



# Easing the Strain: Understanding brain drain and where policy can respond

Development on the Move Working Paper 3

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The views expressed in this paper are those of the authors only.

## Executive summary

It is clear that many countries across the globe are increasingly seeking to attract highly skilled migrants, with trends looking set to continue despite the global downturn. This competition for highly skilled workers is provoking concerns about ‘brain drain’.

There is evidence that at high levels ‘brain drain’ becomes ‘brain strain’ – it starts to damage a country’s development. Therefore it is important to understand the factors that cause brain drain in order to see whether and how policymakers might intervene in order to pre-empt the phenomenon.

ippr and GDN, as part of their ‘Development on the Move’ project, have attempted to synthesise the results of a number of surveys of migrants and people intending to migrate, in order to develop a typology of factors driving brain drain.

Analysis of the surveys shows that there are **five categories of common factors**, across different groups of skilled migrants and different contexts, driving the desire to migrate: wages; employment; professional development; networks and socio-economic and political conditions in the home country. Of course, they are not of equal importance to all migrants and potential migrants.

**Wage differentials** emerge as perhaps the most important cause of brain drain, notably for students who are in tertiary education and those working in skilled professions where the wage differential between countries is very wide and where skills are easily transferable across countries (such as health workers).

**Employment** opportunities are given varying priority according to how far the migrant has progressed in his/her career. Students close to graduating are more likely to give employment as a very high priority for migrating compared with skilled migrants who are already qualified or have been working for some time.

**Professional development** is a key factor influencing the decision to move for skilled migrants who are already in work in their home country. This is because of the perception that opportunities for training and facilities are better in richer countries. In many cases these migrants will move only temporarily, returning to their homeland once they have gained the experience they sought.

**Networks** are important, both of social and professional contacts. They can be a source of inspiration or facilitation, as well as a concrete reason for moving. Networks can be significant in determining both someone’s decision to leave in the first place and their decision to return.

**Difficult socio-economic and political conditions** in the home country – such as political instability, high prevalence of violence and crime or risks to health – might encourage someone to move. Where people are more satisfied with their country, migration is seen as a more temporary option.

The **decision over whether or not to return** is also complex. Should the original reasons for departure decrease in significance this might prompt a move to return home. But generally, substantial changes at home are likely to be necessary to entice people back. The migrant’s intentions on departure also appear to matter, and play some part in the duration of the stay abroad. And a sense of belonging to one’s home country, desire to be close to family and a duty to serve one’s country are also powerful motivating factors for return.

**Should brain drain appear to be damaging a country’s development, policymakers can look to intervene** to retain highly skilled workers and/or entice them back. This might be done for example by offering regular training to professionals such as doctors who particularly value the training opportunities abroad. Mentorships by senior employees in the home country can also encourage career development without people having to migrate. And another response is to stress to migrants the positive role that they can potentially play in the development of their homeland, and, conversely, to make migrants more aware of some of the social costs of migration, informing them so they can evaluate the right course of action for them and their household.

Brain drain is likely to continue given the ability of developed countries to pay higher wages. But in cases where brain drain is becoming brain strain, developing countries could at least partially stem the flow by designing brain drain prevention strategies around the specific motivations driving different groups of people to leave.

## Introduction

International migration has been a highly visible and potent aspect of the globalising world over the last few decades. In 2000, the total number of people residing in a country different to their country of birth was estimated at 175 million, approximately 3 per cent of the world's population. This is double the figure of the 1970s (Tanner 2005). There is also increasing evidence to suggest that the educational structure of international migration is becoming more and more biased towards 'skilled' labour<sup>1</sup> (Commander *et al* 2002) – provoking concerns about 'brain drain'.

While the current global economic downturn may have changed or even slowed the movement of highly skilled workers to some degree, most forecasts suggest that the global economy will start to get back on track in 2010 (for example, IMF 2009). In the absence of any unforeseen economic events, or radical changes to the management of our global system, this implies that global migration patterns will not be radically altered in the long run by recent events. The stage is set for brain drain to continue.

However, while brain drain may be a prominent concern of policymakers it is not necessarily a problem for development. This may sound counterintuitive but if highly skilled people migrate, and migration is something people aspire to do, then this may increase incentives to obtain skills in the first place. In other words, the net effect of brain drain might not be fewer skilled people in the country, but more. Some of the latest evidence (Chand and Clemens 2008 on Fiji) shows this 'brain gain' taking place.

But other evidence suggests that the departure of the highly skilled is a problem when it reaches high levels. When very high proportions of people are leaving 'brain drain' becomes 'brain strain' and starts to damage a country's development (Beine *et al* 2006, Sriskandarajah 2005). This suggests that in certain cases policymakers may wish to 'stem the flow'. However, while we know a fair amount about trends in brain drain, we still lack a nuanced understanding of the forces that drive it. This limits policymakers' abilities to know how to shape it effectively.

Surveys asking migrants why they moved, or potential migrants why they intend to move, have been conducted in a number of different contexts and countries around the world. (It should be noted that few national statistics offices collect information about migrants' motivational factors: the surveys that do are generally *ad hoc* efforts by academics or non-governmental organisations.) These surveys have the potential to add much to our knowledge of what drives brain drain, but there has so far been little attempt to synthesise the findings. This paper seeks to do exactly that, bringing together the results of these surveys to develop a typology of the various motivational factors driving brain drain, as well as understanding the various contexts in which they apply.

We see this as an important part of our larger body of work on migration and development, a project named 'Development on the Move: Measuring and Optimising Migration's Economic and Social Impacts'. Development on the Move seeks to develop fresh, innovative and workable policy instruments to maximise migration's development contributions and minimise its negative effects. Given that brain drain is – along with remittances – the aspect of migration that attracts the greatest attention from policymakers, looking at how it can be more effectively addressed is imperative. We believe that understanding the motivational factors driving emigration can help policymakers to find the right policy instruments to pre-empt brain drain where relevant. This paper should also be helpful in identifying what looks unlikely to work, so that precious development resources are not expended on policies that have little hope of success.

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1. Although there is no consensus on the definition of the highly skilled, an accepted definition is to assume them to have a tertiary educational qualification or equivalent skills acquired through work experience.

## Methodology

In recent years, economists have used regression techniques to understand how macro and micro characteristics of a country might determine the degree of brain drain that occurs. A large body of this analysis has supported traditional economic theories of migration, which point to factors such as wage differentials, country size and level of economic development as causing brain drain (Beine *et al* 2006). However, while these provide insight into the general conditions that could potentially lead to brain drain, their weaknesses lie in not being able to provide a more nuanced understanding of the different motivations behind skilled migrants' decision to emigrate, some of which will have greater importance than others depending on the characteristics of the migrant involved.

Surveys are able to address this problem since they directly ask individuals about their migratory intentions. By comparing individuals' responses, we can draw out which factors are of greatest importance across all respondents, as well as examine the micro characteristics (such as skill level or age) and macro characteristics (such as the political or economic environment that they are living in) that might distinguish one sub-group of respondents from another.

This paper draws on two types of surveys in particular. (See Table 1, p7, for some key details about the surveys we consulted.) First, we examine surveys that ask people who have migrated why they did so. The strength of these surveys is that they consider that an individual should be the best judge of why he or she acted in a particular way. Although people may not always be aware of or report all the nuances and subtleties behind their actions, we believe this assumption to be valid in most circumstances.

The second kind of survey we use is those that ask people who are intending to migrate what the reasons are behind their intentions. However, the value of surveys like this relies on intentions being useful predictors of future behaviour. Theoretically, the gap between intention to migrate and actual migration can be wide, especially where costs of migration are large. For example, migration from a poor country in the global South to a richer country in the North is likely to be an expensive process since prospective migrants must find the financial resources to migrate across geographically large distances as well as pass through (or step around) immigration systems. The discrepancy between the intention to migrate and the practical steps needed for actual migration is apparent; in one survey of the intentions of students, young researchers and teaching staff in Macedonia, 55.9 per cent of respondents said that they were considering emigration while only 10.2 per cent were in the actual planning stages (Verica 2003).

Nonetheless, research shows that an intention to migrate is a strong indicator for how we expect the individual to act in the near- to long-term future. Social psychologists are fairly confident about the close correlation between intention and actions (Dalen *et al* 2003). Moreover, while not all those who say they intend to migrate will move, intention surveys not only warn policymakers of a likely future scenario if they fail to act but also help them to identify 'trigger points' where policy intervention will have the greatest impact.

Using the information from the surveys outlined in the table overleaf, we ask:

- What are the key motivations that potential migrants as well as migrants and return migrants mention as reasons for migrating?

We challenge the general assumption that the wage differentials between developed and developing countries are enough to explain migration and thus look into non-economic, as well as economic, issues that may trigger people's decision to move.

**Table 1. Key details about the surveys**

Name and author of study	Countries	Year	Population surveyed
Migration of Highly Educated and Skilled Persons for the Republic of Macedonia (Verica 2003)	Macedonia	2003	Students/young researchers and teaching staff
Push and Pull Factors of International Migration (Schoorl <i>et al</i> 2000)	Senegal, Ghana, Morocco, Egypt, Turkey	2000	Skilled and highly skilled migrants
Out of Africa: What Drives the Pressure to Emigrate? (Dalen <i>et al</i> 2003)	Senegal, Morocco, Ghana, Egypt	2003	Young educated males
Skilled Health Professionals' Migration (Chikanda 2004)	Zimbabwe	2004	Skilled health professionals
Migration Intentions of Health Care Professionals (Vörk <i>et al</i> 2004)	Estonia	2003	Highly skilled health workers
Medical Brain Drain (Kangasniemi <i>et al</i> )	Developing world, various	2004	Highly skilled health workers
Migration of Highly Skilled Indians (Khadria 2004)	India	2004	Highly skilled IT and health workers
Physician Migration (Astor <i>et al</i> 2005)	Colombia, Nigeria, India, Pakistan, Philippines	2005	Physicians
Brain Drain from Turkey (Güngör and Tansel 2007)	Turkey	2006	Highly skilled students
Southern African Migration Project (SAMP) (Crush <i>et al</i> 2005)	15 countries, members of the Southern Africa Development Community	2005	Highly skilled

*Note: The sample size of the surveys ranges from small (for example, 103 individuals) to large (one of our surveys includes 7,359 individuals).*

## 2. What drives brain drain?

Our examination of the survey data available shows the diversity in motivations behind skilled migrants' intentions to move. Indeed, each individual's decision to move will always depend to some extent on circumstances unique to them. Nonetheless, it is possible to draw out **five categories of common factors**, across different groups of skilled migrants and different contexts, driving intentions to migrate:

- Wages
- Employment
- Professional development
- Networks
- Socio-economic and political conditions in the home country.

The first three of these reasons for migration are clearly 'economic' (with the last factor including some economic aspects too). This fits with what we know about motivation for migration more generally. As discussed in the Introduction, it is within the framework of a globalising economy that migration has accelerated; and cross-country econometric work has shown the importance of a number of economic factors, including wage differentials, in driving migration and brain drain.

The survey data also concurs with the importance of economic factors. For example, in a multi-country survey (Schoorl *et al* 2000) respondents from five migrant-sending countries were asked the question 'Do you intend to emigrate?' and if they responded positively were asked to give a reason for this intention. In all the sending countries (Senegal, Ghana, Morocco, Egypt and Turkey) the vast majority of potential migrants gave economic reasons as motivating factors. These were defined as factors 'relating to work, employment or lack of it, job improvement, better income or a high standard of living' (Schoorl *et al* 2000: 74). Similarly, data from the first Development on the Move survey in Jamaica found that earning higher wages, gaining stable employment and being able to save and remit were the major motivating factors behind departure (Lucas and Chappell 2009).

In this paper we try to move the analysis forward to understand the forces motivating highly skilled movement in particular, as well as the circumstances under which certain kinds of motivations are important, and whether particular sub-groups of migrants have particular kinds of motivations. Analysis of the brain drain surveys tells us that the above five factors are not of equal importance to all potential skilled migrants: there is considerable difference in the priority ranking, with the rank typically depending on firstly the skill and profession of the migrant, and secondly how far the individual has progressed in his/her career.

Below we look at each of the five motivating factors in turn.

### **Wages**

Wage differentials emerge as perhaps the most important cause of brain drain in our comparison of survey evidence. However, wages are not of equal importance to all migrants.

Certain groups of skilled persons particularly highlight wages as a determining factor in their desire to emigrate, notably students who are in tertiary education and those working in skilled professions where the wage differential between countries is very wide and where skills are easily transferable across countries (such as health workers). For example, one survey of science students in their final year of studies in Macedonia found that the opportunity to earn more was the top motive for students' desire to emigrate (Verica 2003). In addition, a survey of migration intentions of final year students in six Southern African Development Community (SADC) countries, found that in Botswana and Swaziland, higher remuneration was the most important economic reason, while in Namibia it was the second most important reason for wanting to migrate (Crush *et al* 2005).

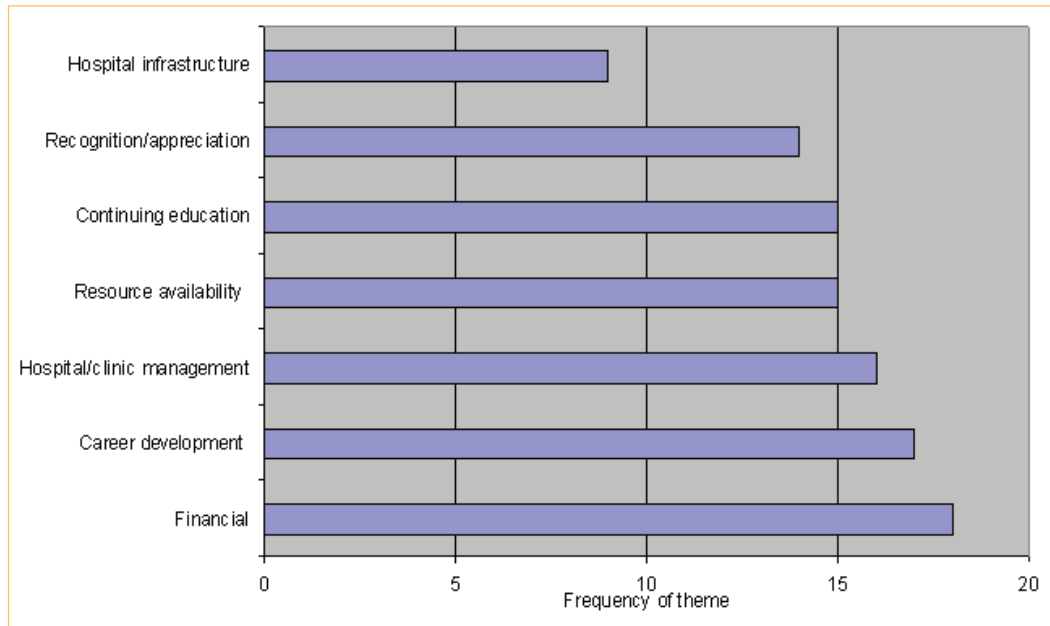
Several surveys that have been conducted among professionals in the health sector point to higher income as a definitive motivating factor. For example, in a survey of physician migration across



Colombia, Nigeria, India, Pakistan and the Philippines 90.8 per cent of all respondents rated desire for higher income as a highly significant motivating factor in deciding whether to emigrate (Astor *et al* 2005). Several other, smaller scale, studies among health professionals have supported this finding. For example, studies interviewing returned doctors and nurses in India found better income prospects overseas as a significant reason driving the intention to go abroad, with nurses stating it as the most important reason (Khadria 2004). In a survey of health professionals in Zimbabwe 51 per cent of respondents gave higher pay as a reason for emigration (Awases *et al* 2004).

Recent research on Polish and Bulgarian natural scientists based in Germany and the UK show similar findings (Figure 1).

**Figure 1. Main reasons for migrating among Polish and Bulgarian-born natural scientists based in the UK and Germany**  
Source: Willis-Shattuck *et al* 2008



Why is the opportunity to earn more such a priority for highly skilled and student migrants? The highly skilled working in professions such as health and IT have skills that are easily transferable and it is feasible for them to move directly into high wage positions in their destination country (whereas migrants whose skill sets are not as transferable may have difficulty accessing the highly paid work associated with their profession, at least initially). In the health sector this is aided by the active recruitment of migrants by developed countries to address skill shortages. For example, about one in three of the 71,000 hospital medical staff working in the UK’s National Health Service in 2002 obtained their primary medical qualification in another country (Department of Health 2003).

Students appear to be motivated to migrate particularly because of the opportunity to earn more. This may be for the fairly mundane reason that having lived on a low income while studying many are keen to enjoy a better standard of living. However, taking a different perspective, seeing students prioritise wages as a motivating factor for migration is very important. This is because students have just become ‘brains’, having just gained a high level of skills and knowledge through their studies. Their ‘new-brain’ status makes students a fairly unique group because none of them have previously had the opportunity to participate in the brain drain. In contrast any survey of professionals in their country of origin (say for example, doctors in India) cannot be taken to represent all professionals from that country (Indian doctors) because it is very likely that some of the group have already left (and are working in the UK, US and so on). This means that surveys of professionals only give us part of the picture as to why the highly skilled leave, whereas surveys of students, none of whom have previously had the chance to participate in brain drain, allow us to look more widely at the motivations of the highly skilled. The fact that wages emerge as a key factor for students therefore shows the importance of this factor overall in motivating brain drain.

## Employment

Turning to the second economic factor, employment, it becomes clear that the priority given to employment opportunities by skilled migrants as a reason for going abroad varies strongly according to how far the migrant has progressed in his or her career. The surveys show that those who are students and are close to graduating are more likely to give employment as a very high priority for migrating compared with skilled migrants who are already qualified or have been working for some time. For example, the SAMP survey reveals that the desire to be in employment or have job security follows closely behind higher income opportunities as a reason for emigrating in all the countries in the survey, and is the most important reason given by students in Lesotho and Namibia.

There is some evidence to suggest that students who have been training in highly specialised fields are not willing to compromise their desire to work in a job that is related specifically to their field of study. In this vein, the intention survey of science and engineering students living in Macedonia gave 'the opportunity to work in one's education field' rather than job security in itself as the second most important motivating factor (Verica 2003).

For skilled migrants who are already qualified, employment or job security itself does not figure prominently as a reason for moving abroad. For example, in Khadria's study (2004), only 11 per cent of return IT professionals in Bangalore gave securing employment as a reason for going abroad. In the same study, nurses and doctors ranked employment as the sixth and seventh priorities respectively as motivations for out-migration. On the whole, skilled migrants who are already working say that the other economic and non-economic factors identified in this paper are more important than employment opportunities in their reasons for moving.

This finding is probably explained by two issues. Firstly, the result should be relatively unsurprising since skilled migrants, especially those working in the health sector, are less likely to suffer from unemployment in their countries of origin since their skills will be in great demand. Therefore their reasons for migrating are likely to lie elsewhere.

In addition, there may also be some methodological bias in the result. As many of the surveys are carried out with professionals, the group being examined are the highly skilled who are also in employment in their chosen profession. As a result most surveys do not include the highly skilled who for one reason or another are not in work that utilises their skills (for example, due to high unemployment and competition for jobs in the country of origin, or the cutting of government budgets which mean there are no funds to employ nurses – for example – who have already been trained). There are two caveats to this potential bias, however. First, the size of the group of people who are skilled but not in skilled employment is not clear. For example, one survey of overseas doctors working in the UK found that only 10 per cent had experienced unemployment in their home country, a percentage reducing to 4 per cent if considering only doctors from low-income countries. This finding led to the conclusion that it 'seems unlikely that migrant doctors are leaving their home country because of unemployment' (Kangasniemi *et al* 2003: 8). Moreover, for our purposes this second group are of less interest. 'Brain drain' is most problematic when it turns into 'brain strain' – when a country would like to employ more skilled people but does not have them available (Sriskandarajah 2005). Losing some of a surplus of skilled labour through migration presents less of a problem.

## Professional development

So what sorts of reasons, other than higher wages, motivate a skilled migrant who is already in work in their home country to migrate? One key factor seems to be to access experiences that will allow them to develop professionally – to learn and advance their careers. There is a perception that richer countries offer superior training facilities and work experience. Groups making a particular priority of professional development factors tend to be either young professionals who have recently finished their education or those who have made some career progress but now want to advance further by getting better training and more varied experience.

For example, Indian IT professionals rank gaining experience as the top motivating factor for going abroad – 37 out of 45 respondents agreed that 'knowledge and skills gained overseas through higher

education and on the job training are highly useful for current jobs in Bangalore' (Khadria 2004; Kangasniemi *et al* 2003) – and Indian doctors rank higher education as the most important draw. Just under 75 per cent of doctors said that they are planning to go abroad to 'get jobs with better training opportunities' and just over 40 per cent said that their purpose for going abroad was to get 'medical experience not easily available in India' (Khadria 2004). In the Macedonian survey 45.6 per cent of young scientific researchers and teaching staff interviewed said that they would like to go abroad for professional advancement and education (Verica 2003).

These migrants believe that by undergoing work experience or professional training in more developed countries, there will be higher returns from working for employers back home. For example, Khadria (2004) finds that the majority of Indian doctors interviewed consider being educated in the United States or the United Kingdom to facilitate faster career growth in India in comparison with Indian-educated doctors who do not have Western qualifications or work experience.

The state of the working environment and facilities and employees' well-being are also mentioned as contributing to the desire to migrate. Access to the latest technology, for example, remains a critical motivational factor for skilled migrants for whom success and efficiency in their work depends on this; this includes professionals working within the health, science, engineering and IT sectors.

The study in Macedonia revealed how young scientists and science teachers ranked having poor facilities at home for scientific work and poor resources for science and technical information higher than income remuneration as reasons for intending to emigrate (Verica 2003). The five-country study questionnaire on physician migration (Astor *et al* 2005) found that 74 per cent of those interviewed highlighted the desire for increased access to enhanced technology, equipment and health facilities in their working environment as the second most important reason for intention to migrate, following closely behind income remuneration. A corollary of this is that 87 per cent of the respondents believed that improving physicians' working conditions in their home countries could also help deter migration.

Similarly, in Zimbabwe, where economic factors figure prominently for skilled health personnel as reasons to go abroad, including a perception that wages will be higher elsewhere, the state of the working environment within the health industry is the next biggest priority. This is considered to be poor in Zimbabwe because of a lack of resources and facilities within the health care system of the country, workloads being too heavy, and there being insufficient opportunities for promotion and self-improvement. When health personnel were asked what factors would encourage their retention in the country, these corresponded strongly to the initial reasons given for leaving: better salaries (77 per cent) and better fringe benefits (71 per cent) and also more reasonable work loads (59.7 per cent) and improved facilities and resources (64 per cent) (Chikanda 2004).

Perceptions of future career prospects are also found to be important in determining the strength of desire for permanent versus temporary emigration. In India, for example, the majority of prospective nurses wanted to settle down permanently abroad (Khadria 2004). While the settlement of close family and friends abroad is likely to have contributed to this decision, the survey also found that Indian nurses did not perceive their career prospects to be bright in their home country. In contrast, Indian doctors, who did perceive tangible career progress in India, were more inclined to go abroad temporarily, returning after gaining their medical experience overseas. IT professional returnees in the city of Bangalore said that the most important reason for returning to India, after factors relating to family, was 'recognition of India as an emerging IT power in the world' and specifically because Bangalore is increasingly seen as the 'corridor for the international mobility of IT professionals'. More and more IT professionals are willing to build a career there (Khadria 2004).

The group of issues around professional development, including access to training, development opportunities and better working environments, is thus shown to be important to many skilled migrants.

## The role of networks

There is a long-standing belief that networks provide channels through which the international migration process takes place (Vertovec 2002). The importance of networks as drivers of international migration was highlighted by Tilly (1990) in his historical analysis of immigration to the United States; he said that it is 'networks', not 'individuals' or 'households', that migrate and that these become 'self-sustaining' (Vertovec 2002: 2). Social networks have been found to be essential in helping potential migrants find access to basic services and job opportunities as well as in presenting the emotional and psychological support normally provided by family at home.

Several of the surveys we examined highlight the importance of networks in shaping intentions to leave as well as to return home. But the importance of this factor varies across different skilled migrants. There is also variation in the type of networks used by skilled migrants.

The two main types of networks that strongly emerge in the analysis are networks of family/friends and networks of colleagues or organisations. Within each there are different forces at play in terms of influencing a skilled migrant's intention to emigrate versus their intention to return home once abroad.

In the case of intention to emigrate, networks of family/friends and of colleagues are important but appear to play a slightly different role to the economic-related factors discussed above in promoting migration. While some people might have a concrete reason for moving, for others networks become an inspiration – something that makes the person realise that they could migrate, and for others they are a facilitating factor, something that makes a possibility into a reality.

For example, Khadria (2004) investigated sources of inspiration for migration as well as reasons for moving. In his case study of Indian doctors and nurses friends overseas were given as the most important source of inspiration for intended out-migration, after self-motivation. For Indian nurses, however, the third most important source of inspiration is family whereas for Indian doctors, it was the network of colleagues. In addition to these networks as a source of inspiration 25 per cent of Indian nurses gave the fact of having relatives living in the host country as a motivating factor for going abroad, rather than just a source of inspiration.

The role of family networks in inspiring or sanctioning the intention to migrate is clearly visible among highly educated students in Sub-Saharan Africa. For example in Lesotho, nearly half of the students (47 per cent) indicated that their families would encourage them to leave Lesotho, while only a third said that their families would discourage them. But regardless of whether the family puts up obstacles or encourages emigration, the majority of students (70 per cent) said that the ultimate decision was in their hands and only 10 per cent said that the decision would be made by their spouse or parents.

For the IT professionals in Bangalore who had recently returned from abroad, networks of colleagues and organisations had similarly been the prime source of inspiration to emigrate (Khadria 2004). This outcome stems from the active role played by employers in encouraging and facilitating IT employees to secure jobs or project assignments abroad for a fixed period of time. Almost half of the respondents stated that they went abroad for this reason.

In the case of the intention to return home, networks of family and friends are a powerful influence on skilled migrants to do so, and networks of colleagues, too, are a significant pull factor for some skilled migrants. In the case of Indian IT professionals, family was given as the most important factor in coming back. One respondent, for example, said that 'his parents were getting older and nobody was there to look after them in India' (Khadria 2004: 11). Moreover, several surveys that questioned skilled migrants about their intentions of returning home produced family as the principal reason. For example, one investigation of Turkish students' return intentions indicated that having family support strongly encourages return to Turkey (IZA 2006).

These findings complement Vertovec's understanding that networks 'utilized by migrants vary considerably depending on local histories of migration, national conditions and communal socio-cultural traits' (2002: 3). Moreover, it is evident that trans-national networks may be one of the definitive factors in the decision to move either temporarily or permanently abroad.

### Socio-economic and political conditions

It may seem odd to examine the overarching political economic and social conditions in a country as a separate variable. But the surveys reveal that particular circumstances or conditions affecting a country do influence an individual's intention to migrate. This becomes apparent from the emphasis migrants place on social, political and economic problems in their discussions of why they left, or intend to leave.

For example, the political instability in the Former Yugoslav Republic of Macedonia was repeatedly mentioned by students, teaching staff and researchers as a motivation to emigrate (Verica 2003). Since the 1990s, Macedonia has suffered from persistently high unemployment (at 21 per cent) as well as political instability from its refugee crisis and the military conflict that occurred in 2001. These have had a discernible impact on emigration. In 1994, about three quarters of economics, medical, mathematics and natural sciences students were considering leaving the country. In 2003, this figure had risen to 87 per cent of economics and medical students and 79 per cent of maths and natural sciences students.

One survey of migration intentions among South African health professionals found that 38 per cent of respondents gave violence and crime/lack of personal safety as common reasons to emigrate (World Health Organisation 2004). In some other African countries, the risk of contracting HIV figures more prominently as a reason for leaving. For example, in the SAMP survey, almost half of the students interviewed in Namibia indicated that the prevalence rate of HIV/AIDS might influence them to move (Crush *et al* 2005). In Uganda and Senegal, 85 per cent and 70 per cent respectively of health physicians surveyed worried about contracting HIV through work-related incidents (Awases *et al* 2004). Interestingly, in Zimbabwe, where the prevalence rate is said to be higher than in Namibia and one of the highest in Southern Africa, HIV/AIDS is not explicitly mentioned as a reason to migrate in either the SAMP or the WHO survey. This might reflect the problem of social stigma – HIV is rarely spoken of there – or it may be because socioeconomic conditions in Zimbabwe are deteriorating so significantly that they have become the number one reason for leaving, other factors fading into the background (Awases *et al* 2004).

Respondents' perceptions of prospects in their home countries relative to other countries, particularly in relation to the state of the economy, are also significantly correlated with migrants' intention to stay abroad for a certain period of time. For example, the SAMP survey of Lesotho indicates a widespread belief that the economic conditions of the country are not going to improve. This has led to 75 per cent of students believing that those who have left Lesotho permanently are better off than when they were in Lesotho – a sentiment that is likely to have increased the level of emigration from the country. In comparison, the Namibia survey found that only 27 per cent and 22 per cent of respondents were dissatisfied with their own circumstances and national economic conditions respectively, which is likely to partially explain why even the minority who would like to emigrate see it as only a temporary option (Crush *et al* 2005).

In the next section we take up the question of why migrants return, and the relative role of improving home country prospects.

### 3. To return or not?

While in the past brain drain might have been seen as a feature of permanent departure, in recent years there has been a recognition that skilled migration is not always forever and that people often return, or move back and forth between different destinations. This has been termed ‘brain circulation’.

The decision over whether or not to return is, again, complex, and previous research has shown it to be correlated to a variety of factors (Finch *et al* 2009 forthcoming). The insight we can gain through our comparison of survey data is twofold.

Firstly, it seems likely that many migrants who departed for the reasons given above – pay, employment, professional development, networks and the political and economic climate at home – might consider returning should the original reasons for departure decrease in significance. For example, if new graduates were leaving a country in part because employment opportunities there were poor (as many have done in Poland in recent years, going to the UK and Ireland among other destinations [Pollard *et al* 2008]), then a substantial increase in employment opportunities in their country of origin might encourage them to return.

Of significance to this first point is that relative performance matters – negative trends in one country will not necessarily cause migrants to depart if problems are emerging everywhere. This is part of what makes predicting what will happen to migration over the next year or so complex, given the current economic crisis which is being experienced worldwide. Some migrants will be making comparisons between more than the two places from which they have moved from and to, as they might be considering moving on to other places where opportunities could be better. And while some migrants might be mobile and able to live in many potential destinations, migrants are also people, who make lives for themselves and invest themselves in a place. So marginal differences in wages or slight improvements in professional opportunities are unlikely to be major motivational factors for moving. For most migrants the difference needs to be worth moving for, taking into account all the attendant costs. Therefore *substantial* changes in a country’s wages, employment, professional development, networks and political and economic environment are likely to be necessary to entice large numbers of migrants to return.

Secondly, there are additional factors that are important in determining whether a skilled migrant returns, including having intentions to return before going abroad, and the degree of attachment or feeling of belonging to one’s country.

There is some evidence to suggest that intentions that a migrant has at the time of migrating are important determinants of the actual time they spend abroad. Of course, we need to be cautious in inferring this kind of causality as while skilled migrants are abroad, their circumstances, ambitions and perceptions are subject to change and there is no guarantee that prior return intentions will dictate actual return. Nonetheless, some evidence suggests that intentions do matter. Survey evidence from Jamaica (which examines all migrants, not just the highly skilled [Lucas and Chappell 2007]) shows that a significant percentage of migrants returned to their homeland having achieved a certain goal they had set themselves before migrating (for example, undertaking a particular job or saving a certain amount of money).

Having an attachment or sense of belonging to one’s home country can be a powerful motivating factor for return. Kangasniemi *et al* (2004) find that doctors from low-income countries are more likely to intend to return home than doctors from high-income countries, with 50 per cent of the former intending to do so. The most common reasons given for this were the desire to be close to family and a duty to serve their country. This is a promising outcome since it shows a sense of common solidarity and aspiration to build and develop their respective countries.

The high degree of attachment to the home country among skilled migrants is also witnessed in other more micro-scale surveys. One intention survey carried out in Macedonia found that most of the people interviewed said they would like to go abroad temporarily but not permanently. Of students

surveyed, 30.8 per cent said they would go abroad temporarily for employment or professional advancement with only 12.5 per cent saying they would emigrate permanently (Verica 2003). In Namibia, the SAMP survey recorded an exceptional degree of attachment towards the country among students, with 94 per cent exhibiting a strong desire to help develop Namibia in the future (Crush *et al* 2005). Only a minority of students expressed the wish to emigrate permanently. Most students also indicated that they are not ready to become permanent citizens of their destination and 38 per cent of students said they would be very unwilling to give up their home in Namibia full time.

## 4. A typology of factors driving brain drain

Having explored the roles of various factors in driving brain drain and encouraging brain circulation, in Table 2 below we bring these together into a basic typology. As well as highlighting key factors, it shows which factors are most important for which types of migrants, looking at age, professional experience and skill set, and the characteristics of the countries they come from.

**Table 2. Typology of factors**

Motivational factor	Of particular relevance to which migrants?
<b>EMIGRATION</b>	
<i>Income remuneration:</i> To take advantage of higher wages in destination country. Especially important where skills are easily transferable between countries.	Students in tertiary education; skilled professionals in sectors such as health and IT.
<i>Employment:</i> To secure employment or attain job security. In certain cases, migrants are unwilling to compromise on gaining employment within the specific field they have trained in.	Students in tertiary education and newly graduated professionals.
<i>Professional development:</i> To advance one's career by gaining work experience, training and access to the best facilities and technologies.	Newly graduated professionals and people who have progressed somewhat in their career (e.g. IT professionals, doctors and nurses).
<i>Personal and professional networks:</i> These are sometimes a concrete reason to move (e.g. to join family) but often they act as an 'inspirational factor', or as facilitators.	Key to highly skilled and senior professionals. Also benefit newly graduated professionals and students.
<i>National political and economic circumstances in the homeland:</i> These matter to the migrant above and beyond the direct impacts they have on their opportunities.	Newly graduated professionals without a well-rooted network.
<b>RETURN MIGRATION</b>	
<i>General improvement of the situation in the homeland (e.g. economic, political):</i> The push factor that brought the migrant to depart has declined in significance.	Relevant to most.
<i>Feeling of belonging to one's culture and society:</i> Some migrants' high degree of attachment towards, and their desire to develop, their country makes them want to return.	People from low-income countries, who tend to feel a great sense of commitment to their country's development; young professionals and students without family ties in the receiving country.
<i>Only intended to leave for short period, usually to achieve a specific objective:</i> Thus will return after working out a contract or once reaches a goal (e.g. mortgage investment, pay tuition fees or set up a business in the homeland).	Highly skilled migrants (e.g. consultants) holding a short-term contract; those who leave family including spouses and children behind; entrepreneurs.



## 5. Conclusions and policy implications

Brain drain is not always a policy problem. Indeed in some cases the departure of the highly skilled may promote education, increase the skill level of the population and help, not hinder development. However, where it is problematic, policymakers are seeking a ‘magic bullet’, a tool to stem the flow.

Our research suggests that this search is futile. Given the nature of the factors that have been shown to encourage brain drain, there can be no overarching ‘solution’ to the phenomenon. Indeed, our analysis suggests that the importance of wage differentials in particular in driving brain drain mean that developing countries will not be able to stem the flow, at least not in its entirety. Doing so would necessitate paying wages that are much more comparable with those on offer in major destination countries, which is too expensive an option, and perhaps undesirable on other grounds (such as the goal of achieving equity between domestic wage earners).

Our examination revealed that if there is concern about the strains brought about by the departure of a specific group such as doctors or students, it may be possible to use tailor-made interventions to address the specific motivations that cause members of this group to leave. For example, our research suggests that one way of reducing the incentive for international migration among doctors would be to offer them regular training opportunities.

Another more specific example is the case of the Singaporean law firms currently engaged in a tug-of-war competition to retain young lawyers. Each year, only about 180 law students graduate from the National University of Singapore. This already low number is aggravated by the overwhelming tendency among young lawyers who have five years or less of work experience to leave the country for firms based overseas (International Financial Law Review 2008). Aware of the fact that higher wages are not the only way of keeping the young generation at home, the Singaporean firms offer their youngest recruits extra perks such as gym memberships, social and sporting events, massage therapists, stress-management workshops, laundry facilities, clothing and smartphones. However, this is a group of high-skilled workers who greatly value career development. Thus probably a more significant initiative is the provision of mentorship from a senior lawyer. Using this same idea, global firms offering international exposure to their employees are among the most successful in their attempt to retain young lawyers. Mentorship in these cases appears to be a successful and cost-efficient solution.

For those who have already migrated, the desire to be close to their relatives as well as the duty to serve their country remain powerful motivating factors for return. Sending countries can try to develop these ties to encourage people back. One positive response to brain drain might be to think of creative ways to engage emigrants in an ongoing relationship, stressing the positive role that they can potentially play in the development of their homeland, and developing, where possible, a continuing sense of social and cultural engagement (see Thomas-Hope *et al* 2009, for example, who recommend such an approach in Jamaica). This could be part of the wider strategies of diaspora engagement that many developing countries are developing at present.

Countries could also ensure migrants are more aware of some of the social costs of migration; for example, children left behind are more likely to perform poorly in school, engage in violent behaviour, and experience delinquency and psychological problems (UNESCAP 2008).<sup>2</sup> Some nations already do this by providing pre-departure information courses. Making migrants aware of these potential impacts would not only help them to prepare specific strategies to avoid them while they are away, but may also encourage them to return. Such educational materials need to be carefully designed, however, to avoid using guilt as a strategy to mitigate brain drain. The focus should instead be on informing migrants so they are better able to evaluate the right course of action for them and their household.

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2. This phenomenon was also corroborated by some of the final discussions at the Global Forum on Migration and Development, 2008

Given that the political and socio-economic situation of the homeland is another frequently cited reason for migrating, improvements in the specific areas in question are likely to attract people back.

Overall, given that international competition for highly skilled workers drives brain drain, and developed countries are able to pay much better wages to highly skilled workers, brain drain is likely to continue. However, if it can be ascertained which kinds of workers are causing the greatest 'strain' to the country by departing, strategies can be designed that meet the specific motivations of that group. In this way developing countries may be able to at least partially stem the flow and mitigate some of the most negative impacts of brain drain.

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