

Different Labour Markets within the Varieties of Capitalism in Central and Eastern Europe¹

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Abstract: This paper explores labour market arrangements in Europe in the context of the so-called ‘varieties of capitalism’ framework. The empirical analysis is based on aggregate data for 54 European and Asian economies, with reference to several developed countries of Asia and the United States. We use asymptotic principal component analysis for our factor analysis to identify three underlying institutional segments of these national economies: labour market regulations, capital market regulations, and fiscal interventions by government. We focus on the group of Commonwealth of Independent States economies that, according to our results, represent a distinctive and homogeneous group characterized by relatively strong capital market regulations, medium levels of labour protection regulations, and limited government interventions. We label this group’s type of capitalism as ‘authoritarian state and limited welfare’. We further use factor scoring coefficients to construct a measure of global attractiveness to foreign investors of the 54 national economies. We find that labour market regulations exhibit the largest variety among the three institutional segments. However, by examining correlation between cumulative foreign direct investment inflows over various periods of time and the components of our global openness index, we find that labour regulations captured in our model do not represent a significant factor for the decisions of foreign investors.

Keywords: institutional economics, varieties of capitalism, labour market, international economic order

JEL Classification Numbers: F66, P5

1. Introduction

The current global division of countries into different and often antagonistic categories, such as ‘developed and developing countries’, ‘third world and western world’, ‘high income and low income’, ‘North and South’, are becoming less capable of capturing the variety and complexity of socio-economic systems. Globalization has blurred the lines between these groups, as witnessed by the advent of the Brazil, Russia, India, China, and South Africa (BRICS) bloc, the increased heterogeneity of the growing European Union (EU), the swelling of the Organisation for Economic Cooperation and Development (OECD), and the enlargement of the Group of 8 (G8) to the G10, G20, and G25, and so on. National interests become less executable within these

enlarging international frameworks. In this paper, we analyse the institutional set-up in Europe, South Caucasus, and Central Asia with a special focus on Eastern European, South Caucasian, and Central Asian countries that belong to the Commonwealth of Independent States (CIS). Our main goal is to investigate which governance system could effectively support the deployment of globalized factors of production in these national economies. We classify the countries according to an index of global attractiveness derived from factor analysis.

In Section 2, we perform factor analysis on cross-sectional data from 54 economies of Europe, Asia and the United States to identify the underlying principal components representing the national institutional arrangements in labour markets, financial markets, and government fiscal policies. We use factor scoring coefficients to construct a measure of global attractiveness of these national institutions for foreign investors.

Section 3 interprets the results. We group countries according to institutional type and degree of global attractiveness. This results in a typology that is broadly consistent with the constitutional typologies of capitalism used in the ‘varieties of capitalism’ (VoC) framework. Thus, we believe that our analysis helps to add a new global dimension to classifying the types of capitalism within the VoC approach. A value-added extension of this analysis is the inclusion of a systematic comparative framework for the CIS countries of Eastern Europe and Central Asia. In terms of our classification, which is based on the global attractiveness of their institutional arrangements, these economies represent a distinctive and homogeneous group characterized by relatively strong capital market regulations, medium levels of labour protection regulations, and limited government interventions in terms of redistribution and maintenance of social cohesion. We label this group’s type of capitalism as ‘authoritarian state and limited welfare’.

In Section 4, we offer a way to generalize our results. This occurs within the broader historical context of socio-economic conflict that evolves as a manifestation of antagonism among classes of owners of the production factors that dominate global production under the given state of technology. We argue that there is a need for a better coordination mechanism among the owners of the dominating production factors for the benefit of organizing increasingly globalized production, as well as for equitable global sharing of its outputs.

2. Examining varieties of capitalism from a global openness perspective

Our study does not aim to add another classification of capitalism or its elements, although we will make some comparisons in relation to our selected countries. Nonetheless, this research is inspired by the VoC approach, especially the work of Amable (2003), Hall and Gingerich (2004; 2009), and Knell and Srholec (2007). Instead, our goal is to capture the functioning of economic systems from the point of view of capital, labour, and government dimensions. We do so by analysing the underlying institutional structure and constructing an index of pro-global versus

pro-national orientation. In other words, we measure the openness of national institutions to globalized factor movements. Subsequently, we position the group of countries within well-known VoC frameworks, such as Amable's classification of modern capitalism types (2003).

The sample consists of 54 countries, including European, Caucasian, and Central Asian economies, alongside several other developed economies (for the full list of countries and variables used in the analysis, see the Annex). Our analysis is based on a cross-section of country variables spanning 2010–2012. The data originate from several global databases: World Development Indicators by the World Bank, the Human Development Index of the United Nations Development Programme (UNDP), and the Economic Freedom Index of the Heritage Foundation.

A major problem of the factor analysis method is the sensitivity of results to the choice of variables. In this regard, the contemporary research is limited by the availability of comparable country-specific data, which drives researchers towards using the same global databases. Our selection of variables is similar to those used in previous empirical works. This limitation notwithstanding, our decision to use these variables provides an opportunity to compare the results for similar sets of countries with updated data in the future.

In order to capture the openness of economies in the three dimensions (capital, labour, and government interventions), we use the sub-indices of the Economic Freedom Index. Employing these measures has two advantages. First, they cover exactly the three dimensions of economic systems that we study: regulations of labour, capital, and general government. Second, they provide comparable international data for all the countries in our study. In addition, we select supplementary indicators that are widely used in this field of research. Since our study is mainly exploratory, the motivation for adding such indicators is to reveal their potential role in the institutional structure of the economic systems we analyse. We add 'average years of schooling' as an important indicator of human capital (e.g. Barro and Lee, 2000), on the expectation it will play an important role in the labour dimension. The transmission mechanism is that higher human capital might attract investors seeking skilled labour. We also include an indicator representing the labour market condition: long-term unemployment. The argument is that a higher share of long-term unemployment creates pressure for workers to accept lower wages and/or worse working conditions in order to exit unemployment. Additionally, this indicator is used by other researchers to study industries and innovation and to compare economic systems (see Fagerberg, Srholec, and Knell, 2005). Similarly, the measurement of shareholder and creditor rights protection is used relatively often (Hall and Gingerich, 2009; Martynova and Renneboog, 2010).

2.1 The principal factors: Capital regulations, labour regulations, and government interventions

Factor analysis groups variables that are strongly correlated into blocks that represent certain underlying factors. In the VoC framework, the groupings of variables obtained through factor analysis are taken as proxies for the functioning of various institutional aspects of socio-economic systems, such as capital markets, labour markets, social cohesion, education systems, goods markets, and so on. Knell and Srholec (2007) use factor analysis to assess the prevailing type of institutional coordination by spreading countries along a bipolar scale ranging from coordinated market economies (CME), a strategic type of coordination, to liberal market economies (LME), a market type of coordination. This assessment requires a priori judgment about the ‘polarity’ of the used variables – that is, for each variable it must be decided whether high variable values correspond to CME type and low variable values to LME type, or vice versa. Such an a priori determination can be robust in some cases, in particular for the variables that provide the backbone of the institutional model. For example, the level of market capitalization increases towards the LME end of the scale and decreases towards the CME end. However, there can only be a few such backbone variables for the model to be comprehensible. For most other variables, the direction of polarity is not so clear and has to be based on subjective assumptions. The growing number of assumptions associated with an increasing number of variables constrains the objectivity of the model.

The degree of coordination among the institutional blocks of the socio-economic systems is then evaluated by a coordination index, which is a measure of the variation of polarity of variables. There is also a body of literature examining the link between the degree of coordination and performance of the socio-economic systems, which in some cases suggests significant and positive correlation (e.g. Hall and Gingerich, 2004).

The aforementioned approach to modelling the VoC is one-dimensional in the sense that it collapses the measurement of the variety of institutions towards a bipolar scale (such as, from LME to CME). Each institutional aspect has to be projected on this scale in order to compute the indices of coordination. Thus, there is a single backbone dimension, which means we can comprehend and interpret the model. However, there is a correspondence between the institutional complexity and dimensionality of the model. From this point of view, Amable’s models of types of capitalism can be viewed as a two-dimensional representation: one backbone dimension ranges from labour security to financial markets, the other from privatized welfare to state welfare. These two dimensions delineate four quadrants, each of which is specific for a distinctive type of capitalism (a fifth Asian model is located towards the middle of the labour–finance axis and is distinguished by a high degree of privatized welfare). This configuration resembles the tripartite representation of the labour–business–government nexus. Similarly, we use this in our paper to position the group of Eastern European and Central Asian countries within a comparative framework.

Another problem with interpreting the results of factor analysis in the institutional context is the

degree of simplification when each variable is attached to only one principal factor (that is, where its factor loading is highest) while the relationships with other factors are disregarded, even when they are present with a high degree of significance. In our analysis, we employ variables that represent more complex constructs, notably the sub-indices from the Index of Economic Freedom, supplemented by two variables from the Human Development Index database, and one variable from the World Development Indicators of the World Bank database. Descriptive statistics for the variables are contained in Table 1.

Table 1 Variables and descriptive statistics

N = 54	Minimum	Maximum	Mean	St. Dev.
Long-term unemployment (% of total unemployment)	9.00	83.1	38.11	17.42
Protecting Investors - Ease of shareholder suits index (0-10)	3	10	6.44	1.723
Fiscal Freedom	39.1	98.4	74.184	15.1693
Business Freedom	30.0	99.9	76.949	13.5668
Labor Freedom	30.0	95.8	64.535	17.7509
Monetary Freedom	64.2	88.9	77.760	5.7949
Trade Freedom	63.2	90.0	84.276	5.4303
Investment Freedom	0	95	65.55	22.457
Financial Freedom	10	90	61.45	18.300
Income Tax Rate (%)	9	57	29.89	14.891
Corporate Tax Rate (%)	0	35	20.31	7.861
HDI	.607	.943	.81544	.087580
Mean yrs schooling (adults)	6.500	12.600	10.58909	1.255753

Note: Variables represent a cross-sectional dataset for 44 countries for 2010–2012. The HDI variable is used for plotting factor analysis results. For more details about the data, see Statistical Annex.

Factor analysis results for our set of variables and countries are depicted in Table 2. The variables appear in three groups, representing three principal factors. We arrange the variables according to highest factor loadings in Table 2. To reflect the essence of our analysis, which focuses on the strength of national regulations versus global openness, we name the three principal factors as capital regulations, labour regulations, and government interventions.

We also test the same models without the outliers. Three countries pass the visual boxplot test

for outlier values: Former Yugoslav Republic of Macedonia (long-term unemployment); Russia (investment freedom and trade freedom); and Serbia (trade freedom). The results of the factor analysis in terms of factor score and country clustering are almost identical to the results that include the three countries. Therefore, we opt to retain the three countries in the analysis and interpret the findings based on these inclusive results.

Table 2 Factor analysis results – principal factors and variable loadings

Principal factors	Capital	Govt	Labor
Variables	<i>Factor loadings</i>		
Monetary Freedom	.797	.171	.045
Trade Freedom	.724	.286	-.008
Investment Freedom	.879	.288	.017
Financial Freedom	.859	.241	.149
Gov't Expenditure % of GDP	.333	.635	-.082
Fiscal Freedom	-.352	-.894	-.016
Income Tax Rate (%)	.345	.850	.020
Corporate Tax Rate (%)	.170	.732	.200
Labor Freedom	.225	-.366	.661
Protecting Investors Ease of shareholder suits index (0-10)	-.164	.049	.779
Mean yrs schooling (adults)	.370	.125	.609
Long-term unemployment (% of total unemployment)	.069	-.438	-.591
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .725			
Number of observations = 54			
Bartlett's test of sphericity	App. Chi-Square	df	Sig.
	276.54	66	.000

Notes: Extraction method: Principal component analysis, Varimax rotation with Kaiser normalization.

We classify the variables on a bipolar scale capturing the degree of openness to the global deployment of production factors (capital and labour) as follows. An increasing degree of monetary, trade, investment, and financial freedom implies more global openness in the capital regulations segment. In the labour regulations segment, global openness is assumed to increase with the index of labour freedom, higher mean years of schooling of the adult population, and higher share of long-term unemployment². Openness is also assumed to increase with the ease

of shareholder suits index, taking into consideration the perspective of employees as potential shareholders. The ease of shareholder suits index measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain. For the government interventions segment, we assume less national openness to the deployment of globalizing production factors with an increasing degree of national government interventions (captured by government spending relative to GDP and by maximum tax rates on income and corporate income) or in terms of regulations (captured by a decreasing fiscal freedom index).

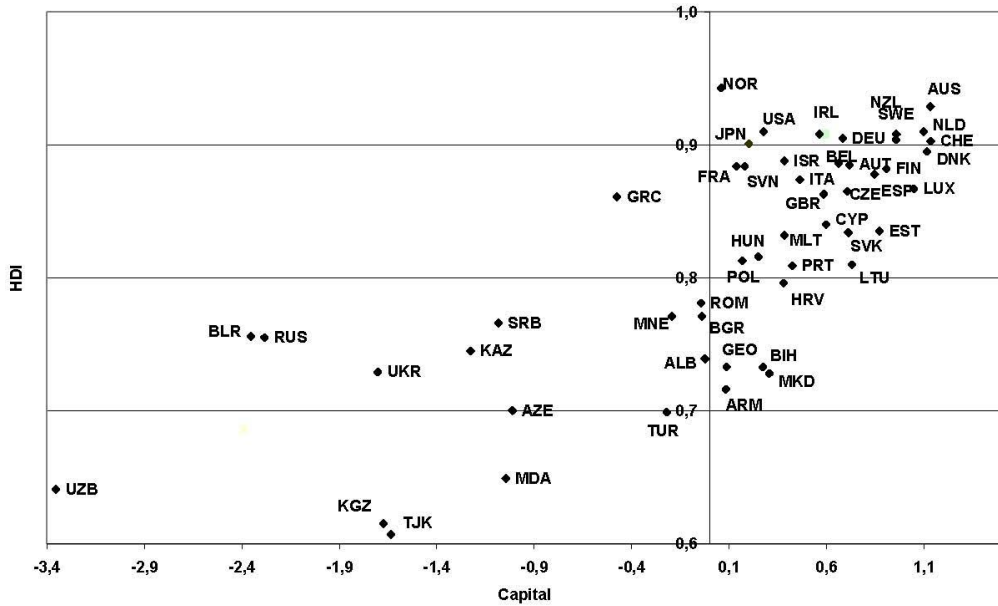
3. Constructing a global openness index based on factor scoring coefficients

Based on groups of highest factor loadings, we construct global openness indices for three principal factors for each country similar to the construction of a coordination index in the previous literature (notably Knell and Srholec, 2007). Variables are normalized and factor scoring coefficients are used as weights. An overall openness index is constructed from the three indices as a weighted average using equal weights. The resulting values of openness indices for capital regulations, labour regulations, and government interventions are depicted in Figures 1–3, respectively. The scatter-plots use the value of openness index as x-coordinate; the y-coordinate is represented by the human development index (HDI). The overall index of openness is depicted in a similar manner in Figure 4.

It can be seen from the plots that capital regulations and labour regulations deliver similar patterns: the CIS countries tend to be clustered towards the low degree of openness. For the capital regulations factor, the spread of the openness index among individual economies is the largest. CIS economies are located at the low end; they are followed in the direction of increasing degree of openness by the Balkans, Mediterranean EU member states, new EU member states in Central and Eastern Europe (CEE), other EU member states, and the Anglo-Saxon countries. A similar pattern, albeit much more compressed, is delivered by the labour regulations factor. With regard to the openness of the labour segment, an extreme case within the CIS group and in general is that of Georgia, which exhibits the highest openness in the field of labour regulations. This can be explained by Georgia's very low degree of labour protection due to its liberal approach to termination of public employment service, unemployment insurance and unemployment benefits, private funding of labour market measures, and liberal labour code, which, for example, allows oral labour contracts). On the other end of the spectrum is Portugal, which has a very low level of openness in terms of labour regulations.

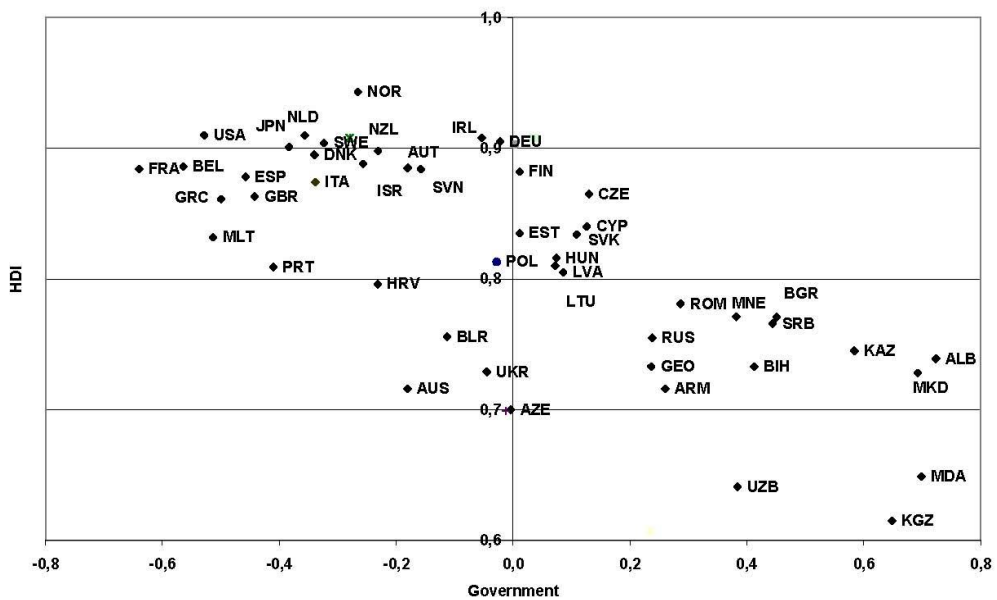
For government interventions, the behaviour of the openness index is reversed. The CIS countries are grouped at the high end, which, by the construction of our index, reflects a relatively low government role for redistribution and maintenance of social cohesion, as captured by tax collection variables and government spending relative to GDP. Finally, after combining the

Figure 1 Global openness index for capital regulations



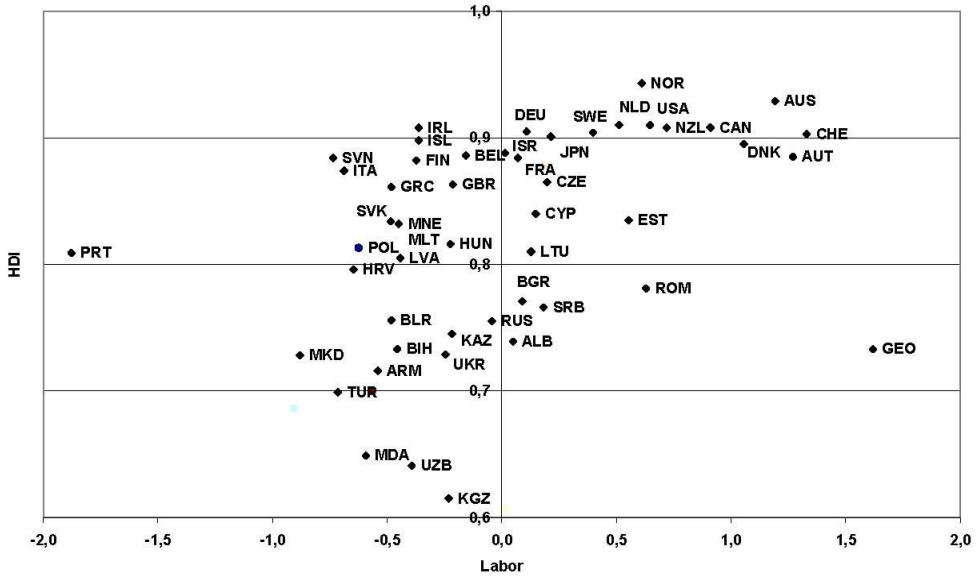
Notes: For country codes see Statistical Annex.

Figure 2 Global openness index for government interventions



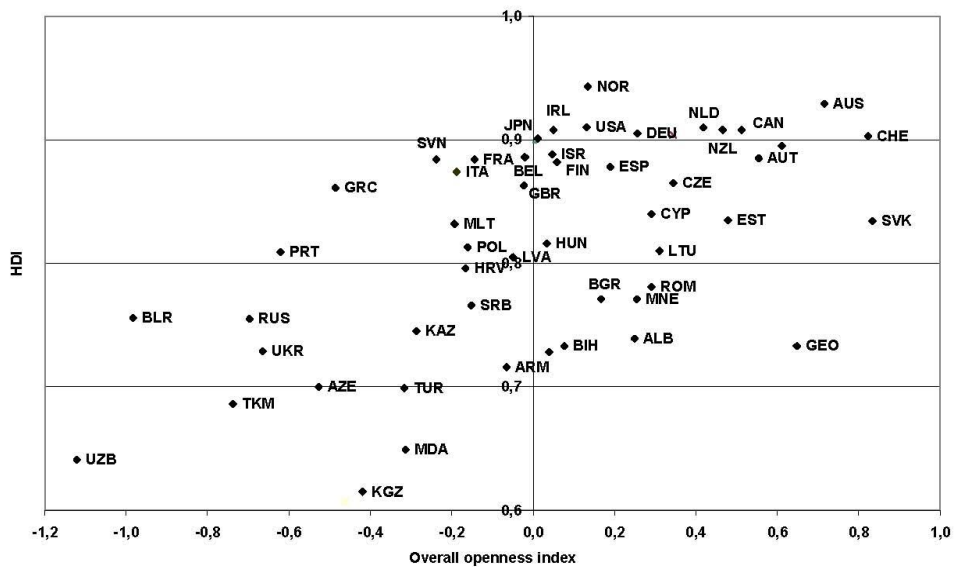
Notes: For country codes see Statistical Annex.

Figure 3 Global openness index for labour regulations



Notes: For country codes see Statistical Annex.

Figure 4 Overall global openness index



Notes: For country codes see Statistical Annex.

three principal factor indices with equal weights into the overall openness index, the resulting values are rather low for the CIS group of countries. This is because, in the overall index, restrictive national capital regulations are less important but relatively restrictive labour regulations prevail over the more open environment created by weaker government interventions.

Thus, the CIS economies form a homogeneous and distinctive group, clustered towards the first rows of Table 3. They are characterized by a very high degree of restrictions in terms of capital regulations, a lower but still substantial degree of restrictions in terms of labour regulations, and a very low degree of government interventions in terms of redistribution and social cohesion maintenance. In order to put the CIS group into a broader comparative perspective, we rank all countries by value on the openness index in Table 3, depicted in ascending order from least open to most open. As can be seen, the CIS countries form a very homogeneous group representing the least open countries, characterized by negative values of the openness index. No other group of countries exhibits such a degree of homogeneity. From the last column of Table 3, it can be seen that EU countries classified under Mediterranean type of capitalism by Amable (2003) gravitate towards negative values of the openness index, while Anglo-Saxon countries classified under Amable's liberal types of capitalism are characterized by positive values of the openness index. This confirms a degree of homogeneity within the modern capitalism typology.

Knell and Srholec (2007) apply a similar factor analysis approach to the countries in our sample that allows them to classify countries according to the prevailing type of coordination – that is, market versus strategic. Despite a similar methodology and set of countries, we do not find a strong correspondence between the typologies defined according to the values of our openness index and the values of the prevailing type of coordination index by Knell and Srholec. In particular, in terms of openness, the CIS countries form a strongly homogeneous group. In terms of the prevailing type of coordination index (strategic versus market) they are spread across the whole spectrum of the coordination index, with values ranging from 8.9 for Belarus (a strong strategic coordination) to -9.6 for Russia (strong market coordination). For comparison with Western developed countries, the maximum value of the coordination index is attained by Greece (11.6), which corresponds to strong strategic coordination, and the lowest value is attained by Canada (-9.8), which corresponds to a strong market type of coordination. Thus, we show that a factor analysis applied to a large set of countries using three principal components and a bipolar scale for classifying the variables effects can yield results that correspond to the constitutional types of capitalism based on multi-criterion typologies, such as the modern capitalism types of Amable (2003).

4. Results discussion within a globalizing production framework

In this section we attempt to interpret the results of the factor analysis presented in the previous

Table 3 Values of global openness index by country

Country	Capital regulations	Government interventions	Labour regulations	Overall index	Group of countries (Type) ^a
Uzbekistan	-3.35	0.38	-0.39	-1.12	CIS
Belarus	-2.35	-0.11	-0.48	-0.98	CIS
Turkmenistan	-2.39	1.08	-0.91	-0.74	CIS
Russian Federation	-2.28	0.24	-0.04	-0.70	CIS
Ukraine	-1.70	-0.05	-0.25	-0.66	CIS
Portugal	0.42	-0.41	-1.88	-0.62	EU (Mediterranean)
Azerbaijan	-1.01	0.00	-0.57	-0.53	CIS
Greece	-0.48	-0.50	-0.48	-0.49	EU (Mediterranean)
Tajikistan	-1.64	0.23	0.02	-0.46	CIS
Kyrgyz Republic	-1.67	0.65	-0.23	-0.42	CIS
Turkey	-0.22	-0.01	-0.72	-0.32	Turkey
Moldova	-1.05	0.70	-0.59	-0.31	CIS
Kazakhstan	-1.23	0.58	-0.22	-0.29	CIS
Slovenia	0.18	-0.16	-0.74	-0.24	EU CEE
Malta	0.38	-0.51	-0.45	-0.19	EU
Italy	0.46	-0.34	-0.69	-0.19	EU (Mediterranean)
Croatia	0.38	-0.23	-0.65	-0.17	Balkans
Poland	0.17	-0.03	-0.62	-0.16	EU CEE
Serbia	-1.08	0.44	0.18	-0.15	Balkans
France	0.14	-0.64	0.07	-0.14	EU (European)
Armenia	0.08	0.26	-0.54	-0.07	CIS
Latvia	0.21	0.09	-0.44	-0.05	EU CEE
United Kingdom	0.59	-0.44	-0.21	-0.02	EU (Liberal)
Belgium	0.66	-0.56	-0.16	-0.02	EU (European)
Iceland	-0.13	-0.23	0.36	0.00	EEA
Japan	0.20	-0.38	0.21	0.01	(Asian)
Hungary	0.25	0.07	-0.22	0.03	EU CEE
Macedonia, FYR	0.31	0.69	-0.88	0.04	Balkans
Israel	0.38	-0.26	0.01	0.05	Israel
Ireland	0.56	-0.05	-0.36	0.05	EU (European)

Finland	0.91	-0.36	-0.37	0.06	EU (Social-Democratic)
Bosnia and Herzegovina	0.27	0.41	-0.46	0.08	Balkans
Slovak Republic	0.71	0.11	-0.48	0.11	EU CEE
United States	0.28	-0.53	0.65	0.13	Anglo-Saxon (Liberal)
Norway	0.06	-0.27	0.61	0.13	EEA (European)
Bulgaria	-0.04	0.45	0.09	0.17	CEE
Spain	0.85	-0.46	0.18	0.19	EU (Mediterranean)
Albania	-0.02	0.72	0.05	0.25	Balkans
Montenegro	-0.19	0.38	0.58	0.25	Balkans
Germany	0.68	-0.02	0.11	0.26	EU CEE
Romania	-0.04	0.29	0.63	0.29	EU CEE
Cyprus	0.60	0.13	0.15	0.29	EU
Lithuania	0.73	0.07	0.13	0.31	EU CEE
Sweden	0.96	-0.32	0.40	0.34	EU (Social-Democratic)
Czech Republic	0.71	0.13	0.20	0.34	CEE
Netherlands	1.10	-0.36	0.51	0.42	EU (European)
Luxembourg	1.05	-0.05	0.29	0.43	EU
New Zealand	0.96	-0.28	0.72	0.47	EU
Estonia	0.87	0.01	0.55	0.48	EU CEE
Canada	0.59	0.04	0.91	0.51	Anglo-Saxon (Liberal)
Austria	0.72	-0.33	1.27	0.55	EU (European)
Denmark	1.12	-0.34	1.06	0.61	EU (Social-Democratic)
Georgia	0.09	0.24	1.62	0.65	CIS
Australia	1.13	-0.18	1.19	0.72	Anglo-Saxon (Liberal)
Switzerland	1.13	0.00	1.33	0.82	EEA (European)

Notes: (a) In brackets type of modern capitalism according to Amable (2003).

Groups of countries denoted as follows:

CIS – Commonwealth of Independent States

EU CEE – New EU member states in Central and Eastern Europe

EU – Old EU member states, Malta and Cyprus

EEA – European Economic Area

section. We discuss the degree of global openness in the field of capital regulations, labour regulations, and government interventions for various countries according to the types of capitalism as classified by the previous research in the VoC field, notably those by Amable (2003) and Knell and Srholec (2007). We try to explain the degree of openness through the mutual relationship of the principal factors and the extent of interventions of the national governments.

First, we test our proposition about global openness by examining the degree of correlation between our constructed index of global openness (based on our theoretical assumption underlying the factor analysis) and the real amount of foreign direct investment (FDI) in the examined countries. The underlying expectation is that the more open an economy is, the more FDI it should attract. On the other hand, we concede that overall openness is not necessarily what matters for investors. Therefore, we test also the relationship between the amount of FDI and individual sub-indices for labour, capital, and government openness.

Table 4 contains the values of bivariate correlation coefficients (Spearman's Rho and Kendall's Tau b) for the inflows of FDI and the components of the global openness index. We use three versions of the total FDI inflow: cumulative variables for the periods 2010–2011 and 2009–2011, as well as the decade-long period 2002–2011. FDI figures for 2012 are not available for many countries in our sample.

Correlations coefficients depicted in Table 4 show that the relationship between total FDI volume and the constructed global openness index or its components tends to be more pronounced over the long-run. Significance of the correlation relationship increases with length of period and the magnitude of coefficients are in general higher the longer the period of cumulative FDI. Furthermore, while the government and capital components tend to be correlated significantly with the cumulative FDI flows, the correlation between inflows and labour component or the overall index are not significant. This implies that the labour regulations captured in our model do not significantly influence foreign investors to invest in any particular country within the analysed group of 54 economies. We concede that there might be factors other than labour, capital, and government openness that play a role in investors' decision-making. Political stability or the presence of natural resources might be some such examples. However, our study focuses on the deployment of the global factors of production and, thus, we do not investigate further the relationship between the amount of investments, openness, and other factors.

In the case of the former CIS countries, as shown by our previous analysis of the global openness indices, national governments undertake quite limited interventions in terms of direct redistribution (through tax collection and government spending), but impose the most restrictive conditions in terms of capital (business) regulations and relatively restrictive labour regulations. Thus, in comparison with other European countries, CIS governments operate through restrictive regulations rather than direct interventions. At the same time, CIS economies exhibit relatively

Table 4 Bivariate correlation coefficients for the volume of FDI and the components of the global openness index

Spearman correlation coefficient (Rho)				
No of observations = 51				
	Openness index by components (institutional blocks)			
FDI inflow	Overall	Government	Labor	Capital
Total 2002-2011	-.165	.479**	-.204	-.589**
Prob > r for H0: Rho=0	.247	.000	.151	.000
Total 2009-2011	-.065	.339*	-.190	-.349*
Prob > r for H0: Rho=0	.649	.015	.181	.012
Total 2010-2011	-.148	.274	-.173	-.375**
Prob > r for H0: Rho=0	.300	.052	.224	.007

Kendall's Tau b correlation coefficient				
No of observations = 51				
	Openness index by components (institutional blocks)			
FDI inflow	Overall	Government	Labor	Capital
Total 2002-2011	-.109	.335**	-.136	-.402**
Prob > r for H0: Rho=0	.262	.001	.160	.000
Total 2009-2011	-.024	.226*	-.128	-.231*
Prob > r for H0: Rho=0	.807	.020	.185	.017
Total 2010-2011	-.083	.191*	-.125	-.246*
Prob > r for H0: Rho=0	.389	.049	.196	.011

Source: Calculations based on FDI figures from the WDI database.

low degrees of capitalization of firms compared to other European countries, accompanied by varying shares of FDI in terms of both total capital formation and GDP (as discussed in Lane, 2007). These parameters can be consistent with a situation in which governments strongly cooperate with natural resource owners through formal or informal arrangements. The importance of natural resources for the CIS countries is documented by their primary sectors' high share of exports. Indeed, the CIS countries are abundant in scarce natural resources, notably energy-producing resources, such as oil and gas (Azerbaijan, Kazakhstan, Russia, Turkmenistan, and Uzbekistan), land used in cotton production (Tajikistan, Turkmenistan, and Uzbekistan), and water resources (Kyrgyzstan and Tajikistan).

5. Conclusions

In this paper we focused on interactions between labour (workers and human capital) on the one side and businesses (other forms of capital) on the other, facilitated by institutional arrangements (labour market regulations, capital market regulations, and government interventions). Through factor analysis of cross-sectional data on 54 European, Central Asian, and OECD countries we identified the underlying principal components representing the institutional arrangements. Based on the results of the factor analysis, we constructed an openness index for the national economies as a measure of their openness towards foreign investment. We compared our results with similar approaches and typologies of modern capitalism used in the VoC framework.

As discussed in Section 2 the selection of variables in our analysis is similar as in other empirical works and provides an opportunity to compare the results for similar sets of countries with updated data in the future.

We found that post-Soviet European and Central Asian economies (CIS) form a distinctive and strongly homogeneous group characterized by 1) limited government interventions in terms of redistribution and maintenance of social cohesion, 2) relatively strong capital market regulations, and 3) medium levels of labour protection regulations. The labour market regulations are, however, weakened by the presence of large informal economies. The extent of the welfare state is very limited compared to the rest of Europe and private welfare systems are practically non-existent. The relatively small extent of direct government interventions in redistribution is also linked to the low capacity or absence of social infrastructure. Another common denominator of the CIS is the presence of strong authoritarian governments or presidential regimes that in general prefer government control over public institutions. Thus, the CIS group could be characterized by labels such as ‘authoritarian state limited welfare capitalism’.

Based on an examination of the correlation between cumulative FDI inflows over various periods of time and the components of our global openness index, we found that labour regulations captured in our model do not significantly influence foreign investors to invest in a particular country. The correlation in terms of cumulative FDI inflow seems to be generally more significant over longer periods of time.

Our findings showed that clusters of countries other than the former CIS do not create particularly homogeneous groups. For example, take the case of two Central Eastern European countries: Estonia was ranked among the 10 most open countries, while Slovenia was the 14th least open. If we look at some of the traditional ideal cases of the VoC approach, we see that our global openness index positioned both Germany (16th) and Austria (5th) higher than the United States (22nd) or the United Kingdom (34th). Our aim was not to measure the coordination of the capitalist institutions, but their openness to the deployment of global production factors. We

believe our results, in light of the comparison to the VoC classification, support the need for multi-dimensional classification of capitalist regimes in future research.

Notes

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² There were several missing values mainly in Central Asian countries. We have replaced the missing values by means in the analysis. We have also tested another model with a general unemployment rate as a replacement for the long-term unemployment rate. The result in terms of factor scores and indices are almost identical, as are the clusters of countries around the overall global openness index.

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Appendix Sources of statistical data and definitions of variables

Table A1

Variable	Source	Source	Factor analysis results
	Database	Institution	Principal factor with highest loadings
Monetary Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Trade Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Investment Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Financial Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Gov't Expenditure % of GDP	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Fiscal Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Income Tax Rate (%)	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Corporate Tax Rate (%)	Index of Economic Freedom Database 2012	The Heritage Foundation	Capital regulations
Labor Freedom	Index of Economic Freedom Database 2012	The Heritage Foundation	Labor regulations

Protecting Investors - Ease of shareholder suits index (0-10)	Doing Business Indicators 2010	World Bank	Labor regulations
Mean yrs schooling (adults)	Human Development Index database 2011	UNDP	Labor regulations
Long-term unemployment (% of total unemployment)	Human Development Index database 2011	UND	Labor regulations

Details and definitions of variables can be found at:

The Heritage Foundation Index of Economic Freedom Database, 2012

(<http://www.heritage.org/>)

UNDP Human Development Index Database, 2011 (<http://hdrstats.undp.org/en/tables/>)

World Bank Doing Business Indicators, 2010

(<http://www.doingbusiness.org/data/exploretopics/protecting-investors>)

Table A2 List of countries and country codes

Country	Code	Germany	DEU	Italy	ITA	Poland	POL
Georgia	GEO	Denmark	DNK	Japan	JPN	Portugal	PRT
Albania	ALB	Spain	ESP	Kazakhstan	KAZ	Romania	ROM
Armenia	ARM	Estonia	EST	Kyrgyz Republic	KGZ	Russian Federation	RUS
Australia	AUS	Finland	FIN	Lithuania	LTU	Serbia	SRB
Austria	AUT	France	FRA	Luxembourg	LUX	Slovak Republic	SVK
Azerbaijan	AZE	United Kingdom	GBR	Latvia	LVA	Slovenia	SVN
Belgium	BEL	Greece	GRC	Moldova	MDA	Sweden	SWE
Bulgaria	BGR	Croatia	HRV	Macedonia, FYR	MKD	Tajikistan	TJK
Bosnia and Herzegovina	BIH	Hungary	HUN	Malta	MLT	Turkmenistan	TKM
Belarus	BLR	Switzerland	CHE	Montenegro	MNE	Turkey	TUR
Canada	CAN	Ireland	IRL	Netherlands	NLD	Ukraine	UKR

Cyprus	CYP	Iceland	ISL	Norway	NOR	United States	USA
Czech Republic	CZE	Israel	ISR	New Zealand	NZL	Uzbekistan	UZB