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DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN THE EU: THE CASE OF THE CZECH REPUBLIC AND GREECE

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ABSTRACT

This paper attempts to explain divergences in inward foreign direct investment (FDI) in the sphere of production among members of the European Union (EU). Specifically, it investigates the determinants of FDI in the case of the Czech Republic and Greece and provides insights into the reasons for their different performance in attracting FDI. The empirical part includes an autoregressive distributed lag (ARDL) approach in order to determine long-run and/or short-run relationships between the examined variables. The main findings of the study show that market size and international trade competitiveness seem to play an important role in attracting FDI in both countries. In the case of Greece, FDI attractiveness seems to be strongly related to the level of its economic complexity. Labour costs seem to play a small role in the Greek economy while their role in the Czech economy seems to be insignificant. Another interesting finding is that FDI in the case of the Czech Republic seems to serve as a substitute to foreign intra-industry trade, a finding which does not hold for FDI attracted to Greece.

Keywords: Foreign direct investment, EU, Czech Republic, Greece, economic complexity

JEL Classification: F14, F15, F21, F23

Introduction

Since the 1980's the European Union (EU), then named the European Economic Community (EEC), has been among the most attractive regions in the world as a destination for foreign direct investment (FDI). According to the UNCTAD database, the EU's inward stock of FDI since the 1980's has fluctuated somewhere between 25 and 40 percent of the world total. Furthermore, an important feature concerning European inward FDI and foreign trade since the early 2000's is that intra-EU FDI and trade is greater than extra-EU FDI and trade, with intra-EU FDI accounting for over 70% of total FDI in the EU (ESPON: 2018) and intra-EU trade accounting for over 60% of total EU trade (EUROSTAT). However, the distribution of FDI among EU members demonstrates certain heterogeneities. This paper attempts to explain a part of this heterogeneity through a comparative empirical analysis between two EU members, namely, the Czech Republic and Greece. The selection of these two countries is made in order to investigate how EU members with a different historical political and economic background perform in attracting FDI.

The Czech Republic is a former Central and Eastern European (CEE) country that has been a member of the EU since 2004 but is still not a member of the Eurozone (EMU). Greece, on the other hand, is a Southeastern European country which has been a member of the EU since the launch of the common market in 1993 and was formerly a member of the European Economic Community (EEC) since the early 1980's. Greece is also a member of the Eurozone since 2001. Greece has also gone through a deep economic crisis since 2008, from which it is still struggling to recover.

Our analysis will focus on FDI realized in the sphere of production, as our basic aim is to investigate the possible interaction of inward FDI with the productive capabilities and international trade competitiveness of the host country. Thus, we will try to examine possible factors that attract FDI into the domestic production of internationally tradable goods and the domestic production of non-tradable goods and services. We choose to exclude FDI in finance as we consider that this type of FDI is not connected directly to the sphere of production. Finally, the analysis will make use of a level of necessary abstraction, focusing on general theoretical forms of interpretation and on basic macroeconomic variables.

The rest of the paper is organized into four sections. In the first section we set the

theoretical framework concerning the specific types of FDI we deal with and their respective motives. The second section presents the research model, the sources of data used, and the variables included in the empirical analysis. In the third section the paper proceeds with the empirical analysis and its findings. Conclusions, limitations and further research suggestions are discussed in the fourth and final section.

Theoretical framework

Main types and motives of FDI

Depending on its orientation and individual motives, FDI in the sphere of production can be broadly categorized into the three following main types:

1st type of FDI: "Market-seeking"/"horizontal"/"demand oriented" FDI aiming at the production of goods for the domestic market in order to substitute the export of goods by the investor or, in other words, in order to substitute the import of goods to the host country. FDI of this type usually follows an initial marketing strategy based on exports. According to the literature (Dunning 2000: 164; Lim 2001: 10; Cohen 2007: 67; Dunning and Lundan 2008: 69; Rugman and Verbeke 2009: 153), an important motive for foreign capital to choose to invest in a specific country is the country's current and projected growth potential, or in other words the size and growth rate of the host country's market. In addition, due to economies of scale, FDI in a larger market, *ceteris paribus*, can reduce the (unit) cost of production, and therefore can have a positive contribution to profitability.

Another basic motive of this kind of FDI is related to the need of foreign capital to circumvent the barriers to international trade, i.e. tariffs (Bukharin 1929: 98; Dunning and Lundan 2008: 70-71) and monetary protection (Busch et al. 1984: 49). Tariffs and monetary protection are forms of barriers imposed on international trade by local governments in order to protect specific domestic industries (capitals) which have reached a certain level of international competitiveness (productivity) but are still not as competitive (productive) as foreign capital. While tariffs (a tax on imports) operate in a quite simple manner, the way monetary barriers operate in protecting domestic industries is a bit different.

According to Busch et al. (1984: 49), the way monetary barriers operate in protecting domestic industries (and thus attract FDI) can be explained through the *modification of the law of value in the world market*. Regarding intra-industry competition, and supposing a like product, when the capital of a more advanced

country sells this product at the price of the world market,[1] it usually reaps an additional profit due to its higher level of productivity (lower production costs). This additional profit would then allow the selling price of a like product to be squeezed below the international average (albeit above the national), thereby increasing demand for the more developed country's products. In terms of total national capitals, an increasing demand for the products of the more advanced country, and a diminishing demand for the products of the less developed country, leads to trade surpluses for the more advanced country and, correspondently, to trade deficits for the less developed country. In a free-floating exchange rate system, this results in the appreciation of the more advanced country's currency, and the devaluation of the less developed country's currency, thus making the more advanced country's products relatively more expensive. The outcome, *ceteris paribus*, will be a drop in sales of the more advanced country's products in the world market. This mechanism restricts the additional profits obtained by more productive capitals residing in more advanced countries when selling in the world market. Thus, foreign capitals that do not wish to see their local market shares (profits) diminish may choose to invest in the domestic market and produce locally, in order to circumvent currency fluctuations (see also Milios and Sotiropoulos 2009: 158).

However, it must be stressed, that the motive to circumvent tariff or/and monetary barriers (through FDI) occurs among countries which engage mainly in intra-industry trade, that is, among countries with similar production and trade structures.[2] The latter means that tariff or/and monetary barriers are a motive for FDI mainly between countries that have comparable levels of productivity and international competitiveness. A final remark concerning tariff and monetary protection, as a motive for FDI, is that once foreign capital has invested in a country which incorporates tariff and monetary protection its investment receives the same protection as local capitals do (Bukharin 1929: 98).

We therefore expect the establishment of the EU (abolition of tariffs) and the subsequent creation of the Eurozone (abolition of national currencies) to have a negative impact on market-seeking FDI among EU members, since most inward

[1] The international price of a commodity is defined as the average price of commodities produced internationally and as the individual price of commodities which are produced under the international average conditions of this sphere of production and which constitute the major mass of its products.

[2] If the home country of the investor and the host country of the investment produce mainly different products there is no meaning for the latter to impose tariffs as this would not protect its industries against the former. The only thing the host country would probably accomplish, through the imposition of tariffs, in this case would be to make imported products, that it does not produce anyway, more expensive.

FDI in the EU and the Eurozone originates from within the EU and the Eurozone. However, the establishment of both the EU and the Eurozone may have a positive impact on market-seeking FDI that originates from countries outside the EU and the Eurozone, as these forms of economic integration enlarge the European common market.

Finally, other reasons which might make foreign capital more competitive through domestic production, rather than through exports, are the proximity to the local market which makes it easier to adapt to domestic changing circumstances and preferences, as well as the ability to better exploit local externalities (Lim 2001: 11).

2nd type of FDI: "Export-oriented"/"vertical"/"supply oriented" FDI aiming at the production of goods for the global market. FDI of this type may concern the production of final products in a specific foreign country or may be associated with decentralization of the stages of production, as it is followed by relocation of segments of the production chain to various foreign countries. According to the literature (Amin 1976: 211; Dunning 1998: 53; Lim 2001: 11; Cohen 2007: 70; Rugman and Verbeke 2009: 154), the basic motives for this type of FDI are related mainly to input cost reduction of the production process through low unit labour costs (ULC) or other input costs, and access to externalities caused by agglomeration economies (e.g. previous FDI or domestic industries clustering at a specific foreign location).

Concerning wages, one must bear in mind that the choice of the location for investment by foreign capital is based on wage comparisons between countries with similar levels of productivity (Amin 1976: 211). This means that wages cannot be seen independently of productivity as a factor in attracting FDI, and that national (or sectoral) absolute cost advantages may play an important role as a motive of export-oriented FDI. In particular, when the goods produced are used mainly as intermediate inputs for the home company (i.e. when intra-firm trade takes place), this type of FDI may relate to the attempt by enterprises to increase their rate of profit by reducing the costs of fixed and circulating capital (Marx 1999: 168).

The existence of national currencies may also play a role in attracting export-oriented FDI, as a depreciated exchange rate, *ceteris paribus*, reduces the costs of

domestic labour[3] and of other local inputs in nominal terms,[4] such as land (Xing 2006: 199), and thus may lead to an increase of capital profitability. Moreover, a depreciated exchange rate that, *ceteris paribus*, cheapens exported goods could be a motive for export-oriented FDI. Therefore, in the case of monetary integrations (such as the Eurozone) export-oriented FDI between members is expected to be affected negatively, as the potential cost advantage of certain countries due to their depreciated currencies no longer exists. Export-oriented FDI that originates from countries outside the monetary union may also be affected negatively, especially if the host country of investment used to have a depreciated exchange rate compared to the new common currency.

Tariffs, in some cases, may also have a negative impact on export-oriented FDI. Lim (2001: 13), argues that (in contrast to market-seeking FDI) export-oriented FDI is expected to increase with a more tariff free-trade environment. The main reason behind this is that vertical (export-oriented) FDI may require flows of intermediate inputs from and to the host country (see also Giannitsis 1983: 353). So, if tariffs exist between countries whose capitals engage in cross-country vertical FDI in order to export to a third country, the existence of trade barriers between them will probably make final products exported to the third country more expensive. Therefore, the establishment of the EU is expected to have a mixed impact on FDI, especially between EU members, depending on whether it is of a more market-seeking or export-oriented type.

3rd type of FDI: FDI in the non-tradable sectors, aiming at the production of goods and services for the domestic market, as in the first type of FDI. This type of FDI, however, does not aim to substitute the export of goods by the investor or, in other words, does not aim to substitute the import of goods to the host country. FDI of this type basically includes investments in the energy, construction, transport, logistics and communication services sectors, and all other domestic services. According to the literature (Kolstad and Villanger 2008: 519; Riedl 2010: 742), the motives for this type of FDI are similar to the ones concerning market-seeking FDI the main difference being, however, that FDI of this type is not affected by the host country's international trade performance and/or foreign trade policy (e.g. the existence of tariffs or monetary protection). Thus, the basic motives for FDI in the non-tradable sectors are related mainly to the size and growth potential of the domestic market. Larger markets, due to economies of scale, *ceteris paribus,* may attract FDI in the non-tradable sectors because this reduces the (unit) cost of

[3] Provided that real-wage goods are mainly produced domestically.

[4] Cost reduction in this case does not originate in the sphere of production but is rather a monetary result that appears in the sphere of circulation due to the depreciation of the local currency.

production and therefore could have a positive contribution to profitability.

Additional remarks concerning FDI and competitiveness

Another important factor which must be considered when examining what attracts FDI to a specific location is the possible interaction of incoming FDI with the existing productive capabilities of the host country. For example, FDI in order to produce low-tech products will usually be attracted to countries with simple productive structures, while FDI targeting to produce medium to high-tech products will usually be attracted to countries with more complex productive structures. This means that FDI may tend to concentrate (cluster) in specific locations possibly because of interconnections between FDI and certain domestic industries. Furthermore, both market-seeking and export-oriented FDI may sometimes tend to concentrate in certain locations possibly because of interconnections between the two types of FDI. This implies that in many cases the incentives of FDI are complex, corresponding to more than one type of FDI and that, also, in certain cases an FDI may serve both as a market-seeking and as an export-oriented investment (Lim 2001: 11). This matter is related to the level of development and international structural competitiveness of a national economy. An index which represents the level of development and international structural competitiveness, and at the same time defines the hierarchical position of a national economy in the world economy, is the Economic Complexity Index (ECI) (Hidalgo and Hausmann: 2009).

According to this index, a way to estimate economic complexity is by examining the export structure of a national economy (Hidalgo and Hausmann 2009: 1; Hidalgo 2009: 3; Hausmann et al. 2011: 20). As Hidalgo and Hausmann maintain, a country's level of economic complexity is related to the variety ("*diversity"*) of products that the country exports and to the degree of uniqueness ("*ubiquity"*) its exported products possess, and can be captured by the ECI[5], which is a reliable proxy of the degree of interconnection between domestic productive sectors.

While unit labour costs (ULC), in a way, usually represent cost competitiveness, economic complexity, in a way, embodies *"structural"* competitiveness (Economakis et al. 2015: 7). We, therefore, consider economic complexity as a proxy for structural competitiveness, which is related to productive national "externalities" (Economakis et al. 2015: 425). The latter could have a positive contribution to profitability by reducing the (unit) cost of production. Thus,

[5] For a detailed description concerning the determination of a country's economic complexity index, see Hausmann-Hidalgo et al. (2011).

countries that demonstrate a relatively higher level of economic complexity will usually attract FDI, especially to produce medium to high-tech products, the production of which requires a sufficient level of structural competitiveness.

As for FDI in the non-tradable sectors and its relation to economic complexity, one could argue that countries with relatively higher levels of economic complexity are more probable to attract FDI also in non-tradable goods and services, as higher levels of economic complexity usually reveal the presence or potential[6] of more developed markets.

Another point we would like to further clarify, concerning FDI determinants, is the close relationship between FDI and international trade competitiveness. Our view is that international trade imbalances essentially reflect imbalances in international competitiveness (Economakis et al. 2015: 2; Shaikh 2016: 535). Therefore, we argue that, in the case of market-seeking FDI, a country's positive trade balance may be a sign of the presence of domestic competitive firms with which foreign capital cannot compete easily through exports (if the goal is to penetrate the domestic market), but only through domestic production (via FDI). If, on the other hand, foreign capital intends to carry out an export-oriented investment, a country with a proven history of international trade competitiveness (i.e. proven productive capabilities) may be preferred over a country which demonstrates a generally poor trading performance.

Thus, foreign capital will usually seek to invest in countries which demonstrate a high degree of international trade competitiveness, either in order to expand their domestic market share *vis-à-vis* their local competitors (market-seeking FDI), or in order to exploit domestic productive capabilities and export to the rest of the world (export-oriented FDI). Concerning the latter, we are aware of the fact that inward FDI might sometimes improve the international trade competitiveness of a host country (i.e. that a dynamic interrelationship exists between FDI and trade), however, we argue that international trade competitiveness depends primarily on national economic factors. The measure we will use in our empirical investigation as a proxy for international trade competitiveness is the ratio of the value of exports of goods to imports of goods or the coverage rate of imports of goods by the exports of goods (X/M).

[6] According to Hausmann-Hidalgo et al. (2011: 29), economic complexity can help predict future economic growth.

Data and model specification

As we have mentioned, our analysis will focus on FDI realized in the sphere of production, excluding FDI in finance. However, there is a lack of sectoral FDI data for the entire span of the time series examined, and thus the econometric analysis will involve general (aggregated over industries) FDI data, instead of FDI concerning the sphere of production specifically. Figures 1 and 2 present the sectoral distribution of FDI in the Czech Republic and Greece, as a percentage of the total domestic inward stock of FDI.

Figure 1

Czech Republic - Sectoral (%) distribution of FDI (2003-2012)

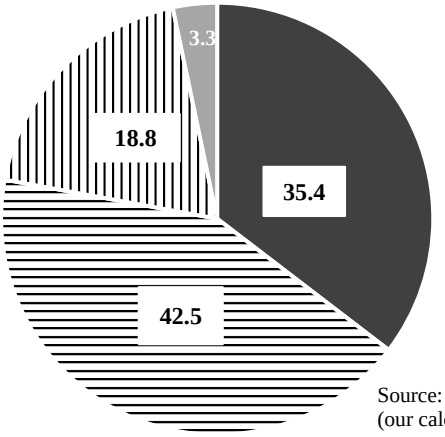
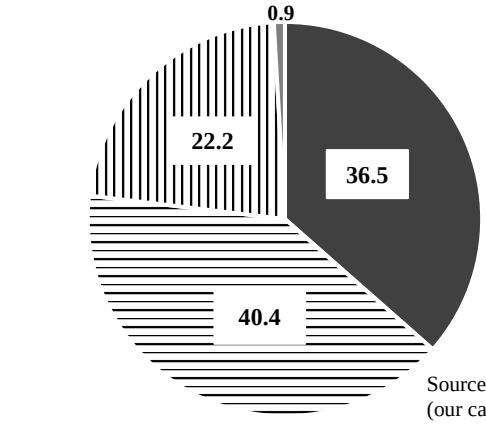


Figure 2

Greece - Sectoral (%) distribution of FDI (2003-2011)



As we can see from Figures 1 and 2, in both countries approximately one out of five foreign direct investments has been realized in the financial sector. Another observation is that the distribution of FDI between domestic sectors that produce manufactured internationally tradable goods and non-tradable goods and services is, more or less, the same for both countries.

The study has used time series data for the Czech Republic from 1993 to 2017, and for Greece from 1980 to 2017. The data for FDI, GDP and foreign trade were collected from the UNCTAD datacenter, the data for unit labour costs were collected from the AMECO[7] database, the data for economic complexity were collected from the OEC,[8] while data for the real effective exchange rate were collected from Darvas, Zsolt (2012a). The basic econometric model examined is:

$$FDI = \alpha_0 + \beta_1 GDP + \beta_2 ULC + \beta_3 REER + \beta_4 ECI + \beta_5 X/M + TARIFFS + u_t \quad (1)$$

With this model we try to examine the impact of market size (GDP), unit labour

[7] AMECO: Annual macroeconomic database of the European Commission. https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm
[8] OEC: Observatory of Economic Complexity. https://oec.world/en/rankings/country/eci/

production costs (ULC), real effective exchange rate (REER), economic complexity (ECI), international trade competitiveness (X/M) and European economic integration, as it is expressed by the absence of trade barriers (TARIFFS), on FDI attractiveness. Our dependent variable will be the host country's inward stock of FDI as a percentage of the world total ($FDI=FDI_H/FDI_W$). Measuring inward FDI stock in the form of a percentage of the world total inward FDI stock provides us with a meaningful estimate of the host country's FDI attractiveness relative to the rest of the world. Our first independent variable will be the host country's market size as a percentage of the world market size ($GDP=GDP_H/GDP_W$), again percentages are used here in order to estimate the host country's market size weight compared to the world market size. Our second independent variable will be the host country's unit labour costs[9] relatively to the average unit labour costs of the EU15 ($ULC=ULC_H/ULC_{EU15}$). Our third independent variable will be the real effective exchange rate (REER)[10] of the host country. Our fourth independent variable will be the economic complexity index (ECI) of the host country. Our fifth independent variable will be the host country's ratio of exports to imports (X/M). Finally, we will use a dummy variable (TARIFFS) in order to investigate the potential impact of the European trade integration, as it is expressed by the abolition of tariffs, on inward FDI. The dummy variable receives the value of 1 before the accession of each country to the EU and receives the value 0 after the accession to the EU. In the case of the Czech Republic the year of accession to the EU is 2004, while the respective year for Greece is 1993. The reason why we choose the "TARIFFS" dummy variable to receive the value 0 after the accession to the EU is because both Greece's and the Czech Republic's main trading partners are the rest of the EU countries.

The selection of the specific group of variables is made in order to investigate the interaction of FDI with the productive capabilities and international trade competitiveness of the host country. In the case where FDI is not related to the production of internationally tradable goods, the variables REER, X/M and TARIFFS are expected to play no role in attracting FDI.

[9] $ULC = \frac{\frac{\text{Total compensation of employees}}{\text{Total employees}}}{\frac{\text{GDP at constant market prices}}{\text{Total employment}}}$, (1995=100). https://ec.europa.eu/economy_finance/ameco/

[10] The real effective exchange rate (REER) measures the real value of a country's currency against the basket of the trading partners of the country. The REER is calculated from the nominal effective exchange rate and the relative prices between the country under study and its trading partners (Darvas, Zsolt 2012a: 1). An increase in the REER implies an appreciation of the national currency, while a decrease in the REER implies a depreciation of the national currency.

More specifically, in the case where FDI is mainly of a market-seeking type, we expect FDI to be positively related mainly to the host country's market size (GDP) and the presence of trade protection (TARIFFS). In particular, a statistically significant relationship with TARIFFS may indicate that FDI serves as a substitute to foreign intra-industry trade. In the case where FDI is mainly of an export-oriented type, we expect FDI to be negatively related mainly to unit labour costs (ULC), while we expect trade protection (TARIFFS) to have a mixed impact on export-oriented FDI. Domestic market size also does not seem to have a decisive impact on export-oriented FDI. Market-seeking and export-oriented FDI are expected to have a positive (negative) relationship with national currency depreciations (appreciations), whereas currency fluctuations (REER) are not expected to influence FDI in non-tradables. We expect market-seeking and export-oriented FDI to be positively related to the host country's economic complexity (ECI) and its ratio of exports to imports (X/M). Finally, we expect all three types of FDI to be positively related to the host country's economic complexity (ECI). Table 1 presents an overview of the expected impacts discussed.

Table 1: Expected impact of variables

Dependent variable	Independent variables						Dummy variable
	GDP	ULC	REER	ECI	X/M	FDI	TARIFFS
Market-seeking FDI	+	-	-	+	+	+*	+
Export-oriented FDI	none	-	-	+	+	+*	+/-
FDI in non-tradables	+	-	none	+	none	+*	none

Notes: (+) means that a positive change in the independent variable has a positive impact on the dependent variable, (-) means that a positive change in the independent variable has a negative impact on the dependent variable. *The positive sign in this case implies that X_{t-1} has a positive impact on X_t.

Empirical analysis

Preliminary observations

Figures 3 and 4 present the variables under investigation for the case of the Czech Republic and Greece. Data are annual time series from 1993 to 2017 for the Czech Republic and from 1980 to 2017 for Greece.

Figure 3: Plot of FDI, GDP, ULC, REER, ECI and X/M for the Czech Republic (1993-2017)

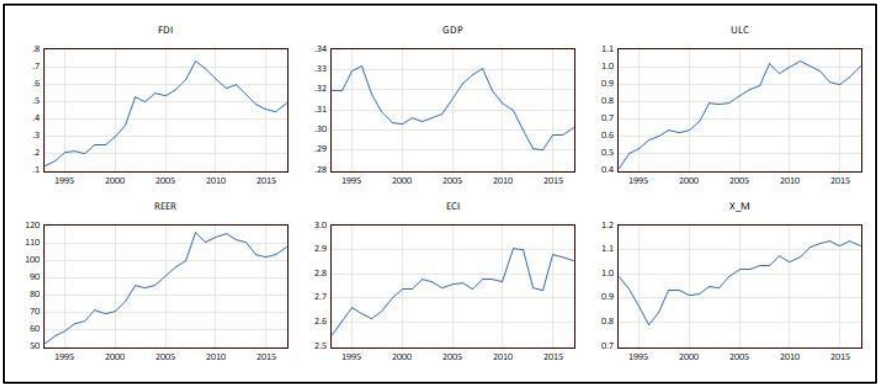
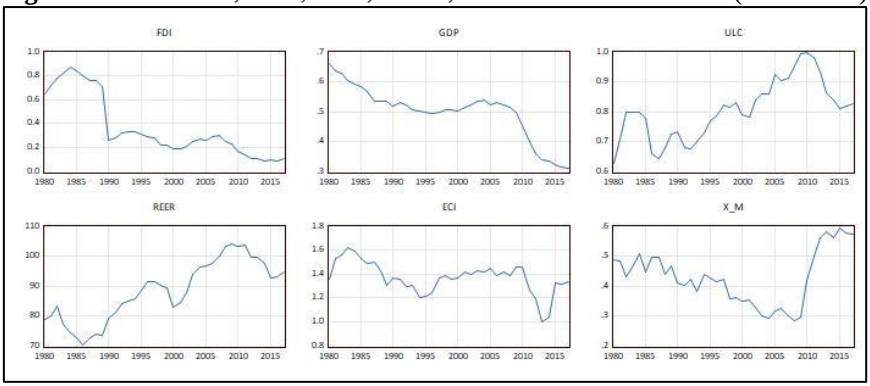


Figure 4: Plot of FDI, GDP, ULC, REER, ECI and X/M for Greece (1980-2017)



Sources: UNCTAD for FDI, GDP and X/M, AMECO for ULC, OEC for ECI and Darvas, Zsolt (2012a) for REER.

A first observation that can be made by examining Figures 3 and 4 is that FDI and foreign trade seem to have quite different patterns in the case of the two countries. In the case of the Czech Republic, which is a former CEE country, FDI rises rather sharply throughout the period prior to the accession to the EU (2004) and continues to rise until the global economic crisis of 2008. After 2008, FDI has a downward trend in the Czech Republic, a trend which is similar to the general trend concerning FDI in the rest of the EU following the global economic crisis of 2008

(UNCTAD). However, FDI has an overall upward trend from 1993 to 2017 for the Czech Republic and seems to be picking up quite fast in the last couple of years. As far as the ratio of exports to imports is concerned, after a brief deterioration due to the political and economic instability following the dissolution of the Eastern Bloc, as well as the split of Czechoslovakia, in the early 1990's (Janda and Munich 2004: 28; Koyame-Marsh 2011: 79) the ratio of exports to imports of the Czech Republic has had a relatively steady upward trend until the year 2017.

On the contrary, Greece, which is a Southeastern European country, a member of the EEC since 1981 and a member of the EU since 1993, has a quite different pattern in relation to the Czech Republic concerning FDI and foreign trade. After a brief increase in the early 1980's, following its accession to the EEC, FDI decreases impressively in the early 1990's and has had an overall downward trend ever since. Greece's ratio of exports to imports has had a relatively steady downward trend from the early 1980's until the 2008 global economic crisis, when it starts to improve rather fast, mainly due to the restrictive economic policies following the Greek Memorandum programs which suppressed imports (see Economakis et al. 2016: 57).

In the following sections of this paper we will try to investigate some of the possible reasons behind the impressively different performances between the Czech Republic and Greece, regarding inward FDI.

Econometric analysis

Tests for stationarity

Before we proceed with econometric estimations, we must first examine the stationary properties of our variables. We choose to use the Phillips-Perron (PP) unit root test because it is found to be more robust when smaller samples are examined (Arltova and Fedorova 2016: 63; Akeyede et al. 2016: 153). The Phillips-Perron unit root test is based on the regression given in equation (2):

$$\Delta y_{t-1} = \alpha_0 + \gamma y_{t-1} + e_t \quad (2)$$

Where Δ is the first difference operator, α_0 is the constant term and e_t is the error term. The null hypothesis is H_0: $\gamma = 0$ and the alternative hypothesis is H_α: $\gamma < 0$, where if $\gamma = 0$ then y_t follows a pure random walk model. The PP unit root test makes a correction to the t-statistic of the coefficient γ in equation (2) in order to account for serial correlation in e_t (Asteriou and Hall 2007: 295). Table 2 presents

the results of the PP unit root tests performed for the case of the Czech Republic and Greece.

Table 2: Unit root tests

Phillips-Perron unit root test (levels): CZECH REPUBLIC					
Variable	Bandwidth	T-stat.	Probability	Stationary	Non-stationary
FDI	1	-0.7487	0.9569	No	Yes
GDP	2	-1.9282	0.6090	No	Yes
ULC	1	-1.7198	0.7108	No	Yes
REER	1	-0.9976	0.9256	No	Yes
ECI	23	-2.2302	0.2014	No	Yes
X/M	0	-0.5931	0.8546	No	Yes
Phillips-Perron unit root test (first differences): CZECH REPUBLIC					
Variable	Bandwidth	T-stat.	Probability	Stationary	Non-stationary
ΔFDI	2	-3.6230	0.0009	Yes	No
ΔGDP	2	-2.7736	0.0078	Yes	No
ΔULC	1	-3.8479	0.0005	Yes	No
ΔREER	1	-3.9092	0.0004	Yes	No
ΔECI	13	-5.0883	0.0000	Yes	No
ΔX/M	9	-3.5308	0.0011	Yes	No
Note: Bandwidth selected automatically by Newey-West criteria					

Phillips-Perron unit root test (levels): GREECE					
Variable	Bandwidth	T-stat.	Probability	Stationary	Non-stationary
FDI	2	-2.0627	0.5488	No	Yes
GDP	4	-1.4027	0.8436	No	Yes
ULC	1	-2.0104	0.5767	No	Yes
ECI	0	-2.5360	0.3102	No	Yes
REER	2	-1.9061	0.6312	No	Yes
X/M	3	-1.1152	0.9127	No	Yes
Phillips-Perron unit root test (first differences): GREECE					
Variable	Bandwidth	T-stat.	Probability	Stationary	Non-stationary
ΔFDI	0	-5.2095	0.0000	Yes	No
ΔGDP	3	-2.5791	0.0114	Yes	No
ΔULC	4	-4.2484	0.0001	Yes	No
ΔECI	4	-5.5683	0.0000	Yes	No
ΔREER	2	-4.3840	0.0001	Yes	No
ΔX/M	3	-5.5836	0.0000	Yes	No
Note: Bandwidth selected automatically by Newey-West criteria					

The stationarity tests reveal that our time series are non-stationary at levels but are stationary at first differences, so we cannot apply a simple ordinary least squares (OLS) approach. Another aspect which must be considered when examining time series in economics is that the impact of an explanatory (independent) variable X on a dependent variable Y is rarely instantaneous. The lag in the impact between

different variables may be due to psychological, technological, institutional or other reasons (Gujarati and Porter 2009: 618). It takes time, for example, before investments bear fruits (Baltagi 2008: 129). Finally, it is possible that past (lagged) values will influence current values of a variable.

Therefore, we choose to implement a dynamic autoregressive distributed lag (ARDL) approach, which means that all the models we estimate take into account lagged values of both the explanatory (independent) and dependent variables.

Tests for cointegration

Initially, we perform an autoregressive distributed lag (ARDL) bounds test in order to first determine if there is a cointegrating (long-run) relationship between the examined variables. If the variables are found to be cointegrated we estimate both an ARDL long-run and error correction (short-run) model (ECM). Through the ECM we also determine the speed of adjustment of the short-run coefficients towards the long-run (equilibrium) model (Engle and Granger 1987: 252). If the variables are not found to be cointegrated we simply estimate an ARDL short-run model, taking first differences.

In order to check for cointegration we apply the ARDL bound testing method following Pesaran and Shin (1998) and Pesaran et al. (2001). When testing for cointegration among the variables, the ARDL bound testing approach is preferred because it can estimate simultaneously both the long-run and short-run coefficients of the model under examination. The ARDL model used in order to estimate the presence of a cointegrating (long-run) relationship between the examined variables is given by equation (3):

$$\Delta FDI_t = \alpha_0 + \sum_{i=1}^{P} \beta_{1i} \Delta FDI_{t-i} + \sum_{i=0}^{q} \beta_{2i} \Delta GDP_{t-i} + \sum_{i=0}^{r} \beta_{3i} \Delta ULC_{t-i} + \sum_{i=0}^{s} \beta_{4i} \Delta REER_{t-i}$$
$$+ \sum_{i=0}^{t} \beta_{5i} \Delta ECI_{t-i} + \sum_{i=0}^{u} \beta_{6i} \Delta X/M_{t-i} + \lambda_1 FDI_{t-i} + \lambda_2 GDP_{t-i} + \lambda_3 ULC_{t-i} + \lambda_4 REER_{t-i} + \lambda_5 ECI_{t-i}$$
$$+ \lambda_6 X/M_{t-i} + \lambda_7 TARIFFS + u_t \quad (3)$$

The first part of the model, which contains β_1 to β_6, represents the short-run dynamic coefficients, while the second part of the model, which contains λ_1 to λ_6, represents the long-run relationship coefficients between the variables. Δ is the difference operator. Finally, u_t is the white noise error terms. For the purpose of

testing for cointegration, the null hypothesis is that $\lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = \lambda_6 = 0$, which means that there is no cointegration (long-run) relationship between the examined variables.

The ARDL approach is also preferred in the context of this paper because it is considered more robust, especially when the sample size is small (in our case T=25 for the Czech Republic and T=38 for Greece). Another advantage of the ARDL bound testing approach for examining cointegration is that it contains a single form equation that can be applied irrespectively if the variables under examination are I(0), which means that the variables are stationary at their levels, or I(1), which means that the variables are stationary after taking their first differences (Matlasedi 2017: 8). The ARDL bound testing approach can be applied even if the variables are of a mixed order of I(0) and I(1) integration.

Since, for both countries, all variables are stationary at first differences, i.e. they are all I(1), we can use the ARDL bounds test for cointegration. The results of the F bounds test based on equation 3, for the case of the Czech Republic and Greece, are given in Table 3. Because data are annual, and the samples are small, we allow for only one lag (Wooldridge 2013: 658) in the ARDL bound tests.

Table 3: Cointegration tests

Results of F Bounds Test: CZECH REPUBLIC			ARDL	F-Statistics		Result	
Dependent variable	Dynamic regressors	Fixed regressor	(1,0,0,1,0,0)	0.3228		No-cointegration	
FDI	GDP, ULC, REER, ECI, X/M	TARIFFS					
Bound critical values (for T=24)				α = 0.01		α = 0.05	
				I(0)	I(1)	I(0)	I(1)
				4.54	6.37	3.13	4.61

Results of F Bounds Test: GREECE			ARDL	F-Statistics		Result	
Dependent variable	Dynamic regressors	Fixed regressor	(1,1,1,1,1,0)	8.2768		Cointegration	
FDI	GDP, ULC, REER, ECI, X/M	TARIFFS					
Bound critical values (for T=37)				α = 0.01		α = 0.05	
				I(0)	I(1)	I(0)	I(1)
				4.05	5.90	2.96	4.34

Notes: Bound critical values are obtained from Narayan (2005)

ARDL model selected according to Schwarz Information Criterion

Table 3 indicates that according to the ARDL bound tests there is no cointegration (no long-run) relationship among the examined variables in the case of the Czech Republic and that there is a cointegration (long-run) relationship among the examined variables in the case of Greece. The absence of a long-run relationship in the case of the Czech Republic may be due to the small time series sample size and the political and economic instability following the dissolution of the Eastern Bloc as well as the split of Czechoslovakia in the 1990's.

In order to proceed with the specification of the appropriate short-run and cointegration models, we must first perform some diagnostic and stability tests concerning the ARDL bounds test model we estimated. Table 4 presents the diagnostic tests performed in order to examine for serial correlation and homoscedasticity of the ARDL model's residuals. According to the Breusch-Godfrey Serial Correlation LM Test there is no serial correlation among the residuals in the case of both countries, while the Breusch-Pagan-Godfrey Heteroskedasticity Test indicates that the residuals are homoscedastic in the case of the Czech Republic, but heteroscedastic in the case of Greece. This may lead us to apply a coefficient covariance estimator that is robust to the presence of heteroskedasticity for the models concerning Greece.

Table 4: Diagnostic tests for ARDL F Bounds Test: FDI as a dependent variable

Test statistics	CZECH REPUBLIC	Test statistics	GREECE
F-statistic	ARDL (1,0,0,1,0,0)	F-statistic	ARDL (1,1,1,1,1,0)
Serial correlation[1]		Serial correlation[1]	
F(1,14)	2.9449 (.1082)	F(1,24)	0.9598 (.3370)
Heteroscedasticity[2]		Heteroscedasticity[2]	
F(8,15)	1.1854 (.3691)	F(11,25)	3.2389 (.0072)

Notes: [1]Breusch-Godfrey Serial Correlation LM Test.
[2]Breusch-Pagan-Godfrey Heteroskedasticity Test
Figures in parentheses indicate p-values

We also performed two types of stability testing, the cumulative sum (CUSUM) of recursive residuals and cumulative sum of squares (CUSUMSQ) of recursive residuals (Brown et al. 1975) in order to determine if the ARDL bounds test model used is stable. Our results show that the model seems to be stable for both countries over time.[11]

Since we have tested the ARDL bounds test model for stability and error terms

[11] The results of these tests are not presented here but are available on request.

normality, we can now estimate the short-run model for the Czech Republic and the long-run and error correction (short-run) model for the case of Greece. We will start with specifying the short-run model for the case of the Czech Republic.

Econometric estimations for the Czech Republic

In the case of the Czech Republic, where there is no cointegration (long-run) relationship, the ARDL short-run model can be expressed by equation (4):

$$\Delta FDI_t = \alpha_0 + \sum_{i=1}^{P} \beta_{1i} \Delta FDI_{t-i} + \sum_{i=0}^{q} \beta_{2i} \Delta GDP_{t-i} + \sum_{i=0}^{q} \beta_{3i} \Delta ULC_{t-i} + \sum_{i=0}^{q} \beta_{4i} \Delta REER_{t-i} + \sum_{i=0}^{q} \beta_{5i} \Delta ECI_{t-i} + \sum_{i=0}^{q} \beta_{6i} \Delta X/M_{t-i} + TARIFFS + u_t \quad (4)$$

In order to choose the appropriate lag length for the ARDL short-run model, in the case of the Czech Republic, we perform a standard vector autoregressive (VAR) test. Table 5 presents the VAR lag order selection criteria, which indicates that the appropriate lag order is 1.

Table 5: Lag order selection for the Czech Republic

VAR Lag Order Selection Criteria
Endogenous variables: FDI
Exogenous variables: C GDP ULC REER ECI X/M
Included observations: 23

Lag	LogL	LR	FPE	AIC	SC	HQ
0	31.0854	NA	0.0066	-2.1813	-1.8851	-2.1068
1	38.2516	9.9704*	0.0039*	-2.7175*	-2.3719*	-2.6306*
2	39.0988	1.1049	0.0040	-2.7042	-2.3092	-2.6049

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error AIC: Akaike information criterion
SC: Schwarz information criterion HQ: Hannan-Quinn information criterion

Table 6 shows the estimated short-run coefficients for the Czech Republic when ΔFDI is the dependent variable.

Table 6: Estimated short-run coefficients for the Czech Republic

Dependent Variable: ΔFDI
Included observations: 23 after adjustments

Regressor	Coefficient	Standard Error	t-Statistic	p-value
C	-0.010	0.016	-0.635	0.534
ΔFDI(-1)	-0.352	0.335	-1.050	0.310
ΔGDP(-1)	7.903	2.754	2.869	0.011
ΔULC(-1)	0.806	0.819	0.984	0.340
ΔREER(-1)	-0.006	0.007	-0.893	0.385
ΔECI(-1)	-0.138	0.205	-0.675	0.509
ΔX/M(-1)	0.939	0.441	2.126	0.050
TARIFFS	0.078	0.030	2.517	0.024

R-squared	0.432	Mean dependent var	0.014
Adjusted R-squared	0.167	S.D. dependent var	0.057
S.E. of regression	0.052	Akaike info criterion	-2.776
Sum squared resid	0.041	Schwarz criterion	-2.381
Log likelihood	39.93	Hannan-Quinn criter.	-2.677
F-statistic	1.632	Durbin-Watson stat	2.080
Prob(F-statistic)	0.201		

Before discussing the coefficients of the estimated model for the Czech Republic we must first perform diagnostic and stability tests concerning the ARDL short-run model we estimated for the Czech Republic. Table 7 presents the diagnostic tests performed in order to examine the estimated short-run model for serial correlation and homoscedasticity of the residuals. According to the Breusch-Godfrey Serial Correlation LM Test there is no serial correlation among the residuals, while the Breusch-Pagan-Godfrey Heteroskedasticity Test indicates that the residuals are homoscedastic.

Table 7: Diagnostic tests: ΔFDI as a dependent variable for the Czech Republic

Diagnostic tests: ΔFDI as a dependent variable for the Czech Republic		
Test statistics	Serial correlation[1] F(1,14)	Heteroscedasticity[2] F(7,15)
F-statistic	0.1065 (.7489)	1.5085 (.2379)

Notes: [1]Breusch-Godfrey Serial Correlation LM Test

[2]Breusch-Pagan-Godfrey Heteroskedasticity Test

Figures in parentheses indicate p-values

We performed two types of stability testing, the cumulative sum (CUSUM) of recursive residuals and cumulative sum of squares (CUSUMSQ) of recursive residuals (Brown et al. 1975) in order to determine if the ARDL short-run model is stable. Our results show that the model seems to be stable over time.[12]

After testing for residual normality and model stability we can now proceed with the evaluation of the estimated statistical coefficients. According to the short-run coefficients presented in Table 6, the factors with the statistically most significant relationship with inward FDI, in the Czech Republic, are market size (GDP), which is related to the first and third type of FDI, international trade competitiveness (X/M), which is related to the first and second type of FDI, and trade protection (TARIFFS), which is related to the first type of FDI. All three statistically significant coefficients have the expected positive effect on FDI according to our theoretical framework. The market size of the Czech economy has a positive effect on inward FDI, meaning that FDI seems to follow its relative market size. Furthermore, changes in inward FDI in the Czech economy seem to be going hand in hand with changes in its international trade competitiveness. The statistically significant relationship with TARIFFS indicates that FDI seems to serve as a substitute to foreign intra-industry trade. Finally, the positive relationship between FDI and TARIFFS also means that the accession to the EU does not seem to have a positive impact in attracting FDI to the Czech economy, in the short-run.

The rest of the coefficients estimated in the short-run model have a statistically insignificant relationship with FDI. This means that, in the case of the Czech Republic, labour production costs (ULC), the exchange rate (REER), economic complexity (ECI) and the previous state of FDI attractiveness do not seem to play

[12] The results of these tests are not presented here but are available on request.

an important role in attracting FDI, at least in the short-run.

Econometric estimations for Greece

Concerning the Greek economy, since we have cointegration, we estimate a long-run ARDL model from which we extract the residuals in order to estimate an error correction (short-run) model so we can also investigate the short-run dynamics of the model's coefficients. Through the error correction model (ECM), we also determine the speed of adjustment of the short-run coefficients towards the long-run (equilibrium) model. The ARDL long-run model for Greece can be expressed by equation (5):

$$FDI_t = \alpha_0 + \sum_{i=1}^{P} \beta_{1i} FDI_{t-i} + \sum_{i=0}^{q} \beta_{2i} GDP_{t-i} + \sum_{i=0}^{q} \beta_{3i} ULC_{t-i} + \sum_{i=0}^{q} \beta_{4i} REER_{t-i} + \sum_{i=0}^{q} \beta_{5i} ECI_{t-i} + \sum_{i=0}^{q} \beta_{6i} X/M_{t-i} + TARIFFS + u_t \quad (5)$$

In order to choose the appropriate lag length for the ARDL models we perform a standard vector autoregressive (VAR) test. Table 8 presents the VAR lag order selection criteria for Greece, which indicates that the appropriate lag order is 1.

Table 8: Lag order selection for Greece

VAR Lag Order Selection Criteria
Endogenous variables: FDI
Exogenous variables: C GDP ULC REER ECI X/M
Included observations: 36

Lag	LogL	LR	FPE	AIC	SC	HQ
0	40.9933	NA	0.0084	-1.9440	-1.6801	-1.8519
1	50.0170	14.5381*	0.0053*	-2.3898*	-2.0819*	-2.2823*
2	51.0004	1.5298	0.0054	-2.3889	-2.0370	-2.2660

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error AIC: Akaike information criterion
SC: Schwarz information criterion HQ: Hannan-Quinn information criterion

Table 9 shows the estimated long-run coefficients for Greece when FDI is the dependent variable.

Table 9: Estimated long-run coefficients for Greece

Dependent Variable: FDI Included observations: 37 after adjustments
White (HC0) heteroskedasticity-consistent standard errors & covariance

Regressor	Coefficient	Standard Error	t-Statistic	p-value
C	-1.406	0.656	-2.143	0.040
FDI(-1)	0.663	0.120	5.542	0.000
GDP(-1)	0.872	0.324	2.687	0.011
ULC(-1)	-0.631	0.376	-1.674	0.104
REER(-1)	0.007	0.004	1.595	0.121
ECI(-1)	0.492	0.279	1.766	0.087
X/M(-1)	0.732	0.306	2.391	0.023
TARIFFS	-0.030	0.036	-0.820	0.418

R-squared	0.943	Mean dependent var	0.357
Adjusted R-squared	0.929	S.D. dependent var	0.257
S.E. of regression	0.068	Akaike info criterion	-2.338
Sum squared resid	0.135	Schwarz criterion	-1.989
Log likelihood	51.257	Hannan-Quinn criter.	-2.215
F-statistic	68.598	Durbin-Watson stat	2.214
Prob(F-statistic)	0.000	Wald F-statistic	220.771
Prob(Wald F-statistic)	0.000		

The error correction (short-run) model for Greece can be expressed by equation (6):

$$\Delta FDI_t = \alpha_0 + \sum_{i=1}^{P} \beta_{1i} \Delta FDI_{t-i} + \sum_{i=0}^{q} \beta_{2i} \Delta GDP_{t-i} + \sum_{i=0}^{q} \beta_{3i} \Delta ULC_{t-i} + \sum_{i=0}^{q} \beta_{4i} \Delta REER_{t-i} + \sum_{i=0}^{q} \beta_{5i} \Delta ECI_{t-i} + \sum_{i=0}^{q} \beta_{6i} \Delta X/M_{t-i} + \lambda ECT_{t-1} + TARIFFS + u_t \quad (6)$$

ECT is the residual time series extracted from the previous long-run model and represents the error "correction" term of the short-run model. The term "correction" means that the estimated value of the coefficient of ECT practically shows the speed of adjustment of the short-run coefficients towards the long-run (equilibrium) model (Asteriou and Hall 2007: 312). Table 10 shows the estimated error correction (short-run) coefficients when ΔFDI is the dependent variable.

Table 10: Estimated error correction (short-run) coefficients for Greece

Dependent Variable: ΔFDI
Included observations: 36 after adjustments
White (HC0) heteroskedasticity-consistent standard errors & covariance

Regressor	Coefficient	Standard error	t-Statistic	p-value
C	<0.000	0.011	0.007	0.993
ΔFDI(-1)	1.011	0.330	3.060	0.005
ΔGDP(-1)	-0.796	0.781	-1.018	0.317
ΔULC(-1)	-1.279	0.501	-2.551	0.016
ΔREER(-1)	0.008	0.004	2.018	0.053
ΔECI(-1)	0.470	0.158	2.972	0.006
ΔX/M(-1)	-0.277	0.283	-0.979	0.336
ECT(-1)	-1.270	0.426	-2.983	0.006
TARIFFS	-0.011	0.019	-0.580	0.566

R-squared	0.611	Mean dependent var	-0.017
Adjusted R-squared	0.496	S.D. dependent var	0.080
S.E. of regression	0.057	Akaike info criterion	-2.663
Sum squared resid	0.089	Schwarz criterion	-2.267
Log likelihood	56.946	Hannan-Quinn criter.	-2.525
F-statistic	5.305	Durbin-Watson stat	2.077
Prob(F-statistic)	0.000	Wald F-statistic	2.118
Prob(Wald F-statistic)	0.069		

Before discussing the coefficients of the estimated models for Greece, we must perform diagnostic and stability tests concerning the ARDL long-run and short-run models we estimated. Table 11 presents the diagnostic tests performed in order to examine the estimated long-run and error correction model for serial correlation and homoscedasticity of the residuals. According to the Breusch-Godfrey Serial Correlation LM Test, there is no serial correlation among the residuals. However, the Breusch-Pagan-Godfrey Heteroskedasticity Test indicates that the residuals are heteroscedastic. Therefore, we have used the "White" (HC0) heteroskedasticity-consistent standard errors and covariance estimator that is robust to the presence of heteroskedasticity for the models concerning Greece.

Table 11: Diagnostic tests: FDI as a dependent variable for Greece

Test statistics	Long-run model		Error correction model	
	Serial correlation[1]	Heteroscedasticity[2]	Serial correlation[1]	Heteroscedasticity[2]
	F(1,28)	F(7,29)	F(1,26)	F(8,27)
F-statistic	0.4904 (.4895)	1.9990 (.0897)	0.5213 (.4767)	3.5041 (.0067)

Notes: [1]Breusch-Godfrey Serial Correlation LM Test
[2]Breusch-Pagan-Godfrey Heteroskedasticity Test
Figures in parentheses indicate p-values

We repeated the two types of stability testing, the cumulative sum (CUSUM) of recursive residuals and cumulative sum of squares (CUSUMSQ) of recursive residuals (Brown et al. 1975) in order to determine if the ARDL long-run model and error correction model are stable. Our results again show that both models seem to be stable over time.[13]

After testing for residual normality and model stability we can now proceed with the evaluation of the estimated statistical coefficients for Greece. According to the estimated long-run coefficients presented in Table 9, the factors with the statistically most significant relationship with FDI, in the case of Greece, are market size (GDP), which is related to the first and third type of FDI, economic complexity (ECI), which is related to all three types of FDI, international trade competitiveness (X/M), which is related to the first and second type of FDI, and the previous state of FDI, which is related to all three types of FDI. All statistically significant coefficients have the expected effect on FDI, in accordance with our theoretical framework. The market size has a positive effect on inward FDI, meaning that the Greek economy's declining relative market size makes Greece an unattractive destination for, at least market-seeking, FDI. Furthermore, Greece's deteriorating FDI attractiveness seems to be following the generally deteriorating economic complexity of the Greek economy, while Greece's loss of FDI attractiveness also seems to be going hand in hand with its general lack of international trade competitiveness. The improvement in the ratio of exports to imports following the global crisis of 2008 is not a result of an improvement in competitiveness but is rather a result of the drastic decline in imports due to the Greek Memorandum programs. This explains, in a way, that although the ratio of exports to imports improves after 2008, FDI during the same period does not

[13] The results of these tests are not presented here but are available on request.

improve, almost at all. Finally, the present state of low FDI attractiveness seems to have a major relationship with the previous state of low FDI attractiveness, that is, Greece has probably long ago fallen into a state of *spiral foreign disinvestment*. The rest of the coefficients estimated in the long-run model for Greece have a statistically insignificant relationship with FDI. This means that labour production costs, the exchange rate and tariff trade protection do not seem to play an important role in attracting FDI in the long-run.

According to the estimated error correction (short-run) coefficients presented in Table 10, the short-run coefficients with the statistically most significant relationship with FDI, in the case of Greece, are labour production costs (ULC), which is related to the second type of FDI, the exchange rate (REER), which is related to the first and second type of FDI, economic complexity (ECI), which is related to all three types of FDI, and the previous state of FDI, which is related to all three types of FDI. Labour costs seem to have the expected negative relationship with FDI. The fact, however, that labour costs seem to have only a short-run impact on FDI may imply that, in the long-run, FDI is attracted primarily by structural (rather than cost) competitive factors. The latter seems to be confirmed by the positive statistical relationship between Greece's (low) FDI attractiveness and (low) economic complexity (ECI), both in the short and long-run.

The exchange rate seems to have a positive short-run relationship with FDI, in contrast to what our theoretical framework proposes. A possible explanation behind this inconsistency between theory and empirical evidence may be that during the examined period (1980-2017) Greece has gone through successive phases in which its national currency was gradually pegged to the European Currency Unit (Ecu), until finally entering the Eurozone (2001), since when Greece has abandoned its national currency. Thus, movements in the exchange rate have been determined mainly by non-national (EU) factors, rather than national ones, and therefore cannot seem to operate as a motive for FDI into Greece in particular. Another reason why the exchange rate does not seem to operate in the way our theoretical framework proposes is because the motive to circumvent monetary barriers (through FDI) occurs among countries which engage mainly in intra-industry trade, that is, among countries with similar production-trade structures. Greece, however, has a dissimilar production-trade structure with its main trading partners, that is, the countries of the EU (see also Economakis et al. 2018: 50). This dissimilarity in the production-trade structure between the Greek economy and the rest of the EU economies is also revealed by Greece's very low level of economic complexity compared to other EU members, as can be seen by

the economic complexity ranking depicted in Figure 5. Therefore, a depreciating exchange rate may not have been able to play a role in attracting FDI even before the adoption of the Euro by Greece.

Figure 5: Economic complexity index (ECI) ranking[14]

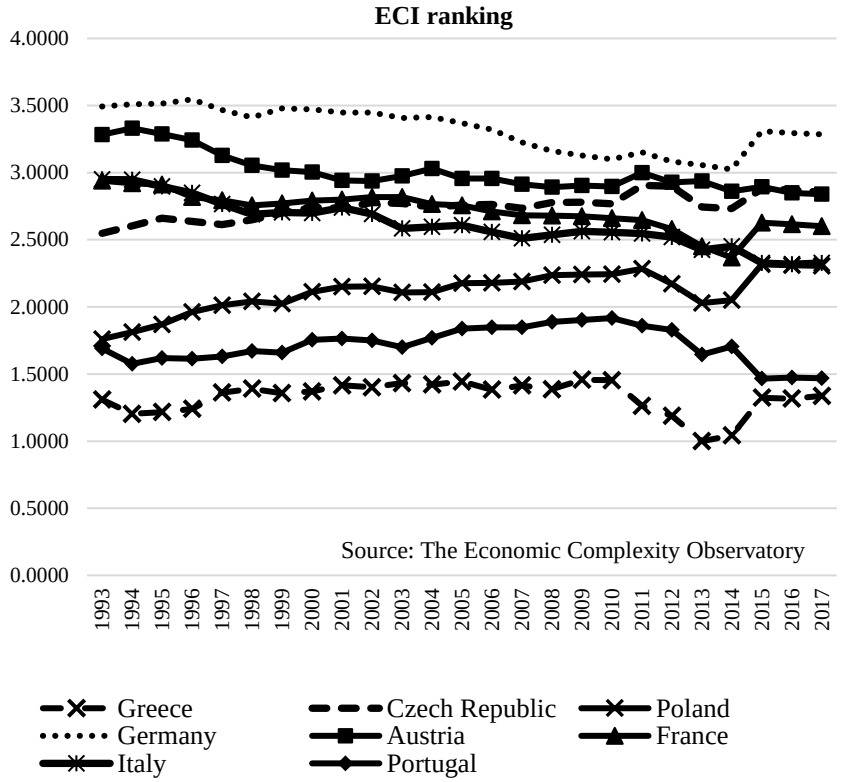


Figure 5, in a way, also indicates the low hierarchical position of Greece within the EU regarding its level of development and international structural competitiveness. Another factor which seems to have an important short-run impact on FDI is the previous state of FDI attractiveness. As we saw previously, in the estimated long-run model, the past state of FDI also plays an important long-

[14] All ECI values have been normalized so that no country's ECI is below one (1.0).

run role regarding FDI, which verifies the fact that Greece has probably long ago fallen into a state of spiral foreign disinvestment. The latter may also be related to Greece's hierarchical position within the EU regarding its level of development and international structural competitiveness.

The rest of the coefficients estimated in the error correction (short-run) model have a statistically insignificant relationship with FDI. This means that short-run (year-to-year) changes in market size and trade competitiveness, of the Greek economy, do not seem to have an important impact on FDI. Market size and international trade competitiveness, both being structural factors, seem to have a more permanent (long-run) impact on FDI attractiveness, as shown in the previously estimated long-run model, meaning that these factors must show their long-run trends in order to affect FDI. Finally, the fact that tariff trade protection, both in the short and long-run, does not seem to play a role in attracting FDI may indicate that whatever FDI is attracted to Greece does not seem to serve as a substitute to foreign intra-industry trade. The latter seems to verify the fact, as noted earlier, that Greece has a dissimilar production-trade structure compared to its EU partners (see also ibid.). Another reason why tariff trade protection does not seem to play a role in attracting FDI, during the examined period, is that Greece has been a member of the EU since 1993, a fact which automatically cancelled the motive to circumvent tariffs for its main trading partners, which are non-other than the rest of the EU members.

Furthermore, the error correction term (ECT), presented in Table 10, is statistically significant and has a negative effect, as expected in the case of cointegrating variables. The negative sign of the error correction term coefficient indicates that when the system is in disequilibrium (due to an external economic shock for example) the error correction term has an opposite effect in order to adjust the system back to equilibrium, while the value of the error correction term coefficient indicates the speed of adjustment of the short-run dynamics of the system back to the long-run model.

Conclusions

The objective of this study was to investigate certain basic determinants of FDI and perform an empirical comparison of FDI attractiveness between two EU members, namely, the Czech Republic and Greece. The most obvious finding was that Greece, a Southeastern European country and old member of the EU, is a much less attractive destination for FDI than the Czech Republic, a Central Eastern European country and a relatively new member of the EU. Specifically, the Czech

Republic has emerged to be a rather attractive destination for FDI within the EU, while, on the contrary, Greece seems to have fallen into a long state of spiral foreign disinvestment.

In the case of the Czech Republic the econometric analysis performed, apart from short-run, could not detect long-run relationships between the examined variables perhaps due to the small time series sample size and the political and economic instability following the dissolution of the Eastern Bloc as well as the split of Czechoslovakia in the 1990's. On the contrary, in the case of Greece the econometric model was able to estimate both short and long-run relationships between the variables, possibly due to the larger time series sample size that was available.

This study has shown that in the case of both countries market size and international trade competitiveness seem to play an important role in attracting FDI (estimations for the Czech Republic in the short-run, while for Greece in the long-run). In the case of Greece, another factor which seems to have a major impact on its low FDI attractiveness, both in the short and the long-run, is its low level of economic complexity. The fact that Greece's low economic complexity seems to play an important role in its low FDI attractiveness, both in the short and long-run, indicates that economic complexity has a strong and constant impact on FDI. Labour costs also seem to play some role in the case of Greece, but only in the short-run, while labour costs do not seem to play a role in attracting FDI in the case of the Czech Republic (short-run estimation). Another interesting finding was that FDI in the case of the Czech Republic seems to serve as a substitute to foreign intra-industry trade, a finding which does not hold for FDI attracted to Greece.

Some other important useful conclusions can be drawn, especially concerning countries which, like Greece, are at a relatively lower level of development and international structural competitiveness. Unlike neoliberal approaches which typically suggest temporary (short-run) wage cuts in order to improve FDI attractiveness, a sustainable road to become an attractive FDI destination would be to adopt a national strategy that fosters economic complexity, international trade competitiveness and market size, all of which are structural factors that seem to attract FDI in the long-run.

A limitation of the study was the relatively small time series sample size that we had at our disposal, especially in the case of the Czech Republic (T=25), a fact which generally undermines reliable econometric analysis. Another limitation was that, although our theoretical framework deals with FDI realized in the sphere of

production, there is a lack of sectoral FDI data for the span of the time series examined, and thus the econometric analysis involved general (aggregated over industries) FDI data, instead of FDI concerning the sphere of production specifically. Further research proposals could include an extension of the number of Southeastern EU members and former CEE EU members examined, in order to investigate if a generalized divergence in FDI attractiveness exists between Southeastern EU members and former CEE EU members.

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