

DISCUSSION PAPER SERIES

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Portability of Social Security Benefits**

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ABSTRACT

Status and Progress in Cross-Border Portability of Social Security Benefits

The importance of cross-border portability of social benefits is increasing in parallel with the rise in the absolute number of international migrants and their share of the world population, and perhaps more importantly, with the rising share of world population that for some part of their life is working and/or retiring abroad. This paper estimates how the rising stock of migrants is distributed over four key portability regimes: those with portability through bilateral social security arrangements (regime I); those with potential exportability of eligible benefits from abroad (regime II); documented workers with no access to national schemes but no contribution payment either (regime III); and undocumented workers with no access to any scheme (regime IV). Estimates for 2000 and 2013 are compared. The results indicate a modest but noticeable increase in the share of migrants under regime I, from 21.9 percent in 2000 to 23.3 percent in 2013. The biggest change occurred under regime III, which almost doubled to 9.4 percent. Regime II reduced by 3.0 percentage points but remains the dominant scheme (at 53.2 percent). The estimates suggest that the scope of regime IV (informality) reduced by 2.9 percentage points, accounting for 14.0 of all migrants in 2013. This trend is positive, but more will need to be done to progress on benefit portability.

JEL Classification: D69, H55, I19, J62

Keywords: labor mobility, retirement mobility, portability regimes, bilateral social security agreements, social benefits

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1. Introduction

The portability of social benefits by international labor migrants is gaining importance across the world. This interest in cross-border portability of social benefits is the result of an increasing number of individuals spending at least some part of their life abroad working and acquiring rights for pensions, health care, and other social benefits that they want to preserve when returning home or moving on to another country of work or residency (Holzmann 2018). The labor migrant-driven demand for cross-border portability (ILO 2010) is joined by the more recent retirement migrant-driven demand (Warnes 2009) and both are a critical aspect of globalization (Holzmann and Werding 2015).

The portability of social benefits was recently contemplated as a performance indicator for the Sustainable Development Goals (SDGs) (see Hagen-Zanker, Mosler-Vidal, and Sturge 2017). Migration is considered by the United Nations (UN) as one of the defining features of the 21st century, and one that can contribute to achieving the SDGs. However, the proposal to include the number of and growth in bilateral social security agreements (BSSAs) as performance criteria was ultimately dropped, as the link between portability instruments and portability outcomes is rather complex and does not lend itself to simple counting of instruments established.

Cross-border benefit portability is understood as a migrant's ability to preserve, maintain, and transfer both acquired social security rights and rights in the process of being acquired from one private, occupational, or public social security scheme to another, independent of nationality and country of residence (Cruz 2004; Holzmann, Koettl, and Chernetsky 2005). Social security rights refer, in principle, to all rights stemming from contributory payments or residency criteria in a country. Benefits that are not typically portable are those that are not based on contributions, such as benefit top-ups for low-income individuals or minimum income guarantees.

How to best establish cross-border portability is still an open research and policy question. The three key options – cross-country agreements, multinational providers, and benefit redesign – are both substitutes and complements, and have not yet been rigorously compared and evaluated. BSSAs between migration corridor countries are often considered the best approach to establish portability; based on the few available corridor studies, BSSAs seem to work broadly well (Holzmann 2016). Yet till this paper the only other available data (from 2000) suggest that only 22 percent of the world's migrants move between countries where BSSAs exist (Holzmann, Koettl, and Chernetsky 2005). Establishing them is time consuming and protracted; their scope of benefits and actual performance are largely unknown; and complementary and substitutive approaches might lead to more effective portability. Nonetheless, BSSAs are likely to be the best option, and may even add value if alternative instruments exist, as these enhance the effectiveness of BSSAs.

This paper offers new estimates of the relevance of BSSAs in 2013, presents the estimated distribution of and changes in migrant stocks across four key portability regimes and across regions in 2000 and 2013, and analyzes the reasons behind these changes. The estimates suggest modest but noticeable progress in benefit portability.

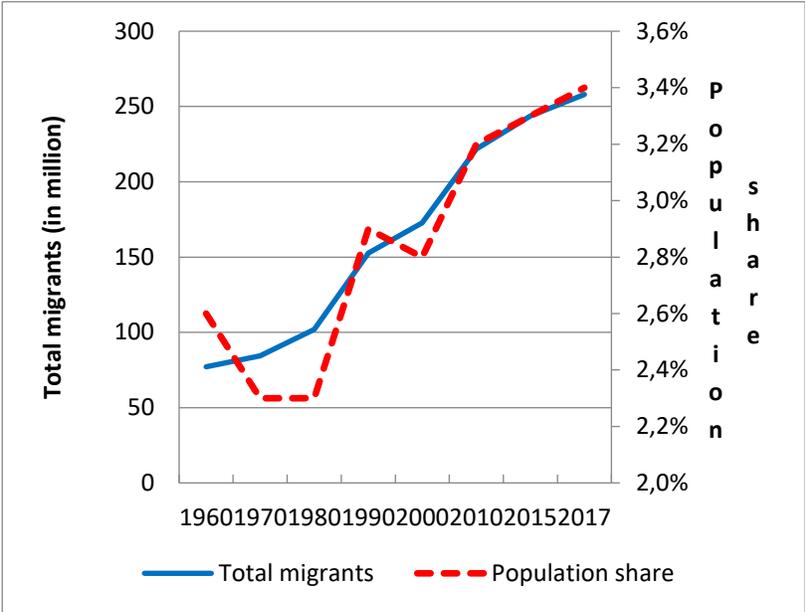
The structure of this paper is as follows. Section 2 briefly reviews some data and background on the scope of migration, stocks and flows of migrants, migrants' acquired social security rights, and the dynamics underlying portability. Section 3 provides some basic information on BSSAs. Section 4

describes the data, the four portability regimes, and estimation approach. Section 5 presents the 2013 estimates on migrants under each portability regime and compares these with the 2000 (re-)estimates from several different angles. Section 6 summarizes and draws policy conclusions.

2. Migration Dynamics and Portability Relevance

The share of individuals living outside their home country is increasing again after a temporary low in the 1970s, reaching 3.4 percent of the world population in 2017 (up from 2.3 percent in 1980), or an estimated 258 million people (United Nations 2017). Figure 1 presents the number of migrants and their share in the world population since 1960. On January 1, 2016, the number of people living in the EU-28 who were citizens of nonmember countries was 20.7 million, representing 4.1 percent of the EU-28 population, while the number of people living in the EU-28 who were born outside of the European Union (EU) was 35.1 million. In addition, 16.0 million persons were living in one of the EU member states on January 1, 2016 with the citizenship of another EU member state (Eurostat 2017).

Figure 1: Number and share of migrants in world population, 1960–2017



Source: Authors’ compilation based on UN 2017; Migration Policy Institute, Data Hub.

These migrant stock numbers—impressive as they are—underestimate the underlying labor mobility dynamics; that is, the number and increasing share of individuals who have lived or will live at least some part of their working or retired life outside their traditional country of residence. While this development is more difficult to quantify due to individuals’ multiple migration spells of varying length, sometimes to multiple countries, indications from across the world are strong that the number of spells spent abroad is increasing. In the EU, the number of citizens who spend at least some of their adult life living outside their home country (as a student, intern, intrafirm and interfirm mobile employee, labor migrant, or “snowbird” retiree) is definitely rising and may soon be as high as one out of every five individuals.

This subsection presents the few available indicators of the rising labor and benefit mobility across borders. These serve to measure the portability phenomenon in the absence of consistent data across countries and time. The indicators represent only EU countries.

Past labor market spells abroad translate into rising numbers of pension payments to and from abroad. For example, in Germany in 2013, these amounted to about 11.1 percent of the total number of pensions paid, rising from 9.8 percent in 2005 (Table 1)

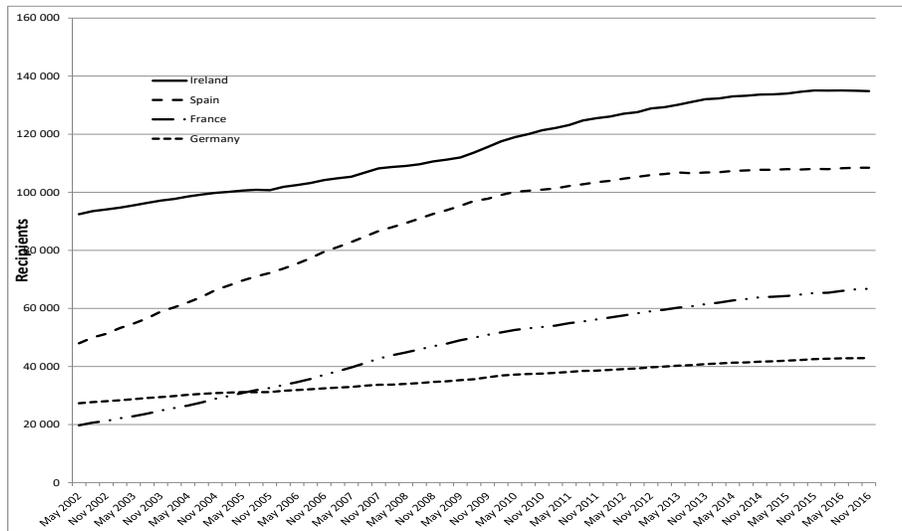
Table 1: Recipients of statutory German pensions – in Germany and abroad

Number of pensioners in millions (% of total pensioners)	2013	2010	2005
Total non-German pensioners	2.562 (100%)	2.367 (100%)	2.032 (100%)
- living in Germany	1.059 (41.3%)	0.944 (39.9%)	0.774 (38.1%)
- living outside Germany	1.503 (58.7%)	1.423 (60.1%)	1.258 (61.9%)
Total German pensioners	22.602 (100%)	22.646 (100%)	22.452 (100%)
- living outside Germany	0.222 (0.98%)	0.206 (0.91%)	0.170 (0.76%)
Total pensioners	25.164 (100%)	25.013 (100%)	22.484 (100%)
- living outside Germany	1.725 (6.85%)	1.629 (6.51%)	1.427 (5.83%)
- non-German pensioners living in Germany	1.059 (4.21%)	0.944 (3.77%)	0.774 (3.44)
- potential recipients of cross-border pensions	2.784 (11.1%)	2.573 (10.3%)	2.201 (9.8%)

Source: Genser and Holzmann 2018, based on Eurostat Online Database (June 2015).

Figure 2 presents data for the United Kingdom on trends in EU residency of recipients of UK state pensions (including British and non-British subjects) from 2002 to 2016. Residents in Ireland and Germany may include a balance of return and retirement migrants; residents in France and Spain are likely to be dominated by retirement migrants. The dynamics and numbers are impressive.

Figure 2: Recipients of cross-border UK state pension in four EU member countries, 2002–2016

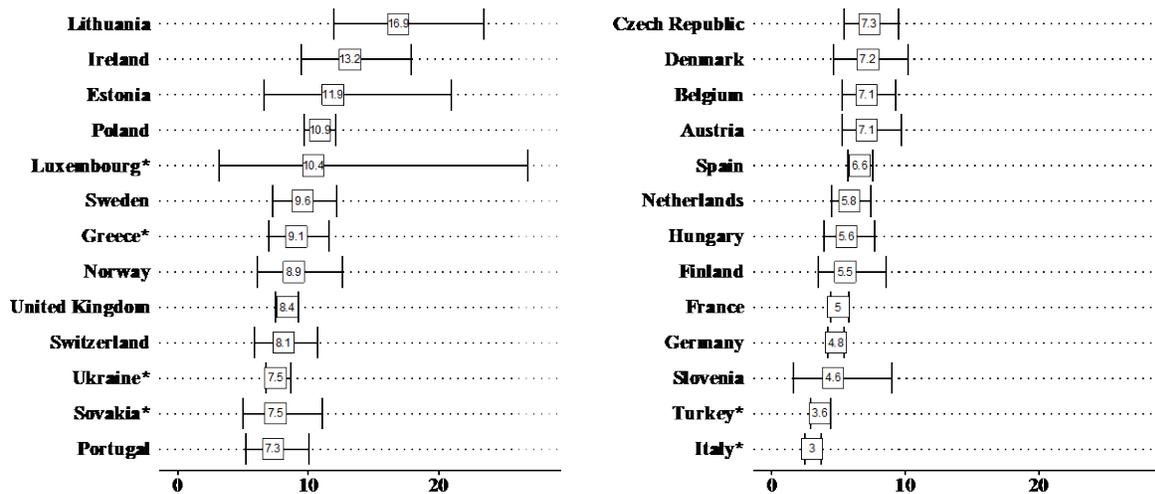


Source: UK Department for Work and Pensions, State Pension Administrative Data.

Comparable pension data for other countries are not publicly available. Warnes (2009) presents public pension data for Germany, the United Kingdom, and the United States that reflect the popularity and dynamics of their respective retirement destinations from the mid-1990s to 2005.

The final example reflects the underlying dynamics of future portability needs of the current working population. Spending six and more months in another country in paid work typically qualifies one for some social benefits, particularly future pension rights that need to be addable and portable at retirement. Figure 3 shows the percentage of people in their source country who spent six or more months working abroad in EU countries and Turkey between 2004 and 2014. Extending the measurement period beyond these years to include individuals' entire working life would further increase the share of individuals who will have acquired rights abroad and want/need to have them included when their pension benefit at retirement is calculated.

Figure 3: Percentage of people aged 18–64 who spent at least six months in paid work in another country during the last 10 years



Source: European Social Survey (ESS) waves 2 and 7, weighted data, authors' calculations.

Note: The question involves only people who were in their own country at the time of the interview. *Indicates that data are not available in both waves. CI at 95% in wave 2 (2004) and wave 7 (2014).

3. Basic Information on Bilateral Social Security Agreements

While promising portability mechanisms other than BSSAs exist,¹ they are more supplements than substitutes for arrangements between countries along their migration corridors. Thus BSSAs will remain the centerpiece of social benefit portability for the foreseeable future. Given their importance and this paper's focus on them as a key portability regime, Section 3 offers some basic information on BSSAs. The following subsections include: a brief overview of BSSAs and other intergovernmental arrangements;

¹ Such as international private sector providers and program redesign to separate the key portability components of social benefits to make them more transparent and better portable (see Holzmann and Koettl 2015).

country scope and dynamics in BSSAs; first results on their effectiveness; and a summary of policy conclusions on BSSAs.

3.1 Portability arrangements and BSSA specificities

A range of portability arrangements can be used to enhance or fully establish portability. Most portability discussions focus on BSSAs, but the scope of arrangements is much larger and includes the following:

Unilateral actions can be taken by a country where individuals have established or are establishing acquired rights. Such actions can improve portability through full exportability of benefits in disbursement and can facilitate transfer of rights in creation.

Multilateral arrangements (MAs) represent a general framework of portability for a group of countries for all or a subset of social benefits. These general rules are typically supported by more detailed BSSAs. The most developed MA is the one among EU member states (plus Norway, Lichtenstein, and Switzerland) that is actually not an MA but based on supranational EU law. Traditional MAs have been established in Latin America (MERCOSUR) and the Caribbean (CARICOM) and in 15 French-speaking countries in Africa (CIPRES); one was recently established between Latin America and Spain and Portugal (Ibero-American Social Security Convention); and one is under development for the Association of Southeast Asian Nations (ASEAN) countries.

BSSAs are the centerpiece of current portability arrangements between countries. While they can in principle cover the whole range of exportable social benefits, BSSAs focus mostly on long-term benefits such as old-age, survivor's, and disability pensions and, to a much lesser extent, on health care benefits.¹

BSSAs serve multiple objectives, including: defining which social benefits will be coordinated; establishing the depth of coordination (from time-limited exemptions to contribute to the host scheme to exportability of benefits to full-fledged coordination); and establishing coordination on eligibility criteria, benefit calculation, disbursement, service delivery, financing, and processes of application, decision, and information.

Effective BSSAs should ensure:

- *Equality of treatment*: This refers to the principle that all workers engaged in remunerated labor should enjoy equal provision of social security; this provision can also be extended to workers' dependent family members.
- *Payment of benefits abroad (exportability)*: The portability principle provides for any acquired right, or right in the course of acquisition, to be guaranteed to the migrant worker in one territory even if it was acquired in another.
- *Determination of applicable legislation*: This principle ensures that the social security of a migrant worker is governed at any one time by the legislation of only one country. Three basic rules apply:

¹ For some historical and legal background on BSSAs, see Strban (2009); for a review of issues of BSSAs with nonmembers within the EU context, see Spiegel (2010); for a review of literature see Taha, Siegmann, and Messkoup (2015). For the texts of BSSAs worldwide, see the ILO NATLEX database: www.ilo.org/dyn/natlex/natlex4.search?p_lang=en.

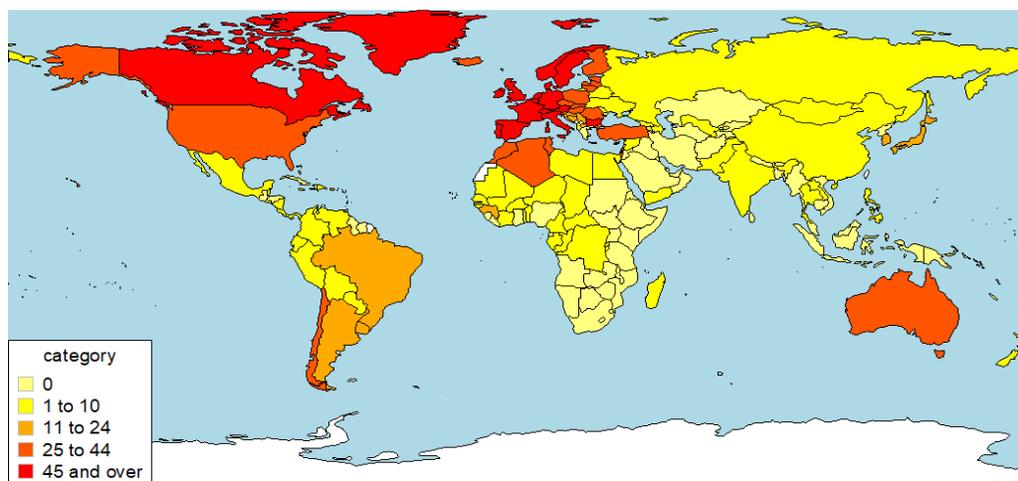
- ✓ Employees are covered by the legislation of the contracting party in which they work, even if they reside in the other contracting party.
- ✓ Self-employed persons are covered by the legislation of the contracting party in which they perform their economic activity.
- ✓ Civil servants are covered by the legislation of the contracting party within whose administration they are employed.
- *Maintenance of benefits in the course of acquisition (totalization)*: This principle provides that when a right is conditional upon the completion of a qualifying period, periods of employment by the migrant worker in each country are taken into account.
- *Administrative assistance*: This principle aims to provide for mutual administrative assistance between the social security authorities and institutions of participating members.

Though these principles are largely observed, the content and implementation of BSSAs are highly variable.

3.2 The international scope and dynamics of BSSAs

The dynamics and distribution of BSSAs across countries are closely linked with the development of mandated and universal social security programs across the world and the migration dynamics between countries. Two figures offer a succinct overview: Figure 4 presents the density of BSSAs per country; Figure 5 presents the dynamics between 2000 and 2013 – the legend indicates the number of new BSSAs that entered into force in this timeframe.

Figure 4: Number of BSSAs (regime I) by country in 2013

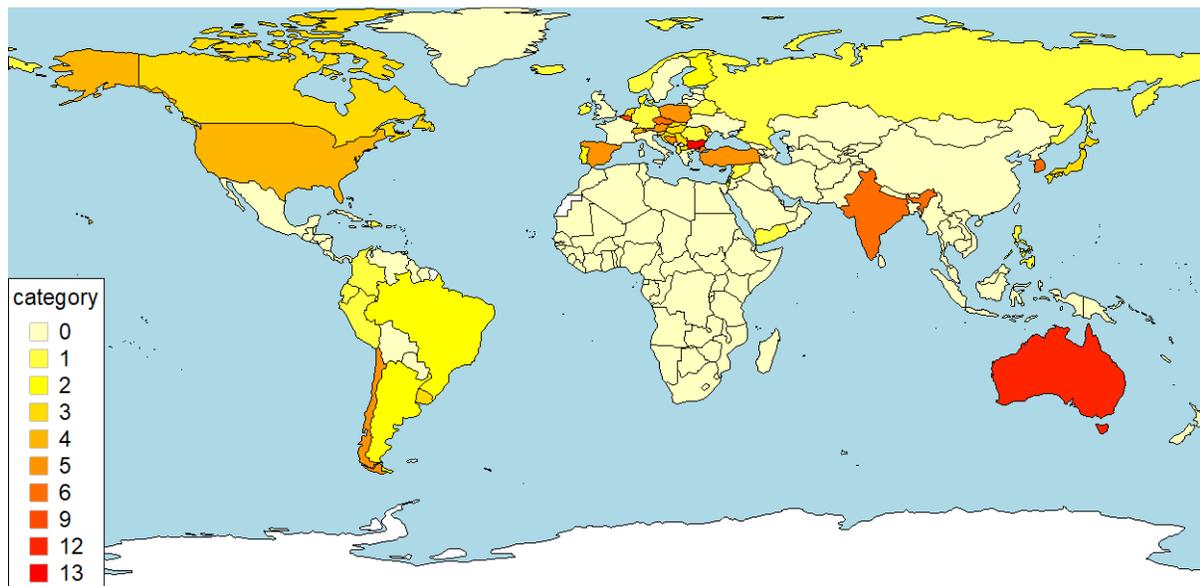


Source: ILO NATLEX database.

Note: Figure made using South 2011 (available from: http://journal.r-project.org/archive/2011-1/RJournal_2011-1.pdf#page=35).

Figure 4 clearly shows that BSSAs remain largely an arrangement between richer countries in the northern hemisphere and are used very selectively in the southern hemisphere. The increased establishment of BSSAs between 2000 and 2013 (Figure 5) also reflects this phenomenon but reveals India, Turkey, and South Korea as emerging powerhouses.

Figure 5: Increase in BSSAs (regime I) between 2000 and 2013



Source: ILO NATLEX database.

Note: Figure made using South 2011 (available from: http://journal.r-project.org/archive/2011-1/RJournal_2011-1.pdf#page=35).

3.3 First results on the effectiveness of BSSAs

BSSAs between countries are considered by most or all of the social security profession as the key instrument to establish portability for mobile workers. Although some call the approach “state of the art,” no substantiated proof exists for such an assertion. Neither a regional nor a worldwide inventory of BSSAs has been conducted to describe their basic features in a comprehensive, analytical way (for example, type of benefits covered, depth and type of coordination on such benefits, and so on). To the authors’ knowledge, no other qualitative study nor any quantitative analysis has been published to explore the functioning of BSSAs, to highlight their strengths and weakness, or to evaluate them against predefined criteria¹; a recent review of the literature (Taha, Siegmann, and Messkoup 2015) comes to the same conclusion. Holzmann, Koettl, and Chernetsky (2005) undertook a first attempt in this direction based on information gathered for a few migration corridors. While incomplete, the study showed the potential power of corridor studies. Corridor studies have some tradition in the analysis of migration flows and integration issues.

To start filling the knowledge gap about the functioning of BSSAs, the World Bank sponsored four corridor studies from 2013–2015. The four country corridors (Austria–Turkey, Germany–Turkey, Belgium–Morocco, and France–Morocco) were selected to allow for comparison of both similarities and differences in experiences of BSSAs between EU and non-EU countries that have established labor

¹ A recent analysis by the Organization of American States on the regional functioning of bilateral and multilateral social security agreements is a useful step (Consejo Interamericana para el Desarrollo Integral 2015). The study offers an informative description of the history and status of the agreements, yet it assesses only the legal content of the agreements without any benchmark and outcomes.

migration corridors since the 1950s. The evaluation of these corridors' BSSAs was undertaken against a methodological framework and three selected criteria: contribution/benefit fairness for individuals, fiscal fairness for countries, and bureaucratic effectiveness for countries and migrant workers.¹

3.4 Summary of policy conclusions regarding BSSAs

The overall conclusions were relatively encouraging. The four investigated BSSAs seem to be broadly working, with only a few areas of contention and recognized areas for improvement. With some exceptions, this assessment essentially holds for all three criteria used to evaluate the BSSAs.

Fairness for individuals: BSSAs do not create a major benefit disadvantage that affects mobility on a large scale in any of the four corridors. Implementation of full health care benefits for mobile workers between France/Belgium and France/Morocco will close a remaining relevant benefit gap. The BSSAs offer the expected pension portability for mobile workers, with no major issues around the lack of benefit take-up. A few important outstanding issues remain, particularly the nonportability of noncontributory pension top-ups, requests for retroactive payment, and (for the Francophone corridors) the handling of Muslim repudiation/divorces and widows' benefits. Family allowances remain an issue for discussion and different approaches across the corridors may prevail.

Fiscal fairness for countries: The pension systems' evaluation yields a mixed picture. For the four BSSAs considered, their increasingly actuarial pension benefit structure helps in the pursuit of fairness; high and increasing levels of budgetary transfers to keep pension systems afloat have a counter effect. For health care systems, it is unclear whether and to what extent fiscal fairness is or can be achieved under the current responsibility and reimbursement structure and how important the problem is. This is an area where major conceptual and empirical work is required.

Bureaucratic effectiveness: Stakeholders gave EU host countries' institutions high marks for their provision of benefit-related information and services but had a less favorable assessment for their home countries. A concern for many applicants is the delay in processing; the advantages of advanced electronic file preparation in some but not all EU countries are attenuated by the paper-based information collection systems in Morocco and Turkey; the situation is further aggravated by verification issues for names and birth dates. Electronic file exchange systems across BSSAs are envisaged and may soon take place in some corridors.

¹ For the individual corridor studies, see Holzmann et al. 2016a and 2016b; Holzmann, Jacques, and Dale 2016; and Holzmann, Legros, and Dale 2016. For a comparison across the east corridors, see Fuchs and Elitok 2014; for the west corridors, see Legros et al. 2014, and Jacques, Bensaid, and Legros 2015 (in French). For an elaboration of broader principles and further country experiences with portability, see the papers in a special volume of CESifo Economic Studies 2015 and the overview paper by Holzmann and Werding 2015.

4. Data and Estimation Approach

To estimate the scope of and changes in migration regimes, data from migration stocks in 2000 and 2013 were merged with information about BSSAs and similar arrangements under the four migration regimes previously described (developed in Holzmann, Koettl, and Chernetsky 2005) and by alternative country groupings based on income level and region. Section 4 introduces the data, the country classifications, the migration regime definitions, and the estimates of undocumented workers. The results are presented and discussed in Section 5.

The overall approach is to categorize and estimate the stock of migrants between two countries for each of the four migration regimes. The categorization is done by both source and destination country. Within these two categories, each country can be further categorized by income group and region.

4.1. Data and classifications

Stocks of migrants by origin and destination country are estimated using the “Bilateral Estimates of Migrant Stocks” in 2000 and 2013 provided by the [World Bank](#). The basic information is bilateral data on the stocks of migrants, provided as a migration matrix. As this paper not only calculates the migration regimes for 2013 but also compares them with those of 2000, it is necessary to control for country attrition and the change in countries between 2000 and 2013. The 2000 matrix includes a larger number of countries than the 2013 matrix. Consequently, a certain number of countries are excluded from both the 2000 and the 2013 matrix as they are missing in 2013 (Table 2). Similarly, a smaller number of countries in the 2013 matrix were not in the 2000 matrix and hence were excluded. Overall, the share of migrants excluded due to missing values in one of the two datasets is 0.98 percent in the 2000 matrix and 1.01 percent in the 2013 matrix. Furthermore, some country nomenclatures changed slightly between the two periods. For example, Sudan was divided in 2011 into Sudan and the Republic of South Sudan. To keep data homogeneous over the period, North Sudan and South Sudan are kept under the same nomenclature in both matrixes. The nomenclature also changed for “Occupied Palestinian Territory” in 2005, coded as “West Bank and Gaza” in the 2013 dataset but not in the 2000 dataset. They are merged into one category here to allow comparison.

Table 2: Missing data

Countries	2000	2013
Included	185,378,653 (99.02%)	236,302,967 (98.99%)
Not included	1,839,255 (0.98%)	2,418,638 (1.01%)
Total	187,217,908	238,721,605

Source: World Bank Migration Matrix 2000 and 2013.

Note: The following countries were included in the 2000 dataset but not in the 2013 dataset: Anguilla, British Virgin Islands, Cook Islands, Falkland Islands (Malvinas), Faroe Islands, French Guiana, Gibraltar, Guadeloupe, Martinique, Mayotte, Montserrat, Mariana Islands, Nauru, Netherlands Antilles, Niue, Norfolk Island, Reunion, Saint Helena, Saint Pierre and Miquelon, Taiwan, Tokelau, Wallis, and Futuna. The following countries were included in the 2013 dataset but not in the 2000 dataset: Channel Islands, Curacao, Faeroe Islands, Isle of Man, Mariana Islands, and Sint Maarten (Dutch part).

Data are presented using two main categories: the country income group classification and the regional classification, both as defined and used by the World Bank. The regional classification distinguishes Africa (AFR), East Asia and Pacific (EAP), Europe and Central Asia (ECA), European Union and other Western Europe (EU27+), Latin America and the Caribbean (LAC), Middle East and North Africa (MNA), North America (NAR), and South Asia (SAR). This regional classification did not change between 2000 and 2013.

The country' income group classification distinguishes low-income (LI), lower-middle-income (LMI), upper-middle-income (UMI), high-income non-OECD (HI NOECD), and high-income OECD countries (HI OECD). The income group classification herein is based on the World Bank classification in which income is measured using gross national income (GNI) per capita, in US dollars, converted from local currency using the World Bank Atlas method. The income thresholds used for classification purpose are updated annually and adjusted for inflation (using a deflator). Consequently, the income group classification of a country may change from one period to another. Thus this paper uses the 2005 classification for both the 2000 and the 2013 matrixes to allow comparison of changes from one period to another. Table 3 shows the changes in income group that occurred from 2005 and 2017; these are not taken into consideration in the calculations that follow.

Table 3: Change in income group by country from 2005 to 2017

Country	2005 income group	2017 income group
Argentina	UMI	HI NOECD
Angola	LI	LMI
Antigua and Barbuda	UMI	HI NOECD
Bangladesh	LI	LMI
Chile	UMI	HI NOECD
Ghana	LI	LMI
Kenya	LI	LMI
Kyrgyzstan	LI	LMI
Lao PDR	LI	LMI
Lithuania	UMI	HI NOECD
Mauritania	LI	LMI
Myanmar	LI	LMI
Palau	UMI	HI
Paraguay	LMI	UMI
Russia	LMI	HI non-OECD
Seychelles	UMI	HI non-OECD
Solomon Islands	LI	LMI
St. Kitts and Nevis	UMI	HI non-OECD
Tajikistan	LI	LMI
Tonga	LMI	UMI
Uruguay	UMI	HI non-OECD
Venezuela	UMI	HI non-OECD
Zambia	LI	LMI

Source: World Bank 2016.

4.2 Migration regimes

To estimate the level of benefit portability among migrant population across the world, the definitions of migration regimes developed by Holzmann, Koettl, and Chernetsky (2005) are applied:

- *Regime I (portability)*: All legal migrants who have indiscriminate access to social security programs in their destination country. In addition, origin and destination country have concluded a bilateral or a multilateral social security arrangement that makes, in principle, benefits portable across borders: those in disbursement and also those in accumulation. This portability arrangement covers essentially all benefits in some countries, but in many arrangements it is essentially limited to pensions. A few arrangements allow migrants to continue to pay into the scheme of the origin country.
- *Regime II (exportability)*: All legal migrants who have access to social security in their host country in the absence of a bilateral arrangement between their origin and destination country. The national social law of the destination country alone determines to what extent benefits are payable overseas, which may result in limited exportability of benefits.
- *Regime III (no access)*: All legal migrants who do not have access to social security for nationals in their destination country; they neither pay contributions nor receive benefits before and after departure.
- *Regime IV (informality)*: All undocumented migrants who neither have access to social security nor can acquire benefit rights to take home or onward.

Data for regime I were provided for the 2000 estimates in personal communication by the ILO bilateral matrix and were updated using the International Labour Organisation (ILO) NATLEX webpage. Table 4 shows the changes in BSSAs that occurred over the selected period.

4.3. Estimates of undocumented migrants

The World Bank migration data cover only documented migrants. As the informality regime is important for an assessment of portability, the official migration matrix data of 2013 are augmented with estimates of the number of undocumented migrants. The 2000 data already include estimates of undocumented migrants.

Using the methodology applied in Holzmann, Koettl, and Chernetsky (2005), the share of undocumented migrants was calculated using a multiplier estimation technique (Jandl 2004) in which the size of an unknown parameter has a stable relation to a variable that can be measured (i.e., the migration stock). The share of undocumented migrants was estimated based on stocks of migrants and external information. The formula used for calculating the number of undocumented migrants, the number of legal migrants, and the total stock of migrants including undocumented migrants may be written as follows:

$$\sum_{b_i}^{b_i} T = \sum_{b_i}^{b_i} \left[\theta - \left(\frac{\theta * y}{x} \right) \right] + \left[(\theta * y) - \left(\frac{\theta * y}{x} \right) \right]$$

where θ is the original stock of migrants provided by the World Bank migration matrix (at a bilateral level (b)), the “ y ” parameter calculates the share of undocumented migrants based on the original stock of migrants (θ), and the “ x ” parameter calculates the share of undocumented migrants (as a percentage) included in the original data (θ). T is the sum of the number of undocumented and documented migrants and is, due to the calculation, slightly different from the original data.

Table 4: Updates of BSSA matrix (from 2000 to 2013)

Entry into force	BSSA	Entry into force	BSSA
2001	Australia–Canada	2009	Hungary–Serbia and Montenegro
2001	Austria–Australia	2009	Moldova–Bulgaria
2001	Bulgaria–Slovakia	2009	Bulgaria–Moldova
2001	Chile–United States	2009	United States–Poland
2001	Czech Republic–Netherlands	2009	Czech Republic–Japan
2002	Australia–Slovenia	2009	Belgium–South Korea
2002	Australia–Portugal	2009	Finland–Australia
2002	Bulgaria–Spain	2009	Belgium–Uruguay
2002	Peru–Chile	2009	Slovenia–Argentina
2003	Argentina–Netherlands	2009	Germany–India
2003	Andorra–Netherlands	2009	Poland–Canada
2003	Australia–Chile	2010	Cyprus–Syria
2003	Croatia–Australia	2010	Serbia–Montenegro
2003	Bosnia–Turkey	2010	Austria–Bulgaria
2003	Czech Republic–Chile	2010	Spain–Ecuador
2003	Czech Republic–Turkey	2010	Moldova–Portugal
2005	Belgium–Croatia	2010	Portugal–Moldova
2005	Bosnia–Macedonia	2010	Bulgaria–South Korea
2005	Bulgaria–Hungary	2010	Poland–South Korea
2005	Czech Republic–Macedonia	2010	Austria–South Korea
2006	Switzerland–Australia	2010	Poland–Australia
2006	Belgium–Australia	2010	Spain–Japan
2006	Russia–Belarus	2011	France–Brazil
2006	Bosnia–Belgium	2011	Dominic Republic–Spain
2006	Bulgaria–Switzerland	2011	India–Luxembourg
2006	Bulgaria–Poland	2011	Macedonia–Australia
2006	Bulgaria–Cyprus	2011	Moldova–Romania
2006	Croatia–Bulgaria	2011	Switzerland–India
2006	Luxembourg–Turkey	2011	Denmark–India
2007	Bosnia–Slovenia	2011	Czech Republic–Australia
2007	Slovenia–Bosnia and Herzegovina	2011	Denmark–South Korea
2008	India–France	2011	Austria–Uruguay
2008	Finland–Chile	2012	Bosnia–Luxembourg
2008	Spain–Colombia	2012	Bulgaria–Canada
2008	Norway–Israel	2012	Moldova–Luxembourg
2008	Netherlands–Uruguay	2012	Serbia and Montenegro–Slovenia
2009	Belgium–India	2012	Slovakia–Australia
2009	United States–Czech Republic	2012	Slovenia–Serbia and Montenegro
2009	Ireland–South Korea	2012	Switzerland–Japan
2009	Serbia and Montenegro–Hungary	2013	Turkey–Yemen

Note: Information collected from the ILO NATLEX database.

Put another way, the calculation is made in three steps:

- First, the number of illegal undocumented migrants is calculated based on the number of migrants provided by the World Bank migration matrix.
- Second, as the share of illegal migrants is included in official data, the total number of legal migrants is calculated as the difference between the original stock of migrants and the percentage (y) of illegal migrants.
- Finally, the total number of migrants (both undocumented and illegal) is the sum of the total number of illegal migrants and the total number of legal migrants.

The value of x is based on the following assumptions:

- In high-income countries, 1 percent of official migrants are illegal – they are distributed proportional to the bilateral migration flows.
- In low- and middle-income countries, 17 percent of official migrants are illegal.

The value of y is based on the following assumptions:

- In high-income countries, 20 percent of illegal migrants are not captured by official data.
- In the United States, 80 percent of illegal migrants are not captured by official data (20 percent are captured by the census).
- In South Africa, 0 percent of illegal migrants are captured by the census.
- in low- and middle-income countries, 30 percent of illegal migrants are not captured by official data.

Coefficients for x and y were post-estimated using external available sources for the following countries: Germany (Vogel 2015), Italy (Blangiardo 2008), Europe (Morehouse and Blomfield 2011), the United States (Passel 2006; Hofer, Rytina, and Baker 2013; Passel, D’Vera, and Rohal 2014), the Philippines (Bryant 2005), and ASEAN countries (Battistella 2002).

5. Progress in Cross-Border Social Benefit Portability: 2013 Versus 2000

The prior sections identified and described four different portability regimes: portability, exportability, no access, and informality. But this sequence implies some ranking that – beyond portability – may not necessarily hold. This section thus presents, explores, and evaluates the levels of and changes in the portability regimes of migrants across countries in and between 2000 and 2013 to gauge how much progress has taken place. It starts with a baseline result that suggests modest progress. It then differentiates the changes across regimes by country groups according to income and region, both based on World Bank definitions. Migration transition matrices that capture the changes in the shares or numbers of migrants between 2000 and 2013 along the same two categories provide further support for the interpretation of the results.

Table 5 presents the change in the shares of migrant stocks by portability regime. The right-hand column shows the stocks of migrants (including undocumented) in 2000 and 2013 and the change between both years: the stock of migrants increased over 30 percent in 13 years.

The distribution of the shares of migrants by the four portability regimes changed between the observation years, but the ranking of their magnitudes remained unchanged.¹ In general:

- Over 50 percent of migrants still fall under the exportability regime (II), which offers, at maximum, the export of eligible pension benefits (old-age, disability, survivor’s) but not the portability of rights in accrual.
- Over 20 percent of migrants moved between countries that have a portability regime (I) based on a BSSA or a similar arrangement that offers the full exportability of benefits in disbursement as well as the portability of rights under accumulation.
- Less than 20 percent of migrants fall under the informality regime (IV), and less than 10 percent of migrants fall under the no access regime (III).

The changes indicate a modest but noticeable increase of 1.4 percentage points under regime I (portability) while the change under regime III (no access) is 4.5 percentage points, representing an almost doubling of the share. These increases are offset by reductions in the informality and exportability regimes of 3.0 and 2.9 percentage points, respectively.

Table 5: Status and progress in portability regimes, 2000 and 2013

Table 5.1: Status and Progress in Portability Regimes, 2000 and 2013					
(in percent of total migrants)					
Year	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)
2000	21.9	56.3	4.9	16.9	191.8
2013	23.3	53.2	9.4	14.0	252.3
Change	1.4	-3.0	4.5	-2.9	60.6
Source: Authors' calculations					

Overall, these estimated changes indicate some modest progress through a higher share of migrants moving to destination countries that have a BSSA with the origin country. Such a change may be generated by two developments – a rising number of BSSAs between migration corridor countries and/or a change in migrant stocks toward countries that have concluded BSSA agreements, or some other compensating developments (analyzed below). The reduction in the share of migrants by 2.9 percentage points under the informality regime reflects the low rise of migrants in this category (some 3 million, or an increase of 10 percent) compared to the growth of all migrants (60 million, or over 30 percent since 2000). This decreasing informality between 2000 and 2013 is in line with other data and information (see section 4.3), but developments since 2015 may have reversed this trend.

The almost doubling of the share of migrants under the no access regime reflects the strong attraction of Gulf Cooperation Council (GCC) countries (with Saudi Arabia in the lead) and of some Asian countries (such as Singapore, Malaysia, and Hong Kong) that rely on a temporary workforce (called “expats”) that has no access to the schemes of nationals but needs not pay social security contributions for pensions

¹ All results for 2000 differ slightly from those reported in Holzmann, Koettl, and Chernetsky (2005) and Avato, Koettl, and Sabates-Wheeler (2010). This is the result of a string of minor corrections and most importantly of correcting the BSSAs’ base for 2000. The prior calculations for 2000 based on BSSA data from ILO in 2005 included BSSAs signed between 2000 and 2005; they are now excluded.

(work injury and basic health care are covered by employers). The source countries are also mostly in Asia, and often have underdeveloped social insurance schemes, making a BSSA less attractive. Survey data suggest that expat workers in these destination countries prefer the higher cash wages and their own saving arrangements.

The six tables in Table 6 display the main results. Tables 6.1a and 6.1b to 6.3a and 6.3b detail the results by country income group – by origin and by destination. The tables suggest that a high share of migrants coming from or moving to the portability regimes remain within OECD countries, albeit with decreasing significance between 2000 and 2013. The tables also indicate that most migrants under the no access regime come from low-income countries and that the destination countries are concentrated in the high-income non-OECD and upper-middle-income groups. Most migrants under the informality regime seem to come from lower-income groups (including upper-middle-income countries) but they also migrate to these groups of countries. This dynamic lessened between 2000 and 2013, however.

As a result, underlying the increase under regime I between 2000 and 2013, larger changes occurred within income groups. Most importantly, the reduction in the share of OECD countries at both origin and destination contributed to the only modest improvement in the significance of the portability regime.

Table 7 and Table 8 complement the information about the scope of the origin–destination country relationship with two transition matrices: the former presents the transition matrix for 2013 in million migrants and the latter the changes between 2000 and 2013 as a percentage of the population. Table 7 clearly shows that the vast majority of migrants come from upper-middle and low-income countries, while almost half go to high-income OECD countries (i.e., the United States and most of the EU) and almost 20 percent to upper-middle-income countries (i.e., GCC and East Asian countries).

Table 8 reveals that high-income non-OECD and OECD countries lost some importance as countries of origin while they continued to gain significance as a destination group; this development is consistent with their advances in population aging compared to all other income groups. As source countries, the low-income group gained importance while as receiving countries, they lost ground together with the upper-middle-income country group; the latter also shows much lower intragroup migration. Table 6 offers more specificity.

Table 6: Global migrant stock estimates by portability regime, by origin and destination country income group

Table 6.1a: Global Migrant Stock Estimates by Origin Country Income Group and Portability Regime, 2013 (in percent of income group)						Table 6.1b: Global Migrant Stock Estimates by Destination Country Income Group and Portability Regime, 2013 (in percent of income group)					
Origin Country Income Group	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Country Income Group	Regime I (Portability)	Regime IIa (Exportability)	Regime IIIb (No.access)	Regime IVc (Informal)	Total (in million)
High Income Non-OECD	50.7	40.2	4.3	4.8	5.1	High Income Non-OECD	5.0	41.5	7.5	0.0	21.2
High Income OECD	76.3	19.0	0.4	4.3	33.0	High Income OECD	38.3	52.7	0.0	9.0	123.7
Upper-middle Income	23.3	54.4	0.5	21.8	33.6	Upper-middle Income	14.9	25.5	40.8	18.8	31.6
Low-middle Income	20.2	58.5	8.7	12.6	104.8	Low-middle Income	10.2	67.9	1.7	20.2	47.8
Low Income	2.7	61.2	18.7	17.3	75.9	Low Income	2.8	75.0	0.7	21.4	28.1
Total (in percent)	23.3	53.2	9.4	14.0	252.3	Total (in percent)	23.3	53.2	9.4	14.0	252.3
Table 6.2a: Global Migrant Stock Estimates by Origin Country Income Group and Portability Regime, 2000 (in percent of income group)						Table 6.2b: Global Migrant Stock Estimates by Destination Country Income Group and Portability Regime, 2000 (in percent of income group)					
Origin Country Income Group	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Country Income Group	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)
High Income Non-OECD	40.4	54.3	3.5	1.8	5.5	High Income Non-OECD	7.0	47.8	28.6	16.5	10.7
High Income OECD	84.7	13.0	1.0	1.3	28.9	High Income OECD	38.9	46.3	0.0	14.9	89.1
Upper-middle Income	13.7	58.8	0.7	26.8	25.4	Upper-middle Income	20.4	35.2	30.7	13.7	17.1
Low-middle Income	14.1	62.7	4.5	18.7	77.9	Low-middle Income	6.4	68.7	1.8	23.2	44.8
Low Income	1.5	69.1	9.8	19.5	54.1	Low Income	0.9	82.4	1.1	15.5	30.1
Total (in percent)	21.9	56.3	4.9	16.9	191.8	Total (in percent)	21.9	56.3	4.9	16.9	191.8
Table 6.3a: Global Migrant Stock Estimates by Origin Country Income Group and Portability Regime, Change 2000 to 2013 (in percentage points)						Table 6.3b: Global Migrant Stock Estimates by Destination Country Income Group and Portability Regime, Change 2000 to 2013 (in percentage points)					
Origin Country Income Group	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Country Income Group	Regime I (Portability)	Regime IIa (Exportability)	Regime IIIb (No.access)	Regime IVc (Informal)	Total (in million)
High Income Non-OECD	10.3	-14.1	0.8	3.0	-0.4	High Income Non-OECD	-2.0	-6.4	-21.2	-16.5	10.5
High Income OECD	-8.4	5.9	-0.6	3.0	4.1	High Income OECD	-0.6	6.4	0.0	-5.9	34.6
Upper-middle Income	9.6	-4.4	-0.2	-5.0	8.2	Upper-middle Income	-5.5	-9.7	10.1	5.1	14.5
Low-middle Income	6.1	-4.2	4.2	-6.1	26.9	Low-middle Income	3.8	-0.8	0.0	-3.0	3.0
Low Income	1.2	-7.9	8.9	-2.2	21.8	Low Income	1.9	-7.4	-0.4	5.9	-2.1
Total (in percent)	1.4	-3.0	4.5	-2.9	60.6	Total (in percent)	1.4	-3.0	4.5	-2.9	60.6

Source: Authors' estimations.

These changes in the composition of origin and destination countries help explain why the progress in regime I was only modest. If the flow of migrants between countries with BSSAs decreases while the flow of migrants between countries without BSSAs increases, the share of migrants under the portability regime cannot rise even if the number of BSSAs increases.

Table 7: Migrants' transition matrix for country income groups 2013 (in millions)

		Destination Country Group				
		HI NOECD	HI OECD	UMI	LMI	LI
S o u r c e	HI NOECD	0.34	3.86	0.40	0.36	0.12
	HI OECD	1.16	25.08	3.48	2.26	0.41
	UMI	8.77	46.03	26.54	15.44	2.88
	LMI	1.40	22.44	1.47	1.39	0.41
	LI	8.99	16.81	13.10	10.57	22.60

Source: Authors' estimations.

Table 8: Change in migrants' transition matrix, 2013 over 2000 (in percentage points)

		Destination Countries Group					Sum
		HI NOECD	HI OECD	UMI	LMI	LI	
S o u r c e	HI NOECD	0.04	-0.15	-0.58	-0.08	-0.05	-0.82
	HI OECD	0.02	-1.48	-0.09	0.10	-0.46	-1.91
	UMI	0.86	3.78	-3.92	1.66	-1.34	1.05
	LMI	0.03	0.82	-0.46	-0.11	-0.19	0.08
	LI	2.04	1.11	-0.43	1.91	-3.03	1.60
	Sum	2.98	4.09	-5.48	3.48	-5.07	0.00

Source: Authors' estimations.

The six tables in Table 9 present more fine-grained information by region about the state of benefit portability and its change between 2000 and 2013. The basic messages on portability regimes are the same, but the distribution across regions yields some interesting observations:

- Quite a bit of heterogeneity exists on the origin side across regions and portability regimes. For example, all sending regions except NAR (i.e., Canada, Mexico, and the United States) have about equal numbers of sending migrants, while of the receiving regions, NAR is the dominant recipient, followed by the EU and MNA.
- Portability regimes are well present for migrants going to the EU and LAC (albeit at a much smaller number) but they are not present in the United States, where only a very small number of immigrants fall under the portability regime. Not surprisingly, in MNA the no access regime dominates for incoming migrants, while the significance of the portability regime for migrants is very low (accounting for 1 percent of MNA's migrant stock).
- The observed status of mobility regimes in 2013 is accentuated by the development since 2000. EAP, LAC, MNA, and NAR all recorded few migrants under the portability regime, while only ECA, EU, and AFR saw a positive change. This development is another explanation for the limited progress seen under the portability regime.

Table 9: Global migrant stock estimates by portability regime, by origin and destination region

Table 9.6a: Global Migrant Stock Estimates by Origin Region and Portability Regime, 2013 (in percent of income group)						Table 9.6b: Global Migrant Stock Estimates by Destination Region and Portability Regime, 2013 (in percent of income group)					
Origin Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)
Africa	6.5	73.1	4.3	16.1	23.6	Africa	4.5	74.2	0.8	20.4	16.9
East Asia & Pacific	7.9	71.5	9.3	11.3	39.1	East Asia & Pacific	17.8	73.0	0.3	8.9	25.2
Europe & Central Asia	19.8	64.7	0.4	15.2	38.8	Europe & Central Asia	15.5	64.9	0.0	19.6	29.3
European Union (EU27+)	88.9	8.7	0.3	2.2	35.3	European Union (EU27+)	65.1	33.0	0.0	1.9	54.0
Latin America & Caribbean	15.6	63.6	0.0	20.8	45.8	Latin America & Caribbean	39.4	47.5	0.0	13.2	9.2
Middle East & North Africa	19.5	41.8	24.6	14.2	26.1	Middle East & North Africa	1.0	23.2	55.4	20.4	42.6
North America	58.6	31.5	1.0	8.8	4.6	North America	15.7	67.9	0.0	16.4	62.6
South Asia	0.4	50.0	32.0	17.6	39.0	South Asia	0.0	78.0	0.0	22.0	12.6
Total (in percent)	23.3	53.2	9.4	14.0	252.3	Total (in percent)	23.3	53.2	9.4	14.0	252.3
Table 9.7a: Global Migrant Stock Estimates by Origin Region and Portability Regime, 2000 (in percent of income group)						Table 9.7b: Global Migrant Stock Estimates by Destination Region and Portability Regime, 2000 (in percent of income group)					
Origin Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)
Africa	3.1	70.0	3.1	23.8	20.1	Africa	1.6	70.6	1.4	26.4	17.8
East Asia & Pacific	13.6	67.3	3.6	15.5	23.1	East Asia & Pacific	20.6	63.4	0.5	15.5	15.9
Europe & Central Asia	12.1	66.8	0.9	20.2	41.7	Europe & Central Asia	7.5	72.3	0.0	20.2	31.4
European Union (EU27+)	80.6	15.5	1.0	2.9	28.9	European Union (EU27+)	60.5	29.8	0.0	9.7	37.3
Latin America & Caribbean	11.2	63.3	0.5	25.0	33.4	Latin America & Caribbean	42.0	47.0	0.0	11.0	5.9
Middle East & North Africa	24.0	44.1	17.3	14.6	15.7	Middle East & North Africa	2.7	40.5	42.1	14.7	21.6
North America	67.0	30.1	1.6	1.4	3.6	North America	21.4	59.2	0.0	19.4	48.8
South Asia	0.0	66.4	17.4	16.2	25.3	South Asia	0.0	84.4	0.0	15.6	13.2
Total (in percent)	21.9	56.3	4.9	16.9	191.8	Total (in percent)	21.9	56.3	4.9	16.9	191.8
Table 9.8a: Global Migrant Stock Estimates by Origin Region and Portability Regime, Change 2000 to 2013 (in percentage points)						Table 9.8b: Global Migrant Stock Estimates by Destination Region and Portability Regime, Change 2000 to 2013 (in percentage points)					
Origin Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)	Host Region	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total (in million)
Africa	3.4	3.1	1.2	-7.7	3.4	Africa	2.9	3.6	-0.6	-6.0	-0.9
East Asia & Pacific	-5.7	4.1	5.8	-4.3	15.9	East Asia & Pacific	-2.8	9.6	-0.2	-6.6	9.4
Europe & Central Asia	7.7	-2.1	-0.5	-5.0	-2.9	Europe & Central Asia	8.0	-7.4	0.0	-0.6	-2.1
European Union (EU27+)	8.3	-6.8	-0.7	-0.7	6.5	European Union (EU27+)	4.6	3.2	0.0	-7.8	16.6
Latin America & Caribbean	4.4	0.3	-0.5	-4.2	12.4	Latin America & Caribbean	-2.6	0.4	0.0	2.1	3.3
Middle East & North Africa	-4.5	-2.3	7.2	-0.4	10.4	Middle East & North Africa	-1.7	-17.3	13.3	5.8	21.0
North America	-8.3	1.4	-0.5	7.5	1.0	North America	-5.7	8.7	0.0	-3.0	13.8
South Asia	0.4	-16.3	14.6	1.4	13.7	South Asia	0.0	-6.4	0.0	6.4	-0.6
Total (in percent)	1.4	-3.0	4.5	-2.9	60.6	Total (in percent)	1.4	-3.0	4.5	-2.9	60.6

Source: Authors' estimations.

Table 10 and Table 11 respectively present migrants' transition matrices by region for 2013 in millions of migrants and for the change between 2000 and 2013 in percentage points of migrant shares in the individual years. A few observations stand out:

- The core migration takes place within regions (shown by the shaded diagonal values). Regional mobility is very high in most regions except NAR and LAC; the latter sends most migrants north.
- Between 2000 and 2013, the transition matrices changed. In most cases, the change was manifested in small deviations in growth and a reduction in both directions, with two exceptions: in AFR, where the reception of migrants from all regions was negative, including within AFR; and in ECA, where the intraregional transition was highly negative. In contrast, the intraregional change was strongly positive for the EU, EAP, and MNA. The latter region also experienced a strong increase of migrants from SAR.
- This regional development provides confirmation of the two key changes among the portability regimes between 2000 and 2013: the modest increase in regime I (portability) reflects the further increase in inter-EU mobility moderated, inter alia, by reductions in the interregional mobility in ECA. The increased number of migrants in MNA coming from SAR and working mostly in the GCC are responsible for the increasing prevalence of regime III (no access).

Table 10: Migrants' transition matrix by region in 2013 (in millions)

		Destination Regions							
		AFR	ECA	EU27+	EAP	LAC	MENA	NAR	SAR
Source Regions	AFR	6.01	0.07	1.63	0.19	0.07	0.75	0.67	0.00
	ECA	0.06	10.15	4.42	0.15	0.02	0.26	0.82	0.01
	EU27+	0.30	1.14	8.70	1.32	0.46	0.22	2.68	0.02
	EAP	0.04	0.15	1.40	7.31	0.11	1.91	4.48	0.49
	LAC	0.00	0.00	1.94	0.31	2.49	0.03	10.96	0.02
	MENA	0.04	0.30	2.91	0.16	0.03	6.31	0.85	0.02
	NAR	0.03	0.01	0.42	0.26	0.57	0.08	0.51	0.02
	SAR	0.08	0.02	1.33	0.71	0.01	7.56	1.58	4.42

Source: Authors' estimations.

Table 11: Migrants' transition matrix by region, change from 2000 to 2013 (in percentage points)

		Destination Regions							
		AFR	ECA	EU27+	EAP	LAC	MENA	NA	SAR
Source Regions	AFR	-1.92	-0.06	0.14	0.05	0.04	0.29	0.16	-0.13
	ECA	-0.40	-4.72	-0.16	-0.16	-0.04	-0.77	-0.05	-0.30
	EU27+	-0.12	-0.35	1.65	-0.08	-0.17	-0.38	-1.11	-0.18
	EAP	-0.07	-0.01	0.12	1.89	0.00	1.25	0.41	0.22
	LAC	-0.15	-0.19	0.60	0.00	0.59	-0.22	0.28	-0.20
	MENA	-0.28	0.08	0.04	-0.03	-0.02	2.43	0.10	-0.11
	NAR	-0.01	-0.03	-0.01	0.04	0.17	-0.01	-0.17	-0.01
	SAR	-0.08	-0.14	0.21	0.17	-0.02	2.89	0.46	-1.39

Source: Authors' estimations.

Section 5 concludes by estimating the extent to which the new BSSAs established between 2000 and 2013 contributed to the change in the distribution of the portability regimes, essentially between regime I (portability) and regime II (exportability). Two alternative scenarios are calculated to measure the change between 2000 and 2013: “Scenario BSSA 2000” estimates the portability regime distributions in both years assuming no new BSSAs were introduced. “Scenario BSSA 2013” estimates the portability regime distributions in both years assuming the BSSAs in 2013 already existed in 2000.

Table 12 summarizes the results. Both scenarios deliver a smaller change in the number of migrants under regime I than the actual estimate. This makes the largest difference of 4.50 million migrants the upper estimate of the BSSA expansion effect. The lower estimate is the difference with the 2013 scenario, amounting to 3.62 million migrants. As the number of migrants under the actual estimation increased by 16.81 million, about 25 percent of the portability regime change is due to enactment of new BSSAs, while 75 percent of the change is simply the result of a larger stock of migrants between the two years.

Table 12: Scenario estimates of the impact of BSSA introduction on regime distribution

(in million)					
	Regime I (Portability)	Regime II (Exportability)	Regime III (No.access)	Regime IV (Informal)	Total
Actual BSSA estimation	16.81	26.40	14.39	2.97	60.57
BSSA 2000 scenario estim.	12.31	30.90	14.40	2.97	60.57
BSSA 2013 scenario estim.	13.19	30.02	14.39	2.97	60.57
Diff.: Actual-BSSA 2000	4.50	-4.50	0.00	0.00	0.00
Diff.: Actual-BSSA 2013	3.62	-3.62	0.00	0.00	0.00
Diff.: BSSA 2013-2000	0.88	-0.88	0.00	0.00	0.00

Source: Authors’ estimations.

6. Conclusions and Policy Implications

The importance of cross-border portability of social benefits is increasing in parallel with the rise in the absolute number of international migrants and their share of the world population, and perhaps more importantly, the rising share of the world population working and/or retiring abroad. The share of individuals living outside their home country reached 3.4 percent of the world population in 2017 (up from 2.3 percent in 1980), or an estimated 258 million people. The share of population that has acquired benefit rights when working or retiring abroad is largely unknown but expected to be much higher. It is hypothesized to be one out of every five individuals for current workers in the EU, and perhaps lower but also increasing in regions such as Asia and northern Africa.

This paper estimates how the rising stock of migrants is distributed over four key portability regimes: those with portability through BSSAs (regime I); those with potential exportability of eligible benefits from abroad (regime II); documented workers with no access to national schemes but no contribution payment (regime III); and undocumented workers with no access to a scheme (regime IV). Estimates for 2000 and 2013 are compared.

The results indicate a modest but noticeable increase in the share of migrants under regime I, from 21.9 percent in 2000 to 23.3 percent in 2013, or a 1.4 percentage point rise. The biggest change occurred under regime III, which doubled to 9.4 percent. While workers under this regime pay no contributions and hence receive no benefits, at least their contributions are not lost, as can happen under regime II. Regime II reduced its share of migrants by 3.0 percentage points but remains the dominant scheme (accounting for 53.2 percent of migrants). The scope of regime IV reduced by 2.9 percentage points, accounting for 14.0 of all migrants in 2013. Thus overall progress can be claimed but more may need to be done to progress on benefit portability.

Measuring the share of individuals who accessed acquired rights from abroad rather than measuring the share of migrants living abroad under a BSSA might reveal more progress. Many more people have lived abroad over their lifetime than are measured at a single moment in time. And those people may have moved more often between countries with BSSAs. Longitudinal or at least comparable data about acquired and disbursed rights are not available for all countries. But even if higher success ratios were to be measured they may still indicate room for improvement, particularly for migrants from low-income countries.

Initiating more BSSAs should be pursued, but these agreements may not be the perfect solution for many reasons. Most importantly, such bilateral agreements only make sense if the sending country has a well-functioning social security scheme itself and runs a developed-enough migration corridor with the receiving country. Else, with low coverage in the sending country return workers will end up outside the scheme with no or limited access to rights acquired in the prior host country. And receiving countries typically have limited interest in investing in the resource-intensive development of a BSSA in a low migration density corridor unless historical links and/or geographic proximity are a feature.

One alternative approach is to work with receiving (typically richer) countries to instigate unilateral actions and to make eligible benefits fully portable. Such an approach could go a long way. The other complementary approach is to redesign benefits to make them more easily portable (i.e., moving toward a financial or non-financial account-based scheme). Finally, for some share of working migrants an extension of multinational private sector schemes may offer a solution.

7. References

- Avato, Johanna, Johannes Koettl, and R. Sabates-Wheeler. 2010. "Social Security Regimes, Global Estimates, and Good Practices: The Status of Social Protection for International Migrants." *World Development* 38: 455–66.
- Battistella, Graziano. 2002. "Unauthorised Migrants as Global Workers in ASEAN". Paper presented at the IUSSP Regional Population Conference on Southeast Asia's Population in Changing Asian Context held at Chulalongkorn University, Bangkok, Thailand, 10-12 June.
- Blangiardo, Gian Carlo. 2008. "The Centre Sampling Technique in Surveys on Foreign Migrants. The Balance of a Multi-Year Experience." United Nations Statistical Commission and EUROSTAT - Working Paper, 12(February), 13.
- Bryant, John. 2005. "Children of International Migrants in Indonesia, Thailand and the Philippines: A Review of Evidence and Policies." Innocenti Working Papers, 2005–5: 1–32. Consejo Interamericana para el Desarrollo Integral (CIDI). 2015. *Análisis de Convenios*

- Bilaterales y Multilaterales de Seguridad Social en Materia de Pensiones*. Segunda Reunion de los Grupos de Trabajo de la XVIII Conferencia Interamericana de Ministros de Trabajo (CIMT), Cartagena, Colombia, 28-30 de abril.
- Cruz, Armando. 2004, "Portability of Benefits Rights in Response to External and Internal Labor Mobility: The Philippine Experience", Paper presented at the International Social Security Association (ISSA), Thirteenth Regional Conference for Asia and the Pacific in Kuwait, March 8–10.
- Eurostat. 2017. Migration and migrant population statistics. http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics
- Fuchs, Michael, and Secil Pacaci-Elitok. 2014. "Portability of pensions and health care for pensioners - Joint Summary Document East Corridor (Austria, Germany vs. Turkey)." Commissioned by the World Bank – Study, 5 M Migration MGMT Initiative Phase I (P127358). European Centre for Social Welfare Policy and Research, Vienna, April.
- Genser, Bernd, and Robert Holzmann. 2018. "The Taxation of Internationally Portable Pensions: Fiscal Issues and Policy Options." In Holzmann and Piggott, eds. *The Taxation of Pensions*, Chapter 15. Cambridge, Mass.: MIT Press (in print).
- Hagen-Zanker, Jessica Elisa Mosler Vidal, and Georgina Sturge. 2017. "Social Protection, Migration and the 2030 Agenda for Sustainable Development." Briefing paper prepared for Swiss Agency for Cooperation and Development. SDC, Bern, June.
<https://www.odi.org/sites/odi.org.uk/files/resource-documents/11583.pdf>
- Hoefer, Michael, Nancy Rytina, and Bryan C. Baker. 2013. "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2012." Office of Immigration Statistics, January: 1–7.
https://doi.org/http://www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2010.pdf
- Holzmann, Robert. 2018. "The Portability of Social Benefits Across Borders." IZA -The World of Labor, in publication.
- Holzmann, Robert 2016., "Do Bilateral Social Security Agreements Deliver on the Portability of Pensions and Health Care Benefits? A Summary Policy Paper on Four Migration Corridors Between EU and Non-EU Member States", *IZA Journal of European Labor Studies* 5(17), 1-35.
- Holzmann, Robert, Michael Fuchs, Secil Pacaci-Elitok, and Pamela Dale. 2016a. "Assessing Benefit Portability for International Migrant Workers: A Review of the Austria-Turkey Bilateral Social Security Agreement." *Social Protection and Labor Discussion Paper 1602*, World Bank, Washington, D.C.
- Holzmann, Robert, Michael Fuchs, Secil Pacaci-Elitok, and Pamela Dale. 2016b. "Assessing Benefit Portability for International Migrant Workers: A Review of the Germany-Turkey Bilateral Social Security Agreement." *Social Protection and Labor Discussion Paper 1606*, World Bank, Washington, D.C.
- Holzmann, Robert, Wels Jacques, and Pamela Dale. 2016. "Assessing Benefit Portability for Migrant Workers: Lessons Learned from a Review of the Belgium-Morocco Bilateral Social Security Agreement." *Social Protection and Labor Discussion Paper 1603*, World Bank, Washington, D.C.

- Holzmann, Robert, Florence Legros, and Pamela Dale. 2016. "Assessing Benefit Portability for International Migrant Workers: A Review of the France-Morocco Bilateral Social Security Agreement." *Social Protection and Labor Discussion Paper 1604*, World Bank, Washington, D.C.
- Holzmann, Robert, and Johannes Koettl. 2015. "The Portability of Pensions, Health, and Other Social Benefits: Concepts and Issues." *CESifo Economic Studies* 61(2): 377-415.
- Holzmann, Robert, and Martin Werding. 2015. "Portability of Social Benefits: Research on a Critical Topic in Globalization." *CESifo Economic Studies*, 61(2), 1–11; Munich: CESifo. doi: 10.1093/cesifo/ifv009
- Holzmann, R., Johannes Koettl, and Taras Chernetsky. 2005. "Portability Regimes of Pension and Health Care Benefits for International Migrants: An Analysis of Issues and Good Practices", *Social Protection Discussion Paper 0519*, World Bank, Washington, D.C.
- International Labour Office. 2010. *International Labour Migration: A rights-based approach*. Geneva, ILO.
- Jacques, Wels, Nawal Bensaid, and Florence Legros. 2015. "La transportabilité des prestations de sécurité sociale en matière de retraite, de soins de santé et de minimas sociaux", revue « Hommes et Migrations - « Les migrants vieillissants », 1309, mars.
- Jandl, Michael. 2004. "The Estimation of Illegal Immigration in Europe." *Migration Studies*, 41(153):141-155.
- Legros, Florence, Wels Jacques, Nawal Bensaid, and Henri Bourrousse. 2014. *Portability of pensions and health care for pensioners: Belgium, France & Morocco*. Brussels: Université libre de Bruxelles & Paris: Université Paris-Dauphin (mimeo).
- Morehouse, Cristal, and Michael Blomfield. 2011. "Irregular Migration in Europe." Migration Policy Institute, 1-17.
http://www.humanrightsmalta.org/uploads/1/2/3/3/12339284/migration_policy_institute_irregular_migration_in_europe_2011_irregular_migration_europe_border_issues_statistics.pdf.
- Passel, Jeffrey. 2006. "The Size and Characteristics of the Unauthorized Migrant Population in the U.S." Pew Hispanic Center.
- Passel, Jeffrey S., and Cohn D'Vera. "Unauthorized Immigrant Totals Rise in 7 States, Fall in 14. Decline in Those From Mexico Fuels Most State Decreases." Pew Research Center, 54.
- Spiegel, Bernhard. 2010. "Analysis of Member State's Bilateral Agreements on Social Security with Third Countries." Report commissioned by the European Commission, Employment, Social Affairs, and Equal Opportunity DG, Brussels, December.
- South, Andy. 2011. rworldmap: A New R package for Mapping Global Data. *The R Journal*, 3: 35–43.
- Strban, Grega. 2009. "The existing bi-and multilateral social security instruments binding EU States and non-EU States." In *The Social Security Co-Ordination Between the EU and Non-EU Countries*, ed. Pieters, Danny and Paul Schoukens, pp. 85–113. Intersentia, Antwerpen – Oxford.
- Taha, Nurulsyahirah, Karin Astrid Siegmann, and Mahmood Messkoup. 2015. "How portable is social security for migrant workers? A review of literature." *International Social Security Review* 68 (1): 95-118.

- United Nations - Department of Economic and Social Affairs. 2017. "Trends in International Migration, 2017". Population Facts No. 2017/5, December.
<http://www.un.org/en/development/desa/population/migration/publications/populationfacts/docs/MigrationPopFacts20175.pdf>
- Vogel, Dita. 2015. "Estimate of Irregular Foreign Residents in Germany (2014)." *Database Irregular Migr Updat Rep*, July. <http://irregular-migration.net>.
- Warnes, Tony A.M. 2009. "International Retirement Migration." In P. Uhlenberg (ed.), *International Handbook of Population Aging*, Chapter 15, 341-363. New York et al.: Springer.
- World Bank. 2016. *Migration and Remittances Factbook 2016, 3rd edition*. Washington, DC: World Bank. doi:10.1596/978-1-4648-0319-2. License: Creative Commons Attribution CC BY 3.0 IGO