The Theoretical Relationships among Foreign Direct Investments, Migration and IFRS Adoption#

David PROCHÁZKA* – Cristina PROCHÁZKOVÁ ILINITCHI**

Global economy brings new challenges for policy makers aiming at regulating particular economic, social and political spheres of life. In recent years we can document a rapid growth in international trade, foreign direct investments, migration, etc. A turbulent economic development educes threats, but also offers opportunities. New tendencies have brought unexpected insights on some traditional economic theories, too. The paper focuses on recent changes in the area of international harmonization of accounting through the adoption of the International Financial Reporting Standards (IFRS), migration and foreign direct investments with the emphasis on their mutual interdependencies.

Mutual relationship of capital and labor in economic theory and reality

Labor and capital in economic theory

The globalization of the world economy is accompanied by the changes in volume and structure of international trade, capital flows and human migration. Countries are engaged in the interconnected global markets, both for the trading of goods and the acquiring of capital.

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Empirical data on actual economic development reveal interesting evidence on the validity of some economic theories explaining the relations between labor and capital.

The traditional mainstream models consider the labor and capital as substitutes moving in the inverse direction. Countries with low productivity of labor are supposed to have low wages and thus relatively higher returns on capital, thus impelling people to migrate to the richer countries and simultaneously attracting foreign investors to pour money in the local, more profitable, projects. Contrariwise, developed countries with relatively high level of accumulated capital suffer from uncompetitive high salaries and decreasing yields from capital. Under perfectly competitive markets, the differences in labor and capital productivity should be eliminated by free movement of labor and capital. Capital should flow to the poor countries, and labor force is expected to leave poor countries and migrate to rich countries. In the long-term, the differences between marginal products of labor and marginal products of capital in rich and poor countries ought to diminish.

The economic theory calls this interdependence of capital and migration flows as “the basic law of migration” (Öberg, 1995). According to this basic law of migration different wage levels (due to e.g. different ratios of capital per labor) induce the migration flows. Nevertheless, in the long run, assuming that the mobility of capital and labor is allowed, market forces tend to converge to a new equilibrium where wages have the same levels in all regions.

**Fig. 1:** The basic law of migration – the initial phase

Source: Öberg (1995, p. 2)
The figure below illustrates the process described above, but also explains how already established equilibrium states can be disturbed and how a new equilibrium is re-achieved.

**Fig. 2: The basic law of migration – the entire process**

<table>
<thead>
<tr>
<th>Countries A and B have the same ratio of capital per labor.</th>
<th>In the country A there is an increase in capital (e.g. a new big factory is opened). In consequence: – migration from B to A increases; – capital decreases in the country A (transfer to the country B or some companies go bankrupt).</th>
<th>In the country A the amount of capital lowers and the amount of labor increases. In the country B capital increases and the amount of labor decreases. The capital per labor ratios is equal again in both countries.</th>
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<tbody>
<tr>
<td>Capital per labor ratio</td>
<td>2</td>
<td>2</td>
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<td>1</td>
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Source: authors

Empirical evidence shows, although, a different picture. Analyzing data on development of foreign direct investments (FDI) inflows and immigration into OECD countries, we can find that incoming FDI and labor force have moved in the same direction over last 20 years.

FDI incoming to OECD countries experienced a similar pattern as the inflows of labor force to the group of OECD countries. We can document a steadily increase of FDI until year 2000 (with local maximum of 1 513 billion USD), then a sharp decrease with a local bottom of 406 billion USD in 2003. Another steep increase ended in year 2007 with a subsequent drop until now (see *Fig. 3*).
Fig. 3: Incoming foreign direct investments to OECD countries in 1990-2010 (in USD millions)

Fig. 4: Immigration, emigration and net migration to OECD countries in 1990-2009 (in thousands)

Source: OECD (2011)
As far as immigration to OECD countries concerns, the first peak came in years 2001/2002. After a significant fall, both gross and net immigration steadily increased with local maximums in years 2007/2008. In recent years, the number of immigrants has been falling down (see Fig. 4).

The parallel movement of labor and capital in the OECD area can be supported also by the simple correlation coefficient, which (based on the OECD data from 1990 to 2009) is 0.64 and thus shows a relatively strong positive relationship.

**Paper’s aims**

The paper tries to explore why the assumptions of neoclassical economic theory on the mutual relationship between labor and capital do not correspond to the empirical evidence outlined above. Moreover, macroeconomic consequences of the worldwide IFRS adoption and their influence on foreign direct investments will be evaluated. Exploring the possible impacts of the IFRS adoption on capital flows (represented by FDI) and labor flows (representing by immigration) is the main novelty of this research.

The paper is intended to be the first phase of a complex project scrutinizing actual trends in labor and capital movements between the European Union and Eastern European countries. The solution of research hypotheses in this paper will therefore rest on an overview and detailed analysis of literature relating to the particular issues already described. The expected final output of the project is the proposal of recommendations for the policy makers, how they can regulate the effects of migration. The tentative set of recommendations will be introduced in Conclusion and they will serve as the proposal of the future research in the area.

**Possible explanations to the research hypotheses based on the literature review**

The literature review shall address the answers to two chief issues described in the previous chapter. Firstly, we are going to refer to the theories explaining, whether labor and capital are substitutes or complements in the international perspective. Secondly, we are going to find the evidence in what extent the worldwide adoption of the
International Financial Reporting Standards has affected the development of international capital flows in the form of foreign direct investments.

**Relationship labor-capital**

The empirical evidence on a rather surprising mutual movement of FDI and immigration into the developed countries, provided by OECD statistics (see Fig. 3 and Fig. 4), is consistent with Lucas’ (1990) findings. Lucas firstly empirically challenged the neoclassical paradigm on the opposite flows of labor and capital. The question is why capital flows to rich countries (75% of all FDI flew to OECD countries in the period of 1990-2010), i.e. why capital moves in the same direction as the labor force (OECD countries experienced an average annual immigration of 3.2 million of people over the same period).

There are several possible explanations of this phenomenon. Firstly, neoclassical model assumes that both labor and capital is homogenous, which is not true obviously. Different people have different skills, knowledge and experience. Therefore, it should be distinguished between skilled and unskilled labor force, the former one is able to contribute to the economic output at a greater extent than the latter. Migration of highly skilled people from developing countries increases the marginal productivity of labor in developed countries. The brain drain effect is supposed to be one of decisive factors, which have a negative impact on the economic performance of developing countries. The outflow of skilled workers lowers the stock of human capital in sending (i.e. usually developing) country and increases the productivity in receiving (i.e. usually developed) countries (Checchi et al., 2007). The distinction between migration of skilled and unskilled labor is an important factor, which changes the original assumption about opposite flow of labor and capital.

There are also severe objections to the assumption of homogenous capital. Market imperfections (Arbatli, 2011) such as political and economic instability, low protection of investors, etc. levy the additional costs on capital and particularly the long-term investments in developing countries. Due to these restrictions and imperfections relatively higher returns on capital disappear.

Inspired by the Lucas’ pioneer work, the research has concentrated on the cardinal issue in the field of immigration and FDI; what is the
contemporaneous relationship between international movements of labor and capital (Foad, 2009).

Empirical studies mostly work with time-series data. Groznik (2003) provided evidence with reference to the U.S. data on migration and FDI; labor and capital flew in the same direction between 1950 and 1997. Similar findings can be found in Javorcik et al. (2006), who replaced the aggregate data in Groznik’s (2003) model by data on bilateral flows of FDI and migration between U.S. and foreign countries. Ivlevs & de Melo (2008) assert that if exports are low-skill intensive, emigration of high-skill labor leads to positive FDI, i.e., migration and FDI are complements. The assertion is supported by the cross-sectional analysis using FDI and emigration data for 103 migration-sending countries over the period 1990-2000. Finally, the study of Foad (2009) confirms previous findings. In contrary to other studies, Foad (2009) does not work with data at the national level, but he developed a model using data on the regional distribution of FDI and immigration within the U.S. The validity of studies referring to national level data is impaired by the fact that the flows of capital can be influenced by many factors, which simultaneously affect immigration, too. The suggested regional analysis helps in holding all determinants influencing immigration and FDI contemporaneously constant.

The aforementioned studies revealed another important piece of knowledge. The findings about negatively correlated immigration and FDI flows on country-by-country level are valid only for the short-run. But in the long-run, skilled migration leads to positive future FDI. This fact is explained through the creation of so-called immigrant social networks, which assist in building up a business environment favorable for foreign investments (by reducing the obstacles causing the immobility of capital). The importance of immigrants’ networks on FDI flows is documented e.g. by Kugler and Rapoport (2005).

The results of empirical studies bring new insights into the brain drain issue. It has turned out that the immigration of skilled and educated people from developing countries has negative effects only in the short-run. However, in the long-term sending countries benefit from the previous emigration of the elites (Stark, 2004). These findings raise new challenges to theories exploring the mutual relations between labor and capital. The effects of migration and capital flows differ in the short and long-term and a general theory is needed.
D’Agosto et al. (2006) developed a theoretical model based on the expected lifetime income differential between destination and sending countries, human capital, FDI and the cost of migration. The model assumes that FDI can affect the individual decision to migrate, although, some factors can have opposite impacts. FDI are expected to be negatively correlated with migration through domestic labor demand effect. On the other hand, FDI are supposed to be positively correlated through migration cost effect and human capital efficiency effect. D’Agosto et al. (2006) tested the validity of the model on OECD and some developing countries. Empirical results prove that FDI are positively correlated with migration, i.e. complementarity effect prevails. In addition, FDI have a positive influence on human capital stock. Consequently, FDI produce an indirect negative effect on the migration rate, which means that the substitution effect is significant in the long-term.

Influence of the IFRS adoption on foreign direct investments

The worldwide harmonization of financial reporting through the International Financial Reporting Standards is an accounting response to the integration of world capital markets. The existence of significant differences among various national accounting systems causes an information asymmetry of local investors at expense of foreign ones, which do not possess detailed knowledge of local economic and political environment. Consequently, prohibitive informational obstacles to cross-country investments occur (Pagano et al., 2002); and foreign investors have to pay a “penalty premium” in transactions with the local investors (Gordon & Bovenberg, 1996). The importance of good accounting practice as an important factor increasing the chance of cross-country investments is evidenced by Rossi & Volpin (2004).

The gradual adoption of the IFRS all around the world reduces and eliminates the costs of gaining information for the decision-making, as companies (mainly listed) use the same system of financial reporting standards regardless their legal domicile. In this way, the IFRS as high-quality accounting standards contribute to the smooth functioning of global capital markets and shall promote the flows of foreign capital to adopting countries. Despite this important feature, this research analyzes the benefits from the IFRS implementation only from investors’, i.e. microeconomic, perspective. Among other, studies of Ball (2006), Daske – Gebhart (2006), Barth et al. (2008), and Armstrong et al. (2010) shall be reminded.
Macroeconomic consequences of the IFRS adoption are, although, on the edge of accounting research. The research about the role of the IFRS adoption on foreign direct investments is relatively new and just few studies relate to issues under scrutiny by this paper. The first comprehensive analysis of the effects of IFRS on FDI was performed by Marquéz-Ramos (2008) on the sample of EU countries. The author uses a gravity model. The results provide evidence that the IFRS adoption has positively influenced FDI. Marquéz-Ramos (2008) takes the assumption that the accounting harmonization is a workable strategy to attract foreign investors by reducing their risks for investing abroad.

A different approach was adopted by Farooque et al. (2009) who studied the interdependence of corporate governance and FDI inflows on the sample of twelve year data of 173 countries. Their research comprises also the evaluation of IFRS adoption and legal origin on FDI and governance. Their findings show that IFRS have stronger effect on governance rather on FDI. However, through an increased quality of governance, the IFRS allows free movement of capital around the world.

Beneish et al. (2010) found that the IFRS adoption in the European Union has significant impact on attracting foreign debt investment. The effect on foreign equity investments is relatively small. However, the results of the study are impaired because only four non-EU countries were used as control factors.

Chen et al. (2011) investigated the effect of widespread adoption of IFRS on bilateral FDI within the OECD countries. They found that the shift from local accounting standards to IFRS contributed positively to the FDI growth during the period between 2001 and 2005.

The cardinal challenge to all sorts of empirical research focusing on the role of IFRS adoption on FDI development is the fact that the IFRS are spread almost over all around the world. Except for some cases,¹ all

¹ Only two major economies (namely the U.S. and China) have not implemented the IFRS. However, the general accepted accounting principles used by American listed companies are highly harmonized with the IFRS as a result of the Convergence Process run by the IASB and the FASB. In addition, foreign private issuers on the U.S. markets may use IFRS as issued by the IASB. Finally, the U.S. SEC should determine whether to proceed with rules requiring U.S. public companies to file financial statements prepared in accordance with IFRS by 2014. China is also heading to the IFRS implementation. So far, the Chinese Accounting Standards contain
important world economies have already adopted the IFRS, which are required or allowed for the use by listed companies and even also by non-listed companies in certain jurisdictions. Secondly, regulated capital markets are differently developed in various countries. While esp. in Anglo-American region companies apply for the financing via stock exchanges quite commonly, this way of raising funds is not very frequent in other regions, where more effort is headed for the attraction of brown-field investments.

Different pattern of raising capital by companies across countries requires a more sophisticated approach to detect properly the influence of the IFRS adoption on mutual relation of labor and capital. With reference to literature cited above, we propose to refine the level of IFRS adoption in each country depending on the scope of companies, for which financial statements based on IFRS are relevant. E.g. the amendment of Czech Act on accounting, which – from 2011 – allows certain non-listed companies to select the IFRS as the basis for preparation of individual financial statements accepted for statutory purposes may have introduced a supportive factor boosting the inflow of foreign direct investments into the Czech Republic. For this reason, further analysis should not focus on adoption of the IFRS by listed companies only, but the possibility to apply the IFRS by non-listed companies should be taken into account too.

**Conclusion**

Available statistics about international flows of labor and capital in recent years have raised the interest of economic research. The traditional neoclassical model using the assumption of pure substitution effect between labor and capital has been replaced by models, which work with social networks. The migration of high-skilled labor force explains the flows of migration and FDI in the same direction in the short-run. In addition, the immigrants’ networks create favorable environment, which reduces the barriers to capital movement by eliminating the information and transaction costs. Therefore, FDI are supposed to flow to sending countries in the long-term perspective.

The new evidence moderates the negative perception of “brain drain effect”, which turns to be “brain gain”. According to Checchi et al. significant part of the IFRS guidance. Moreover, the Ministry of Finance plans to eliminate the remaining differences.
(2007), there are three channels how the emigration of skilled labor force may bring benefits not only to receiving countries, but also to sending countries. The most important is that skilled migration may contribute to the growth of sending country through the technology and know-how transfer, trade and finally through the foreign direct investments. The FDI to originally sending countries induced by social networks are often accompanied with the (temporal or permanent) return of emigrants.

Previous conclusion offers an interesting option for controlling the effects of migration flows so that both sending and receiving countries may benefit from the brain drain. Properly regulated migration, e.g. by “green cards” for particular professions, valid only for the restricted period of time, may enhance the economic growth in both countries supposing that sending countries are able to improve the institutional environment. Beside general factors (e.g. political stability, law enforcement, protection of their investments) and financial factors (e.g. taxation, stability of financial sector), the investors are interested in informational factors, with the quality of financial reporting on the top of list.

Adoption of the IFRS can attract more foreign direct investments. Marquéz-Ramos (2008) shows that the macroeconomic benefits of the IFRS adoption are higher in developing countries. The reason beyond is that the shift to the IFRS is connected with important changes in informational environment and improvement of corporate transparency. Similarly, Chen et al. (2011) conclude that the macroeconomic benefits of the IFRS adoption impel the policy makers in non-adopting countries to join the adopters. The improvement of financial reporting relieves the barriers to FDI inflows. The quality of accounting information is a relevant factor in FDI decision-making as the IFRS lower transaction costs and better transparency of financial reporting. However, the success depends on quality of the IFRS implementation from the side of companies. Appropriate education of accountants preparing the IFRS financial statements is a necessary condition of successful implementation. This area represents another field of possible cooperation between developed and developing countries.

To conclude, the paper summarized relevant literature on two issues, which are not addressed by the research jointly although they are significantly interconnected. The chief reason for this separation may be that mutual interdependence of labor and capital is subject of interest in economic theory. On the other hand, the influence of IFRS on capital
markets and FDI is scrutinized by accounting research. As the start of a new research project, the paper tried to outline possible links among the triangle consisting of “IFRS adoption – FDI flows – migration” with reference to the existing literature in both strands of research.

The future work on this project shall specify the interconnections among all three factors in detail. Based on these specifications, a theoretical model explaining the mutual relationships will be developed. For the empirical testing of model’s validity, the sample comprising the European Union and Eastern European (or post-communistic countries not belonging to the EU), from which a significant number of immigrants come to the EU, will be utilized. Bilateral data on FDI flows between those two groups of countries will be employed for the development of model. For this purposes, a measure proposed by Ding et al. (2005) will be adapted and used. In addition, a proxy measure, as described in the previous chapter, capturing the level and quality of the IFRS adoption in each country will be incorporated in the model.

The ultimate findings of the research shall be useful also for the policy makers, both in the area of migration policy and regulation of financial reporting. To provide really exploitable results, the main constraints shall be taken into account. Firstly, it should be reminded that migration takes several forms and its regulation is problematic especially for the sending countries (Procházková Ilinitchi, 2010). Moreover, the adoption of the IFRS is the first step in a more complex process only. Because of cultural differences, the discrepancies in the actual quality of the IFRS implementation in companies’ financial statements across different countries exist. Finally, though the IFRS may be helpful in attracting of FDI, legal approval of the IFRS as financial reporting system in particular country is not the sole factor influencing the decision of investors, whether or not to allocate their scarce resources to this country.

**References**


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ABSTRACT

The globalization of the world economy is accompanied by changes in volume and structure of international trade, capital flows and human migration. The paper focuses on theoretical aspects of recent changes in the area of international harmonization of accounting through the adoption of the International Financial Reporting Standards (IFRS), migration and foreign direct investments with the emphasis on their mutual interdependencies.

**Key words:** Foreign direct investments; Migration; IFRS adoption; Brain drain/gain.

**JEL classification:** M41, F21, F22, J61.