European imbalances and shifts of global value chains to the Central European periphery: role of institutions

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ABSTRACT

This article deals with the topic of European imbalances. They are defined as large and persistent differences in the current account position of European countries, which are closely connected to the emergence of the financial crisis and the subsequent sovereign debt crisis in 2008. A build-up in current account deficits had been observed from the mid-1990s, namely in two peripheral regions of the EU. However, little attention was paid to the potential differences between the Southern and Central European peripheries of the EU. The emergence of large and persistent current account deficits in Southern Europe was accompanied by a significant shift in gains from global value chains. The aim of this paper is to evaluate the factors that co-determined the changes in the geographic structure of GVCs in Europe. These changes decreased GVC income in Southern Europe, increased it in Central Europe and contributed to the build-up of account imbalances in Southern Europe. Despite the fact that Central Europe was among the deficit regions in European imbalances, the four Central European countries substantially increased their gains from global value chains as well as GVC participation. The shift in GVC activity towards Central Europe between 1995 and 2011 was driven not only by total labour costs but also by better regulatory quality. At the same time, TNCs switching from Southern to Central Europe had to accept worse quality contract enforcement.

Keywords

global value chains; institutions; European imbalances; Central Europe

1. Introduction

The financial crisis in 2008 and subsequent sovereign debt crisis revealed the underlying structural weaknesses of the European integration project. These weaknesses require major action and increased coordination in economic policies. With most attention being paid to structural differences within the euro area, the political agenda has also slowly addressed the significant structural differences between Europe's East and West. The legacy of the Eastern enlargement has thus increasingly come under scrutiny. Moreover, its policy implications are very carefully studied, namely with respect to the labour market and migration. During the build-up to the financial crisis in Europe (data will be examined from 1995 to 2011 in this paper, referring to the early years of the build-up and its escalation on the eve of the financial crisis and initial years of the crisis itself), the problem of Europe's Eastern periphery was not obvious or was neglected. Policy debate as well as theoretical explanations of why the crisis hit Europe so hard mostly followed structural issues within the euro area. They left Central European countries aside and paid the greatest attention to Southern Europe, i.e. Greece, Italy, Portugal and Spain. From today's perspective it is, however, obvious that there are also significant policy challenges arising from Central European countries' trade and labour market integration. Since trade integration has increased significantly in Central Europe, we have decided to focus on the role of changing global value chain (GVC) participation obvious in Central Europe during the build-up of European imbalances. European imbalances, which were mostly seen as an interaction between Europe's competitive North and structurally weaker South, also have a significant East-West component.

Structural changes of GVCs in Europe can be demonstrated by changes in German outward FDIs. In 1991, 12% of German investments in developed OECD countries went to Southern Europe. By 2007, this share had fallen to 7%. Simultaneously, German investment stock in Czechia, Hungary, Poland and Slovakia reached the same level as the stock in the whole of Southern Europe, despite the fact that the overall GDP of those Central European countries in 2007 represented only 20% of Southern Europe's (OECDstat 2018). There has been a gradual GVC shift from Europe's South to Europe's East which are both current account deficit regions from the European imbalances perspective. The aim of this paper is to evaluate the factors that co-determined the changes in the geographic structure of GVCs in Europe which reduced GVC income in Southern Europe, increased it in Central Europe and contributed to the build-up of account imbalances in Southern Europe. In this paper, Southern Europe (the Southern European periphery) will be represented by Greece, Italy, Portugal and Spain, while Central Europe (the Central European periphery) by Czechia, Hungary, Poland and Slovakia.

European imbalances, which have been studied in line with global imbalances (see Dunaway 2009; ECB 2008; or O'Brien, Williams 2007 for example), are defined as large and persistent differences in current account positions of different European countries (or economic models). These imbalances underpinned the build-up to the financial crisis of 2008 in Europe. OECD (2010) data reveal a current account balance of between −5% and 7% of national GDP in 1995 and of between −14% and 8% of GDP in 2008. Additionally, current account position only underpinned changing debtor-creditor relations with Greece, Portugal and Spain cumulating more than 70% of GDP in international liabilities by 2008, while major current account surplus countries became major creditors. Growing current account surpluses in the North are mostly attributed to the creation of the euro, which made the core countries' investment rise in the euro area peripheries (IMF 2009). The prevailing rigidities of Europe's core goods and labour markets, which limited investment opportunities (Dunaway 2009), also contribute to the imbalances. The peripheries' deficits were mostly explained by declining competitiveness in the new economic climate caused by the adoption of a common currency (Wyplosz 2010). Falling competitiveness was fuelled by growing differences in wages and productivity between the periphery and the core (IMF 2009) as well as by the inappropriate fiscal policy response to greater financial market integration and low interest rates (Jiránková and Hnát 2012 or Šíma 2016). In general, the greatest attention was paid to Southern Europe and its growing wages accompanied by limited productivity growth and increased borrowing opportunities from current account surplus parts of the euro area. This fuelled sovereign debt and increased the expansionary effects of the common monetary policy (Wyplosz 2010; IMF 2009).

Little or no attention was paid to the fact that after the Eastern Enlargement, the EU absorbed another periphery at its Eastern border. Even though its persistent current account deficits clearly made it part of the core-periphery issue in the EU, the very different structure of Central European countries' current accounts was not seen as an important aspect for further analysis. Yet, the structure of the most trade-integrated parts of Central Europe shows striking differences from the predominant trend in Southern Europe's balance of payments. A positive trend in trade and services balances, which is more than offset by ever larger profit repatriations, reveals an important trend in the market. The GVC integration of Central European countries demonstrates a marked difference from the structural and productivity issues of Southern Europe.

A similar flaw can be identified in the growing literature on global value chains, which is becoming

an increasingly popular focus for international trade analysis, particularly after Baldwin's Second Unbundling. Such works are largely dedicated to the most developed economies or to the development effects of trade and market integration and do not pay enough attention to the case of the (relatively) well-developed transition economies in Central Europe. Some literature studying the case of Central Europe has emerged, but most of it focuses on the automotive industry: Pavlínek 2004, 2018, 2019; Pavlínek and Ženka 2011; Humphrey et al. 2000; Sturgeon et al. 2008. Other sectors have only been studied selectively, like Smith et al. (2014) for the apparel industry in Slovakia, or Plank and Staritz (2013); Sass and Szalavets (2014) for the electronics industry in Hungary. For a comprehensive study on industrial upgrading in the region, see Vlčková et al. (2015).

Guzik and Micek (2008) compiled country-industry case studies from the region. These studies offer valuable data which supports our hypothesis that there has been a major structural shift between the two current account peripheries resulting in significant consequences for today's Europe.

Given the generally high proportion of the EU's share in Central Europe's trade and investment, a significant increase in the region's GVC participation must have had effects in Europe's other periphery, i.e. Southern Europe, which has so far benefitted from European trade integration. Changing gains from GVCs and current account position between the two peripheries indicate a more important structural shift in EU trade integration, this has mostly been neglected due to a predominant focus on the euro and its institutional weaknesses. To reveal such a structural shift, our analysis will connect economic growth with trade integration in GVCs to show which growth factors influenced the changing GVC patterns the most.

2. Literature review

Offshoring and internationalisation of production, which was related to the technological progress and overall liberalisation of the world economy, contributed to the so-called slicing up of the value chain (Dicken 2015). This has been described as global supply/commodity chains (Gereffi 1994), global value chains (Porter 1985) or global production networks (Coe et al. 2008). In this paper, we use GVC income data from Timmer et al. (2013) and we therefore follow the concept of GVCs. Value creation in GVCs is crucial for economic growth (Coe et al. 2008). As the costs and benefits of trade are distributed unevenly (Baldwin 2006), the objective of countries is to improve their positions in GVCs (Henderson et al. 2002; Humphrey and Schmitz 2002), which makes GVCs a dynamic system.

Since the beginning of its economic transition, Central Europe has consistently attracted significant amounts of inward FDIs, creating a specific system dependent on manufacturing exports through producer-driven networks (Myant and Drahokoupil 2012). International investors mainly utilised a relatively skilled and cheap labour force, the geographic location, investment subsidies, integration into EU structures and relative political stability (Pavlínek et al. 2009; Pavlínek and Ženka 2016; Myant and Drahokoupil 2012). Central European suppliers became increasingly integrated into European value chains, as proven by Domanski and Gwosdz (2009), Jürgens and Krzywdzinski (2009). On the other hand, being dependent on FDIs, Central European countries are prone to potential value transfer to the economies from which the capital initially came (Dishinger et. al. 2014). According to Pavlínek and Ženka (2016), foreign-owned companies create and capture more value than the lower tier domestic companies in Central Europe. Actual gains from GVCs in Central Europe therefore need to be empirically examined.

On the one hand empirical research clearly shows that there have been significant shifts in GVC activities in the pre- and post-crisis eras, but on the other it demonstrates that GVCs and global production remain regionally concentrated. Both statements lead to the suggestion that there might be a major shift in how European companies organise their cross-border production in Europe, possibly explaining at least some of the current account developments and competitiveness shifts. As claimed by Degain, Meng, Wang (2017: 45) "cross-border production sharing activities of complex GVCs increased every year" before the 2000-01 period. "And there was a dramatic expansion of GVCs, especially those with complex production-sharing activities" between 2003 and 2008. That being said, key theorist of global value chains, Richard Baldwin (2014), links his Second Unbundling with the prevailing regionalisation of the global economy: "The world economy is not global; it remains regionally segregated, such as Factory Asia, Factory Europe, and Factory North America. What matters is not value (added) but jobs, especially good jobs." Within Europe, the Eastern enlargement has played a major role since, according to Degain, Meng, Wang (2017: 61), "Eastern European countries have developed intensive bilateral trade linkages in industrial inputs with other European countries. Joining the EU and adopting its regulations have been conducive to the development of these ties within European GVCs. Czechia, Hungary and Poland, the largest players in intraregional trade in manufacturing inputs among European economies, accounted for more than 11% of intra-Europe exports in intermediate goods in 2015, a share that has more than quadrupled since 1995." There is already literature proving that Germany in particular, has gradually weakened its trade ties with Southern Europe in favour of Central Europe (Simonazzi et al. 2013). Similar conclusions were also drawn by the German Bundesbank (2011). Pavlinek

(2019) proves in a study on the automotive industry that geographic restructuring in the industry has been taking place since the late 1990s. While automotive production in France, Italy and Portugal is decreasing, production in the so-called integrated periphery, including Central Europe, is gradually increasing. This trend is explained by the labour cost advantage (Pavlínek, 2019), which is supported also by Chiappini (2012). For Germany, the Eastern enlargement was an opportunity to outsource low-skilled processes abroad, import the necessary inputs from Central European cost-efficient economies and keep the mid-skilled processes on domestic soil (Coricelli and Wörgötter 2012). Keeping only the final stages of production in Germany contributed to the sharp fall in German unit labour costs, increasing the competitiveness of the German industry (Marin 2010) and contributing to more efficient corporate labour division (Walker 1989). Apart from lower labour costs, Pavlinek (2018) also identifies geographic proximity to large markets, membership in regional trade agreements, and investment incentives as Central Europe's key assets.

In contrast, Italian companies inclined to the delocalisation of entire production processes to Southeast Europe (German Bundesbank 2011) leave much less scope for increasing GVC income in Southern Europe. In this context, understanding a country's current participation in value chains is central to ensuring that its industrial and trade policies can facilitate sustainable productivity gains and increased quality employment.

This paper follows on from Brumm et al. (2016), one of the few studies evaluating the effects of participation in global value chains on current account imbalances. Brumm et al. (2016) came to the conclusion that economies which demonstrate higher GVC participation also exhibit larger current account surpluses, as the positive effect on trade balance surpasses the negative impact on the balance of primary incomes. This is true especially for backward participation, which affects current account balance much more than forward participation. The positive effect of downstream participation is also confirmed by Haltmaier (2015), who, however, rejects the notion

that there is any positive effect of upstream participation. As most of the countries included in this analysis demonstrated higher backward GVC participation rates in 1995 and 2009 (table 1), GVC income will be considered as positively affecting the current account balance of an economy.

The ECB (2017) also affirms that there is a relationship between GVC participation (especially backward) and current account or trade balance. Nevertheless, the justification is slightly different. Economies participating more in GVCs demonstrate larger current account surpluses (or smaller current account deficits) resulting from the increased competitiveness of domestic producers. The higher competitiveness of companies actively participating in GVCs is caused by stronger competition in the global markets. Several empirical studies confirm the positive impact of GVC participation on firm-level productivity (e.g. Amiti and Wei 2009; Winkler 2010; Crino 2008). The relative increase of domestic competitiveness tends to be only temporary. In order to distribute increased consumption over time, domestic savings increase, which contributes to an improvement in the external trade position.

Institutional setup proved to be important for the participation of an economy in GVCs, according to Dollar et al. (2016). These researchers argue that countries demonstrating better institutional quality tend to have higher forward GVC participation, while countries with weaker institutions usually evince higher backward participation. Institutions are therefore able to influence international trade. Sturgeon et al. (2008b) confirm this idea by highlighting the importance of institutions, especially concerning the labour market, to the distribution of automotive value chains. Nunn and Trefler (2014) summarise the effects of economic institutions on comparative advantages of states, paying particular attention to institutions regulating contractual arrangements among trading parties. In GVCs, suppliers produce highly customised products that have higher value only for the anticipated purchaser. Should the contracts not be consistently enforced, the purchaser would be motivated to renegotiate the contract to increase its own benefit after the supplier has already invested in its production. The supplier hereby faces a hold-up problem (Williamson 1985), which can be reduced by high-quality contractual institutions, e.g. property rights and investor protection (Lavchenko 2006). As a result, economies with higher institutional quality demonstrate a high level of relation-specific investments. Nunn (2007) identified the most relation-specific industries, calling them "contract-intensive". According to Nunn, contract intensive sectors include, among others, automotive, computer equipment, telecommunications equipment and engines, which are among the most exported articles from Central Europe (Sankot and Hnát 2015). Nunn's findings at the firm-level are

Tab. 1 GVC backward / forward participation indexes.

	1995	2009
Czechia	32.1 / 19.4	39.4 / 23.0
Hungary	26.6 / 15.2	39.9 / 16.7
Poland	15.4 / 17.5	27.9 / 20.5
Slovakia	35.6 / 20.7	44.3 / 17.9
Greece	13.2 / 17.6	23.1 / 19.9
Italy	21.9 / 16.8	20.1 / 21.7
Portugal	28.9 / 15.3	32.4 / 19.0
Spain	20.6 / 19.7	20.7 / 21.1

Source: OECD.stat (2018)

confirmed by Ma et al. (2010), Li et al. (2012) and Feenstra et al. (2012). Apart from contract enforcing institutions, the regulation of labour and financial markets also affects the comparative advantage of an economy. According to Beck (2002), an economy with a developed financial market has a comparative advantage in manufacturing. Becker et al. (2012) prove that high fixed costs in export-oriented industries require well developed financial markets. Tang (2012) argues that countries with highly protective labour markets demonstrate comparative advantage in goods intensive in firm-specific skills. On the other hand, countries with more flexible labour markets demonstrate comparative advantage in industries that are more volatile (Cunat and Melitz, 2012). Pavlínek 2002, 2018; Aláez, Gil and Ullibarri 2015 confirm in their sectoral study that flexibility of the labour market determines spatial distribution of the automotive industry. As the articles exported from Central Europe (e.g. electronic components or industrial machinery) are classified as volatile by Cunat and Melitz (2012), lower regulation will be considered a positive attribute, promoting a GVC shift towards Central Europe.

3. Empirical background

It must be noted that the research outline is markedly influenced by data availability. Since there are numerous attempts at linking economic growth with GVC trends, measuring value added and value captured by an individual economy is a major challenge. As claimed by Amador and Cabral (2013) or Vlčková (2015), consistent data on GVCs are still rare. Most reliable datasets can be newly obtained from several input-output models (OECD TiVA, WIOD, UNCTAD Eora, or GTAP) but, currently, they do not offer the most recent years. This is another reason why our focus is on the build-up stage of the crisis (using the mid-1990s and 2011 as critical years) in our attempt to reveal a structural change in Europe's GVCs.

In this paper, data for real GVC income are taken from the World Input-Output Database (WIOD), based on Timmer et al. (2013). Timmer et al. (2013) calculated real GVC income for all manufactures produced in selected countries, using the US CPI as a deflator. Table 2 depicts real income from GVCs in economies of the two EU peripheral areas in 1995, 2008 and 2011. The time selection is dependent on very limited data availability. Nevertheless, the period between 1995 and 2011 represents quite well the time frame during which European imbalances emerged and increased, as well as the initial period of the European sovereign debt crisis, which had a strong impact on the structurally weak economies in Southern Europe. In order to ensure the comparability of these figures among economies of different sizes, real GVC income is normalised by real GDP.

Tab. 2 Real GVC income (as a % of GDP).

	1995	2008	2011	Difference (95–11)
Czechia	0.104	0.195	0.182	0.078
Hungary	0.120	0.195	0.194	0.074
Poland	0.132	0.190	0.158	0.025
Slovakia	0.108	0.196	0.168	0.060
Greece	0.097	0.092	0.088	−0.009
Spain	0.136	0.116	0.110	−0.025
Italy	0.155	0.160	0.141	−0.014
Portugal	0.131	0.113	0.102	−0.029

Source: Timmer et al. (2013), UNCTADstat (2018)

In 1995, the difference between Southern and Central Europe, in terms of relative real GVC income, was not significant. Until 2008, the GVC income of Central European economies rose markedly, while the income of Southern European countries stagnated (Italy and Greece), or even decreased (Spain and Portugal). During the initial years of the sovereign debt crisis, GVC income in all Southern European economies dropped below the 1995 level, while GVC income in Central European countries remained well above the 1995 benchmark. In terms of real GVC income, Central European economies gained ground, while Southern European economies lost ground. Decreasing relative GVC income implies lower importance of international labour division for economic growth and the higher importance of domestic factors, e.g. household and government consumption, which should be reflected on the current account. The current account also incorporates profit repatriation, which in Central Europe between 1995 and 2008 increased significantly and pulled all current accounts down into deficit (UNCTADstat 2017). This would conceal the change in position of Central European countries within GVCs. Therefore, solely balances of trade will be taken into account.

Tab. 3 Balance of trade (% of GDP).

Country	1995	2008	2011	Difference (95–11)
Czechia	−0.057	0.020	0.047	0.105
Hungary	−0.056	−0.003	0.070	0.126
Poland	−0.043	−0.072	−0.041	0.002
Slovakia	−0.010	−0.029	0.000	0.009
Greece	−0.108	−0.187	−0.117	−0.008
Spain	−0.026	−0.085	−0.047	−0.021
Italy	0.024	−0.008	−0.016	−0.039
Portugal	−0.083	−0.142	−0.095	−0.012

Source: UNCTADstat (2018).

Table 3 depicts the development of trade balance for selected economies. Between 1995 and 2008 trade balances improved only in Czechia and Hungary. The deterioration of trade balances in Poland and Slovakia were, nonetheless, lower when compared

to Spain, Portugal and Greece. Until 2011, trade balances deteriorated below the 1995 level in all Southern European economies, while in Central European economies, trade balance improved, albeit with very limited improvement in Poland and Slovakia.

When analysing the relation between balance of trade and income from global value chains, it is necessary to bear in mind the possible built-in bias of both approaches that might cause analytical discrepancies. Balance of trade is measured using standard indicators of international trade (neglecting the origin of the value added), while income from global value chains is measured using advanced decomposition techniques tracing value added of labour and capital needed for the production of final manufactured goods (Timmer 2013). For that reason, figure 1 focuses rather on the big picture, not aiming to provide accurate outcomes, which would be provable in a more advanced econometric model.

A comparison of both groups of countries is shown in figure 1. The X-axis represents the change in relative real GVC income between 1995 and 2011 (depicted also in table 2) while the Y-axis represents the change in trade balance (depicted also in table 3) in the same period.

Based on figure 1, we can observe a direct relationship between change in relative GVC income and change in balance of trade. While the position of Central European economies improved in both GVC

income and trade deficit, the opposite holds for all Southern European economies.

4. Data sources, results and robustness

The motivation of TNCs to move production to post-socialist Central Europe was, apart from its geographic location, caused by the local low-cost but skilled labour (Jürgens and Krzywdzinski 2009; Pavlínek 2019; Chiappini 2012). The following analysis therefore takes into account not only the institutional setup but also the local labour costs.

To estimate determinants of structural changes of GVCs in Europe, we employ an OLS linear regression, which is widely used in GVC empirical studies, e.g. Baldwin and Yan (2014). Due to limited GVC data availability, a more advanced analysis of time series cannot be employed. In the analysis, three explanatory variables are used: labour costs, quality of regulatory environment and quality of contract enforcing institutions.

Labour costs cover the compensation of employees plus taxes minus subsidies in the sectors of industry, construction and services (Eurostat 2018). As wages demonstrated a dynamic development, especially in Central Europe, average available labour costs in the selected time frame are applied. Quality of institutions is evaluated by the Rule of Law multi-criterial
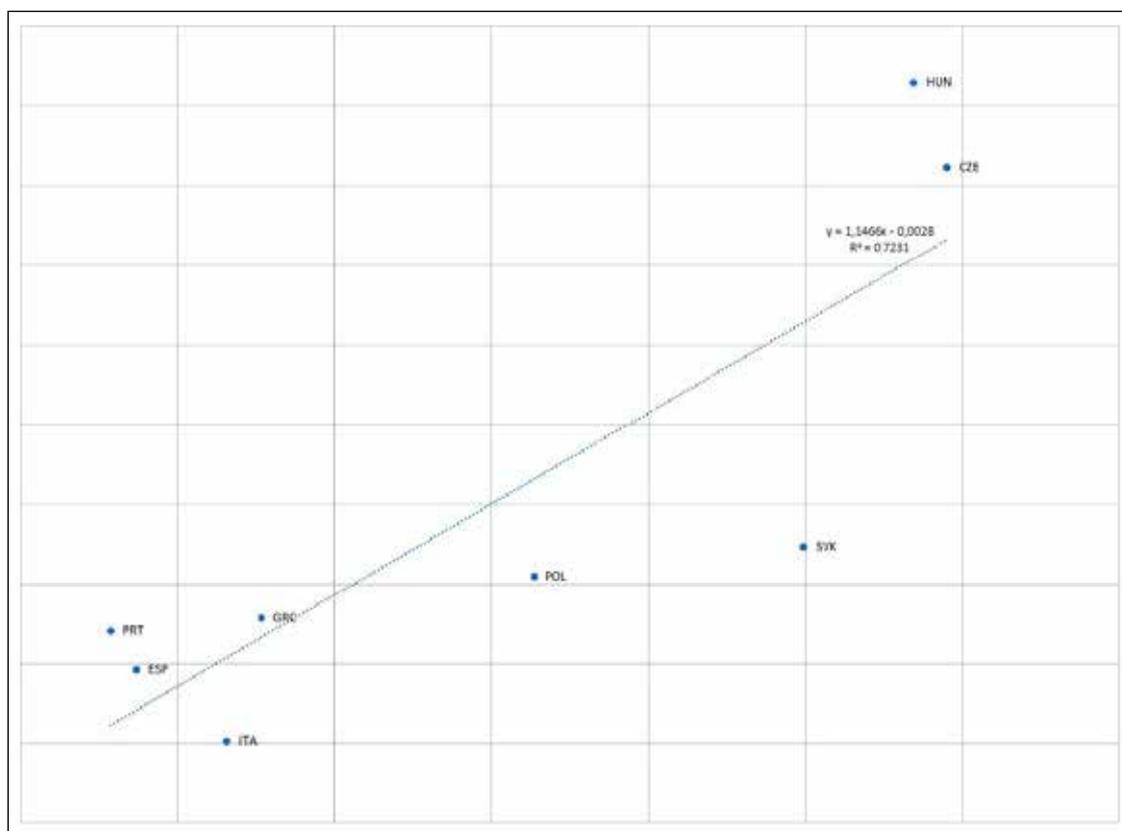
Fig. 1 Change in relative GVC income (x-axis) / change in balance of trade (y-axis) (1995–2011).
Source: Timmer et al. (2013), UNCTADstat (2018)

indicator, compiled by the World Bank (WGI 2017). This measure was developed by Kaufmann et al. and is used as a baseline of the ability to enforce contracts by Nunn (2007) and Lavchenko (2006). Rule of Law index covers a broad range of areas, e.g. property rights protection, quality of enforcement mechanisms, reliability of police services and judicial independence. As comparative advantage is, according to Nunn and Trefler (2014), co-determined by product and financial/labour markets regulation, we also include the multicriterial index of Regulatory Quality (WGI 2017). The regulatory quality index evaluates not only the regulatory environment, but also the effects of trade policy or tax policy on the domestic business environment. Rule of Law and Regulatory Quality indices are compiled from multiple sources, mainly surveys of independent providers (e.g. Gallup World Poll), business information providers (e.g. Economist Intelligence Unit), NGOs (e.g. Freedom House) and public sector organisations (EBRD Transition Report).

The explained variable, i.e. the structural changes in GVCs, is measured by the difference in real GVC income (per unit of GDP) between 1995 and 2011, as depicted in table 2. Economies included in the analysis are, for Southern Europe, Greece, Italy, Spain and Portugal, while Central Europe is represented by Czechia, Hungary, Poland and Slovakia. The estimated impact of selected variables on real GVC income is depicted in table 4.

Tab. 4 Impact of labour costs, regulatory quality and rule of law on GVC shift (1995–2011).

Variable	Coefficient (Standard error)
Labour costs	−0.003 ** (0.001)
Regulatory Quality	0.134 *** (0.026)
Rule of Law	−0.079 ** (0.029)

Sources: Eurostat (2018), WGI (2017)
** stands for p-value lower than 0.05,
*** stands for p-value lower than 0.01

Regression analysis confirms the statistically significant impact of lower labour costs and higher regulatory quality on the GVC shift to Central European countries. Adj. R-sq. of the model is equal to 0.86. TNCs were attracted by labour costs, which were on average, during the selected period, more than 55% lower in Central Europe than in Southern Europe. In addition, all Central European countries demonstrated better regulatory quality than Southern European economies (with the exception of Spain). This also proved to be a statistically significant determinant of the GVC shift towards Central Europe, denoting TNCs fleeing from the overregulated South to the slightly more liberal Central Europe. So far, the outcomes are in line with the available literature. Rule of law proved

to be a significant determinant as well. However, the negative coefficient points to the fact that companies were moving their production to an environment with worse contractual institutions, which does not conform with the current theoretical and empirical literature.

A relatively similar result is achieved when the Rule of Law index is replaced by the Corruption Control index (WGI 2017). High levels of bribery and irregular payments are conspicuous signs of weak rule of law. Therefore, the Corruption Control index broadly covers the essence of weak rule of law and enforcement mechanisms in the economy. Meanwhile, the multicriterial Control of Corruption index consists of different input variables from the Rule of Law index, focusing on all kinds of irregular payments.

In order to further test the robustness of the results, we limit the examined period to 1995–2008. By neglecting the years 2009–2011, we omit the period of severe economic crisis. The European debt crisis particularly hit Southern Europe and affected both real GVC income as well as real GDP. Moreover, we replace the variables of the World Bank with indicators provided by the World Economic Forum (WEF). WEF uses data gathered independently, using its own surveys among executives worldwide. We apply the 'Institutions' index as a substitute for the 'Rule of Law' index and the 'Goods Market Regulation' index replaces 'Regulatory Quality'. The 'Institution' index evaluates the quality of both formal and informal institutions, i.e. the quality of state administration, protection of natural rights and also the ethical standards of companies. The 'Goods Market Efficiency' index evaluates, among other things, how easy it is to start a business, rules on FDIs, or what the effects of taxation are. Table 5 summarises the impact of the amended variables on real GVC income (per unit of GDP) between 1995 and 2008.

Tab. 5 Impact of labour costs, goods market regulation and institutional quality on GVC shift (1995–2008).

Variable	Coefficient (Standard error)
Labour costs	−0.004 ** (0.001)
Goods market regulation	0.085 *** (0.015)
Institutions	−0.074 *** (0.017)

Sources: Eurostat (2018), WEF (2009)
** stands for p-value lower than 0.05,
*** stands for p-value lower than 0.01

Outcomes of the modified regression in table 5 are comparable with the original model (table 4), adj. R-sq. of the modified model is equal to 0.92. The modified model confirms that GVC income in Central Europe increased despite the lower quality of domestic institutions. This, however, did not discourage

TNCs from moving their production eastwards, mainly because of the prospects of EU membership. The EU's Eastern enlargement managed to guarantee the necessary institutional standards. Moreover, regulatory quality in Central European countries improved between 1996 and 2008 (WGI 2017).

Furthermore, it has to be added that the results hold only for selected Central European countries, i.e. Czechia, Hungary, Poland and Slovakia. Once different countries (Bulgaria, Latvia, Lithuania or Romania) are incorporated in the model, the statistical significance of labour costs or rule of law disappears. The reason might be twofold. First, a less skilled labour force and greater geographic distance are not sufficiently compensated for by the decrease in labour costs. Alternatively, the trade-off between labour costs and quality of contractual institutions is only limited and TNCs are ready to accept a decrease in rule of law only to a certain extent. In the latter case, significantly lower institutional quality (e.g. in Bulgaria and Romania) could not be offset, even by substantially lower labour costs.

5. Limitations, conclusions and discussion

This empirical study demonstrates several limitations. Apart from the general drawbacks related to overall GVC data and their application, as discussed above, scholars are divided on the issue of how to measure soft variables like institutional quality. They also question whether the current data on institutions are relevant and generally applicable in econometric models, e.g. see Glaeser et al. (2004) or Voigt (2009) for details. As there is an overwhelming consensus that institutions matter, we employ the available and broadly used indicators, despite the ongoing academic discussion (e.g. Kaufmann et al. 2009 vs. Thomas 2009). Moreover, the limited amount of countries taken into account might reduce the statistical power of the regression models. However, the number of Southern European EU member states is factually given and results for other Central and Southeast European countries are discussed above.

With the limitations taken into account, the following conclusions can be drawn. Significant changes in GVC real income between 1995 and 2011 indicate a shift of GVC-related production from Southern Europe towards Central Europe. While Central European countries demonstrated improvement in GVC-related real income, income in Southern European countries diminished or stagnated. In this article, we argue that such a shift was reflected in the trade balances of both Central and Southern European countries. Therefore, this shift was also one of the contributors to the growing current account imbalances in the EU during the build-up to the European sovereign debt crisis. In this article, we identify total labour costs together with regulatory quality as reasons for the shift.

This is in accordance with other authors who have focused predominantly on increasing unit labour costs as a significant determinant for European imbalances. In a broader sense, soaring labour costs in Southern Europe together with the Eastern enlargement brought more cost-efficient competitors into the European Common Market. These factors undermined the existing comparative advantages in Southern European countries. Higher value-added production remained in the EU core, which exhibits higher total factor productivity. Simultaneously, lower value-added production moved to more cost-efficient new EU member states in Central Europe, leaving Southern Europe dependent on domestic demand. Subsequent changes in current account positions were further underpinned by soaring government expenditures and liquidity, initially through the misallocated investments of high-savings countries and later through the euro area's liquidity distribution mechanism, the TARGET2 system.

As regulatory quality proved to be one of the contributors to the GVC shift from Southern to Central Europe, the push for the liberalisation of product and labour markets in deficit-prone Southern Europe seems to be justified. During the years following the European sovereign debt crisis, current account deficits in Southern Europe almost disappeared. However, as Jirankova et al. (2015) demonstrate, this was predominantly due to a dramatic decrease in consumption in Southern European countries, i.e. due to the income adjustment mechanism of the balance of payments. This means that the preconditions for European imbalances have not yet been sufficiently tackled.

Even though this approach might provide a short- to medium-term solution, it would not address the issue of relatively lower competitiveness in Southern Europe when compared to Central Europe. Southern European countries have approved some measures to address their relatively lower competitiveness resulting from the unfavourable productivity-wages ratio. Such measures include reduced non-wage labour costs in Greece, increased flexibility of working time management in Portugal and increased space for firm-level bargaining to derogate from sectoral contracts in Spain and Italy (Buti and Turrini 2012).

Despite the actions taken recently, countries in Southern Europe are still lagging behind in terms of macroeconomic competitiveness, and not only behind the EU's core but also behind Czechia (WEF 2017). One of the major weaknesses of Southern Europe, besides the macroeconomic environment, is its financial market development, which suffers from the redirection of private cross-border capital flows towards surplus countries, i.e. from a direct effect of European imbalances. Should Southern European economies boost their productivity, they will have to attract foreign investments and private capital flows again. More robust financial markets would also accelerate and increase the benefits of

conducted structural reforms. Completing the banking union would increase the trustworthiness of the financial sector. Further deregulation of goods and labour markets as well as improving the institutional environment are other preconditions to restore the attractiveness of Southern Europe for foreign investors. Foreign investments will later induce increased GVC income and, subsequently, also drive current account adjustment, which will not be based upon limited internal consumption.

Central European countries seem to benefit from the GVC shift eastwards. However, this has to be viewed only as a short-term victory. Foreign capital has been attracted predominantly to its cost-competitive labour, while quality of human capital and total factor productivity still do not match the standards of the EU's core. Therefore, Central Europe is actually prone to suffering from similar flaws as Southern Europe did before the start of the European debt crisis. The regulatory environment is currently improving in Portugal and Spain, while slightly deteriorating in Hungary and Slovakia. Moreover, contrary to general belief, Central European countries attracted TNCs despite relatively lower rule of law standards. This is, however, rather an exception to the rule. In our model, the statistically significant negative coefficient for rule of law does not hold universally for all the cost-efficient economies in Central and Southeast Europe, but only for Czechia, Hungary, Poland and Slovakia. These countries demonstrated only minor rule of law deficiencies. Rule of law and institutional quality in general, therefore, remain a crucial determinant of FDI allocation and the position of a country in GVCs. Unfortunately for Central Europe, rule of law is currently worsening in Hungary and Poland. In Hungary's case, it is also accompanied by increasing levels of corruption. Unfortunately, institutional quality is not universally improving in Central Europe, leaving the region dependent on still relatively low labour costs.

Cost-based comparative advantages will sooner or later be exhausted, as wage pressure in Central European economies is currently on the rise. Central European countries thus run a risk that they will share the same fate as Southern Europe. Wage increases unaccompanied by corresponding productivity and competitiveness gains might cause another shift of GVCs, leaving Central Europe in the same position as Southern Europe in 2009. Based upon WEF (2017) data, Central European economies, like their Southern European counterparts, suffer from comparably weak institutions, stringent labour market regulation and lower quality education systems. However, unlike Southern European countries, Central European economies possess a larger scope for fiscal policy to address well-known structural weaknesses. Political will and the stability of the institutional environment, therefore, remain the most relevant determinants of future economic development in Central Europe.

Acknowledgements

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