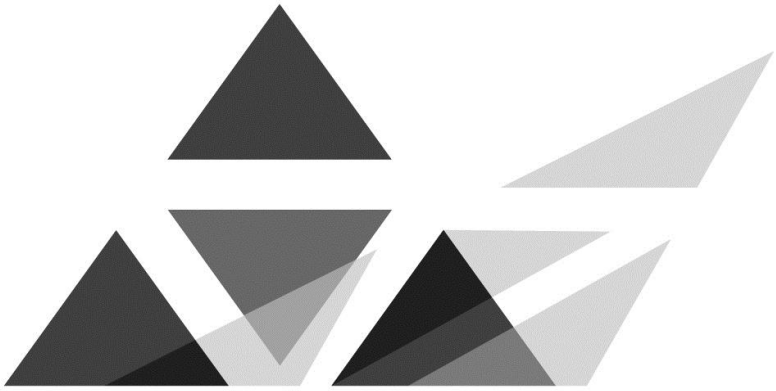

PRISM

Policy Research on International Services and Manufacturing

Is the Brain Drain really reversing? New evidence.

Dr Thomas Höppli

Economic Research Analyst at SAIPA

(thomas.hoeppli@gmail.com)

School of Economics
University of Cape Town
PRISM Working Paper Series

Number 1/2014

Abstract

This paper analyses the extent of the brain drain from South Africa since the turn of the century. Recent estimates by Adcorp suggest that the brain drain has reversed and that numerous highly-skilled South Africans have returned from overseas since the onset of the global financial crisis in 2008. New empirical evidence is presented in this paper to substantiate the actual brain drain (or reversal thereof) over the past few years. Actual immigration and/or census data as well as estimates based on immigration statistics are used in an effort to determine the magnitude of the brain drain. The findings, based on empirical data from 23 emigration destinations, clearly indicate that it is unlikely that a significant reversal of the brain drain has occurred since 2008. The results rather indicate that the brain drain has continued, albeit at a lower rate from 2010 onwards.

Keywords: *South Africa, migration, brain drain, brain gain, emigration, skills shortage, immigration of highly-skilled professionals*

Recommended citation

Höppli, T. (2014) Is the Brain Drain really reversing? New evidence. Policy Research on International Services and Manufacturing Working Paper 1. Cape Town: PRISM, University of Cape Town.

ISBN: 978-0-7992-2513-6

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1. Introduction

Recent media reports suggest that the South African brain drain is reversing and that highly-skilled South Africans have been returning in large numbers since the onset of the global financial crisis in 2008. Examples of these news reports include articles proclaiming that "*Expertise flows back into SA as brain drain is reversed*" (Business Day live; Hedley, 2014), "*Returning expatriates – South Africans return from abroad*" (Financial Mail; Bisseker, 2014) or "*Brain gain as expats come home*" (IOL News; Nicholson, 2014). Even the SABC (2014) reported in mid-January that the "*Brain drain shows signs of reverse*".

These media reports are largely based on recent estimates by Adcorp (2014). According to Adcorp, there has been a net return migration of 359,000 highly-skilled South Africans since the beginning of the global financial crisis in 2008. The announcement that such a large number of highly-skilled South Africans have returned from work assignments abroad is most encouraging, particularly given the skills shortage from which the country has been suffering continuously over the past years. The emigration of highly skilled South Africans over the past decades has led to a brain drain that has further aggravated the persistent skills shortage in South Africa which has been caused by several reasons (see Höppli, 2014).

The persistence of this shortage of skills has had a detrimental economic effect and still continues to hold back South Africa's development goals. Business leaders have repeatedly highlighted the unavailability of a skilled workforce in South Africa as a key growth constraint (see Grant Thornton, 2013). In combination with other constraints, the skills shortage has thwarted significant economic growth, which in turn has remained below levels that would facilitate large-scale job creation. The recent media reports about a reversal of the brain drain are therefore very good news for the South African economy as it means that the country now gains more of the much-needed skills than it loses.

However, a closer look at the data casts some doubts on the reliability and accuracy of Adcorp's estimates. In fact, even Adcorp labour economist Loane Sharp is cited to concede that the estimates are based on some "heroic assumptions" (Bisseker, 2014). A net return migration of 359,000 highly-skilled South Africans seems indeed very high, even more so given that the total number of South Africans residing overseas (i.e. not only highly-skilled persons) was estimated at 758,000 in 2010 (Höppli & Kaplan, 2012). The recent estimates imply that roughly one out of two South African emigrants has returned since the beginning of the global financial crisis in 2008.

This paper examines the estimates made by Adcorp (2014) and presents an alternative approach to quantify the extent of emigration from South Africa in an effort to assess the brain drain or reversal thereof. Based on actual immigration and census data as well as estimates based on migration statistics, it is possible to track the development of the number of South Africans who have emigrated over time. A total of 23 destination countries will be analysed, thereby covering the bulk of emigration destinations. This empirical approach provides estimates of the magnitude of the brain drain since the turn of the century that contradict earlier estimates.

2. Methodology

Reliable and up-to-date migration data is generally hard to come by. This is particularly true for South Africa. Statistics South Africa (Stats SA) ceased to collect emigration statistics in February 2004, following the Immigration Act No. 13 of 2002. Moreover, the statistics collected prior to 2004 were incomplete as only self-declared emigrants were captured. The official statistics thus understated the true number of emigrants significantly. Kaplan, Meyer & Brown (2000a) showed that the number of skilled emigrants from South Africa was in fact about 3.2 times higher than official Stats SA figures indicated.

In view of the lack of official South African statistics on emigration and return migration, any research on the South African brain drain necessarily has to rely on other data sources and/or estimates to determine the approximate extent of immigration to and emigration from South Africa. The approach chosen by Adcorp to estimate the net number of high-skilled immigrants (immigrants minus emigrants) is based on wage data for high-skilled workers in South Africa.[1]

Adcorp's recruitment subsidiaries that specialise in the placement of highly-skilled staff (defined for that purpose as staff earning more than R400,000 per annum in 2013) provided the data basis to estimate the net number of return migrants since 2008. The supply of *foreign* high-skilled workers is assumed to be negligible due to strict immigration rules that were adopted by the Department of Home Affairs in 2002, and further tightened in 2008 and 2010. At the same time, the demand for high-skilled workers in South Africa is assumed to have remained 'relatively stable' over the past decade. This assumption is explained by the following reasons:

(1) A persistent state of excess demand for high-skilled workers in the local labour market, as evidenced by a consistent shortage of high-skilled workers of around 829,000 unfilled vacancies.

(2) A negligible and almost constant unemployment rate for high-skilled workers of about 0.4%, compared to the significantly higher unemployment rate of the whole workforce.

The underlying assumption of Adcorp's estimates is thus that the demand for high-skilled workers has remained relatively stable and that the local skills shortage could not be eased through foreign high-skilled workers. Based on this set of assumptions, Adcorp estimated the change in supply of high-skilled workers using the (real) wage rate of high-skilled workers. Adcorp's average real wage figures for high-skilled workers show a decline of 23.0% since the onset of the global financial crisis in 2008. Adcorp (2014) concludes that: "This decline is consistent with an increased supply of 359,000 additional workers, i.e. a net return of 359,000 South Africans who were on work assignments abroad." (p. 3)

This paper relies on an alternative approach to estimate the extent of the brain drain (or the reversal thereof). As official South African statistics on emigrants and return migrants are not available, we use data on migrants from South Africa that was recorded by the destination countries. After all, a migration flow always affects two countries: when persons leave a country, that country usually records them as emigrants, while the country they move to (destination country) records those persons as immigrants. As South Africa ceased to record emigrants, the migration flows of South Africans are only recorded in one of those two countries. The fo-

[1] See Adcorp (2014) for more details on the methodology used for their estimate.

cus will thus necessarily be put on the data provided by the destination countries of South African emigrants.

The use of destination country data is in fact even recommended for research on migration as it is generally more accurate and reliable than source country data for the following three reasons (see Kaplan, Meyer & Brown, 2000b, as well as Höppli, 2010). *Firstly*, emigrants often do not declare themselves when they leave their country of origin, which makes it virtually impossible for authorities to accurately track the number of persons who emigrate. Some persons may in fact leave with the intention of returning after a few months and are thus not leaving with the intention of staying overseas permanently. *Secondly*, most emigrants from South Africa travel to their destination country by air. Entering a foreign country through an airport illegally is almost impossible, which means that virtually all immigrants from South Africa can be expected to be recorded in the destination country. *Thirdly*, it is very unlikely that illegal immigrants will be appointed to highly skilled formal positions. Highly skilled migrants – the focus in this paper and the cause of the brain drain – can therefore be expected to be in the destination country legally and to be recorded.

In practice, national data on migration *flows* is often inaccurate and unreliable. As a consequence, researchers often rather rely on stock data to analyse the migration between two countries (i.e. the total number of persons from a specific country of origin who are present in the destination country at a particular point in time – often at the time of a national census). The use of stock data instead of flow data has indeed some economic and statistical reasons. For instance, it prevents problems of endogeneity of certain variables and achieves better validity as stock data is generally more accurate and reliable (Docquier & Marfouk, 2006).

Due to the lack of South African data and the disadvantages of actual flow data, this paper uses stock data published by the statistical offices of the destination countries with significant numbers of South African immigrants. Most of these countries carry out censuses in regular intervals, which include the number of persons by their origin, or even publish estimates annually of the number of persons that are present. As the quality of immigration or census data is generally better than that of emigration data, it is safe to assume that the data recorded by the local statistical offices represents a fairly true picture of the net number of persons who have immigrated from South Africa.

It is important to keep in mind that numerous South Africans are dual nationals. A focus on South African immigrants in a destination country would therefore not take into account that a person from South Africa who holds a passport from that particular country will not be registered as a South African immigrant, but rather as a local return migrant. The reported numbers of South African immigrants are therefore likely to underestimate the true number of persons who immigrated from South Africa. To avoid this problem, the following figures are based on the concept of ‘place of birth’ instead of ‘nationality’. The figures thus include all persons who were born in South Africa and who have left the country at some stage, including for example South African dual nationals who immigrated and settled in the UK as British nationals.

3. South African Born Persons Overseas

3.1. Traditional Immigration Countries

As a first step, the traditional English speaking immigration countries United Kingdom, Australia, New Zealand, Canada and the United States are scrutinised. Kaplan, Meyer & Brown (2000b) established that these five countries absorb the bulk of emigrants from South Africa,

namely about 75%. With the Stats SA figures at their disposal, the authors confirmed that the UK, Australia, New Zealand, Canada and the United States accounted for some 79% of the total emigration before 1994 and 71% after 1994.

The popularity of these destination countries is in line with migration theory. The five countries not only share a common language with South Africa but also have historical and cultural similarities. This makes it much easier for South African immigrants to establish themselves in the labour market and to integrate into the local society than in other, non-English speaking countries. At the same time, there has been a considerable demand for skilled professionals in these five countries, which has added to their appeal as emigration destinations.

The most recent brain drain database of the World Bank (2004)[2] corroborates the popularity of these five English speaking countries. Over 90% of all immigrants from South Africa in the 30 OECD countries at the time (2000) resided in one of these five countries. In terms of skills, the results are even more biased: over 95% of the emigrants from South Africa with a tertiary education were to be found in one of these five countries.

The inclusion of these five destination countries is therefore indispensable when assessing the brain drain from South Africa. Not only have these countries absorbed a high absolute number of emigrants from South Africa, but these emigrants also tend to be highly skilled. Rather strict immigration laws in these countries that favour highly-skilled immigration have contributed to this bias in the skills composition of their immigrants. Canada, Australia and New Zealand, for example, use point systems to recruit highly skilled workers that their local economies need; and the United Kingdom introduced such a system in 2002 (OECD, 2005). Similarly, immigration laws in the USA have traditionally caused a positive selection of migrants in terms of their education (Massey et al, 1998).

The skills composition of the immigrants from South Africa in those five countries confirms that emigrants from South Africa are mostly highly-skilled (persons with a tertiary education; see (Figure 1), causing a brain drain from South Africa to those countries.

As

[2] Migration statistics are often published with large time delays, especially when it comes to internationally comparable data. Internationally comparable data on skills levels of migrants is generally scarce and only published with substantial lags after census data is published.

Figure 1 illustrates, immigrants from South Africa generally have a high education level in these five countries. In Canada and the United States, over 80% of the immigrants from South Africa have some tertiary education, while their share in Australia exceeds 70% and is roughly two thirds in New Zealand. The primary reason for this high education level is that these countries have immigration laws that favour highly skilled immigrants, while making immigration for unskilled persons more difficult.

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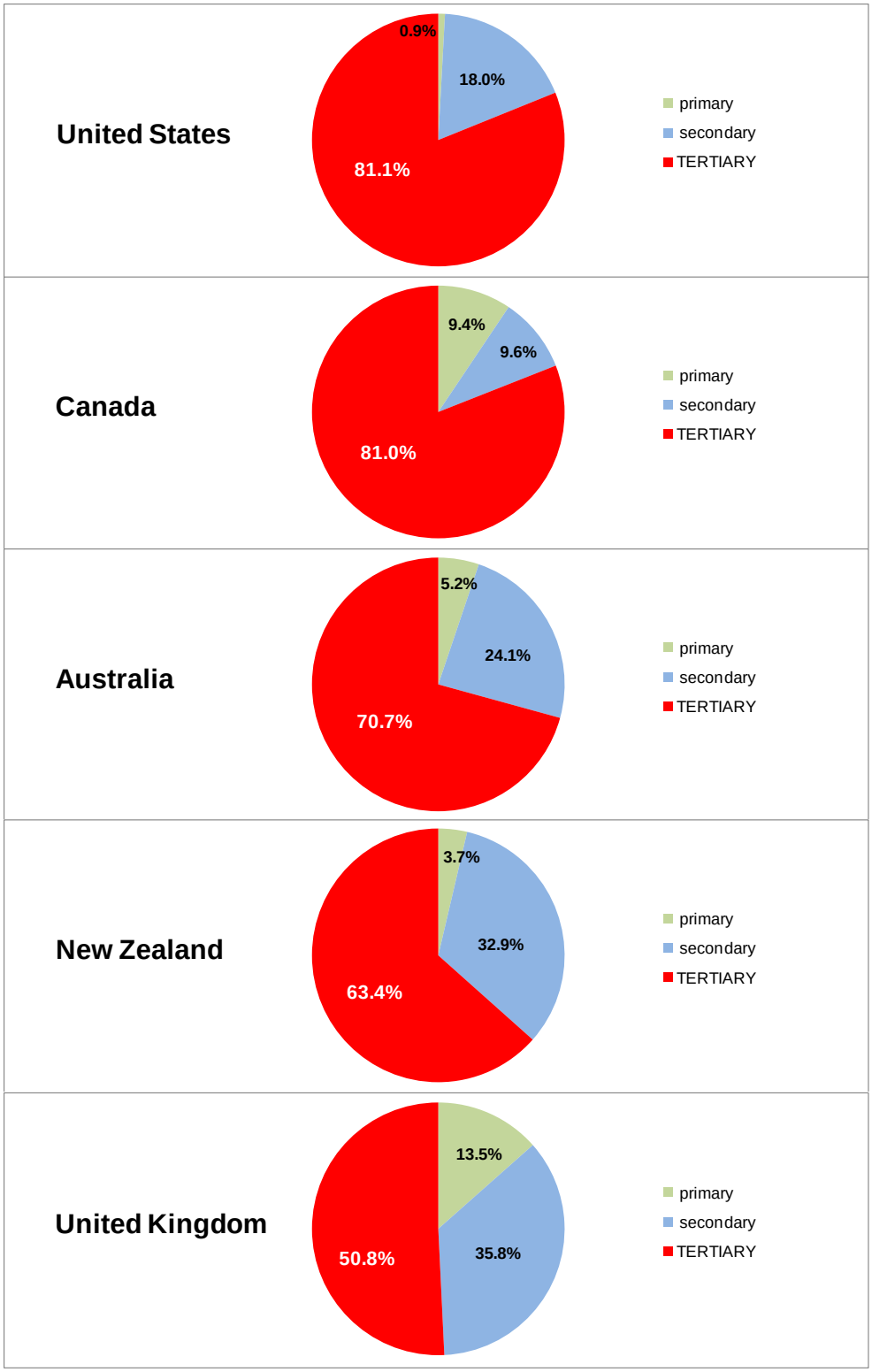
Figure 1: Skills Composition in Traditional Immigration Countries



Source: own calculations, data from World Bank (2004).

The fact that the UK – the country with the largest South African born population – has a lower share of immigrants from South Africa with a tertiary education (just over 50%) can in part be explained by the fact that a considerable number of South Africans hold dual citizenship. For those emigrants, the skills level does obviously not constitute a barrier to immigrating and settling in the UK. Moreover, the migration and subsequent job search may be facilitated by family ties and existing social networks.

The World Bank brain drain database further reveals that the entire emigration from South Africa was indeed biased towards skilled people: Some 63% of the recorded immigrants in the OECD had some tertiary education and another 27% some secondary education. As illustrated in Figure 1, the share of emigrants from South Africa with a secondary or tertiary education is even higher in the five English speaking countries than in the rest of the OECD countries. The data also shows that these five countries absorbed over 90% of all the South African born emigrants in the OECD at that time, and that they were the destination for over 95% of all the emigrants with a tertiary education.

The growth in the number of South African born immigrants in these five countries is shown in Figure 2. The figures reported by the respective statistical offices are either census data or official estimates. All the figures are based on the concept of 'birthplace', which includes dual nationals. This is particularly important in the case of the UK as a not insignificant number of South Africans citizens hold British citizenship. Such emigrants would obviously not be included if the concept of 'citizenship' were to be used instead.

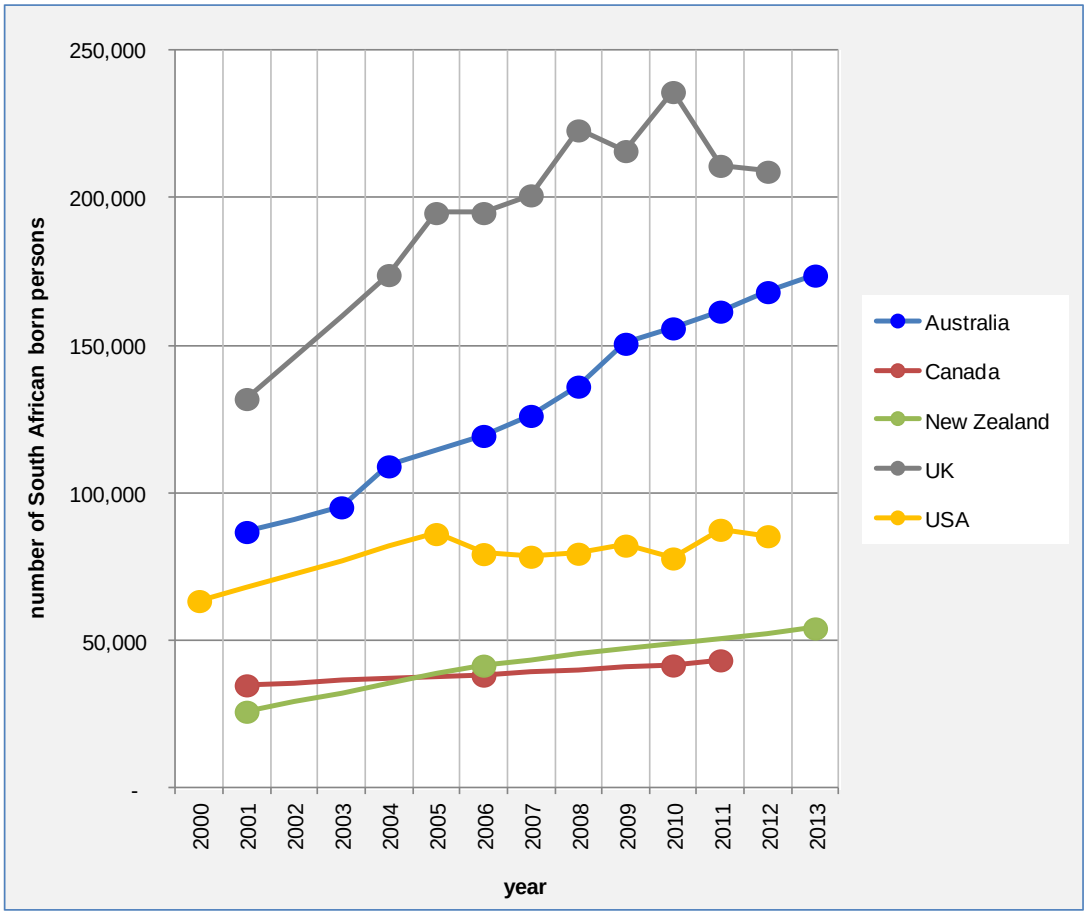
The number of South African born persons in the USA, which is known for strict immigration laws, has vacillated between 80,000 and 90,000 persons since 2005. In Australia, Canada and New Zealand, the number of South African born persons has been gradually increasing, even in the wake of the global financial and economic crisis that started in 2008.

The UK is the only one of the five countries where a noticeable decrease in the number of South African born persons was recorded, especially after 2010, following a significant increase in that year. The number of South African born persons decreased by about 27,000 between 2010 and 2012. However, it is worth noting again that the UK has the lowest average skills level of immigrants from South African among these five countries (see Figure 1).

Adding up the numbers of South African born persons in these five countries, as done in

Figure 3 below, provides an even clearer picture. The total number of South African born persons in these countries, which have traditionally been the destination of the majority of the skilled emigrants from South Africa (brain drain), has in fact seen a gradual *increase* over time. However, the continuous increase observed over the first decade of the century has slowed down, and the total number of South African born immigrants has remained relatively stable at a level of roughly 560,000 persons from 2010 onwards.

Figure 2: Growth of South African Born Population in Traditional Immigration Countries



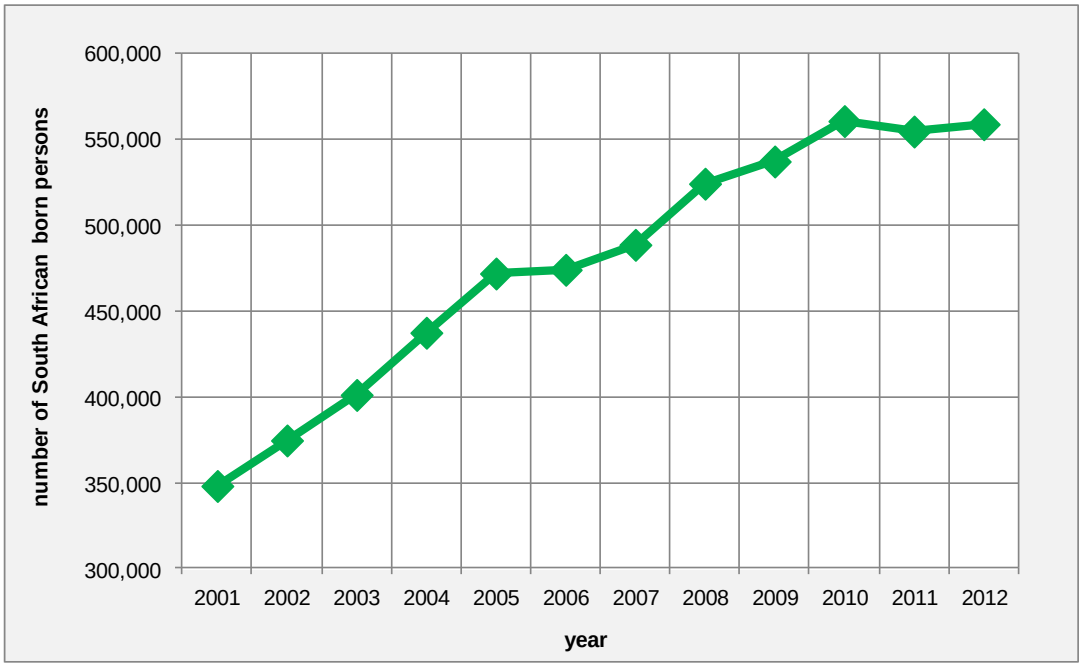
Source: own representation, data from Australian Bureau of Statistics, Statistics Canada, Statistics New Zealand, Office for National Statistics (UK) and U.S. Census Bureau.

Note: Official data reported by the respective statistical office is marked by a round filled circle. The number of South African born persons in years without census data or other official estimates was estimated using a linear extrapolation between the last known official data point and the next official data point (e.g. the next census data). Linear extrapolations are illustrated by a straight line without a round filled circle.

Nonetheless, since the onset of the global financial crisis in 2008, the stock has grown by about 35,000 persons.

Figure 3 confirms that in these major immigration countries, which presumably account for the largest brain drain from South Africa, no significant reduction in the immigrant stock can be noted. The data does therefore not provide any empirical evidence for a sizeable brain drain reversal back to South Africa. The only good news in view of the persistent skills shortage in South Africa is that the brain drain seems to have slowed down (as indicated by the stagnating number of South African born persons since 2010).

Figure 3: Growth of Total South African Born Population in Traditional Immigration Countries



Source: see Figure 2

Note: Data for the number of South African born persons in Canada in 2012 were not yet available at the time of writing this article. Between 2001 and 2011, the South African born population in Canada had gradually increased by an average of 2.2% per annum. Using a conservative estimate, it was assumed that the population did not grow in 2012 at all (i.e. that the number of South African born persons remained constant after 2011).

3.2. New Popular Destination

In recent years, the United Arab Emirates (UAE) have become a popular destination for South African emigrants. Dubai and Abu Dhabi are two of the places in the UAE that have attracted sizable numbers of South Africans. However, in contrast to the five destinations considered in section 3.1, which primarily attract skilled immigrants (and also have corresponding immigration laws that favour skilled immigrants), the UAE has attracted large numbers of skilled *and* unskilled immigrants from all over the world as their economy requires large numbers of both low- and highly-skilled labour. The share of non-nationals is therefore exceptionally high in the UAE (88.5% in 2010 according to figures of the UAE National Bureau of Statistics, 2010).

The actual number of South Africans in the UAE is unknown. Neither their statistical offices nor their census data provide data on the number of South Africans residing in the UAE. Estimates have put the number of South Africans somewhere between 40,000 and 100,000 (see for example Gerardy, 2008, or sagoodnews, 2008). What is known though is the total number of immigrants of all nationalities in the UAE. According to the United Nations (2013), the total stock of immigrants in the UAE roughly tripled between 2000 and 2010, and continued to increase by about 7% between 2010 and 2013.

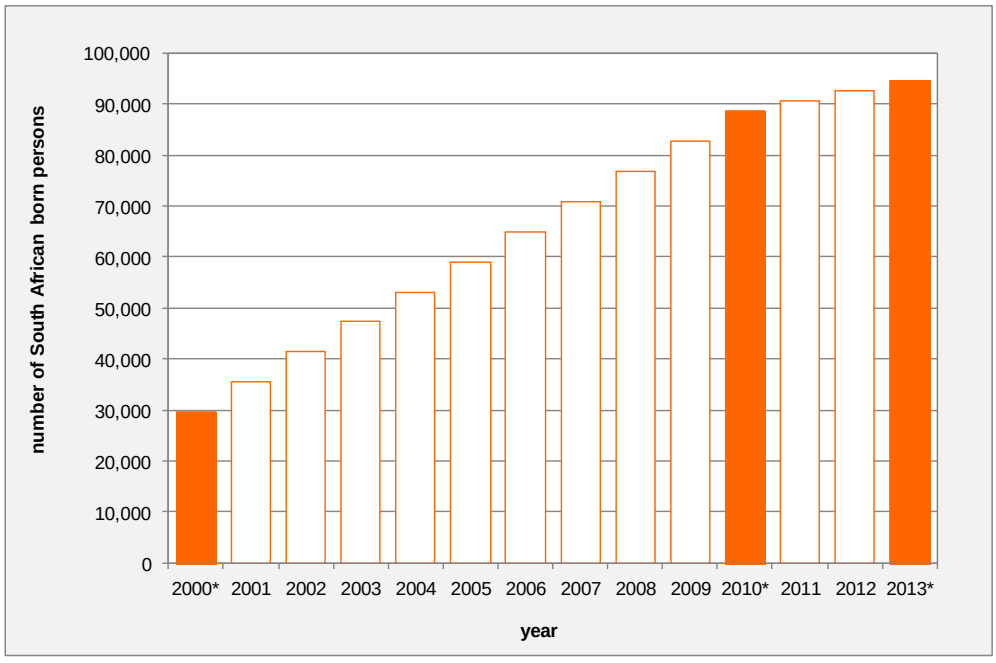
Phampi (2013) produced a rough distribution of the population in the UAE by nationality for 2010/11. These figures show that people from India, Pakistan, the Philippines and Bangladesh – with immigrant stocks of at least half a million each – form the largest immigrant populations

in the UAE. By comparison, South Africans only make up a small share of 1.2% of the foreign population according to the population breakdown provided by Phampi (2013).

The share of South Africans among the foreign population may have varied over time. There is, however, no conclusive information available on whether this share has increased or decreased over time. The global financial and economic crisis, which affected the UAE economy and its real estate market considerably, has undeniably had an impact on immigration and return migration patterns. Yet, without solid data on the skills composition of South African immigrants, it is virtually impossible to assess if the crisis positively or negatively affected migration to and from South Africa, and especially how it affected skilled migration flows.

The development of the actual number of South Africans in the UAE as well as their skills composition is unknown. What is known for a fact is that the total number of foreigners in the UAE has gradually increased since the turn of the century, and that it has grown by another 7% between 2010 and 2013. There is no evidence that the number of South Africans has *de*creased drastically, while simultaneously the overall number of immigrants has *in*creased. It is therefore reasonable to assume that the number of South Africans has increased to some extent too, irrespective of whether their relative share among the immigrant population in the UAE has increased or decreased.

Figure 4: Estimated Number of South Africans in the United Arab Emirates



Source: Own estimates, using data from the United Nations (2013) and Phampi (2013).

Note: The United Nations (2013) provided figures for the total immigrant stocks in 2000, 2010 and 2013 (all nationalities). The estimated numbers of South Africans for these years (marked by an asterisk *) are 1.2% of the total stock of immigrants, in line with the relative share of South Africans based on the figures provided by Phampi (2013). The estimates for these three years are highlighted by orange bars. The number of South Africans between these years was calculated using a linear extrapolation (indicated by bars with an orange border, but no fill).

Given the lack of official migration or census data, the development of the number of South Africans is approximated, assuming that South Africans have represented a constant share of the immigrant stocks reported by the United Nations (2013). The estimated numbers of South Africans in the UAE are illustrated in Figure 4. Their numbers are predicted to have increased over time, in line with the overall increase in the number of foreigners in the UAE. In terms of their magnitude, these approximated numbers are within the range of estimates for the total number of South Africans in the UAE of other authors.

These estimates suggest that similar to the number of South Africans in the traditional five immigration countries (see Section 3.1), there are no indications that the number of South Africans in the UAE has decreased significantly, which would be the case if a large number of highly skilled persons had returned to South Africa.

The data from these six major immigration countries in Section 3.1 do not provide any sound empirical evidence to confirm the reports of a 'reversal' of the brain drain. The only positive news is that similar to the findings for the five traditional immigration countries, it seems that the growth in the stock of South Africans in the UAE has slowed down after 2010.

3.3. Other Emigration Destinations

South Africans have settled in a number of other countries, in addition to the five English speaking countries and the UAE. Especially younger South Africans have increasingly gone overseas to teach English (e.g. to South Korea). However, this form of migration is presumably of a more temporary nature in most cases. The emigration (and subsequent return migration) of South Africans to countries in the European Union (EU) as more and more countries joined the EU has received increased attention too, particularly given that a number of South Africans hold citizenship of these countries.

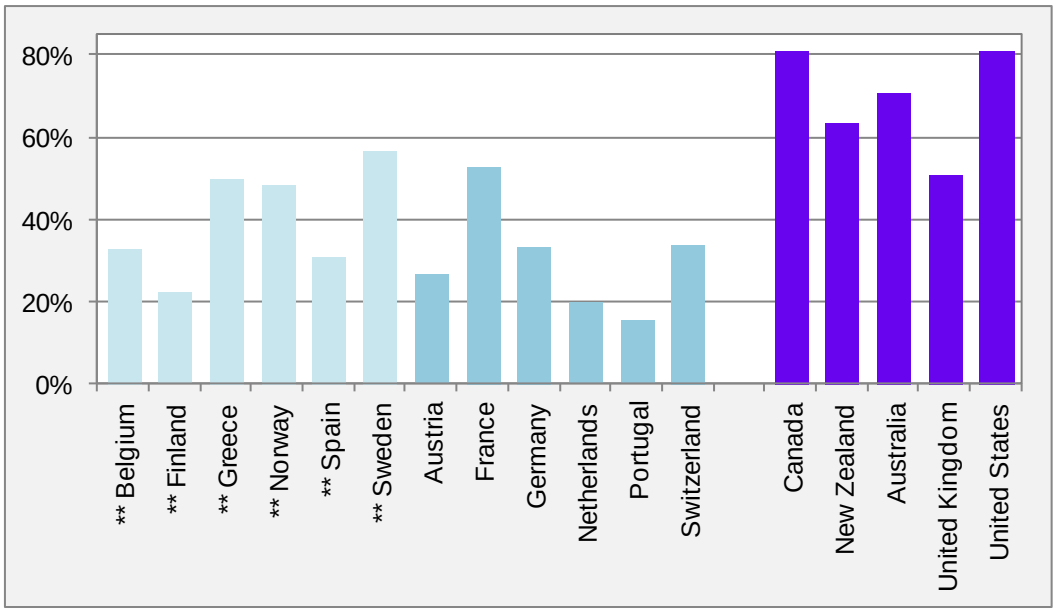
Greece and Portugal are two examples, both of which were traditionally rather poor countries. As Greek or Portuguese citizenship allows South African dual nationals to settle and work anywhere in the European Union, it can be expected that many emigrants (highly-skilled emigrants in particular) have rather sought opportunities in more advanced economies within the EU. One obvious destination for South African dual nationals is the UK (included in Section 3.1), which on top of promising higher salaries than Portugal or Greece also shares historical and cultural ties with South Africa, and most importantly English as a common language.

The hypothesis is therefore put forward that the immigrant population from South Africa in the countries considered in this sub-section is not as qualified, on average, as the immigrant population of roughly 560,000 South African born immigrants in the five countries considered in Section 3.1. The immigration laws in those five countries clearly favour highly skilled immigration. By contrast, for dual citizens of some European country, the skills level is no formal restriction when emigrating to any country that is part of the European Union. The only potential restriction is that the local labour market in some countries (e.g. the UK, Germany or Switzerland) may not provide enough opportunities for low-skilled immigrants.

Looking at the most recent internationally comparable migration data by skills level, this hypothesis is confirmed. As illustrated in Figure 5, the skills level (percentage of immigrants with a tertiary education) in the five English speaking countries considered above is markedly higher, on average, than in the other OECD countries. It is worth reiterating that these five coun-

tries absorbed over 90% of the whole South African born immigration population in the OECD countries in 2000 and over 95% of the skilled emigrants from South Africa.

Figure 5: Skilled South African born Immigrants in Selected Designation Countries (Persons with a Tertiary Education in % of Total)



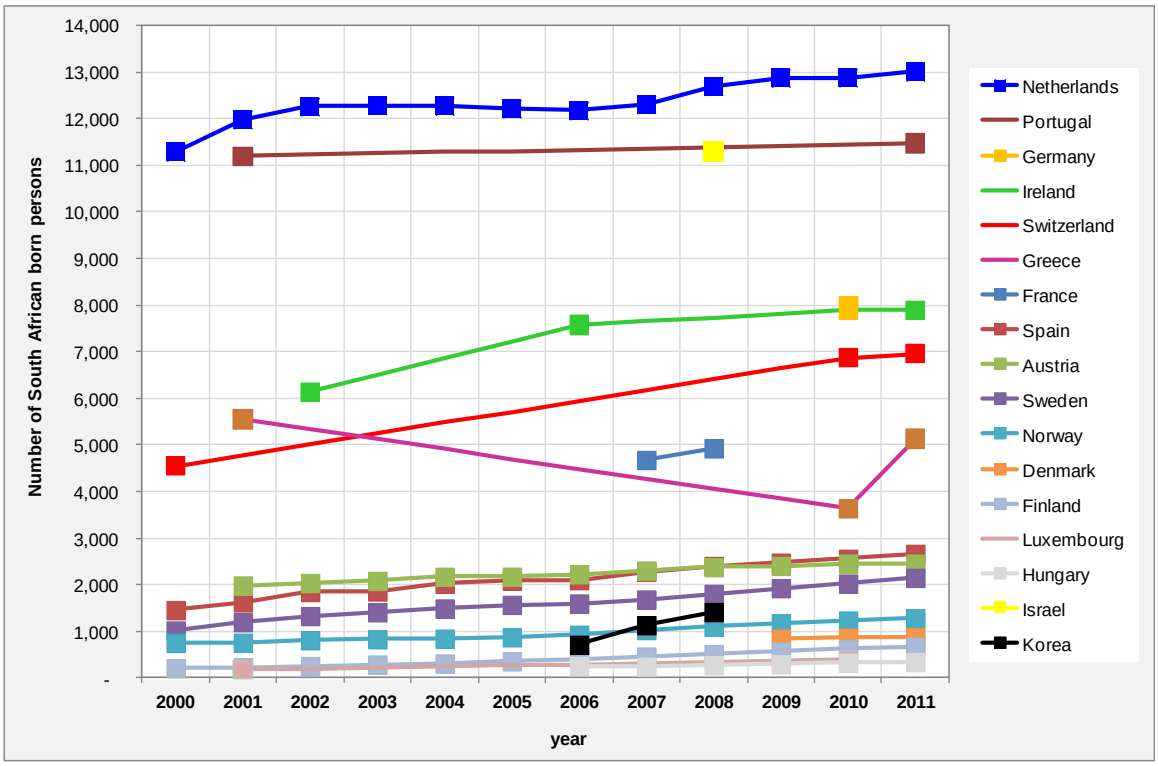
Source: own calculations, data from the World Bank (2003).

Note: The countries marked with two asterisks (**) had a total stock of South African born immigrants of less than 1,000 in the year 2000. The percentage indications should therefore be interpreted with care.

A closer look at the number of South African born persons recently recorded in the other OECD counties reveals that the largest South African born expatriate population can be found in the Netherlands. According to the OECD (2014), their number has increased from 11,286 in 2000 to 13,008 persons in 2011 (see Figure 6). The World Bank data suggests a rather low education level of those persons in the Netherlands: only 19.5% of the South African born immigrants in 2000 had a tertiary education (see Figure 5). The next largest expatriate population resides in Portugal. Their number has slightly increased from 2001 to 2011. Only 15.1% of the South African born immigrants in 2000 had some kind of a tertiary education. In fact, the Netherlands and Portugal have the lowest share of South African born immigrants with a tertiary education of all the countries presented in Figure 5.

Israel comes third with 11,290 immigrants born in South Africa, according to their latest census in 2008, followed by Germany with a South African born population of 8,000. It is remarkable that the number of South African born immigrants in Ireland, which was hit hard by the global financial and economic crisis, has actually increased. The OECD (2014) reports an increase from 6,137 in 2002 to 7,576 in 2006 and to 7,892 in 2011 in Ireland. The respective increase in Switzerland follows a similar pattern to that. One marked exception to the increasing trend observed in most countries is Greece. The South African born population in Greece decreased from 5,546 in 2001 to 3,632 in 2010. However, their number had *in*creased again to 5,129 by 2011.

Figure 6: Stock of South African born Population in Other OECD Countries



Source: OECD (2014), CBS (2014), Koehler (2008)

Note: Actual data on the number of South African born persons in the individual countries is marked by a filled square. For years without official data, linear extrapolation between the last known data point and the next known official data point were used. The corresponding estimates are indicated by a straight line without a square. Israel's last two censuses date back to 2008 and 1995. The data for (South) Korea are based on the number of E-2 visa holders presented by Koehler (2008).

The OECD (2014) database provides comparable statistics on the number of South African born immigrants since 2000. As Figure 6 highlights, these numbers have been gradually increasing in almost every one of these countries up to the latest reported year (2011). In view of this increase, even after 2008, a conservative assumption for the years after the last reported data (i.e. for 2012 and 2013) is that the immigrant stock remained constant after the last reported year. An analogous assumption was made for the years before official data is available.

Based on these assumptions, it is possible to roughly estimate the development of the total stock of South African born persons in these other countries since 2000. The estimates reveal a similar pattern to the ones obtained for the five English speaking countries (Section 3.1) and for the UAE (Section 0). The total number of South African born immigrants has continuously increased from roughly 70,000 persons in 2000 to about 80,000 persons in 2011 (and for lack of more recent data is conservatively assumed to have remained constant thereafter).

4. Reversal or Continuation of Brain Drain?

This paper presented official figures and estimates for the total number of South African born persons (emigrants) in 23 destination countries since the turn of the century. The countries analysed include the five traditional immigration countries Canada, the United States, New Zealand, Australia and the UK (see Section 3.1), the United Arab Emirates (see Section 0) as well as 17 other OECD countries for which sufficient data was available, including popular emigration destinations such as the Netherlands, Portugal, Ireland, Greece and South Korea (see Section 3.3).

The five traditional immigration countries absorb the bulk of emigrants from South Africa (some 560,000 South African born persons were recorded there in 2012) and arguably also absorb the largest share of the highly skilled emigrants. These countries are therefore critical in terms of the brain drain, which came about through the emigration of highly-skilled people who emigrated from South Africa to these countries. However, as illustrated in

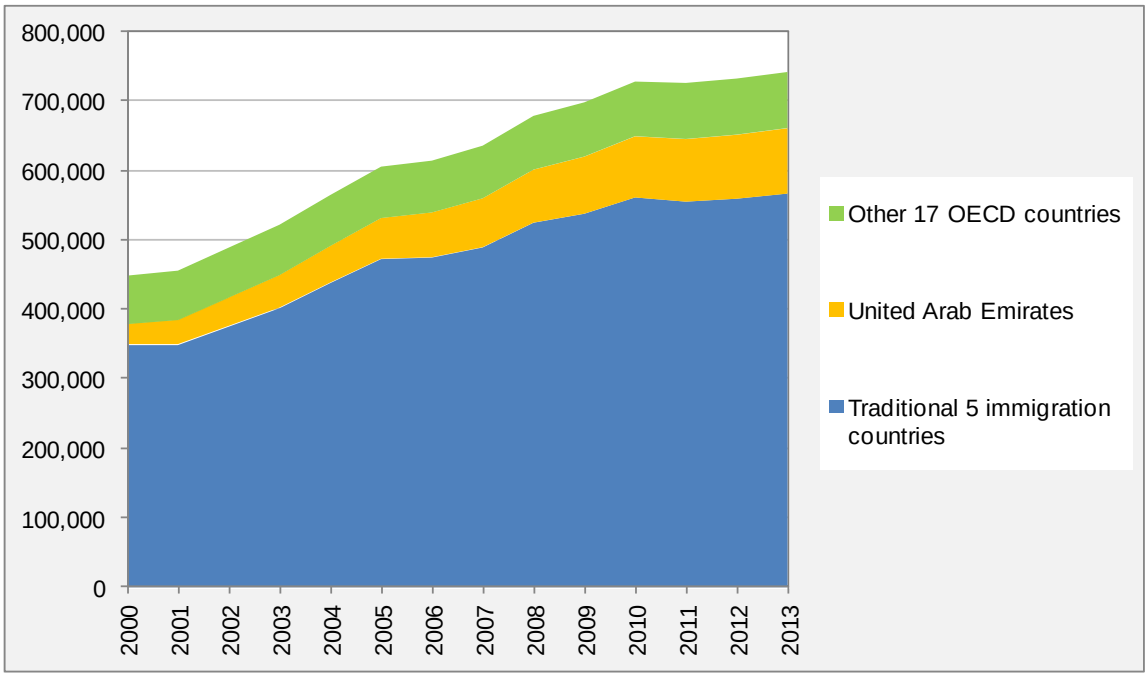
Figure 3, the total number of South African born immigrants has gradually increased in these five countries from the beginning of the century until about 2010. Their total number stagnated in 2011 and 2012 without however declining significantly, which would be an indication that the brain drain is indeed reversing. In the two countries that have already published figures for 2013, namely Australia and New Zealand, the number of South African born immigrants has in fact further increased.

The United Arab Emirates (UAE) do not publish census or other immigration data by nationality or country of birth. Recent figures indicate that the total number of non-nationals in the UAE has been on an increasing trend, even following the global financial and economic crisis. There is no sound evidence that the number of South Africans in the UAE has significantly decreased, while the overall number of immigrants has increased. The number of South Africans (including both low- and highly skilled persons) is indeed estimated to have increased by over 6,000 persons between 2010 and 2013. A large-scale brain drain reversal from the UAE since 2008 is therefore unlikely, even less so as the skills composition of South Africans in the UAE is presumably not as biased towards highly skilled people as it is in the traditional five immigration countries. The same applies to South African born persons in the other OECD countries, whose numbers have not shown any clear signs of a significant decrease either.

Figure 7 summarises and adds up the officially reported stocks and estimates of the total numbers of South African born persons in the 23 major migration destinations countries included in this paper. It becomes evident that the total stock of South African born persons living overseas has *increased* continuously up until 2010 at an average rate of approximately 5%. Growth subsided from 2010 onwards, with an average annual growth of a mere 0.6% – a growth rate that is markedly lower than in the years before 2010, but still positive. Figure 7 thus empirically confirms that the cumulative number of emigrants from South Africa has not significantly reduced since the onset of the global financial crisis in 2008, but rather continued to increase.

There is no doubt that the global financial and economic crisis has affected the job security of these emigrants – similar to the job losses experienced in South Africa. It is unlikely though that highly-skilled emigrants were disproportionately more affected than less skilled immigrants. In an economic downturn, less skilled workers are often more negatively affected. Moreover, empirical evidence shows that when highly skilled persons emigrate, it is generally the least skilled of those that eventually return to their country of origin (see for instance Borjas & Bratsberg, 1996). The skills composition in the destination country then becomes even more pronounced in favour of highly skilled persons. The brain drain from the country of origin (South Africa in this case) is therefore not expected to be eased significantly as it is generally not the 'best and brightest' who return.

Figure 7: Development of Total Stock of South African Born Persons Overseas



Source: data for 23 countries see

Figure 3, Figure 4 and Figure 6.

Note: The stock in the traditional 5 immigration countries in 2013 is based on actual figures, if available, or alternatively on the latest available figure, assuming that the stock did not further increase, but has remained constant. It was further assumed that the stock in 2000 is the same as in 2001. The data for the 17 OECD countries only cover the period up to 2011. It was conservatively assumed that their numbers remained constant between 2011 and 2013, and did not continue the growth pattern observed between 2000 and 2010.

Another observation that can be made in Figure 7 is that the stock of South African born immigrants not only continues to be highest in the five traditional immigration countries, but also that the stock in these countries has experienced the largest increase in absolute terms between 2000 and 2013. Kaplan, Meyer & Brown (2000b) showed more than a decade ago that these countries absorbed some 75% of all South African emigrants. These recent figures substantiate the continued popularity of these countries. These five traditional immigration countries absorbed some 76% of the estimated number of roughly 750,000 South African born emigrants in the 23 countries considered in this paper as of 2013.

5. Conclusions

The official statistical data and the estimates in this paper show that the total stock of South African born immigrants in the major 23 destination countries has reached a total of close to 750,000 persons in 2013. The numbers of South African born people overseas have continuously increased between 2000 and 2010. From 2010 onwards, growth has been very slow, but still positive. The traditional five immigration countries (United Kingdom, Australia, New Zealand, Canada and the United States) continue to absorb the majority of emigrants from South Africa and host about three quarters of all the expatriates. The strict immigration laws in these five countries favour highly skilled immigrants. This is also confirmed by the most recent data on the skills composition of South African born immigrants in these countries.

Based on the findings in this paper, the following conclusions can be made:

- A sizeable brain drain has taken place since 2000.
- Five single countries absorb the bulk of highly skilled emigrants. Over 75% of all emigrants from South Africa have moved to one of the five traditional English-speaking immigration countries.
- The stock of South African born persons in these five countries has grown at a much slower pace from 2010 onwards compared to the years before, suggesting that the brain drain to these countries has slowed down, but not reversed.
- The stock of South African born persons in the UAE and 17 other OECD countries makes up less than 25% of the total number of South African born persons overseas.
- Their numbers have been growing continuously since 2000 in most of these 17 OECD countries as well as in the UAE. However, growth appears to have slowed down from 2010 onwards too.

- The skills composition of the emigrants from South Africa who moved to the UAE or to any of the 17 other OECD countries is presumably less biased towards highly-skilled persons than in the traditional five immigration countries.
- With less than 25% of the emigrants from South Africa and a lower average skills level, a reversal of the brain drain largely relies on the return migration from the five traditional immigration countries.

The analysis of the development of the number of persons who migrated from South Africa to a total of 23 major migration destinations suggests that the brain drain has not reversed since the onset of the global financial crisis in 2008. Empirical data available by early 2013 does not corroborate the presumed reversal of the brain drain. The data does, however, provide some empirical evidence that the brain drain has slowed down after 2010.

A slowing down of the brain drain is positive news for South Africa. The country has been experiencing chronic shortages of skills in many sectors of the economy for quite some time. While some of these shortages are sector-specific, others affect businesses in most sectors of the economy and have severe consequences. The unavailability of a skilled workforce has often been highlighted as a key growth constraint. Together with other systemic constraints (such as regulations and red tape), the lack of skills prevents companies from growing and thereby thwarts efforts to jump-start economic growth and create jobs.

The demand for skilled labour has gradually increased over time and is bound to further increase, while the supply of those skills has been lagging behind. The skills shortage not only persists due to an increasing demand, but also because of an insufficient supply. The South African education system has not managed to produce sufficient numbers of highly skilled people locally to meet the growing demand. As a consequence, many vacancies cannot be filled, while many people remain unemployed as they lack the requisite skills to find a job in the formal economy. The net emigration of highly skilled people (brain drain) has aggravated this shortage.

What is relevant in terms of the brain drain is the net balance (i.e. immigration minus emigration). Obviously, there are always people who come and at the same time some other people leave. However, the latest South African census data identified only 82,801 South Africans who had previously resided outside of the country and who had returned by 2008,[3] while thousands of people emigrate each single year. Moreover, as shown in this paper, a net increase in the number of South African born persons overseas suggests that more people moved there than left.[4] It is therefore an illusion to assume that substantial numbers of highly skilled South Africans pour back into the country and thereby ease the skills shortage significantly or even remove it.

In 2012, more than 829,000 unfilled vacancies for skilled people in the private sector were reported (Adcorp, 2013). Based on World Bank data on the skills composition of emigrants from South Africa, it can be inferred that as of 2013 almost 500,000 highly skilled persons were living overseas – a significantly lower number than the number of unfilled vacancies in the country. Return migration is therefore unlikely to solve the skills shortage challenge. Even if all

[3] Figure cited in Bisseker (2014).

[4] The number of South African born persons overseas can only increase when new immigrants arrive. Children of these immigrants who were born in the country would obviously not be recorded as a person 'born in South Africa'. On the other hand, decreases can be caused not only by a return migration, but also by deaths or by an onward migration (to another country).

highly-skilled emigrants returned, a few hundred thousand vacancies in the country could still not be filled.

The demand for skilled professionals will further increase the more the South African economy develops. With a limited local supply to meet this demand, the obvious solution would be to source the required skills from abroad. Immigration could in fact be used to help South Africa in the achievements of its economic and developmental objectives. The skills shortage that has been restricting the potential of the economy could be alleviated through the recruitment of sufficient numbers of skilled immigrants.

Skilled labour is an important driver of economic growth, which is a prerequisite for sustainable job creation for unskilled people and thus to tackle the high unemployment in the country. South Africa is not the only country that experiences skills shortages and a brain drain. Even many developed countries are faced with a brain drain through the emigration of their own highly skilled – the population group that is in general most mobile. South Africa should take more advantage of this international migration of the highly skilled. The country has so far primarily participated in one side of migration, namely the *emigration* of its own talents (brain drain). Increased participation in the other side of migration, namely the *immigration* of foreign talents could balance the brain drain through an inflow of much needed skills (brain gain).

If South Africa unleashes the huge potential of skilled immigration (brain gain), it could not only balance the brain drain, but even tap into a major driver of growth and job creation. Moreover, the considerable (highly-skilled) expatriate population itself holds some potential for South Africa that is still to be harnessed, even if those people do not return.[5] Although this paper has shown that the brain drain has not reversed (as previous estimates suggested), there is no time to dwell on this loss. While country appears to continue to lose some of its own talents (as many other country do too), it could harness the international mobility of highly skilled people much more to benefit from foreign skills, while also tapping into the potential that its own expatriate population offers.

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Level 3, School of Economics Building, Middle Campus,
University of Cape Town Private Bag, Rondebosch 7701,
Cape Town, South Africa
Tel: +27 (0)21 650 5240
Web: www.prism.uct.ac.za