to explain the sometimes conflicting imperatives in the policy domain. (Joppke 1998; Guiraudon and Joppke 2001).

Conversely, focusing on policy outputs (rather than outcomes) can also be problematic, especially where adherence to *de jure* laws is supplanted by *de facto* realities on the ground (Money 1999: 22). Existing databases have grappled with this important question and some have tried to address this issue by combining outputs and outcomes (i.e. Koopmans et al. 2005, 38; Howard 2009, 24; MIPEX 2011; Thielemann 2003). Howard (2009) and Koopmans et al (2005) both use naturalization rates as part of their output indicators. Yet, by including naturalization rates, both studies simultaneously are highlighting but also blurring the crucial distinction between policy outputs and outcomes (Janoski 2010: 36). As a result it becomes unclear what exactly these studies are measuring. This raises concerns in turn about the aggregation of indicators. In fact, comparing outputs and outcomes arguably presents the best solution to this vexed issue.

Reliability and Transparency

A further criticism of existing immigration policy indices is that many are insensitive to important gradations within policies. In their discussions of democracy indices, Elkins (2000) and Coppedge and Gerring (2011: 249) argue that, unlike simple indicators, continuous indicators are more precise as they are more sensitive to gradations (see also Bader 2007: 876). Elkins (2000) shows that graded measures have superior validity and reliability. Some studies in the immigration field use a single variable to represent immigration policies. For example, Neumayer (2004) uses determination rates as a proxy for the relative openness or restrictiveness of asylum policy. While such an approach is understandable in the absence of comparative data on the substance of asylum policies, it is nonetheless vulnerable given the highly politicized way in which recognition statistics are employed by governments. Thielemann (2004; 2006) uses a small number of indicators, which provides more nuanced measures. However, he still employs regenerated indices with only limited variance. Lowell (2005: 7) develops seven major indicators, ranked on a four-point scale, to assess skilled immigration policies.

Naturalization indicators have been built in very different ways and include different amounts of data, directed at different conceptual issues. Howard's Citizenship Policy Indicator (CPI) is the most parsimonious, as it is based on only three aspects of legal regulations and six variables. Waldrauch and Hofinger (1997) include almost 80 items in their index. Koopmans et al.'s (2005; 2012) study of settlement policy contains 40 sub-indicators that involve both legal and cultural aspects and codes jurisprudence, administrative decrees and local implementation practices. The MIPEX-indicator is based on a large range of over 140 sub-indicators that have been collected by means of expert surveys (Huddelston and Niessen 2011). This is also true of the Economist Intelligence Unit's Global Migration Barometer that

covers naturalization issues in addition to some areas of immigration selection such as family reunification policy (EIU 2008). Ultimately, disagreement remains over which are the best indicators of naturalization policies.

Aggregation

Any study that seeks to make cross-national comparisons in public policy will invariably seek to combine indicators into a single index or summary score. Aggregation of this kind is often a valuable product of the analysis of large-scale datasets. However, the selection of indicators frequently involves trade-offs with overall summary measures coming at the expense of over-simplification or loss of complexity. Unfortunately, there are too few cross national studies of immigration policy - broadly defined – for a substantial discussion of aggregation practices.

The MIPEX (2011) study, which examines integration policies across a large number of countries, is one of the few that attempts such aggregation within the field of immigration. However useful, this database illustrates the extent to which aggregation can lead to the loss of data. Here, indicators are scored using a ranking procedure, but the scoring options are imprecise. For example, an indicator for the policy strand of labour market access within the policy dimension of labour market integration is defined as: "State facilitation of recognition of skills and qualifications obtained outside the EU." The definition of this indicator includes a list of sub-policies in a country year that include matters such as the existence of state agencies and information centres for the recognition of skills and qualifications; and information on profession-based language courses and on procedures for assessment of skills and qualifications. A coder must score this indicator on a 1-to-3 scale according to which combinations of the listed components are contained in national policy. Although the coder must determine whether the sub-policies identified are present in the national policy prior to

Table 1: Existing immigration admission, naturalization and integration policy indices (framework based on Boucher and Gest 2014)

Date	Author	Title of study	Countries considered	Aspects of Immigration Policy considered	Method and variables
2006	Migration Policy Group	Migration Integration Policy Index	All EU states plus Switzerland, Norway, Canada and the United States	Focuses in integration policy indicators including labour market mobility, family reunion, education, political participation, long-term residence, access to nationality and anti-discrimination laws.	Expert survey coding that separates integration from immigration policy and uses unclear aggregation methods.
2006	Rainer Bauböck, Eva Ersboll, Kees Groenendijk, and Harold Waldrauch	Acquisition and Loss of Nationality. Policies and Trends in 15 European states	15 European states	Documents the diversity of legal regulations and policies concerning the acquisition and loss of nationality in the fifteen old Member States of the EU. Inquires whether any trends towards greater similarity are emerging from international and European law or from parallel domestic developments in the Member States.	Expert survey coding basic legal techniques, procedural characteristics and material conditions (residence requirements, integrity clauses, conditions of integration, reasons for loss of nationality, etc.) as well as major changes to procedural details and conditions since 1985 (without data on administrative practice).
2007	Costica Dumbravă	Citizenship regulations in Eastern Europe	16 Eastern European states.	Applies Howard's 2006 (2009) model for cross-national analysis of citizenship policy on Eastern European states to reveal its limitations outside the original 15 (predominantly Western European) cases.	Original policy analysis and coding of limited but clear indicators.
2008	Francesco Ortega and Giovanni Peri	Migration reforms index	14 OECD states Text	Loosening and tightening of reforms of non-asylum and of asylum laws, based on legal indicators in FRDB 2012 and Mayda and Patel 2004 reform list.	Original policy analysis and coding of bundled legal indicators.
2009	Marc Howard	The Acquisition of Nationality in EU Member States: Rules Practices and Quantitative Developments	15 EU states	Measures of *jus soli*, immigrant residency requirements, and dual citizenship allowances.	Original policy analysis and coding of limited but clear indicators extrapolated to characterize citizenship regimes.

Date	Author	Title of study	Countries considered	Aspects of Immigration Policy considered	Method and variables
2010	Sarah Wallace Goodman	Civic Integration Index	15 EU states	Naturalization requirements of country knowledge, language acquisition, and value agreement.	Original policy analysis and coding of limited but clear indicators.
2010	Tomas Janoski	The Ironies of Citizenship	18 OECD states	Naturalization rates	Standardized calculation and comparison of citizenship policy outcomes.
2011	Keith Banting and Will Kymlicka	Multiculturalism Policy Index	21 OECD states	Measures the character and strength of multiculturalism policies and across three time intervals (1980, 2000, 2010)	Original policy analysis and coding of limited but clear indicators.
2011	Fondazione Rodolfo Debenedetti (fRDB)	Index of Strictness of Migration Policies	12 OECD states	No. certificates and procedures to enter and to reside; No. years for permanent residency; No. administrations involved; No. of years of stay required for first residence permit; existence of quota system	Expert coding based on policy documents, websites and secondary literature.
2012	Ruud Koopmans, Ines Michalowski, and Stine Waibel	Citizenship Rights for Immigrants	Northern and Western Europe (soon non-European settler states)	Nationality acquisition, family reunification, expulsion, anti-discrimination, public-sector employment for non-nationals, political rights for non-nationals, cultural rights in education, cultural and religious rights.	Analysis of policy documents, legal texts, secondary literature, internet websites, and expert information

This table is based on, and derives some content from, a similar table in A. Boucher and J. Gest (2014) 'Migration Studies at a Crossroads: A Constructive Critique of Immigration Regime Classifications' forthcoming in *Migration Studies.*

determining the score, this information is not retained. Instead, the end user of MIPEX can determine only whether a country had either some or none of these policies. A researcher who would prefer to know whether each country provides information on language courses, for example, would be unable to obtain this information, as it is aggregated with other information.

3   Methodological innovations: The IMPALA Database

How, then, are we to make progress in the conceptualization and measurement of immigration policy? In arguing for a new approach, the IMPALA Database employs indicators structured around five major areas of admission: economic; family; humanitarian, student; irregular along with indicators for the acquisition and loss of naturalization; bi-lateral arrangements allowing migration between countries; and the legal frameworks for immigration control. As we explain below, a major innovation of the IMPALA Database project is the use of "entry tracks" as the primary focus of the data collection process. This allows us to concentrate on policy outputs, which has several advantages in terms of validity. It also allows for a multi-dimensional, disaggregated and transparent approach to data analysis. We close this section by describing the coding method and sample of countries and regulations on which our pilot study focuses.

Conceptual Scope

The aim of the IMPALA Project is to compile comparable data on immigration law and policy across six major areas of migration policy: economic migration, family reunification, humanitarian migration, irregular migration, student migration and the acquisition and loss of citizenship for migrants resident in the selecting state (see Table 2). These are the major categories of entry identified in OECD flow data reports (OECD 2010). Citizenship rules

cover the policies that control immigrants' access to full membership of the new host society. In parallel to coding immigration laws and regulations around these areas, we identify the major bilateral agreements in the area of cross-border mobility of people and similarities and differences in the countries' basic legal structures. A bilateral agreement is defined as an agreement that confers preferential treatment by the destination country to potential migrants coming from a particular origin country. Analysis of these agreements is important to capture relatively open movement between countries – for example between New Zealand and Australia. It also captures historical forms of race- and ethnicity-based selection in former colonial empires such as France and the United Kingdom. Bilateral agreements not only cover aspects of immigration laws and policy that are specific to a pair of countries but also often introduce exceptions or derogations to existing laws and policy on a bilateral (or multilateral) basis. It is therefore crucial to account for such agreements if one wants to produce meaningful indices of the various dimensions of immigration policy.

Table 2: IMPALA Coding Categories

Economic migration	Regulations for workers, investors, entrepreneurs
Family reunification	Regulations for partners, children, parents and extended family members
Student migration	Regulations for university, school, vocational and language students
Humanitarian migration	Regulations for asylum seekers, refugees, subsidiary protection, temporary protection, residence permits for personal reasons (such as domestic violence), medical reasons and for victims of human trafficking.
Naturalization	Modes of acquisition and loss of citizenship
Irregular migration	Regulations for immigrants entering a country without authorization and those who qualify for removability or exclusion.
Bilateral agreements	Preferential treatment for a particular origin country, compared to the general policy

Table 2 lists different sub-groups that fall within the respective categories. In some cases, defining these sub-groups was relatively straightforward. For example, in relation to family migration, a biological distinction can be made between partners, children, parents and extended family. In other cases, however, the distinctions are less clear. For example, the IMPALA Consortium originally included as sub-categories within the economic sub-category, the descriptors "highly skilled" and "labour migration." In attempting to fit the laws and policies of the target countries into these groupings, however, we encountered difficulties in finding common understandings of what constitutes "skilled" and "labour" migration at different times and in different contexts (see also McGovern 2012). Instead, we opted for a term of higher level abstraction, namely economic migration.

In addition to the different immigration entry paths, the IMPALA Database covers naturalization eligibility granted after admission by a host society. As noted earlier, immigration and naturalization address different phenomena. Naturalization policies determine the acquisition of citizenship (and in some cases its loss) once immigrants have settled and met certain conditions. The EUDO Database provides the most expansive and detailed source of naturalization policy since 1985. Accordingly, we chose to build on EUDO's categorization of citizenship acquisition and loss into separate "modes" (EUDO, 2009a). As immigration and naturalization are conceptually distinct, we examine them as separate categories. Nonetheless, we believe that they are sufficiently interconnected to warrant consideration. Citizenship represents the final step of admission into the state—the legal hurdle that separates immigrants from official membership. Naturalization policies, especially those featuring citizenship tests or lengthy waiting periods, may act as deterrents against certain types of migratory flows (Goodman 2011). Policies can also act as attractions in the context of frequent amnesty decisions or liberal integration procedures. The track of

entry through which an immigrant enters a receiving country affects the conditions of her or his eligibility to naturalize. Consequently, an analysis of migration policy should also consider naturalization rules.

Measurement Validity

One of the principal innovations of the IMPALA Database project, and the principal source of cross-sectional and temporal validity, is the coding of 'tracks of entry'. Originally introduced in Challen's study of U.S. immigration policy (Challen 2013), tracks of entry are established in national law, and are normally defined as a particular mode of entry for a prospective migrant given her or his characteristics and purpose (e.g. family reunification, occupation, type and length of requested residence permit).[iv].A specific example of a track of entry is the H-1B Visa offered in the United States under the Immigration and Nationality Act of 1965. This allows employers to temporarily sponsor and employ foreign workers in speciality occupations. In order to take up the visa, the potential entrant must demonstrate that they hold a bachelor's degree or equivalent qualifications allowing them to work in the nominated occupation. At the same time, the employer must demonstrate that a worker cannot be found locally for the position in question. The potential entrant is strictly limited to employment by the sponsoring employer. Visas allowing entry on remarkably similar terms are used in other countries, allowing this specific example to be generalised into an entry track for the purposes of the database. [v]

For each category, such as economic, family, or humanitarian migration, two sets of questions have been developed as indicators for the overarching concept of restrictiveness/openess.[vi] The first set are asked once only at country level and relate to general issues of policy (e.g. the use of quotas) and the relevant international instruments to

which a country is party. The second are the track level questions that are applied to each visa or group of related visas within the relevant category. For instance, they include items on the actual application process, such as whether the applicant can apply independently or requires sponsorship, whether the entry track requires a points or labour shortage test; whether the track allows for permanent or temporary entry etc. Entry-level questions also capture personal characteristics such as age, marital status, education, language proficiency, and work experience, as well as requirements relating to health, character and legal status.[vii]

By way of example, when it comes to comparing economic migration across countries, we can list the relevant tracks for each country and then examine how they compare in terms of restrictiveness. The listing or non-listing of the tracks will tell us if a country has a specific policy for admitting highly skilled, semi-skilled labour migrants, or seasonal workers. So, we have been able to learn that the United Kingdom does admit low-skilled labour migrants despite having a supposedly 'zero immigration' policy since the 1970s. Like Australia, Germany and the US, it also has specific tracks to attract graduate and professional migrants.

In addition, by using the responses to the pre-designed questions for each track we can compare the relative stringency of the policies. Within economic migration, for example, we ask if the applicant must be sponsored by an employer; if the employer can only sponsor after searching local labour markets, or if the migrant must leave the country on losing their job, and so on. Further, the focus on tracks means that we can search for likely variations within more general categories, such as the possibility that children may enjoy a relative lack of restrictiveness within family reunification policies.

Outputs vs. Outcomes

The coding of entry tracks and their requirements inevitably means that our research focuses on immigration policy outputs rather than policy outcomes. As discussed earlier, conflating outcomes and outputs would undermine the content validity of the measures we seek to ascertain, and would hinder the interpretation of findings. Outputs are themselves defined broadly in the IMPALA Project to include immigration acts, associated regulations, policy manuals and directives. As much as possible, we have sought to minimize reliance on case law that interprets these legislative instruments, on the grounds that such interpretation may create ambiguities for coders. Exceptionally, the orientation of humanitarian-immigration regulations is powerfully shaped by this type of law so coders working in this area must also consult case law from apex courts.[viii] In the other categories, case law is consulted only if primary and secondary legislation, policy manuals and executive decrees, do not clearly indicate the law.

Having said this, the IMPALA policy outputs may be analysed in conjunction with existing datasets on migration flows and stock. For instance, we think it would be very useful to analyse the IMPALA data in conjunction with the kind of *outcome*-oriented variables that are being developed by other researchers.[ix]

Case selection

The entry track approach is being developed and refined through pilot test studies of six diverse countries. This sample included a mixture of "settler societies", such as Australia and the United States, "post-colonial societies" such as the Netherlands, Spain and the United Kingdom. We also include one small European country, Luxembourg, which has had quite limited immigration legislation until recently, despite hosting a relatively large foreign labour

force for decades. The advantage of selecting cases according to the principle of maximum variation (Patton 2002, 234-5) is that the heterogeneity can be used to identify indicators that work across a wide range of immigration regimes. In other words, if it is possible to identify (immigration) category questions that work for these very different cases, then there is a real prospect that the questions will also work for countries that fall within this range of experience. Nonetheless, this diversity has also revealed that that some of the policy innovations developed by the "settler" are *sui generis* and cannot therefore be compared with equivalent policies among other countries, simply because they do not exist.

Subject to financial support and the availability of the legal sources, the ultimate aim of the IMPALA Project is to code all developed (OECD) economies that have experienced net immigration over the fifty years between 1960 and 2010. The European Union is coded as a separate case.[x]

The planned national coverage of the IMPALA database encompasses most economies in the OECD, except those with negative net immigration (i.e. net emigration) over the past two decades. This leaves 26 countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, the United Kingdom, and the United States. These countries receive the most international migrants and include the five receiving the most immigrants over the past 50 years: the United States, Canada, Australia, the United Kingdom, France, and Germany. Furthermore, given the emphasis of the project on the way countries select migrants, the countries are also chosen on the basis of the importance of skilled immigration.

To illustrate the importance of our countries selection, Figures One and Two provide the proportion of total and skilled immigration for each country considered in the IMPALA project. The data refers to the last version of the Docquier and Marfouk (2006) database providing bilateral migration stocks by education level.[xi] Figure One gives the proportion of immigrants in total world immigration in each destination country. Figure Two provides the same information, focusing on skilled immigration only. Skilled immigrants refer here to migrants with tertiary education.

These countries receive a significant proportion of international migrants: of the estimated 191 million international migrants in 2005, for instance, over 60 percent resided in these countries (according to estimates provided by the United Nations Population Division in 2007). In the Docquier-Marfouk (2006) dataset, the IMPALA case countries represent about half of the total immigration in 2000. More importantly, our selection of countries captures about 70% of the global immigration of skilled workers. This is important since the project aims to capture not only restrictive policies in terms of global immigration, but also policies targeting certain categories of immigrants. Figure Two illustrates the important role played by the traditional English speaking countries (US, UK, Australia and Canada) in attracting educated workers. The data also illustrated that continental European countries such as Germany and France tend to attract a higher proportion of unskilled workers compared to English-speaking countries. The project aims at shedding some light on the role played by immigration policies in that global process.

Aside from the importance of the selected countries in terms net immigration, the group also includes cases that can be subsumed under well-known typologies of immigration regimes. These include the distinctions between Western democracies, English speaking settler

societies founded by European emigrants, and European countries that experienced mass migration after World War Two (Freeman 1997); settler, guestworker and postcolonial regimes (Joppke 1999) and, finally, "countries of immigration," "reluctant countries of immigration" and "recent countries of immigration" (Cornelius et al. 2004). While there is a clear liberal democratic and Western focus in this case selection, it is in the belief that these countries at present provide the most readily available data on immigration policy outputs.

Figure One: Proportion of immigration in each IMPALA country, stocks, year 2000.
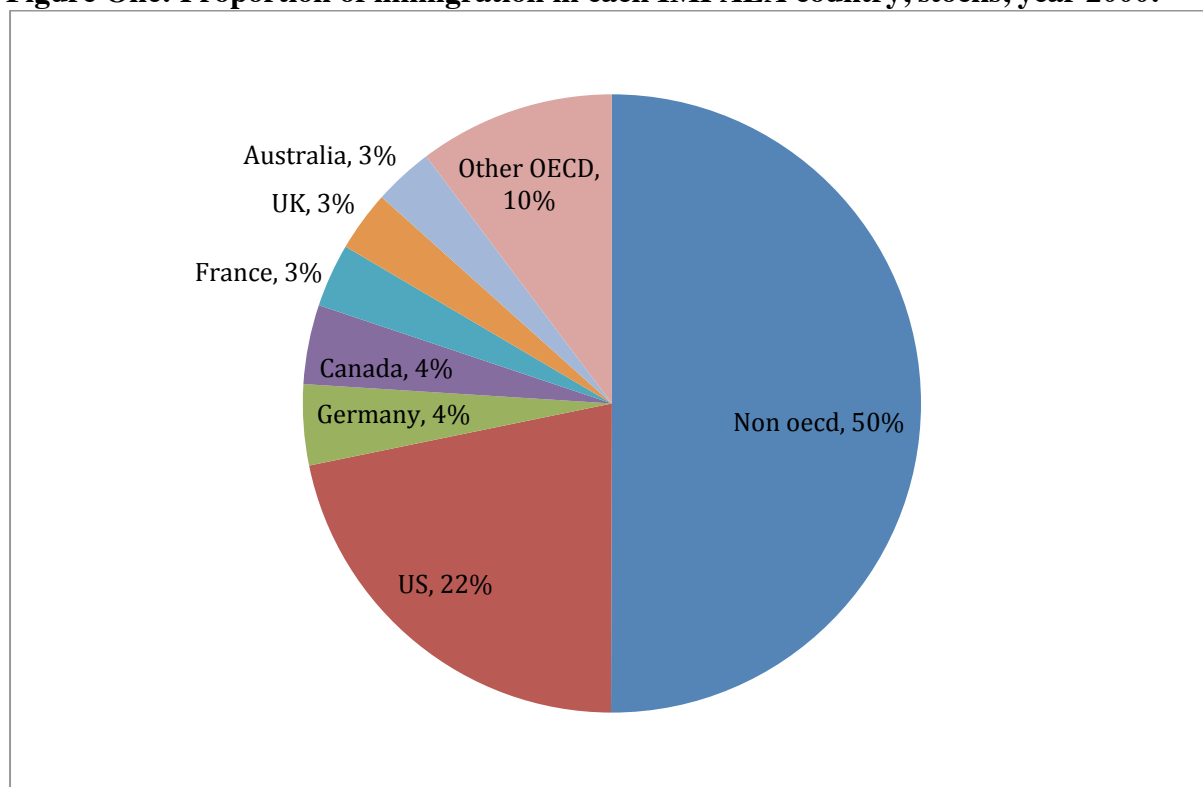
Source Docquier-Marfouk (2006) and own calculations.

Figure Two: Proportion of skilled immigration in each IMPALA country, stocks, 2000.
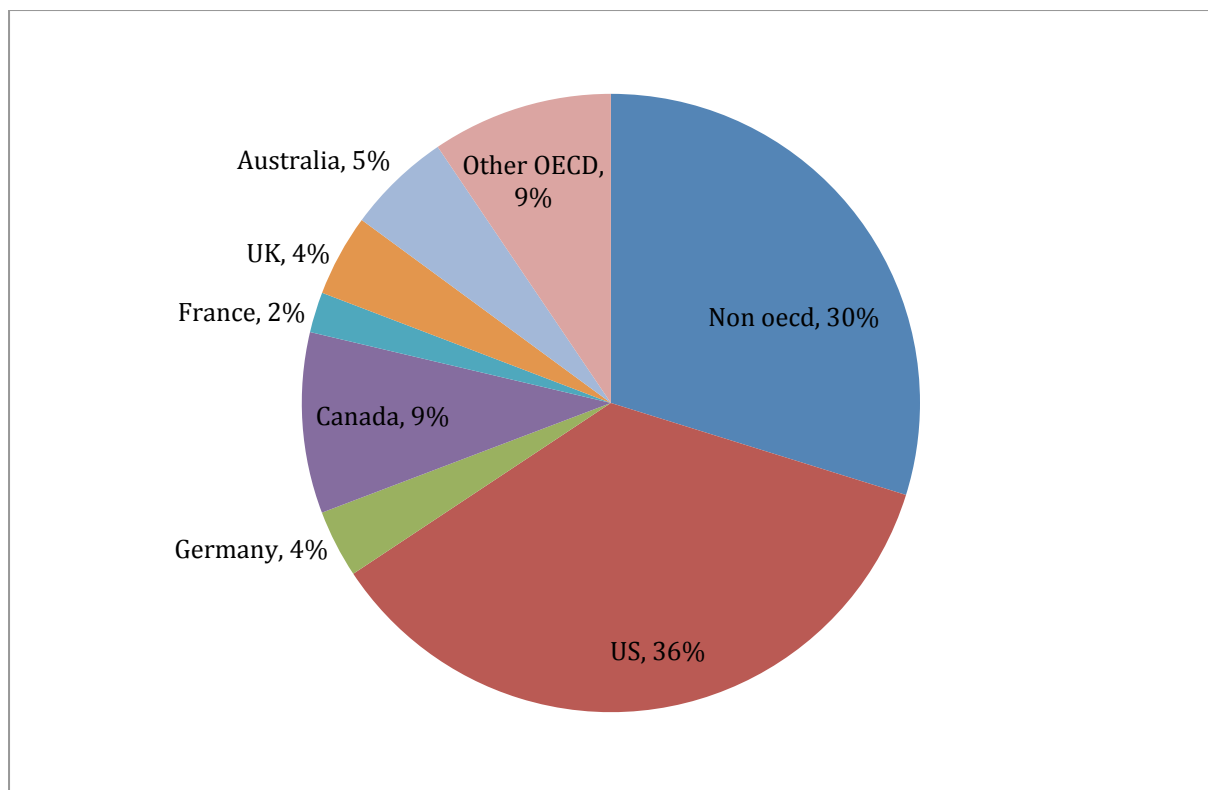
Source Docquier-Marfouk (2006) and own calculations.

With regard to federal systems of government, IMPALA focuses on coding national level policy outputs, while noting sub-national issues in the codebook associated with relevant countries. Codebooks will be made available to future researchers to identify the need for further exploration of sub-national variation. For the time being, they also reduce the complexity of the final database construction. This approach has been adopted in other public policy fields (i.e. Keck et al 2009, 17).

Reliability and Transparency

To maximize reliability and transparency across the cases, the IMPALA coding process adopts four key strategies. First, it codes documents according to a standardized procedure, with citation at every level, using coders skilled in law, policy and archival research. The coding is based on referenced and cited acts of parliament and other legal documents, rather than on experts' memories or opinions. This increases the reliability (as well as validity) of the coding. Second, these documents are coded following standardized questions that vary by category but that apply to all countries, tracks and and years within a category. Among other things, the questions capture rules establishing the numbers and types of immigrants that can enter a country, the conditions under which immigrants can enter, live and work, and their legal rights. Third, the questions are worded and designed to be answered easily in terms of the legal text. Most questions (and associated codes) are binary, providing "yes/no" responses that simply indicate the presence or absence of specific measures (e.g. whether asylum seekers are detained while applications are pending). In other cases, the coding gathers quantitative data on variables such as number of admissions allowed each year for specific applicants, the duration of stay allowed, waiting periods, and the like. All such questions can be answered from reading the legal documents. Fourth, all such coding is explicitly referenced at level of each question, providing transparency and reliability checks at the finest level of detail with respect to immigration policy and law.

Aggregation

The fact that immigration control is a multi-faceted concept means that any attempt to summarize the data in composite indices must address problems of aggregation. More specifically, we have to consider which indicators should be combined into a single index; whether they should be added or multiplied; and the amount by which they should be

weighted. The IMPALA Project adheres to a methodological principle of "post-coding aggregation." Aside from focusing on entry tracks and devising a lengthy series of questions that are derived from the idea of openness/restrictivness we have not devised a series of concepts and indicators to organize and capture data. This means that the decision over how these tracks will be aggregated to construct composite measures is decided at a later stage, once the "universe" of visa tracks and categories becomes known through the initial coding process.

This stage will involve a range of transparently derived algorithms for combining the raw coded information into track-specific and multi-track measures of stringency and of bias. The method is facilitated by scaling answers to questions relevant to restrictiveness as taking-on higher values for higher stringency. For instance, the binary "yes-no" questions are scaled as 1 for higher stringency and 0 for less. The simplest measure of restrictiveness could be to sum the values in a given track-country-year – ignoring quantitative or qualitative information whose implications for stringency are less obvious, and without weighting of aspects of law more or less relevant to such stringency.

This would provide an indicator of stringency for a very particular type of migrant. A similar approach could also apply to a broad category of migrants (for example, economic or humanitarian). The proportion of entry tracks within a category that is subject to a specific restriction (e.g. request of visa fee) would shed light on the extent to which a destination country imposes this specific restriction and how it compares with other countries. The combination of both approaches (aggregation across questions and aggregation across tracks) could lead to more global indicators of stringency in admissions policy. Of course, any natural complications that arise will be discussed and addressed. One such complication is

how to implement an appropriate weighting scheme. Once again, this applies to aggregation across questions (some restrictions might be more important than others) and aggregation across tracks (some tracks obviously involve more applicants than others). For the latter approach, some weighting scheme based on migration flows appears as a possible and intuitive solution. Nevertheless, this tends to omit the magnitude of migration flows for a given track or category is highly endogenous. For example, the size of a specific flow depends in turn on the degree of specific restrictions applied to a given category. Another tricky issue is the treatment of missing data. If there is uncertainty in the law about a particular restriction, one could assume that the restriction is absent and one could treat missing information as a zero in the aggregation process. On the other hand, uncertainty implies that missing information and zero coding are not completely equivalent. One needs to think in deep details how to deal with that before setting any aggregation algorithm.

More complicated methodologies will consider also the bilateral dimension of our database, accounting for instances where immigration laws and policies are quite often discriminatory across origin countries, particularly as we go back in time. For example, a particular restriction might apply to all countries except for particular partner countries. Accounting for this bilateral treatment is essential if restriction indicators need to be included in dyadic models of migration (see for instance Beine, Docquier and Ozden, 2011). The second stage aggregation will involve a range of more complicated methods that will be transparent and open to scrutiny and debate, and that can be used or ignored as data users see fit. We intend to provide future users with guidelines on how to aggregate the data and to build indicators of entry restriction for each field of migration.

The result is a comprehensive coding of national immigration policy regimes at a considerable level of detail. Despite some cost to parsimony, we believe that this approach

makes considerable gains. It is a method that minimizes data loss. It comprehensively captures the variation in complexity of different immigration policy systems, which is itself of important theoretical and conceptual relevance. It increases transparency, as any composite measure can be easily deconstructed to observe precisely which policies for which visa categories determine the score for each country and year. Finally, this approach grants future data analysts the ability to decide how best to aggregate information to produce measures specific for their projects. Some users will look for detailed legal wording related to a particular kind of immigrant in a particular country in a particular year. Others will look to build one or another measure of general policy stringency. Still others will look to identify the degree of bias in rules with respect to the favoring or targeting of particular kinds of immigrants and immigrant characteristics. The IMPALA database and its form of dissemination can serve all such approaches.

4   Discussion

In this article, we have explored the primary methodological challenges in the comparative measurement of migration policies. These include identifying the conceptual scope and validity of regulations across many categories of law, policy and regulation in different national and temporal settings; developing systematic, reliable and valid measures of the content of such complex and diverse regulations, laws and policies; and aggregating this information to measure general policy stringency and bias without losing sight of the nuance of legal content specific to time and place. We have outlined new ways to address these challenges, as devised by the IMPALA consortium in its data collection exercise. Consequently, for the first time, we will be able to identify clusters of immigration policy output regimes, assess variation in national policies, and trace processes of convergence/divergence in migration regimes across countries and across time.

The following are three examples of the kind of research questions that can be addressed with these data. The first relates to one of our key concepts, namely that of restrictiveness. In an early overview of the growing literature on immigration policy Massey noted an emerging paradox of globalization:

> While the global economy unleashes powerful forces that produce larger and more diverse flows of migrants from developing to developed countries, it simultaneously creates conditions within developed countries that promote the implementation of restrictive immigration policies. (Massey 1999, 312).

The IMPALA project is ideally placed to test this claim as it makes it possible to investigate variations in immigration policy across countries, through time, and between and within categories of immigration law. Has there been a significant increase in the restrictiveness of immigration laws across the sample countries? Have some areas of immigration become more restrictive than others? Can patterns of openness and restrictiveness be detected across groups of countries? Answering the latter question may, for instance, shed new light on existing typologies of immigrant receiving nations. One such schema contrasts the relatively liberal "settler societies" (Australia, Canada, United States) and the Nordic countries with the more restrictive "colonizers" (France, Netherlands, United Kingdom) and Japan, Germany, Switzerland, the highly restrictionist "non-colonizing" countries (Janoski 2010). Regardless of whether there is a gap between the intentions and outcomes in immigration policy (Cornelius et al, 2004) theories of immigration policy can only be improved by having a more accurate map of the terrain that they are trying to explain.

A second example comes from the literature on the economics of migration where the determinants of international migration are of particular interest. Here one strand of the literature claims that the size and skill composition of international migration flows reflect wage, occupation and skill characteristics in the sending and host countries while another strand emphasizes the influence of existing networks and diasporas (Grogger and Hanson, 2011; Beine et.al., 2007; McKenzie and Rapoport, 2011). So far, the impact of immigration policies has not been considered because of poor or non-existent measures. IMPALA-derived evidence can advance the debate by examining the effects of immigration policy in its various dimensions (restrictiveness, selectivity, generosity of asylum and refugee policy, family reunion programmes, temporary versus permanent status) on the size and skill composition of immigration. This will considerably contribute to the existing literature on the determinants of immigration flows. At the same time, it will allow us to investigate which dimensions of immigration policies make a difference and for a comparative analysis of the effectiveness of immigration policies in their various dimensions across countries.

The third example, which is primarily of interest to political scientists and international relations scholars, relates to one of the more striking developments of late 20th century inter-state relations, namely the rise of supra-national forms of governance. Focusing on the European Union (EU), this research can investigate a fundamental issue related to the origins of national-level immigration laws: How do EU-level immigration laws and policy constrain and influence the development of member-state laws and practices? For instance, scholars disagree on whether family reunification and national asylum laws in Europe are being ratcheted towards more or less harmonization, races to the bottom or top by the development of EU immigration laws (Geddes 2000; Luedtke 2009; Thielemann and El-Enany 2009; Pascouau and Labayle 2011). The IMPALA dataset on asylum and family reunification

policies in Europe can be used to conduct the first systematic empirical test of these competing hypotheses. By coding and comparing national and EU laws across countries and over time, the data collected will enable us not only to confirm or reject existing hypotheses. It will also allow the development of new hypotheses that will enable us to further specify the conditions under which one might expect regional cooperation to restrict or enhance the rights of refugees and accompanying family.

Overall, we expect that the ability to make easy comparisons across different policy realms and countries will set new benchmarks. It will help in the identification of best practice and sub-optimal policy choices across a range of areas. An important objective of the IMPALA Project is to improve on how immigration policy is discussed across borders. It is our hope that the Database will work to eventually enhance the sophistication of policy discourse more generally in this most significant and politically charged area of public administration.[xii]

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[i] While we recognize that the total global population has grown congruently such that migrants comprise the same share of the world's population, the absolute increase in numbers and their concentration in certain destination states has challenged those governments' regulation of immigration management. This has also altered many countries' demographic profiles in significant ways (See Boucher and Gest 2014).

[ii] Indices are understood as highly aggregated, composite measures of immigration policy, while indicators are understood as more specific, disaggregated elements that are individually coded.

[iii] When in the 1980s is not clearly specified in Howard 2009.

[iv] Tracks of entry should be distinguished from visa programmes such as the General Skilled Immigration programme in Australia which comprises a number of visas, with different rules associated with each and even conceptual differences within particular visas known as 'sub-visas'. In this example, the sub-visas constitute distinct tracks of entry.

[v] As the ultimate aim is to compare admissions regimes across countries, it is important to understand that countries represent the *units of analysis* in our research while an individual track is the *unit of observation*.

[vi] Note that we do not define different entry tracks when coding bilateral agreements. Each bilateral agreement is treated as one particular mode of entry. Here we simply capture whether the agreement gives preferential access with respect to the general policy. Similarly, acquisition and loss of citizenship are not coded as entry tracks but rather, rely upon a system developed by Waldrauch and Hofinger (1997) identifying 27 modes of acquisition of citizenship and 15 modes of loss. These 'modes' are different from the tracks identified in the other areas of our study in that they are not derived from national legislation. Rather, they are a conceptual typology that is constant across countries and countries are coded as either having or not having a particular mode.

[vii] It is important to emphasize that while we have a set schedule of questions for the entry tracks identified in different countries the identification of those tracks is an inductive process. Aside from mostly diplomatic tracks we simply code whatever tracks are used.

[viii] Apex courts are higher courts and tribunals of record, with a preference given to courts of final appeal, where relevant decisions are available.

[ix] See for instance, the recent project to develop outcome indicators for immigration to Latin American states: Puentes, R. , A. Canales, H. Rodriguez, R. Delgado-Wise, and S. Castles. 2010.

[x] With respect to the EU, we have decided to code national laws: i) mentioning explicit rules for EU nationals where appropriate as a separate track, and code those laws in terms of questions that include explicit reference to EU laws where appropriate; ii) code EU law as if it were a country, with respect to the same coding system, methodology (in terms of categories, subcategories, tracks, and questions per track); iii) include, if possible, treatment of bilateral agreements (certainly between national countries with such, including those addressing EU-specific rules. For European nations, we also distinguish between EU and Third Country National entry tracks in order to capture the different rules governing entry and naturalization for these two groups. EU countries with accession arrangements are not included in the country sample.

[xi] See Docquier and Marfouk (2006), update of release 2.1. of April 2013. This dataset provides the bilateral stocks for three education levels for all countries of origin (203 countries) and most destinations (194 countries). The initial version included only 30 destinations. The data refers to stocks observed in 2000, the most recent year available in the dataset.

[xii] For a discussion of the claims made about the efficacy of policies in the area of asylum and border control in Australia see Crock and Ghezelbash 2011.