13
Political Economy of Central Europe

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13.1 Introduction

This chapter examines the political economy of Central European (CE) countries from two angles. First, it looks into the political economic institutions evaluating their convergence across the region. Second, the chapter investigates trade and foreign direct investment (FDI) flows of the CE countries.

To start with, all the countries share common institutional background. They introduced socialist economic institutions after the Second World War and then after the Cold War they reverted back to market economy. But there were also considerable differences in design choices during the last century, in terms of socialist institutions (e.g., market socialism in Hungary, self-management in Slovenia, a more centralistic planning in Poland or Czechoslovakia) as well as in the strategy of post-socialist transition (e.g., big-bang reforms in Czech Republic or Poland, a more gradual approach in Hungary or Slovenia). Building on the theoretical distinction between informal (evolving) and formal (designed) institutions, the first issue pursued in this chapter is whether the common historical origins of CE countries are deterministic enough to ensure that institutional commonalities prevail over discrepancies despite possible divergent political interventions in institutional design. Our hypothesis is that if CE countries are indeed a separate group unto its own, we should observe an evolutionary process of historically determined long-run institutional convergence, regardless of different design choice at particular points in time. In testing this hypothesis we use a selection of existing institutional indicators and look for institutional similarities by means of statistical clustering. We also use a predetermined concept of coherent institutional frameworks, as provided by the 'varieties of capitalism' (VOC) approach, and review the relevant literature and some basic data to see whether CE countries are moving towards their own distinctive variety of capitalism.

On the other hand, not only should the structure of economic systems, determined through institutions and VOC, be similar, the countries should

have similarities in terms of their economic flows as well. With that in mind, we examine bilateral trade flows and FDI. With bilateral trade flows, we look at the evolution of countries' trade shares through time, and also search for something special, that CE factor, which might ally the countries closer together than it would be implied by theory and established empirical models. In terms of FDI, the relevant flows are not only the flows within CE, but even more so, the flows in the CE area as a whole. If the countries in CE are in fact perceived as a group unto themselves, we expect that major foreign investors would invest in CE countries proportionally, and would thus assume important investment roles not only in one or two countries of the CE, but in all of them.

We find there are institutional similarities among the CE countries, that they trade considerably among themselves, and that they are considered as comparable destinations for FDI. The CE countries do have similar institutions; however, we also find important differences that prevent all of the CE countries to be classified within one specific variety of capitalism. In terms of trade, we do not find special trade linkages between the CE countries, which would robustly support the notion of CE. Foreign investments are more promising, with signs that foreign investors could be in fact perceiving the CE countries as a cluster. Some CE countries still have much in common, both in institutions and in economic relations, with countries outside their group. Overall, while there are certainly important similarities and connections between countries in CE, in light of all the evidence, we cannot confirm that the suggested CE countries form a homogenous and separate group on their own.

13.2   Theoretical framework

13.2.1   Institutions and VOC

We base our chapter on two traditions of institutional political economy, the New Institutional Economics transforming the received neoclassical paradigm to account for importance of institutions (North 1990) and the VOC approach (Hall and Soskice 2001) combining economic and sociological insights into an original interpretative framework.

If the importance of institutions is today well acknowledged and studied assiduously within the general research programme of New Institutional Economics (Coase 1937, 1960; North 1981, 1990, 2005; Ostrom 1990, 2005; Williamson 1975, 2000), and more and more applied in everyday mainstream economics and other social sciences studies, there is still a lack of common sense regarding what institutions are and how can they be classified. We could, however, say that institutions form the basis of most if not all social systems, and are as such the prime candidate to use in our convergence analysis of CE. The most common and widely used definition of institutions can be attributed to Douglas North, who defines institutions

as formal and informal rules governing human interactions (North 1990, 1993, 2005). North (1993) demarcates institutions from organizations, which are the players of the game, be it individuals, firms, organizations, or any other definable social construct, whereas institutions, including their enforcement mechanisms, are the rules of the game they play. The game, in this respect, is any social interaction.

Institutions result from two groups of factors: (i) deeply rooted physical and historical factors, such as geography, religion, culture, political history; (ii) conscious societal action to transform the institutional design. The latter includes also important pressures from the international environment (globalization, transnational enterprises, international economic organization, etc.) towards institutional isomorphism – but, as stressed by Bruff (2010), isomorphism is not prevailing and the concept of distinct national VOC is still relevant. We search for institutional similarities among the CE countries in two ways. In statistical investigation of institutional convergence, we choose a broader classification of institutional indices according to subject category (Joskow 2008), but concentrate on only the three formal and relatively homogenous sets of institutions and look for their similarities with cluster analysis without imposing any prior theoretical structure. In the second step, building on the recent VOC approach, our unit of analysis is the institutional framework as a whole. The question here is not how similar countries are regarding individual institution, but whether these institutions are combined into a coherent overall framework and whether such (emerging) frameworks are similar among the CE countries.

The focus of VOC, introduced originally by Hall and Soskice (2001), is on institutions that coordinate economic activities of firms and other actors. The most important institutions are those governing industrial relations, interfirm relations, employment relations, corporate governance, and vocational training. The basic VOC approach classifies institutions into those supporting market coordination and those supporting coordination by strategic interaction of different actors. The key notion here is institutional complementary: put simply, institutions across different areas must be consistent with one another in order to support economic development. There is no *a priori* assumption that market or strategic coordination is intrinsically better.

The VOC approach initially tried to classify political economies into two broad groups of liberal and coordinated market economies. It soon became clear that more types are needed for a richer analyses and several other classification were proposed, the most widely used being that of Amable (2003). There has recently also been some work applying the VOC approach to the emerging capitalist economies in post-socialist countries (Myant 2007; Hancké *et al.* 2007). In the empirical part, we examine the empirical frameworks of VOC analysis and apply it to CE.

13.3 Trade and FDI

In this section, we outline the theory behind examining trade and FDI flows. We present a theoretical framework which can be operationalized for empirical estimation of the influence of the CE concept on the international activities of countries.

The prevalent model for bilateral trade flows (and other bilateral flows) research is the gravity model, which in a single equation relates trade flows to its most salient determinants. It provides a direct link between trade flows and trade barriers, while incorporating the relevant factors affecting trade flows. Leamer and Levinsohn (1995) write that the gravity relationship is one of the most stable relationships in economics, due to the abundance of empirical evidence that supports it (McCallum 1995; Rose 2000; Anderson and van Wincoop 2003; or Helpman *et al*. 2008). The basic gravity model, directly applied from physics, for bilateral flows from country *i* to country *j* can be written as in Equation 13.1, where the flow X_{ij} depends positively on the sizes of the markets of the trading countries, proxied by their respective gross domestic products (GDPs), and negatively on the trade costs.

$$X_{ij} = const. \frac{GDP_i^\alpha GDP_j^\beta}{\delta_{ij}^\gamma} \varepsilon_{ij} \tag{13.1}$$

Head and Mayer (2011a, 2011b) show that the trade gravity specification can be expressed generally, from two accounting identities: budget allocation for the importer and market clearing for the exporter. Taking these relations into account yields the gravity formulation of trade flows in Equation 13.2.

$$X_{ij} = \frac{1}{Y} \frac{Y_i}{\Phi_i^*} \frac{X_j}{\Phi_j} \phi_{ij} \tag{13.2}$$

The constant is expressed as one over the world income *Y*, followed by an exporter-specific and importer-specific term, and a term capturing bilateral factors. Y_i and X_j capture the respective gross domestic incomes of the trading countries, Φ_i^* is the exporter market *i* potential or access term, similarly Φ_j captures the degree of competition in the importing market *j* and Φ_{ij} measures the accessibility of the market and can be thought of as openness to trade or total trade costs.

The cross-sectional theoretical gravity model in Equation 13.2 can then be used to consistently estimate all the factors varying on the *ij* dimension, as it is extremely hard to correctly capture the *i* and *j* terms, which are thus controlled for with fixed effects. Like the free trade area effect (*ij* dimension) or a common monetary union effect (*ij* dimension), also being a part of CE (*ij* dimension) is a part of the Φ_{ij} term, which can be estimated empirically.

The influence of CE as a concept on trade between the countries in the group can then be tested.

FDI flows and stocks can also be theoretically modelled with a gravity specification, although for our purposes they are slightly more tricky, as it is not mainly the flows or stocks between the countries that matter, but more than that, the flows or stocks in the countries or, in our case, a group of countries – CE. As with trade flows, we can talk about inward and outward FDI, as well as greenfield (new) FDI as opposed to mergers and acquisitions. There are two main types of FDI: vertical and horizontal. Horizontal FDI is motivated by market seeking, while vertical FDI is motivated by lower production costs for some or all parts of the production process. Taking these motives and market frictions into account, capital in the form of FDI should be located where the return to it is the highest.

Models combining the two motives for FDI such as Markusen and Venables (1998, 2000) suggest a gravity like specification for FDI from country *i* to country *j*, which analogously as with bilateral trade flows, depends on the respective GDPs of the two countries and bilateral trade costs proxied with distance and other variables. Head and Ries (2008) emphasize that around two-thirds of FDI is actually mergers and acquisitions, not greenfield FDI, and build a theoretical model using corporate control over firms' motivation. They also arrive at a gravity specification for FDI in the form of Equation 13.3.

$$E[F_{ij}] = e^{(O_i + I_j - D_{ij}\theta)} \tag{13.3}$$

The expected bilateral FDI stock from country *i* to country *j* is a function of origin-specific variables represented by O_i, destination-specific variables represented by I_j and $\mathbf{D}_{ij}$ is a vector of geographic and cultural distance (which can be thought as the equivalent to openness to trade and bilateral costs term Φ_{ij} in the previous paragraphs). It is also suggested that the inward and outward effects can be estimated as *i*- and *j*-specific fixed effects. The authors additionally offer a good review on the theoretical developments of the FDI gravity models as well as the empirical success of the gravity equation for FDI, to which we direct the interested reader.

We can include the CE effect in the bilateral costs term and estimate it empirically. However, we are not only interested in the FDI between CE countries; more than that, we are interested in the FDI flows into CE as a whole. Evidence on location choice of multinational companies offers some guidance on that, as multinational firms first choose a wider area where to locate, and then continue with the choice of their micro location. For instance, Head and Mayer (2004) empirically model the decisions of Japanese investors in Europe as a nested logit model, where the investors first choose a country and then a region within that country. We extend that logic to CE and look

at evidence pointing to whether investors invest in CE as a whole, implying the largest investors in all CE countries should have a considerable overlap, which would then be in favour of the CE concept, or rather concentrate on specific countries, not seeing CE as a homogenous area.

When examining FDI, we take outward FDI stocks as our variable of interest, for three reasons explained in Bénassy-Quéré *et al.* (2007: 769): 'First, foreign investors decide on the worldwide allocation of output, hence on capital stocks. Second, stocks account for FDI being financed through local capital markets, hence it is a better measure of capital ownership (Devereux and Griffith 2002). Finally, stocks are much less volatile than flows which are sometimes dependent on one or two large takeovers, especially in relatively small countries.'

13.4   Convergence of institutions in CE and VOC

In this section, we analyse the convergence of institutions in CE and the VOC, which describe their institutional systems. For the convergence analysis, we use 31 different institutional indicators, which can be grouped into three homogenous groups of formal institutions. We classify institutions as being legal, political, or economic institutions as in Kunčič (2012).[1]

Our convergence analysis of institutions uses statistical cluster analysis of our institutional proxies to form homogenous groups of countries, which in fact relies on the concept of sigma convergence as in the economic growth literature (Barro and Sala-i-Martin 1992 or Sala-i-Martin 1996). Sigma convergence is a cross-section concept in our analysis and refers to lower variation within the selected group of countries on selected institutional indicator(s). In other words, it is about placing similar countries together. In search for CE, we rely on sigma convergence, and compare variability of institutional factors across different groups of countries.

Clustering forms homogenous groups out of given observations. Hierarchical clustering starts with a single country and continuously adds countries to form larger clusters, according to the specific agglomeration method and metric used. We use the frequently used Euclidean metric to calculate the distances between clusters. Additionally, an agglomeration method must be chosen, which determines which distance between clusters is taken into calculation, such as the single linkage method (uses minimal distance between clusters), the complete linkage method (maximal distance) or, more commonly, Ward's error sum of squares method (which uses variance to minimize loss of information due to clustering), which we use.

In order to avoid being dependent on one specific year, we take country averages of institutional indicators from 1990–2010 to arrive at a cross-section for examining sigma convergence. We include all countries of the European continent in cluster analysis, although some are dropped due to excessive missing values.

The dendogram in Figure 13.1 shows the possible clustering solutions. The horizontal length of the lines, representing dissimilarity, implies that the largest divide seems to be on two blocks: East Europe on the one hand and West Europe on the other (which also includes the more developed southern countries Greece, Malta, and Cyprus). The Western cluster is further divided into two parts, the predominantly northern part and the west–south–central part. The comparison of the standardized cluster means (available on request) is not surprising, with the Northern group having best institutions, the Eastern worst and the West–South–Central group not departing from the means considerably.

The countries of CE are all placed in the second (west–south–central) part of the West. This implies three conclusion: (i) in this sample of countries, CE countries still cluster close to each other, but they do not form a separate group on their own; (ii) CE countries, together with some other post-socialist countries (namely the Baltic countries), are closer to the western then to the eastern part of the 'iron curtain' divide; (iii) among the western countries, CE ones seem to be closer to the southern ('Mediterranean') group than to the countries neighbouring CE (Germany, Austria, or Switzerland).

Cluster analysis gives some support for the notion of CE as a relatively homogenous group of countries, as all the five countries of our working
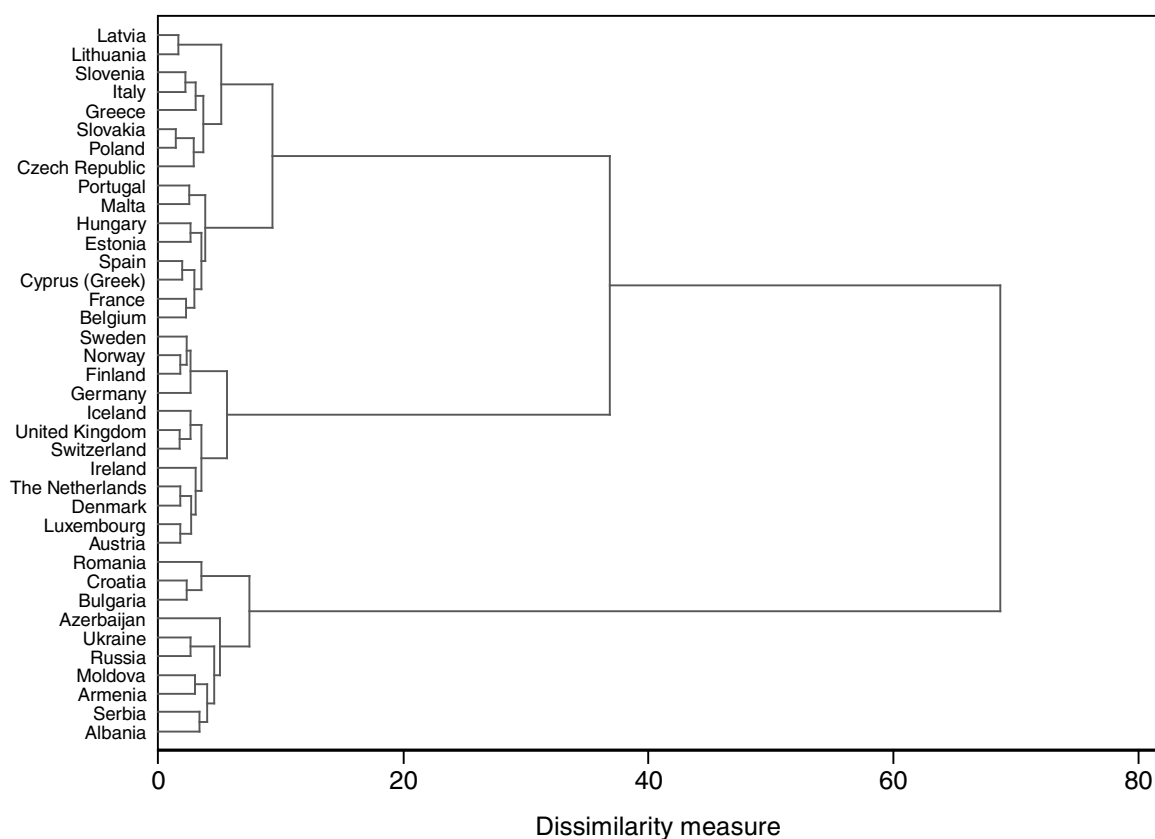

Figure 13.1   Dendrogram of Europe

Source: Kunčič (2012) and own calculations.

definition are clustered together, on the first levels. There are other countries institutionally similar to CE as well. Besides Lithuania, Latvia, and Estonia, the CE countries appear to be closer to some southern countries of Western Europe than to their western neighbours Austria and Germany. One way to interpret these two findings together is that the CE countries were successful in moving away from socialist legacies and building Western-type institutions, but in doing that, they have not yet reached the level of institutional quality exemplified by northern and central parts of Western Europe. Another, a more pessimistic interpretation, is that the designed political institutional heritage of socialism managed to penetrate the more embedded institutional environment, which could consequently set a limit on institutional development in the short to medium term.

The foregoing analysis has implied that there is a natural, or at least widely acceptable, ordering of institutions from worse to better. Such ordering is also implicitly reflected in the values of institutional indicators. The result that CE countries are found somewhere in the middle regarding their institutional quality would thus likely mean that they are found halfway in their path of convergence to the best institutional models. In such an interpretative framework, their current similarity (sigma convergence) would not be seen as static or persistent, but merely as reflecting their current level in the process of institutional catching up.

The alternative view to this is that there is no intrinsically best combination of institutions to which all countries should be expected to finally converge. Rather, there may exist several different consistent institutional frameworks that are all, in their specific ways, supportive of economic development. Such view has recently been put forward by the so-called 'varieties of capitalism' (VOC) approach (Hall and Soskice 2001).

In the following, we build on this work in trying to establish whether the CE countries may be seen as developing a similar variety of capitalism. A positive answer to this query would provide additional support for the meaningfulness of the notion of CE.

Due to complexity of theoretical concepts and lack of relevant data, the empirical studies of the VOC literature are largely based on qualitative methodology, providing numerous individual or comparative country case studies. Quite naturally, this leads to divergent and sometimes even opposing interpretations. For example, Lane (2007) classifies post-socialist countries into two large groups. All CE countries and Estonia are in the continental market capitalism group. In the same group, but with much more state interference are also Lithuania, Latvia, Croatia, Romania, and Bulgaria. King (2007) too puts all CE countries, without any others, into the same group, which he calls liberal dependent post-communism capitalism.[2] Nölke and Vliegenthart (2009) similarly treat CE countries (without Slovenia) as dependent market economies, emphasizing the crucial role of transnational enterprises for their political economy. These studies suggest that the CE countries are indeed developing their distinct variety
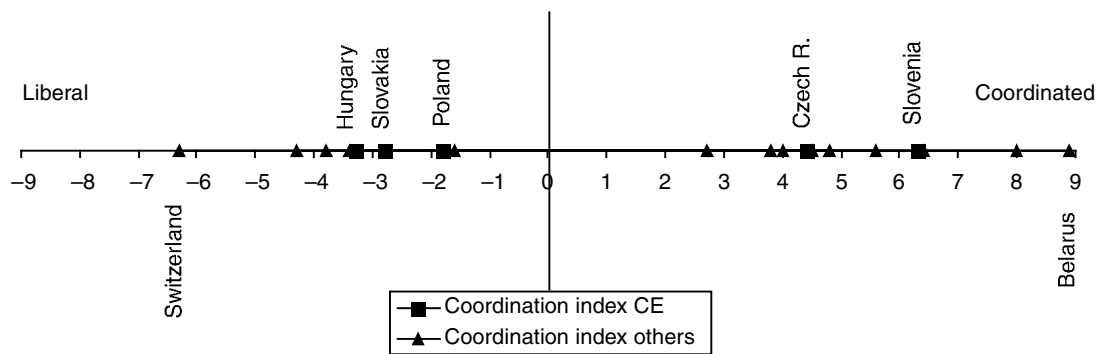
Figure 13.2   Liberal or coordinated variety: coordination index

Source: Knell and Srholec (2007) and own representation.

of capitalism. But there are some opposing views as well. Mykhenko (2007a, 2007b) sees Poland and Ukraine as belonging to the same variety, which runs counter to the divides imposed by both Lane and King. Several authors (Buchen 2007; Feldmann 2007; Adam *et al.* 2009) see Estonia and Slovenia as opposite cases of liberal and coordinated variety, which speaks against Lane's inclusion of Estonia in the CE group.

In one of the rare strictly quantitative cross-section studies, Knell and Srholec (2007) have produced an index of coordination intended to classify countries along the liberal–coordinated interval. Their results for the total index and its three components are reproduced in Figure 13.2. Indices are normalized to zero with standard deviation of 1. Positive values denote a coordinated market economy, and negative ones a liberal one. The sample of countries included CE countries, as defined in this book, and their neighbouring countries.

It is immediately apparent that there are wide divergences within the group of CE countries; they include both coordinated and liberal economies. Looking at individual components of the Knell and Srholec index, CE countries seem to be more liberal (or less coordinated) in areas of distribution and labour markets than in business regulation. On the contrary, the Western Central countries and their neighbours are most liberal in business regulation. Eastern neighbours are similar to CE in strictness of business regulation, but they appear to have more regulated labour markets and less redistribution. Overall, while the country scores are certainly interesting and informative, they hardly give us any ground to treat the CE as a homogenous variety of capitalism.

Knell and Srholec data refers to the 2001–04 period. Since post-socialist countries are all experiencing dynamic institutional change, the picture may have changed in more recent years. We have thus compiled more recent data reflecting the main dimensions of the VOC approach:

- General government expenditure as share of GDP (by Eurostat for 2007, to avoid distortions by recent financial crises). This variable captures the

extent of state involvement in the society and is expected to be higher in more coordinated economies.

- Social benefits paid by general governments as share of GDP (by Eurostat for 2007). This variable captures the extent of the welfare state and is expected to be higher in coordinated economies.
- Employment protection legislation (EPL) index (by Organization for Economic Cooperation and Development (OECD) for 2008). This variable captures the extent of labour market regulation and may also be indicative for the type of industrial relations. It is expected higher to be in more coordinated economies.
- Ease of doing business index (by World bank for 2010). It proxies the restrictiveness of business regulation and is expected to be higher in coordinated economies.
- The ratio of stock market capitalization in GDP to domestic bank credit in GDP (calculated from World Bank data for 2007). This variable is intended to reflect the type of corporate governance. In the VOC approach, the main issue related to corporate governance is who provides capital for long-term business investment. The relative importance of stock market, as opposed to 'patient' bank capital, is expected to be higher in more liberal economies.

Regarding general government expenditures, there are important differences within groups, but on average the CE countries are more similar to their western neighbours than to their eastern ones. Social expenditures are on average lower in the CE, and especially in their eastern neighbours. This confirms the finding from Knell and Srholec that post-socialist countries, on average, develop a less extensive welfare state. Also, business regulation still remains much more extensive in the CE countries compared to Western Europe, but somewhat more liberal than in their eastern neighbours.

On the other hand, the differences in the extent of labour market regulation, as measured by the EPL index, seem to be much less pronounced as they were in less recent Knell and Srholec calculations. This may suggest that some of the CE countries are moving, from the initial liberalization wave, in the direction of slightly more coordinated labour markets. Finally, data on financing hardly reveals any regularities among groups; the range of indicator values within each group is simply too wide.

While there are some apparent similarities within the CE group (e.g., relatively low social expenditures, relatively strict business regulation), there are important differences in values of almost all indicators. We calculated mean ranks of countries in our sample for each indicator, and it shows that Slovakia, the Czech Republic, and Poland are more liberal (or less coordinated) than Slovenia and Hungary. This finding departs from Knell and Srholec, who classified Hungary on the liberal side and the Czech Republic on the coordinated side of their spectrum, and reflects the influence of

conscious institutional design choices. Overall, we find little support for the idea that there is an emerging special variety of capitalism that would be specific for the group of CE countries.

13.5 Trade and FDI

In this section we take an empirical look at the international economic activities of countries in CE. The data used in the empirical investigation of trade and FDI is freely available from two sources. A rich bilateral trade data set, covering the time period from 1948 to 2006 and used in the Head *et al.* (2010) paper is freely available on Thierry Mayer's webpage (Mayer 2011). To this data set we add bilateral outward FDI stocks from OECD, which cover a sample of countries for the period from 1985 to 2010, although data availability varies.

In these data, the share of exports to CE in total exports of a country seems to be reasonably homogenous and stable over time at between 5 and 10 per cent, with the exception of the Czech Republic and Slovakia, which have a disproportionately larger share due to extensive trade between each other for historical reasons. The intra CE FDI stocks show a similar but less homogenous picture, again with disproportionate shares of Slovakia and the Czech Republic, but with a more volatile share of Hungary. Next we examine the largest trading partners for each country and largest investors in each country, which is especially relevant for FDI stocks. FDI stocks into CE are much more important than FDI stocks between CE, and as the theory for FDI location would also predict, we are especially interested whether the top investors for each of the CE country match, which would imply that they invest in CE as a region.

If we look only at the top five export destinations, what is initially apparent is that Germany is the dominant export destination for all five CE countries, and that other export destinations match well too. The Czech Republic and Slovakia have each other in the second place, while the rest have Italy, which also ranks in the third place for Slovakia and seventh for the Czech Republic. Other shared export destinations among the top five are France, shared by everybody accept Slovakia, and Austria, shared by three out of the five CE countries. However, being a very homogenous group in terms of top export destinations is not indicative enough of CE as a closely knit group of countries, as the top export destinations, according to theory that emphasizes market potential, should be similar for all the countries in that geographical region. It is more interesting to interpret the top export destinations which are different between the countries, as they would signal some other factors that affect trade and are not common to our definition of CE countries. Slovenia and Hungary are the only countries that do not have any CE country at all in their top five export destinations. Additionally, Slovenia has Croatia at the top of the list, which no other CE country has, which can be understood in

terms of a common political past (Yugoslavia). As also mentioned in Chapter 2, Slovenia in terms of bilateral trade is the odd country out, but whether this is enough to break the CE-specific influence must be determined econometrically with a gravity specification.

Regarding the FDI stocks, we see the largest investors match considerably among the top five largest investors in CE countries. Especially the Netherlands and Germany are most salient investors, ranking first and second in the Czech Republic, Slovakia, and Poland, while they are third and first in Hungary and third and fifth in Slovenia. France and Austria are also among the widely shared top five investors. In contrast to export flows, there are fewer reasons to expect the largest investors to be overlapping in the CE countries, providing illustrative evidence for homogeneity of CE countries in terms of investments. To arrive at more robust evidence, the effect of CE on FDI stocks has to be estimated econometrically. We continue our analysis of the influence of CE on international activities of countries with a theoretically motivated gravity equation for bilateral trade[3] and bilateral outward FDI stocks.[4]

We define two special CE variables. The first dummy variable, CE within, captures the effect of both the origin and destination country being part of CE, and is testing the hypothesis that trade or FDI should be disproportionate within the CE countries relative to theoretical predictions, if these countries are in fact bound together by something other that standard economic determinants of trade and FDI. The second dummy variable, CE, is defined differently in the trade and FDI regressions. In trade specifications, CE dummy variable captures the effect of the exporting country being a part of CE, and points to the possible effect of CE countries exporting disproportionally more or less than the others. In the FDI specifications, the CE dummy is now defined as the destination country being a part of CE, examining whether investors disproportionately invest in CE.

Table 13.1 shows the econometric results for the gravity trade and FDI specifications. First two regressions use the trade data, while the second two regressions use the FDI data. In each regression, a number of control variables are included in line with the literature. The variables of special interest for this chapter are CE within and CE in all four specifications. Their statistical significance implies a special relationship that binds the CE countries. In striving for consistent result, there is also a trade-off between what we can control for and what we can calculate, and so the CE dummy cannot always be calculated.

More specifically, regression (1) shows a pooled ordinary least squares estimation (POLS) with time dummies, the most used gravity trade specification in the literature but also the one that makes the gold medal mistake (Baldwin and Taglioni 2006), as the remoteness term is left out. Regression (2) shows the cross-section regression results for the year 2006, where both the exporter fixed effects (*i*) and importer fixed effects (*j*) are

included. This consequently means the monadic terms cannot be identi-fied anymore, which also excludes the identification of the CE dummy. Regression (3) shows the simple gravity specification for FDI, using the same set of controls as with trade. Regression (4) includes the country fixed effects and runs an OLS for the year 2006, which again implies that identification of monadic terms as well as the CE dummy variable is not possible. Below, we first discuss the POLS results, and then turn to the cross-sectional OLS results.

The pooled OLS results for trade and FDI in Table 13.1 are similar in both significance and magnitude to the results of Head *et al.* (2010) for trade and Head and Ries (2008) and Bénassy-Quéré *et al.* (2007) for FDI. Almost all control variables have the expected sign and are statistically signifi-cantly different from zero. The populations and incomes per capita of both origin and destination countries have a positive effect on trade and FDI flows, implying larger markets and richer countries do more trade and FDI. Distance, which captures transport costs, reduces both trade and invest-ments. A shared border, language, and legal origins all increase the two flows, as it means the countries are closer on these dimensions and so busi-ness is easier. Also, the country pairs that had been in a colonial relation-ship have higher trade and FDI flows than others, and the countries still tied by colonial linkages have higher trade, but, interestingly, not FDI flows. Finally, in terms of economic structures, both countries being in a regional trade agreement (RTA), being members of GATT (General Agreement on Tariffs and Trade), and/or sharing a currency, all positively affect trade and FDI flows. Due to preferential treatment, being a member of the Asia–Caribbean–Pacific area also increases trade for those country pairs. The two variables of special interest in both columns (1) and (3), however, are the dummy variables on CE.

Looking firstly at the within CE trade and outward FDI stocks in POLS specifications, the significant partial coefficients on CE within would imply that there is in fact something specific about CE countries, as they trade disproportionately more between each other than with others, and also invest disproportionately more between themselves. The magnitudes of the effects are also large, with the intra CE trade exceeding the one suggested by the theory (exceeding the average) by 95 per cent, and the intra outward FDI stock exceeding the average by 123 per cent.[5] The coefficient on the CE dummy is significant in both trade and FDI specification. It implies that the CE countries export disproportionately less relative to the rest (by 22 per cent). In the FDI specification, it implies that they are disproportionately less targeted as an investment destination (by 46 per cent), meaning CE countries are perceived differently than other countries from the perspec-tive of foreign investors. Put differently, these results imply that the standard predictors of bilateral trade and FDI do not capture everything that affects these two flows within CE. Simply being a member of CE considerably

Table 13.1 Gravity results for exports outward FDI stocks

	ln of exports		ln of outward FDI stocks	
	POLS	OLS for 2006	POLS	OLS for 2006
	(1)	(2)	(3)	(4)
	lnExports	lnExports	lnFDI	lnFDI
ln Pop, origin	0.984***		0.996***	
	(0.00606)		(0.0217)	
ln Pop, dest	0.826***		0.661***	
	(0.00595)		(0.0187)	
ln GDP/Pop, origin	1.144***		1.955***	
	(0.00729)		(0.0479)	
ln GDP/Pop, dest	0.926***		0.944***	
	(0.00759)		(0.0257)	
ln Dist	–1.006***	–1.605***	–0.382***	–1.187***
	(0.0147)	(0.0603)	(0.0592)	(0.113)
Shared border	0.571***	0.799***	0.942***	0.854**
	(0.0714)	(0.150)	(0.209)	(0.318)
Shared language	0.477***	0.698***	0.758***	0.106
	(0.0343)	(0.0867)	(0.138)	(0.196)
Shared legal	0.303***	0.419***	0.311***	0.331***
	(0.0260)	(0.0605)	(0.0892)	(0.111)
ColHist	0.973***	0.750***	1.333***	1.217***
	(0.0724)	(0.127)	(0.185)	(0.337)
ColAlways	0.697**	1.387**	–1.944	0.789
	(0.312)	(0.693)	(1.667)	(1.059)
RTA	0.909***	0.513***	0.573***	0.235
	(0.0440)	(0.108)	(0.127)	(0.369)
Both GATT	0.120***	1.112***	0.696***	–0.462
	(0.0194)	(0.174)	(0.0913)	(0.654)
Shared currency	0.755***	0.0778	1.012***	1.007**
	(0.0870)	(0.277)	(0.178)	(0.441)
ACP	0.364***	0.142		
	(0.0595)	(0.170)		
CEwithin	0.668***	0.420**	0.800*	–0.160
	(0.145)	(0.198)	(0.429)	(0.421)

Continued

Table 13.1 Continued

	ln of exports		ln of outward FDI stocks	
	POLS	**OLS for 2006**	**POLS**	**OLS for 2006**
	(1)	(2)	(3)	(4)
	lnExports	**lnExports**	**lnFDI**	**lnFDI**
CE	−0.249***		−0.620***	
	(0.0403)		(0.163)	
Constant	−7.060***	4.883***	−26.21***	13.41***
	(0.154)	(0.508)	(0.697)	(0.978)
Observations	621,376	22,445	33,084	4,715
R^2	0.617	0.721	0.680	0.773
Time FE	YES	NO	YES	NO
Origin FE	NO	YES	NO	YES
Destination FE	NO	YES	NO	YES

Notes: Significance levels: ***$p<0.01$, **$p<0.05$, *$p<0.1$. Standard errors are in parentheses and are robust to dyadic heteroskedasticity in columns (1) and (3) and to origin country heteroskedasticity in columns (2) and (4). ACP cannot be identified in columns (3) and (4) because ACP countries do not report data on FDI to OECD.

Sources: Head *et al*. (2010), OECD (2010) and own calculations.

increases the economic activity with other CE members, while it decreases economic activity with countries outside of CE.

The POLS specifications reveal the general problem with gravity specifications. The gravity equation has had a lot of empirical success, as it usually involves estimating flows (which can be trade, FDI, foreign aid, etc.) on an extremely large set of observations. Large number of observations consequently implies that almost anything included in the regression will turn out to be significant, and can thus be misleading. Additionally, with the gravity trade equation, we know that the results in column (1) must be biased due to the omitted multivariate resistance term, although we could argue that the bias on our two variables of interest is small, due to the fact that they are time invariant and geography based.

To err on the safe side we also estimate 59 yearly cross-sectional gravity specifications for trade, and 22 yearly cross-sectional gravity specifications for FDI, where country fixed effects are included, and so all monadic effects controlled for. The results for the year 2006 are presented in columns (2) and (4). The CE dummy for exporter and FDI destination cannot be identified, and the CE within dummy remains significant only in the trade specification, where it also reduces a little in magnitude. The effect of disproportionate

internal trade and investment, if robust, should be statistically detectable in the majority of the years in our sample, not only in 2006. We examine the robustness of CE within the estimate, by estimating the regressions year by year. If in fact CE countries are bounded together by something extra, we should be able to detect it in the form of coefficients on CE within dummy, which should then be statistically different from zero in most of the years. The partial coefficients on the CE within dummy, as well as a 90 per cent confidence interval, are graphed in Figure 13.3 and Figure 13.4.

Figure 13.3 implies that the POLS result on the trade within CE is not robust, as the coefficient in yearly regressions is predominantly significant and positive up to around 1980s, when it starts decreasing, turns negative in the beginning of 1990s, and becomes predominantly insignificant. This is also the time when, firstly, the break of the Soviet Union and Yugoslavia occurs, and, secondly and more importantly, the Czech Republic, Slovakia and Slovenia are actually included in the sample (before only Czechoslovakia, Poland, and Hungary), which changes the dynamics of the within CE trade. Looking only at the period of the 1990s, when we have all five CE countries in the sample would imply there is nothing that statistically significantly separates them from the rest of the sample, as the coefficient is predominantly insignificant, and even switches sign at the end of the sample. In other words, the yearly trade results do not support the notion that the
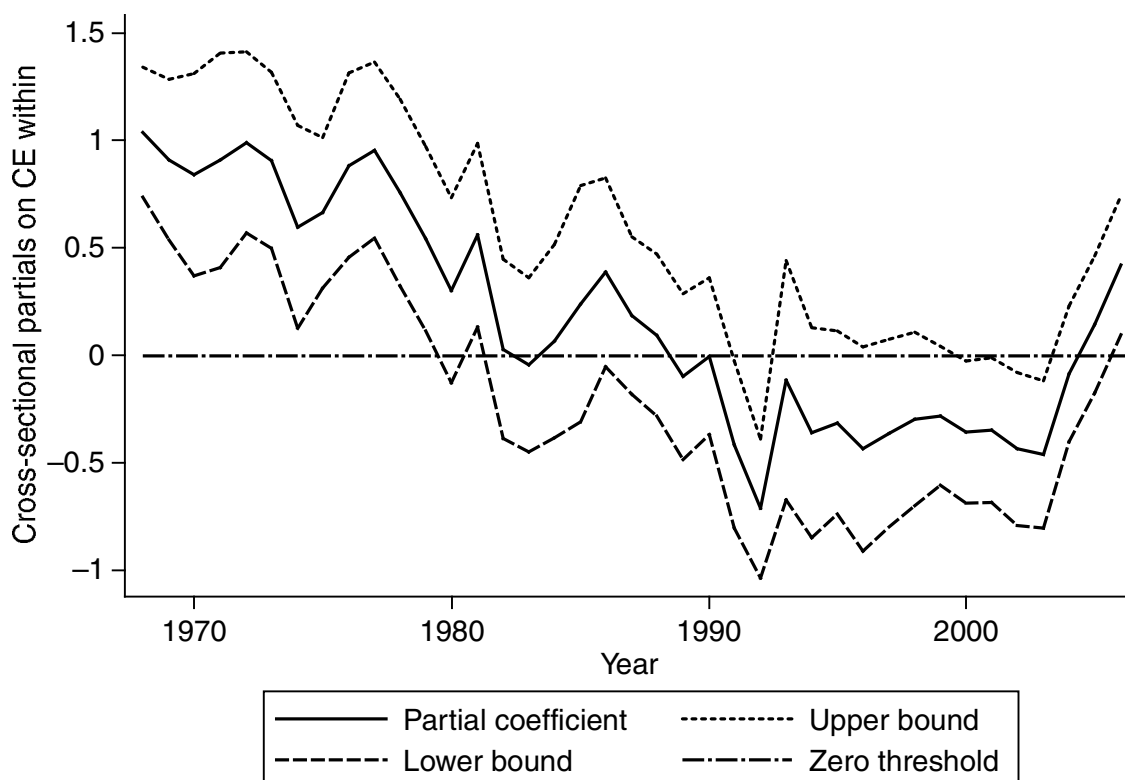

Figure 13.3 Partial coefficient estimates in yearly trade regressions

Source: Head *et al*. (2010) and own calculations.
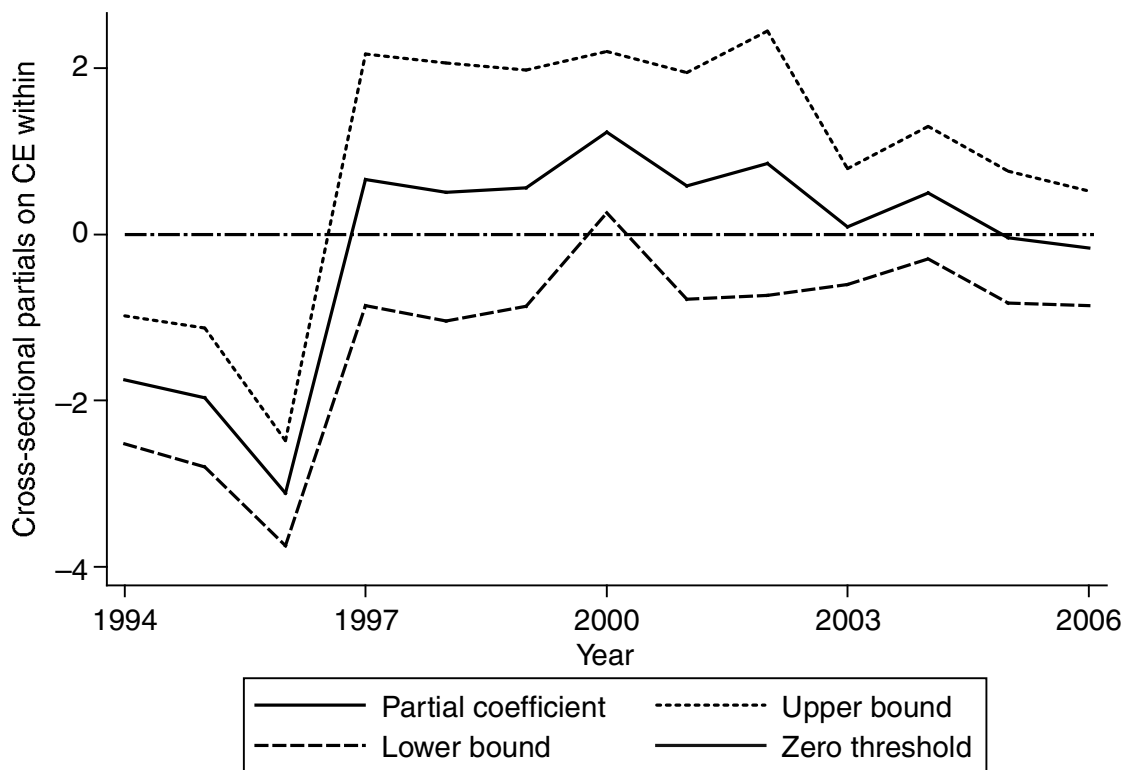
Figure 13.4   Partial coefficient estimates in yearly FDI regressions

Source: Head *et al.* (2010), OECD (2010) and own calculations.

countries in CE are bound together by something other than the standard economic determinants.

Figure 13.4 tells a similar story for within CE investments, which are significantly smaller than the average of the sample in the middle of the 1990s, switch sign in 1997, and remain larger than the average but predominantly statistically insignificant until the end of the sample. The switching of the sign implies that either there is no disproportionate investment within the CE or the relationship between the CE countries is special but dynamic and so the nature of the effect changes in time. The coefficient being predominantly insignificant for most of the sample points to the first explanation, and thus does not contribute to evidence in favour of the existence of CE in this form.

13.6   Conclusions

In this chapter, we test empirically whether countries of CE form a group that is more homogenous, in terms of their institutional environments and international economic activity, among themselves than with other countries. Specifically, we look for evidence on institutional convergence among the CE countries. Existence of such convergence can be interpreted as reflecting deeply rooted cultural and historical commonalities that prevail

over distinctive institutional design interventions during recent socialist and transitional periods. We also look at whether the possible institutional convergence is reflected in international bilateral trade and investment. We test whether the actual economic flows within, to, and from the CE countries are in any respect disproportionate, to what would be implied by economic theory not taking into account the institutional closeness of countries.

Overall, our conclusion is that existing institutional commonalities and trade and FDI linkages between CE countries do not support treating them as a distinct group in general. The notion of CE is most supported when we cluster countries together based on their deeply rooted institutional factors. Nevertheless, this commonality does not carry forward to belonging to a common variety of capitalism. In terms of trade and FDI, illustrative evidence would suggest that the CE countries are in fact a group unto its own, but we fail to confirm this by a more robust econometric analysis of trade flows and outward FDI stocks. Only conditionally, when explored further for robustness to the inclusion of other countries, could the results of foreign investments in CE imply that investors perceive the CE countries in fact as a group. Other than that, taking all evidence into account, we cannot confirm the CE concept, as suggested in this book.

An important caveat to any of these conclusions is that firstly stable institutions need long historical periods to evolve, and especially deeply rooted influence may need more time to prevail over the recent institutional design efforts, and, secondly, trade and FDI are economic flows on the surface of a broader and deeper economic–political system, and can change reasonably quickly. In other words, holding both for institutional framework and for economic flows, the picture may prove very different in a decade or so from what it is today.

Notes

1. Due to space limitations, we do not report details on indicators and variables used here and in other calculations. A detailed list is available from authors on request or in the source paper.
2. He explicitly mentions only Hungary, the Czech Republic, and Poland, but the data collected by him would clearly allow us to put Slovenia and Slovakia in the same group. He classifies 'most of the rest of the post-communist world' as patrimonial post-communist capitalism. Unfortunately, he is not explicit about his view on Baltic countries and Croatia.
3. The theoretical gravity expression in Equation 13.2 can be log-linearized and extended to a time dimension to yield Equation 13.4, which can be econometrically estimated. The bilateral openness to trade can be expressed as In $\Phi_{ij} = D_{ijt} + u_{ijt}$, where D_{ijt} is a vector of time-invariant bilateral variables and time-varying bilateral variables and u_{ijt} is the unobserved error.

$$\ln X_{ijt} = \ln\frac{1}{Y_t} + \ln\frac{Y_{it}}{\varPhi_{it}^{*}} + \ln\frac{X_{jt}}{\varPhi_{jt}} + \ln\phi_{ijt} \tag{13.4}$$

Equation 13.4 is the equation which has been estimated over and over again the literature. The variables used to capture the monadic terms (*it* and *jt*) are normally GDPs of the respective countries, or GDP per capita and the population, when the effect of size and development is intended to be disentangled. However, in estimating this equation, we omit the so-called remoteness term $1/(\varPhi_{it}^{*}\varPhi_{jt})$, which can bias our estimates of In $\varPhi_{ijt}$ (Anderson and van Wincoop 2003). The time-varying term $\ln(1/Y_t)$ can be captured using time dummies, and the bilateral trade openness term $\varPhi_{ijt}$ using a set of control variables. We use the same set of controls as in Head and Mayer (2010). The monadic terms (*i* and *j*) are log of GDP per capita and log of population. The time-invariant dyadic terms (*ij*) are log of distance, shared border, shared language, colonial history and being a colony. The time-varying dyadic terms (*ijt*) are RTA, both countries being members of General Agreement on Tariffs and Trade, sharing a currency and the preferential treatment of exports from Asia–Caribbean–Pacific countries to the European Union (EU). To the time-invariant dyadic factors, we add the dummies capturing the CE influence.

Ideally, in addition to time fixed effects, we would want to control for the exporter-time fixed effects and for importer-time fixed effects. This is problematic firstly on a technical level, as with 60 years of data and 200 countries, we would need to estimate more than $2\times(60\times200)=24{,}000$ dummy variables, which cannot be done using the standard hardware and software available. The way around this is to take advantage of the multiplicative form of the theoretical gravity equations, and using ratios of bilateral trade flows to cancel out the *it* and *jt* monadic terms (e.g., friction specification of Head and Ries 2001), or using ratios of ratios to cancel out everything exporter-time and importer-time specific, as in Head *et al.* (2010). Doing that yields the second substance-related problem. With the inclusion of *it*, *jt*, and *t* fixed effects, we can only identify variables that vary on the *ijt* dimension, whereas our two variables of interest on CE do not vary in time, and are both of the *ij* dimension. Using the data set for each year separately, as 59 cross sections, and using exporter and importer fixed effects in those regressions, essentially controls for the problematic terms, and the results are not biased due to the remoteness term. We do, however, loose the time dimension in doing that and cannot control for time-varying importer and exporter fixed effects.

4. If we log-linearize the Head and Ries (2008) specification from Equation 13.3 (leaving out the expectation operator), and extend it to a time dimension, we arrive at an estimable Equation 13.5.

$$\ln F_{ijt} = O_{it} + I_{jt} - D_{ijt}\theta \tag{13.5}$$

We use the same empirical approach and controls for the monadic and dyadic variables as with trade, which allows for direct comparison of results. Additionally, since 45 per cent of all FDI observations are zero recorded flows, we adjust the zeros as suggested by Bénassy-Quéré *et al.* (2007), adding a small constant (0.3)

to each zero flow, which assures we do not loose those observations when taking logs of FDI flows.

5. The partial effect of a dummy variable in a log-linear specification is calculated as (exp(coeff.)−1)*100.

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