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HABILITATION THESIS

Summary

The role of direct investment in economic development

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This habilitation thesis brings together results obtained in my research activity after obtaining the title of PhD in Finance in 2009. The habilitation thesis presents the results of the research conducted by the undersigned in the field of finance with emphasis on **The role of direct investments in economic development.**

The research activity carried out after the completion of doctoral studies was a natural step in developing the results obtained within the doctoral training completed with the doctoral thesis *Decision on investment in the competitive environment.* Having as starting point the doctoral research, the research activity was also reflected in the transfer of research results into the teaching activity, as holder of the disciplines Efficiency and Investment Financing, Financial Management or Corporate Finance.

Keeping the research line and developing a teaching career in finance with a specific focus on the direct investment component has led to the consolidation and obtaining of research results in specific elements of the field such as: risk analysis and assessment in the field of decisions related to direct investments, foreign direct investment, decision methods, including addressing complex decisions involving both financial elements and non-financial parameters. The results obtained in these research directions followed both a specific approach to finance and a cross-disciplinary approach that integrates elements from specific, adjacent fields, in order to support an integration of the financial decision into the decision-making system of any public or private law entity.

Chapter 1 entitled **The role of investments in economic development** presents an argumentation, based on literature analysis, on how investments generates economic development, focusing on the role of direct investment in reasing the level of real aggregate wealth in the economy.

The importance of direct investments in economic development is supported by the extensive attention paid by the specialized literature to the topic of direct investments, but also by the importance given by states to public policies to support direct investments. The main topics covered focus on the one hand on the issue of foreign direct investment, and on the other hand the issue of investment decision both from the perspective of corporate finance and from the perspective of public investments.



In this respect, a first research direction was represented by the research approach built in recent years focused on the analysis of the existing relationship between elements specific to international financial flows, FDI or remittances, interdisciplinary components targeting components of economic balance, economic integration, human capital, public policies, education or direct impact on various fields of activity, which justified the trans and interdisciplinary approach to topics related to international financial flows and the desired and created social impact at micro and macroeconomic level.

The second direction of research is based on new complex societal challenges, from poverty and inequality, to the preservation of cultural heritage or environmental degradation, in which the efficient allocation of resources through strategic investment decisions becomes dominant. In this context, we were able to demonstrate that exploring the use of robust investment decision-making methods in the field of social projects is important not only from the perspective of financial efficiency, but also from the perspective of highlighting their transformative potential in generating positive changes aligned with the specific needs of today's society.

Chapter 2 contains the most important scientific achievements after the completion of doctoral studies. Keeping the research line and developing a teaching career in the field of finance with a specific focus on the direct investment component has led to the consolidation and obtaining of research results in specific elements of the field such as: risk analysis and assessment in the issue of decisions related to direct investments, foreign direct investment issues, the issue of using decision methods, including addressing complex decisions involving both financial elements and non-financial parameters. Rezultatele obținute în aceste direcții de cercetare au urmărit atât o abordare specifică domeniului finanțelor cât și o abordare trans-disciplinară care integrează elemente din domenii specifice, adiacente, pentru a susține o integrare a deciziei financiare în sistemul decizional al oricărei entități de drept public sau privat.

Paragraph 2.1. Contributions in the area of scientific, professional and academic research, on disciplinary and interdisciplinary thematic directions, presents a summary of the research, professional and academic activity after the completion of the doctoral thesis in the field of finance, entitled *Investment decision in the competitive environment* and obtaining the PhD title in 2009



Paragraph 2.2. presents the significant achievements achieved in the area of methods for substantiating investment decisions. The two papers included in Stefan Daniel's habilitation thesis, *The impact of uncertainty in assessing real options, in the informational conditions of emerging markets*, Expert Publishing House, 2013, ISBN 978-973-618-350-8 and *Trademark potential increase and entrepreneurship rural development: A case study of Southern Transylvania, Romania*. Stefan Daniel, Vasile Valentina, Popa Maria-Alexandra, Cristea Anca, Bunduchi Elena, Sigmirean Caesar, Stefan Anamari-Beatrice, Comes Calin-Adrian, Ciucan-Rusu Liviu. (2021), PLoS ONE 16(1): e0245044. <https://doi.org/10.1371/journal.pone.0245044>, eISSN: 1932-6203, WOS:000609991600005.

The two papers offer developments of specific methods for validating direct investment decisions in different contexts. The first paper uses the theory of real options to address the context of validating investment decisions in conditions of risk and uncertainty, with applicability in the area of exploitation of natural resources. The second paper offers a specific solution to the investment decision in the case of public investment projects with socio-economic impact. The results obtained in this case have specific, but limitless applicability in using a classical algorithm to substantiate a decision-making model to substantiate the decision to capitalize on local heritage objectives. This study aims to: a) identify a decision algorithm model applied at local level to support rural development through investments in cultural heritage valorisation (less known on the international cultural consumption market or for newly discovered cultural heritage goods), based on the improved AHP method; b) identify the most valuable alternative from a set of strategic rural development investment alternatives identified at regional level. Using a collaborative approach, the study assesses the potential of rural development based on a set of criteria considered important by local actors. More recent research has identified the multiple potential of the decision-making method in different industries Gunduz Murat & Khaled, Omar Mohammad. 2020, Gunduz Murat & Alfar Mohammed. 2019] or decision levels [Aghdaie M.H. & Alimardani, M. 2015.]. By involving local stakeholders, the AHP method enables a partnership approach and, based on the results achieved, can strengthen innovative business investment decisions as part of the local strategic investment agenda of rural areas.



Paragraph 2.3. FDI, remittances and economic growth offer, starting from the three papers included in the habilitation thesis, an innovative perspective, given by the context of Central and Eastern European countries, on the relationship between two financial flows with significant impact on economic growth: FDI and remittances.

A first paper included in the habilitation thesis, *The Impact of Foreign Direct Investments and Remittances on Economic Growth: A Case Study in Central and Eastern Europe*, Comes, Calin-Adrian; Bunduchi, Elena; Basil, Valentina; Stephen, Daniel; SUSTAINABILITY Volume: 10 Issue: 1, Article Number: 238 Published: JAN 2018, investigates the impact of foreign direct investment (FDI) and remittances on economic growth, using panel data of seven Central and Eastern European countries with a Gross Domestic Product (GDP) per capita below USD 25,000. The literature highlighted the relationships between FDI and remittances and economic growth, and our aim was to identify whether there are significant relationships between FDI, remittances and economic growth in the seven countries analyzed. In the study we found a positive impact of both FDI and remittances on GDP, but the FDI influence is greater in all analyzed countries, accepting the assumption of *ceteris paribus* principles in limiting research caused by other possible determinants.

In the process of economic development, capital formation is crucial, regardless of its origin. To address this problem, developing countries rely on foreign capital, building FDI attraction strategies to support development. Foreign capital is considered to facilitate the reduction of savings constraints by increasing the availability of savings and the reduction of trade constraints by expanding the import capacity of the recipient country. In this way, the flow of foreign capital influences national economies and investments and promotes economic growth. The empirical evidence available on the impact of the flow of foreign capital on domestic economies and economic development in general is divided into two categories. While a number of studies have shown that foreign capital flows lead to an accumulation of savings, others have observed that the former replace savings and generate an increase in consumption, stimulating economic growth differently. Moreover, some authors have identified channels through which increasing foreign capital flows lead to lower savings (Griffin, 1970). Together with FDI, developing economies increasingly benefit from another substantial flow of financial resources –



remittances from immigrants, who came predominantly from developed to developing economies. Since immigrant remittances represent a substantial flow of financial resources, the role of this financial flow in economic development is an important issue for researchers and policymakers alike. However, whether remittances are indeed investment capital flows is still a debated issue and, because of this, deserves careful examination because of its substantial implications for policymakers. In the study we focused on a group of countries in Central and Eastern Europe that traditionally represented an emigration zone before their accession to the EU, and this became more consistent after joining the EU. From the data of the initial EU28 panel, we chose an EU7 data panel, with seven countries from Central and Eastern Europe: Romania, Bulgaria, Croatia, Czech Republic, Hungary, Slovakia and Slovenia, according to the methodology for analyzing hierarchical and geographical clusters. In our study, we focused on foreign direct investment and remittances; among the most important external financial resources, since 1980. For the selected countries, the question we intend to answer is whether remittances behave in the same way as other capital flows, especially FDI. In particular, it was hypothesized that remittances would have a positive correlation with production growth and if assimilated to other capital flows, such as FDI.

The results obtained allowed us to conclude that the impact of foreign direct investment on GDP growth is more pronounced in the case of FDI than in the case of remittances, both in the case of using a unifactorial model and in the case of using the multifactorial model. Although there are studies analyzing the influence of remittances and foreign direct investments as determinants of economic growth, they do not cover the countries analyzed in the study.

Empirical analysis has shown, on the other hand, that remittances, together with FDI, nevertheless play an important role in economic growth in the analyzed countries. Based on the outcome, we considered that policymakers should actively seek to encourage remittances and support for this category of foreign flows to be invested in order to create a significant economic benefit. Policies similar to those created for FDI could generate a greater positive impact of remittances at economic level.

The second paper included in this paragraph of the ability thesis, Macroeconomic determinants of remittances: evidence from România, Bunduchi, Elena; Vasile, Valentina; Comes, Calin-Adrian; Stefan, Daniel al. APPLIED ECONOMICS Volume: 5 Issue: 3 Pages: 3876-3889



Published: JUL 27 2019, starts from the conclusion of the previous study that assessed the impact that, together with FDI, remittances can have on economic growth by using this category of financial flows in investments. Based on these results, the overall objective of this study was to investigate the main factors that condition the volume of remittances with direct applicability in Romania.

The following determinants of the decision to migrate and remit were initially considered:

1. average wage differential between the destination country and Romania;
2. tax system and tax pressure;
3. labour market participation – unemployment rate by category, i.e. natives and migrants;
4. the level of education, which differentiates access to decent professions, as income support, enabling remittance;
5. geographical input, as a restriction for the chosen destination for economic migration.

The results obtained allowed us to conclude the following:

Even if the salary earned in destination countries is more attractive compared to Romania, a high tax burden on wages will lead migrants to reduce remittance inflows as a result of reduced net disposable income. Even though the wage gap is smaller compared to other countries, Italy and Spain have a relatively lower tax burden on wages.

Thus, the interaction between the average wage difference and its tax rate determines the emergence of a psychological threshold of admissibility of the tax burden, compared to the wage difference, from this moment the mobility of remittance motivation turns into circular migration and / or return migration. At the same time, we notice a reduction in the importance of the ethnic criterion, with more and more emphasis on socially motivated migration, connection with extended family, openness to mixed native-migrant families, networks, compact or relatively heterogeneous communities of migrants in Romania.

The distance criterion is losing its importance, which is why migrants no longer choose countries in the geographical neighbourhood. Although at a considerable distance from Romania, the US and Canada are preferred migration destinations for Romanians, and significant remittance



flows come from these countries. The high wage gap, better job prospects and attractive integration conditions for migrants (attracting highly skilled migrants to Canada) have promoted a reduction in the importance of the distance criterion for Romanian migrants. At the same time, research should take into account new forms of employment induced by the digital economy and teleworking opportunities, which can have the same effect in reducing geographical mobility. The results finally support the conclusion that the wage gap remains a main cause of labour mobility, but we can foresee new developments in the profile of migrant workers, such as:

- strong segmentation of the migrant market according to skill level;
- a strong asymmetry of employability, both vertically (overskilled) and horizontally (other areas compatible with the qualification profile); ● migration networks are important for those on low incomes;
- persistence of discrimination regarding career access, limiting career progression;
- There is a trend towards an increase in the average skill level of new migrants and a decrease in the average age of migration.

The expected results of the research materialized in identifying the determinants of remittance inflow flows in Romania and the influence exerted by them, highlighting the limits, materialized in the impact of social factors that were not taken into account.

From the perspective of novelty elements, we mention the introduction of new independent variables (the interaction between the average wage differential and its tax rate and the interaction between the migrants' unemployment rate and their level of education), which allow the analysis of remittance determinants from a new perspective, observing the maximum level of admissibility of the tax rate at a certain level of wages, which could generate remittances and the influence exerted by migrants' level of education on the likelihood of employment.

The empirical study was based on panel data, in order to investigate the influence of determinants of the flow of remittance inflows that Romania benefited from, during 2010-2015 from those countries from which remittances exceed 1% of total remittances, although these states include the United States of America and Canada, we decided to carry out econometric research



only for European states, as a result of the significant comparative difference between migration conditions, here we are talking about visa regime, and the migration policy of these states is selective, while at the level of European states and Israel there are no barriers of free movement and selectivity from the destination states.

The third study included in this paragraph, FDI or remittances for sustainable external financial inflows. Theoretical delimitations and practical evidence using Granger causality, Vasile, Valentina; Stefan, Daniel; Comes, Calin-Adrian; et al. ROMÂNIAN JOURNAL OF ECONOMIC FORECASTING Volume: 23 Issue: 4 Pages: 131-153 Published: 2020 aims to identify the extent to which FDI inflows into migrated countries of origin influence the level, dynamics and sustainability of remittances received by households and whether or not the level of economic development is important in differentiating policy measures during the analyzed period (1996-2019). Based on the Dumitrescu-Hurlin Granger causality approach, we highlighted to what extent the level of development of the country of origin influences the hiring decision, respectively the external mobility for work or employment in FDI companies. Studying the dependence between the dynamics of FDI stocks and the evolution of remittance inflows in beneficiary countries, the following hypotheses were chosen as research objectives:

- (1) whether the attractiveness for FDI in the country of origin mitigates the dynamics of external mobility of the working-age population,
- (2) to what extent the level of GDP per capita of a country influences the attractiveness of FDI inflows and the level of remittances sent by migrants to countries of origin
- (3) whether the growth index of FDI stock dynamics in relation to remittance inflows can be appreciated as a marker for differentiating labour market policy measures for retaining human capital.

The analysis of conditionality between external financial flows and economic growth has been an intensely discussed topic in recent years, especially from the perspective of their sustainability in a society with major conjunctural events. Moreover, given the regional integration efforts of national economies and the convergence process, maintaining macroeconomic balances is a condition for the attractiveness of foreign investors. It is well known that, in recent decades, the main sources of external financing for developing countries have been the three financial flows



- ODA flows (Official Development Assistance), FDI (Foreign Direct Investment) and Remittances - (OECD, 2020a), and for the other (medium-developed) countries predominantly the last two. For less developed countries, remittances and FDI amounts supported economic growth, but from the perspective of employing the working-age population on the national labor market, the effects are different, controversial and extremely volatile.

The starting point of our research was the hypothesis demonstrated by reality and highlighted by specialists according to which FDI (Das & Sethi, 2020) and remittances (Mehedintu et al., 2020) positively influence the economic growth of less developed countries. The two external sources dominate the hierarchy of financial inflows, consistently exceeding ODA and portfolio investment (World Bank, 2019b). For this reason, more and more researchers (Arif et al., 2018; Combes et al., 2019; Comes et al., 2018; Driffield and Jones, 2013; Eggohet et al., 2019; Giuliano and Ruiz-Arranz, 2009; Lartey, 2013) looked at the effects of both variables on the level of economic growth.

Thus, the question is to what extent the two external financial sources can be considered sustainable contributors to resilience in the face of economic or humanitarian crises. The analysis of statistical data highlights at least two findings: a) the inverse correlation between the level of economic development (measured by GDP/capita) and the share of remittances in GDP and b) the behavior of foreign investors depends on maintaining comparative cost advantages for factors of production (especially labor) and the friendly tax system in the host country.

There are numerous studies in which the causal relationship between remittances and economic growth has been analyzed (Ali et al., 2018; Chowdhury, 2016; Herzer et al., 2008; Khurshid et al., 2020; Le, 2009; Radius, 2015; Siddique et al., 2012) and FDI - economic growth respectively (Abbes et al., 2015; Duarte et al., 2017; Soumaré & Tchana Tchana, 2015), demonstrating the presence or absence of a Granger causal relationship (appendix 1 of the article). As regards the relationship between FDI and remittances, Shafqat et al. (2017) tested Granger causality for 31 developing countries between 1991 and 2015 and identified bidirectional causality. Also, at the level of poor countries, namely 35 countries in Africa, Latin America and Asia-Pacific, Basnet et al. (2014) obtained different results depending on geographical location. It was identified



the presence of a one-way relationship between remittances and FDI for African countries and the lack of any influence on other states during 1980-2010. Of course, a number of specific factors influence the two financial flows, but it is important to see to what extent FDI shapes the medium and long-term employment model in the host country, respectively – the demand and profile of vocational training, the decision on external mobility for work or return to the country – remittances being "compensated" by higher salaries in FDI companies.

The added value of this paper lies in the fact that it analyzes the extent to which the dynamics of the two financial flows influence each other, or not, and whether they have a different impact on the sustainability of economic growth, and this influence depends on the level of development of the country. Another contribution of the paper is the analysis of these two-dimensional relationships on some European countries, since in the literature were considered mainly less developed/developing countries in Asia and Africa. As regards the EU space, several recent papers debate the influence of FDI or remittances on economic development in less developed countries in the region (Apostolopoulos et al, 2020; Cisma et al., 2020; Gherghina et al, 2019) without further analysis of the causality between FDI and remittances.

The database used in the research consists of the following variables: share of remittances to GDP, share of FDI in GDP and GDP per capita, which have as source World Bank indicators (World Bank, 2020b, 2020c, 2020a). the objective of this structure was to observe the significance and relevance of FDI, as well as remittances received by each country, taking into account their share in GDP, not their volume. The period under review varies between 1996 and 2019.

The countries included in the research are EU Member States, from which we have removed Luxembourg and Ireland as a result of outlier behaviour. In addition, three non-member states (Moldova, Ukraine and Turkey) were added to our sample, due to the fact that they have a similar migratory behaviour to Member States located in Central and Eastern Europe and over 50% of their migrant population chose EU Member States as destinations. Although Serbia has a similar behavior to the 3 non-EU states included in the research, the availability of data only since 2007 did not allow us to include it in the analysis. Although countries were, as a preliminary approach, considered together, their behaviour and specificity required grouping. Thus, the 29 countries were grouped into 3 panel datasets according to the level of economic development



(Annex 2 of the article), expressed in GDP per capita (Panel 1, countries with a GDP/capita below half of the EU average, the second, with GDP/capita between half and the EU average level and Panel 3, with GDP/capita above the EU average).

The results revealed the manifestation of a bidirectional Dumitrescu-Hurlin Granger causality between remittances and GDP/capita for all analyzed countries (Table 17 in the article). In the case of less developed countries (GDP/capita <1/2 EU average) and developed countries (GDP/capita > EU average), the relationship is much stronger.

The results indicate a bidirectional causality between the level of economic development and remittances. This implies that remittance flows contribute to economic growth and are mainly directed towards consumption in less developed countries.

However, we note that the level of economic development of countries of origin leads to migration for higher earnings instead of employment in the national labour market. In contrast, in developed countries the motivation for migration is different - professional development.

The same analysis of Dumitrescu-Hurlin Granger causality for panel data performed for the FDI-GDP/capita binomial shows a similar situation compared to the relationship between remittances and GDP/capita. FDI was found to contribute to the economic growth of beneficiary countries in all countries analysed (**Eroare! Fără sursă de referință.**8). Their level of development is attractive to FDI companies due to differences in labor costs in these markets.

The analysis revealed that DHG FDI causes remittances in almost all countries where we have unidirectional causality, except Slovakia, where DHG remittances cause FDI. This inverse causality of Granger is quite controversial from the perspective of economic interpretation and requires various approaches, but also complements the analysis with additional information.

Following the application of the Dumitrescu-Hurlin Granger test for panel data, we found that the level of economic development of the analyzed countries influences the intensity of the causal relationship between FDI and remittances.



Chapter 3 presents the Plan for the evolution and development of one's own professional, scientific and academic career. Starting from the foundation of a career of over 23 years in higher education, in which I went through all professional stages from university assistant to associate professor. I am currently an associate professor at the Department of Economic Sciences, Faculty of Economics and Law of the George-Emil Palade University of Medicine, Pharmacy, Sciences and Technology of Tîrgu-Mureș, a university formed in 2018 following the merger of "Petru Maior" University of Tîrgu-Mureș with the University of Medicine and Pharmacy of Tîrgu-Mureș.

Between 2002 and 2023 we carried out teaching activities in the first stage at seminar level and subsequently at course level in the disciplines: Investment Management and Financing, Commercial Insurance, Corporate Finance – at the level of bachelor's degree programs and Financial Management, respectively, Financial derivatives and alternative investments – at the level of master's study programs.

Since 2003 I have been an elected member of the Board of the Faculty of Economic, Law and Administrative Sciences of Petru Maior University of Targu Mures and subsequently of the Faculty of Economics and Law of UMFST.

Since 2008 I have been a member of the UPM Senate and subsequently UMFST, serving between 2016-2018 as Vice-President of the UPM Senate.

During 2009-2012 I was appointed Director of the Training and Training Center within UPM, quality in which I coordinated postgraduate course activities, training projects financed by POS-DRU, other Lifelong learning training activities.

During 2012-2016 I was appointed Vice-Dean of the Faculty of Economic, Legal and Administrative Sciences with attributions in both teaching and research.

Currently, starting with April 2022, I have been appointed, on a competitive basis, Dean of the Faculty of Economics and Law at UMFST "George Emil Palade" in Targu Mures.

During 2014 -2022 I also served as coordinator of the bachelor's degree program Finance and Banking, quality in which I was directly involved in coordinating and developing ARACIS periodic evaluation files, developing and updating curricula.



The didactic and managerial activity carried out at faculty and university level is complemented by extracurricular activities to involve students in national and international competitions organized by AFER, partner universities, professional associations (CFA, CECCAR), member of organizing committees for summer schools (BEST Summer school – 11 editions), practice projects, expanding cooperation with local, regional and national stakeholders, establishment of teaching laboratories, director of institutional development projects, etc.

Research activity has been an important concern throughout his academic career, contributing significantly to the development during his over 23 years of academic career.

The doctoral thesis (2009) entitled "Investment Decision in the Competitive Environment" addresses a research topic assigned to direct investments, which combines theoretical and applied approaches, offering specific solutions in the field of substantiation of investment projects. During the elaboration of my doctoral thesis, I benefited from a Nicolae Titulescu research scholarship *on the topic The mechanism of financing at European Union level based on projects financed from economic and social cohesion funds.*

The next step in the development of my research career was obtaining the quality of postdoctoral student at the Institute of National Economy of the Romanian Academy, where during 2020-2012 I went through the formative stages of the postdoctoral school and elaborated the thesis *The impact of uncertainty in evaluating real options, in the informational conditions of emerging markets.*

The specific objectives, assumed for the next period, of the research activities will be subscribed to the field of finance by implementing research projects or knowledge transfer in concrete economic activities, as well as by assuming research themes at organizational level in order to further develop the interdisciplinary research lines mentioned above, the financing of the medical system, the financial impact of digitization projects and the investment decision at an entrepreneurial level.