

BRAIN DRAIN – AN ALTERNATIVE EXPLANATION

Glăvan Bogdan
Universitatea Româno-Americană

Abstract

Brain drain occurs when skilled individuals leave their native countries. It is often argued that this phenomenon has strong negative effects on the origin countries, preventing them to capture the advantage of investing in human capital formation and realize a higher growth. This analysis shows that the negative consequences of brain drain have been overemphasized, mainly because of the confusion between capital and technology. It demonstrates that investments in human capital are possible and profitable on a free market. State intervention in education is responsible for the systematic misallocation of human capital, in general, and for brain drain in particular.

Introduction

Brain drain is considered a problem of extreme importance for many developing countries. The notion “brain drain” indicates the international flow of resources in the form of human capital, especially the migration of skilled individuals. A large number of highly educated individuals from developing countries work in North America and Western Europe. The professionals that are emigrating out of developing countries are mainly those with technical expertise, entrepreneurial and managerial skills. The issue of intelligence export is likely to gain importance in the future. Facing aging societies and shortages of skilled workers in some professions, many developed countries will be interested to attract foreign educated people. More importantly perhaps, the eastern enlargement of the European Union enables skilled workers to search for jobs in the richer parts of the continent.

Since the '60s, when it was first noticed, the phenomenon of brain drain has captured the attention of many economists and political scientists, and the literature on the subject has been growing for decades. Most studies conducted in this area suggest that the phenomenon has two inter-related negative effects. One the one hand, the origin countries lose human capital and, thus, are deprived of one of the engines of future economic growth, and on the other hand, these countries waste a substantive part of the public funds invested in the process of emigrants' capital formation.

This paper examines the roots of brain drain and shows that much of the current literature is seriously flawed when it comes to interpret the significance of intelligence flight. Our argument is that the phenomenon of human capital migration represents one part of the larger – natural – process of factors' allocation. The migration of scientists and top professionals of every sort has no devastating effect on the origin countries, because this part of the labour force cannot be efficiently employed in the economy of these countries. The harmful consequences associated with brain drain have their origin not in the actual direction of human capital flows, but in the institutions and the pattern of relationships that govern transactions with human capital.

The paper is structured as follows. The next section presents a concise summary of the economics of brain drain, in order to put the issue in a proper perspective. Section III clarifies the meaning of human capital. In section IV, I provide a short review of the effects of public education. Section V shows the brain drain is a particular consequence of the present institutional framework of human capital formation. The next section compares alternative solutions to the problem of brain drain. The last section concludes the paper.

The current interpretation of brain drain

”Does it matter if clever people leave in such numbers? For the world as a whole, it makes sense for the cleverest to exercise their skills where they earn the greatest reward. But what holds for the world may not hold for individual countries that lose large swathes of their educated middle class....To the loss of productivity potential, add the fiscal losses from migration. Taxpayers in developing countries have paid to educate many of those who leave... And emigration leaves behind fewer workers to pay the cost of looking after the old.”

Put it differently, much of the current literature emphasize that high-skilled individuals tend to migrate from areas poorly endowed in such skills to areas where human capital is already abundant. This (rather difficult to interpret) assumption supports the belief that we are in front of a vicious cycle: the precious human capital flows from where it is scarce to where it is abundant, making the former regions even scarcer in this resource and accelerating the migration of human capital. To make matters even worse, physical capital goes hand in hand with human capital. Consequently, productivity will decline in the sending country, creating further incentives for skilled emigration to developed regions. A vicious cycle can result, and this might explain why less developed nations remain poor.

Various proposals have been advanced to mitigate this consequence. In the ‘70s, states that absorbed human capital were asked to provide compensation to the states suffering from the exodus of intelligence. In ex-communist countries, political authorities attempted to stop the phenomenon by drastically limiting people’s right to circulate freely. Later, the sending states have begun to cultivate their relations with diaspora, attempting to extract benefits from the expatriates’ human capital. Lately, it has been much discussed the policy of encouraging educated individuals to come back to their homeland. Among different measures, governments take into account the possibility of increasing the wages of those involved in research activities, providing fiscal privileges to those returning home in order to set up a business, spending more resources for developing the educational and research infrastructure etc. None of the above-mentioned policies brought positive results, mainly because they did not target the root of the phenomenon.

Most books and articles on this subject recognize that brain drain has not only negative effects for developing nations, but also beneficial consequences. They support the view that whether or not a country is harmed by the emigration of skilled workers is a matter that has to be settled through a cost-benefit analysis. The issue of calculating the benefits and costs of skilled migration has not been settled in the neoclassical framework. To give just one example of how complex the problem is, student mobility is considered a part of skilled migration, but how can we evaluate its impact in terms of lost GDP or income? Moreover, think that emigrants save their origin state of the expenditures associated with the education, health preservation and defense of himself/herself and his/her family. On the other hand, the migrant is in position to claim a part of the public expenditures of the destination state. As Giannoccolo (2003) exemplify this, “the emigrant exchange his right to send his children to school in his country of origin for the right to send his children in his country of destination, reducing the need for new school building in the former country and increasing it according in the latter”.

The profession is, therefore, left to decide in favor of (or against) regulation of migration on a case by case basis, without any clear-cut argument for the freedom of human capital market and against state interventionism. And almost always the verdict is that “more reliable information” and “more precise description of specific countries” is needed.

Lately, economists attempted to find a quantitative measure of the negative impact of brain drain on the origin countries. For example, Desai, Kapur and McHale (2002) found that the net fiscal loss associated with the emigration of indians to U.S. is somewhere between 0.24% and 0.58% of India’s GDP. Even if we disregard the inherent inconsistencies of such calculations, the resulting figure cannot be a just guide advocating the limitation of emigration. Even if hindering

the exodus of intelligence would lead to an increase in production and national income, this consequence does not by itself support the policy of stopping emigration. In last instance, society's welfare derives from a variety of elements, material wealth being only one of them. For some individuals, living in a society with no restrictions, like those hindering the free circulation of the labor force, may be sufficient to compensate for the lower material wealth. For other people, the social environment on which they work and live is more important than the difference in income. Put it differently, wellbeing is subjective, it depends on each individual preferences, not on material conditions. For this reason, the levels of wellbeing of different individuals cannot be aggregated in order to derive the “national welfare”. In a truly free society, the majority’s welfare criterion is not essential for shaping public policies.

Public education and the development of human capital

It is nevertheless true that individuals can enhance their productivity to some degree if they accumulate human capital. But the process of human capital accumulation is costly, as any other investment. This cost reflects the value of workers’ time and effort associated with learning, instructors’ labor and knowledge, and the rest of the complementary resources used in the formation of human capital. These resources are valuable because they can be employed alternatively in the production of other goods demanded by the public.

The most important question education system has to answer is what type of human capital, in what quantity and for what price it is needed in the economy. On the free market, the individual is the sole owner of its human capital and he/she is free to choose what to do with his/her labor and skills. Each individual is interested in accumulating additional human capital as long as he/she expect the marginal benefit will exceed the marginal cost of investing in his education. What is true for the “consumer” of education is also true for the producer of “education”. Entrepreneurs engage in the production of education and start offering specific training programs if they judge individuals’ demand for such programs is sufficiently intense. Competition among private suppliers of educational services leads to the efficient use of society’s scarce resources and challenges entrepreneurs to provide exactly the services people need in order to accumulate human capital in the quantity and of the quality required by the market. Of course, it does not mean that the production and distribution of human capital will be flawless on a free competitive educational market. Occasionally, even private providers of education will fail to anticipate properly the magnitude and composition of human capital demanded by the public. Yet error is inescapable in human affairs. Competition among different entrepreneurs will eliminate the less able entrepreneurs and keep the number of such errors to a minimum.

At the present, human capital formation is not considered an ordinary economic investment. Because education is considered a public good, governments have socialized the provision of education throughout the world. State intervention range from issuing compulsory attendance laws and limiting entry into the teaching profession through certification and other bureaucratic procedures, to supporting public schools and prohibiting any private initiative in this field.

The process runs as follows. Each of us pays taxes. The state uses a part of the money collected through taxation to subsidize education. In principle, the system should provide the young generation with the proper human capital for increasing the productivity, so that to increase the future income in order to remunerate the young specialists and the elderly, who originally financed the whole process. In reality, the system malfunctions are obvious. The inferiority of government controlled education results from several problems.

The fundamental problem with public education derives from the impossibility of calculation in a public property system. Following Mises (1990), Rothbard (1970, p. 825-828) pointed out that any punctual decision to socialize education introduces an island of calculational chaos in the market economy. Under public property of resources employed in education,

meaningful prices cannot emerge and individuals' preferences for accumulating human capital cannot be rationally fulfilled. State intervention on education falsifies the true cost and return of various educational services. In a socialized system of human capital formation, one cannot know what precise investment in human capital is profitable or not. As a consequence, the question in which exact direction human capital investments need to be channeled cannot be answered accurately.

A second problem with public education is that government bureaucracy has poor incentives to adjust the provision of education according to the market participants' preferences. Put it differently, this system does not encourage good teaching. Innovation and improvement in quality will not be the main priority of public officials. Rather, the directors of government-owned (or sponsored) institutions will pursue their own objectives and seek to satisfy the political demands of education policymakers.

In practice, public education lead to excessive costs, overuse of educational resources and misallocation of human capital. Too many of society's resources are allocated to schooling and general training. In a state-sponsored high education system (which is supposed to provide individuals with more specific human capital), the opportunity cost of engaging in education is also artificially lower. As a consequence, too many individuals are stimulated to become "specialists" or "experts" in some field or another. The state interference in education induce individuals to invest more heavily in the accumulation of subsidized human capital. This process has nothing in common with economic efficiency and welfare maximization, because, as Rothbard (1970, p. 820) observed, "since there is no pricing, and therefore no exclusion of submarginal uses, there is no way that the government, even if it wanted to, could allocate its services to their most important uses and to the most eager buyers. All buyers, al uses, are artificially kept on the same plane. As a result, the most important uses will be slighted".

The brain drain and institutional framework

It should be noted that economists are not interested in analyzing brain drain *per se*. Persons circulate permanently, therefore the human capital is continually redistributed within the economy, among various regions. As an empirical fact, the greatest brain drains have been from rural areas to cities. But no economist has ever claimed the movement of human capital from one region to another, within the same country, needs to be prevented because it leads to an asymmetric regional development. Instead, we hear this argument with reference to different countries. What is of interest is not infra-national brain drain, but only inter-national brain drain, and this for purely ideological reasons.

Human capital migration becomes especially interesting only when it occurs between countries, because it generates benefits and losses for the states involved. Moreover, as we will argue, brain drain is strongly associated with the public provision of human capital formation. One of the main weaknesses of public education is the possibility of emigration of individuals who have accumulated human capital, which makes impossible for society to recover the expenditures with the investment in their education.

We saw that the export of human capital raises no problem when exchanging parties bear the full cost of their choices (that is, when the "brain" seller pays the full price for the production of human capital. Brain drain is currently reflecting a problem because there is no link between the payment for educational services and the accumulation of human capital. The resources invested in human capital formation are levied through taxation by the state, which spends them inefficiently. Therefore, the funds are wasted into less urgent investments, from the perspective of the general public. Society losses the production it could have realized if the resources (as well as the labor and skills of those in the education of which it invested) were used in really productive businesses. Referring to this situation, Emeagwaly, a leading computer scientist aptly comments:

“African universities are actually training one third of their graduates for export to the developed nations. We are operating one third of African universities to satisfy the manpower needs Great Britain and the United States. The African education budget is nothing but a supplement to the American education budget. In essence, Africa is giving developmental assistance to the wealthier western nations, which makes the rich nations richer and the poor nations poorer”.

Property regime vs. management quality

How does conventional wisdom react to the problem of brain drain? The basic idea is that the socialization of education should be expanded into a (more comprehensive) socialization of the labor market. The state should not only recruit and retain experts in all fields. It should offer tax exemptions, cover relocation expenses, and provide loans for housing and for starting businesses, as well as a salary supplement for the first few years. The government should enact programs supporting the development of small and medium enterprises, as well as the activity of young entrepreneurs and individuals working in key fields (IT related, for example). These programs could include directing credit toward small companies and funding research activities in firms that innovate in critical domains. Positive discrimination in favor of foreign-trained workers – including various advantages such as priority in job search and lower taxes – represents another policy proposal. Very often the measures for stopping brain drain are included in a larger package of regulations intended to attract foreign investors and “harmonization” of the legal aspects concerning education and labor markets. Of course, a (always) good solution is to pay educated people wages that are “competitive”.

As one can easily notice, all proposed cures for brain drain point, in essence, to an improvement of public management of human capital formation. Most Romanian analysts opine that brain drain can be stopped if the state implements a higher quality standards in educational management and, most important, if it increases the funds allocated in this field. “Romanian state should afford the luxury of using all available means to protect and stimulate the thin class of Romanian researchers.”

Besides this package of fiscal privileges and public spending, much attention has been given to various proposals of taxing skilled migrants. Bhagwati (1975, 1976) and others have argued in favor of a “brain drain tax”, which would reduce the incentives for emigration, constraining people to work in the state where they received subsidized education. Because such an exit tax is difficult to be enforced by a single state only, sending and receiving countries are required to cooperate, bilaterally or within international public organizations, in order to reach an agreement on the details of this policy.

At a closer look, the opinion that the solution lies only in the management of human capital formation is wrong. If brain drain is a problem of management exclusively, it is difficult to explain why private firms and sport clubs do not face the same problem as the state does. Sport clubs and private companies in general have large programs of investment in human capital. The best example is provided by the football clubs. Their business is to buy players, train them to work in a team with other players and win games. During the process, huge funds are invested in promising players’ recruitment, infrastructure development, training etc. When errors occur, clubs can easily sell players considered unfitted for the team. Occasionally, bankruptcy occurs, but football clubs are profitable in general, and their functioning illustrates how investment in human capital can be managed successfully. Another example is offered by the private schools. The goal of such an institution is to provide its students with a good quality education in exchange for tuition. One way to reach this objective is to attract the best graduates on the market by offering them a competitive wage; another way is to reach an agreement with the most promising students, offering them a job in the institution after graduation. Likewise, all private companies provide their employees more or less comprehensive training programs; the example offered by banks is

convincing. Nevertheless, it is obvious that human capital migration does not raise significant difficulties for them, otherwise they would be unable to reap profits and stand the competition. If the secret of success in the case of private firms would lie in the managerial techniques they use, then it would not be impossible, in principle, for public bureaucracy to acquire and employ these techniques. But things are different. So it is not a coincidence that, after decades of experiences in the management of human capital flows, the exodus of intelligence has intensified, not declined.

In reality, what distinguish state policy from sport clubs and other firms' activity is not the employment of different management methods, but the absence of private property and, therefore, the lack of incentives for an efficient allocation of human capital. The problem of human capital migration is a property problem. It arises because the property rights of those involved in the process of human capital formation are not clearly defined. Who contributes/invests (in Romania and other developing nations) in the formation of human capital? The labor force, through taxes that finance public schools and other public education programs. Who benefits/accumulates human capital? Certain individuals – future graduates – who do not have any obligation to recompensate taxpayers.

As some economists acknowledge, the cost of general education would be irrelevant to the assignment of gains and losses from migration if each individual paid the full cost of his education, that is, if education falls entirely into the realm of private enterprise. The effects of migration become important only when education is at least partly provided by the state. Menaced by the danger of running short of high-qualified personnel, some state agencies (such as defense minister) have attempted to imitate the market entrepreneurs, enrolling students only if they agree to sign a contract forcing them to work for a certain period (and for a certain wage) as government employees. But this policy does not have the same significance as contracting between private parties. It looks more like the policy of a slave-owner who offer his subjects the possibility to learn given that they can employ their future abilities only to help him control more effectively his slaves. The ethical issues associated with these contracts are obvious. In addition, state bureaucracy cannot play the role of entrepreneur who hires various resources, including labor force, in order to supply goods demanded on the market. Public officials hire graduates primary with a view of satisfying their political superiors. They do not have to pass the market test in order to find how good are their abilities in selecting the proper workers for specified jobs. It logically follows from this that public contracts cannot improve the allocation of human capital.

It can be argued that any firm runs the danger of loosing the workers to whom it provides extensive training. As Suedekum (2003, p. 22) aptly observes, because of additional accumulation of (less specific) human capital, these workers “become more attractive to other firms or even to direct competitors of their current employer”. Therefore, the company needs to take into account the increased probability of quits that is associated usually with the more intensive training of its employees. The problem is easily solved through a clear definition of both parts' rights and duties. While private companies succeed in internalizing the benefits and costs of human capital formation, the state fails to manage effectively this process, because public bureaucracy is not constrained to find the best way to invest resources in the formation of human capital.

In a private property regime, this problem would be inexistent. On the one hand, private suppliers of education will be interested in confining their activity to the formation of more specific human capital. On the other hand, private schools that invest in general human capital would have the means (that any property owner has) to obtain a profit from their investment: sharing training costs and the return with their employees, using exclusivity clauses and fidelity bonuses etc. Only private economic agents are stimulated to discover the most fitted contractual solutions, which benefit both sides of the contract, that is, allows each part to fulfil its own interests.

The key to the current international migration of human capital problem is the complete privatization of human capital formation. A market system of education – by increasing the accuracy of economic calculation and enhancing the incentive compatibility of participants in the

education industry – will manage to address the problems which plague the educational system in most developing countries. In particular, private allocation of human capital will eliminate as much as possible the gap between private costs and gains from human capital accumulation and, consequently, reduce brain drain to a minimum.

Conclusions

This paper intended to provide an alternative perspective on the problem of brain drain, which affects many countries in the world. The central argument is that the conventional approach of skilled migration is flawed, because it lacks a proper understanding of the difference between private and public formation of human capital. The reason for which all policy proposals that have been advanced so far did not bring the intended results and are not welfare improving is that they do not target the fundamental cause of the phenomenon. Brain drain reflects, basically, a property problem, not a deficiency in the management of human capital formation. Complete privatization of the educational system and withdrawal of all government's subsidies for the formation of human capital is necessary if society is to be sheltered from the welfare effects of human capital migration.

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