

**IMPACT OF INSTITUTIONAL COHERENCE ON  
MACROECONOMIC EFFICIENCY**

**Burçak Müge VURAL<sup>1</sup>**

**Dokuz Eylül Üniversitesi**

**İşletme Fakültesi İktisat Bölümü**

**Özet**

Kapitalizmin farklı formlarının içerisinde yer alan farklı örgütlenme biçimleri ve bu örgütlenme biçimlerinin meydana getirdiği iktisadî kurumların iktisadî performans ve uluslararası rekabet gücü üzerindeki etkilerinin incelenmesi karşılaştırmalı kurumsal üstünlükler yaklaşımının temel tezidir. Neo – klasik okuldan farklı olarak kurumsal yapı analizini iktisadî çözümleme içerisine dahil eden karşılaştırmalı üstünlükler yaklaşımı kurumsal yapıyı ve örgütlenme biçimlerini temel çözümleme aracı olarak ele almaktadır. Bu kapsamda mercek altına alınan kapitalizmin heterojen yapısı ortaya çıkmakta, birbirinden çokça farklı kurumsal yapıları barındıran kapitalizmin farklı formları dikkati çekmektedir. Temel olarak iki farklı yapı, serbest piyasa ekonomileri ve yönlendirilmiş piyasa ekonomileri, kapitalist iktisadî sistemin içerisinde yer alan iki kutbu oluşturmaktadır. Bu çalışmanın amacı Türkiye’yi ve Avrupa Birliği’nin 15 ülkesini içeren örneklem kullanılarak Karşılaştırmalı Kurumsal Üstünlükler hipotezinin test edilmesidir. Bu amaca yönelik olarak, çalışmada faktör analizi ile, ülkeler kurumsal yapılarına göre sınıflandırılmakta ve kurumsal yapının iktisadî performans etkisi rassal etki modeli kullanılarak ölçülmektedir. Elde edilen sonuçlar Karşılaştırmalı Kurumsal Üstünlükler tezini destekler niteliktedir.

**Abstract**

Comparative Institutional Advantages theory mainly asserts that the varieties of capitalism, and the institutional coordination in different economic models influences the economic performance of national

---

<sup>1</sup> “Karşılaştırmalı Kurumsal Üstünlükler Bakımından Türkiye’nin Avrupa Birliği Karşısında Rekabet Gücü” başlıklı doktora tez çalışmamı titizlikle yöneten danışmanım Prof.Dr. Sadık ACAR’a teşekkürlerimi sunarım.

economies. Contrary to the abstractions of the Classical and Neo-Classical theories, varieties of capitalism approach incorporates the institutional peculiarities of different economic models. Within this context, heterogeneity of economic models of capitalism becomes the focal point. Both, formal and non-formal modes of economic coordination in national economies build up the institutional structures. According to the prevailing modes of economic coordination embedded, two core division is made between the two forms of capitalism. They are Liberal Market Economies and Coordinated Market Economies. National economies are arrayed along these two forms of capitalism. The primary objective of this paper is to test the Comparative Institutional Advantages theory by using a sample including Turkey and 15 members of the European Union. To this end, national economies are classified by employing factor analysis, and the impact of institutional features on macroeconomic performance is tested by means of a random effect model. Findings of the empirical analysis support the suggestions of the theory.

#### Introduction

An extensive literature on “Varieties of Capitalism” has focused on the institutional variety among the industrialized nations. The main argument of the Varieties of Capitalism literature relies on the comparative institutional advantages hypothesis. The hypothesis suggests that, national economies with distinctive set of institutional structures and economic coordination construe comparative economic advantages. A number of researches within this field demonstrates that there exists a statistically significant association between the degree of economic coordination and macroeconomic performance (Bruno & Sachs, 1985; Calmfors & Driffil, 1986, Kenworthy 2006; .

Primary objective of this research is to test the impact of economic coordination and institutional coherence on international competitiveness. A special emphasis is put on Turkey by including to the analysis, in order to develop policy implications. To this end, the paper consists of three parts. First part is spared to the explanation of the Comparative Institutional Advantages theory, which constitutes the theoretical background of the Varieties of Capitalism literature. Concepts of economic coordination, institutional coherence, and institutional embeddedness are presented on these grounds. Second part focuses on the empirical investigation of the theory, using institutional variables to explain changes in the international competitiveness. Data

set and the methodology used are both introduced, and findings are interpreted under this part. The final part presents further policy implications inferred from the empirical investigation, and concluding remarks.

### **1. Comparative Institutional Advantages Theory**

Abstractions of the Classical and Neo-Classical theories, excluded the historical processes and peculiarities of national economies from economic analyses, taking institutions as given. However, institutional framework, incorporating complementarities, effectively increases the performance of national economies. Institutional approaches to economic analysis are pioneered by Ely, Veblen, Clark, Atkins and Commons, and further developed by North. Recently arising literature on Varieties of Capitalism further focuses on complementarities of institutional configurations, and its reflections on economic performance.

Both, formal and non-formal modes of economic coordination in national economies build up the institutional structures. According to the prevailing modes of economic coordination embedded, two core division is made between the two forms of capitalism. They are Liberal Market Economies and Coordinated Market Economies. National economies are arrayed along these two forms of capitalism. Based on this distinction, Varieties of Capitalism literature focuses on Comparative Institutional Advantages theory. Comparative Institutional Advantages theory asserts that, institutional structure of a particular form of capitalism provides nation with comparative advantages on specific economic activities. Hall and Soskice describe four basic spheres, through which economy is coordinated, either by market mechanism or strategic coordination. These are; (1) financial system, (2) industrial relations, (3) education and training system, and (4) corporate governance (Hall & Soskice, 2001: 36 – 45). Liberal Market Economies and Coordinated Market Economies diverge in coordination of these four spheres.

Liberal Market Economies are characterized by hierarchical and competitive market arrangements, fully left to market mechanism. Financial system in LMEs are market-based, relying heavily on capital markets. Financial securities consist large part of financial assets (Vitols, 2001). Supply and demand managed industrial relations are

based on competitive forces of formal contracting. These kind of industrial relations specify fluid markets, where flexible employment conditions with low union density, and weak wage coordination systems prevail. Fluid labor markets with relatively higher labor turnover, on the other hand, are complemented with general skills result from the education and training system of LMEs. Substantial freedom of employers to hire and fire workers render both employees, and employers reluctant to invest in firm or industry specific skills. In highly competitive labor markets, poaching highly skilled employees also becomes frequent attitude of firms, rather than investing in employees' skill acquisition (Godart, 2002). Hierarchical and autocratic business management style, also describes corporate governance styles of LMEs, where inter-company relations depend on high competition. Lazonick and O'Sullivan define 'shareholder maximization' principle as the main 'ideology' of corporate government in LMEs, which enforces fierce competition (Lazonick & O'Sullivan, 2000).

Coordinated Market Economies are described by strategic coordination, and collaboration of these four spheres, either by state established agencies or social organizations. Financial system of CMEs are typified as bank – based financial systems. Banks assets comprise largest portion of total financial assets in the economy. Vitols describes two key characteristics that distinguish bank – based financial systems from market-based financial systems (Vitols, 2001). One is that the banks are the dominant sources of financing companies. Most of the time, banks participate to the corporate governance as a shareholder, as a result, there exists an interlocking relationships between banks and companies. The second is that, credit allocation is not totally left to market forces as it is in market – based systems. State is highly involved in credit allocation decisions in bank – based systems. CMEs' industrial relations systems involve highly coordinated wage bargaining and unionization (Eichengreen & Iversen, 1999). The system makes poaching and firing rather difficult, and this renders labor markets rather rigid with long employment tenures, and low job turnover rates. High employment protection in CMEs render both employers, and employees invest in industry specific skills acquisition of employees.

Since individual institutions are interdependent to each other, effectiveness of individual institutions increase when each is complemented with another. This reinforces the divergence among national capitalistic models. Coherence of the national institutional

framework is required to maintain institutional complementarities (Amable, 2000). The main focus is on the fact that; the institutional coherence increases macroeconomic efficiency and international competitiveness.

Models of capitalism emerge with the divergence of national institutional frameworks. Furthermore, diverging models of capitalism supports diverging production systems and patterns of specialization. Soskice and Hall emphasize the impact of institutional framework on national innovation styles. There are basically two innovation styles distinguished according to the development patterns; (1) Radical Innovation, (2) Incremental Innovation. Radical innovation describes the path-breaking substantial shifts in either process or product innovation, such as biotechnology or software programming. In contrast, incremental innovation represents continuous, but rather small scale improvements made to the existing product or processes, such as automotive sector or office equipments (Hall & Soskice, 2001).

Long term financial and employment relationships, collaborative and cooperative inter-company connections and industry specific skill acquisition provide CMEs with the comparative advantage in sectors dependent on incremental innovation. Institutional features of LMEs, on the other hand, render production in sectors relying on radical innovation rather advantageous. Shifting the production towards entirely new and path-breaking products is induced by highly liquid financial and labor markets, and corporate governance strategies of LMEs.

## **2. Measuring Institutional Coherence and the Impact of Institutional Coherence on Macroeconomic Efficiency**

Institutional variables are used to explain changes in macroeconomic efficiency and international competitiveness by a sample of previous researches (Soskice and Hall, 2001; Hall and Gingerich, 2004; Milberg and Houston, 2005; Kenworthy, 2006) . Except Kenworthy, previous research concluded with the evidences supporting the hypothesis that there exists a relationship between institutional set up, macroeconomic efficiency and international competitiveness. This paper primarily, aims to contribute to this literature with further evidences. Another objective of this work is to produce policy implications for Turkey, by including Turkey to the

dataset. Dataset includes EU – 15 plus Turkey<sup>2</sup>. The reason why EU 15 has been the focus of analysis and not the enlarged EU is that, the new members of Europe were the part of Socialist Bloc until 1990s, and they do not have a long history of capitalism.

## **2.1. Data and Methodology**

Impact of institutional coherence on macroeconomic efficiency is to be tested in this section. To this end, firstly a measure of institutional coherence is required. The empirical methodology adopted for this research is taken from Hall and Gingerich (2001). They, basically, have constructed a coordination index in order to have a comparative measure of institutional coherence. The use of this measure of institutional coherence makes intense observation of the types of economic coordination possible. The coordination index is composed through a factor analysis. They have, then, employed the coordination index in a regression to test the impact of institutional competitiveness on long term economic growth.

Factor analysis is a statistical methodology to discover the pattern of relationships among different variables, such as whether they identify a common factor or not. The methodology allows a large number of interrelated variables to be condensed into smaller dimensions. For instance in this research, a number of variables related to institutional framework, such as wage coordination, union density and etc., are tried to be reduced into smaller dimensions of economic coordination. The purpose here is first, to see whether they describe a form of economic coordination (a common factor) and second, to have a tool to construct the coordination index by scaling.

The variables chosen to distinguish between the liberal market economies and the coordinated market economies are supposed to reflect the degree of coordination in different spheres of the economy. The economic coordination in this research is assumed to be identified by the type of coordination in three sections of the economy; (1) product markets, (2) labour markets, and (3) capital markets. Selection

---

<sup>2</sup> The dataset includes EU-15 + Turkey, however, Belgium and Luxembourg considered to be one since the relevant statistics for Belgium and Luxembourg are reported combined.

of institutional variables related to these sections of the economy is based on the existing literature, and are described in detail in Annex – 1.

Following Hall and Gingerich, a coordination index is composed through a factor analysis. A scale of institutional coherence, namely coordination index, is composed using a principle components method of factor analysis for these institutional variables. The methodology for constructing coordination index followed several steps. First, the data taken from several sources is normalized using a panel technique of normalization, which is described in Annex – 2. Second, the normalized data is processed by use of SPSS statistics program for the computers by selecting the principle components method for factor analysis in the program menu, and factor scores are obtained. Third, the square of obtained factor loadings are divided by the eigen values to extract the weights of the variables within the factor. Finally, the variables are weighted accordingly and scaled to get the coordination index resembling Kenworthy’s and Soskice and Gingerich’s indices.

Wage coordination, Union Density, Strictness of Employment Protection Legislation (EPL), Share of Social Expenditures in Gross Domestic Product, Share of Active Labor Market Expenditures (ALMP) in Gross Domestic Product, Product Market Regulations (PMR), and Market Capitalization Rates have been taken as institutional variables and used in factor analysis. Results of Factor Analysis, shown in Table 1, exhibit that all these institutional variables constitute two factors.

Table 1: Results of Factor Analysis

Variables	Factor 1		Factor 2	
	Market Structure		Government Intervention	
	Factor Loadings	Weights	Factor Loadings	Weights
Market Capitalization Rate	-.944	.36		
PMR	.897	.33	-.131	.01
Strictness of EPL	.769	.24	-.282	.04
ALMP Expenditures	-.185	.01	.886	.35
Wage Coordination	.224	.02	.766	.26
Social Expenditures	-.225	.02	.693	.21
Union Density	-.219	.02	.558	.14
Factor Weights	.52		.48	
Eigen Values	2.471		2.259	
Total Variance Explained by Factors	% 68			
Test Statistics				
Bartlett's Test of Sphericity $X^2$	43.109			
Degrees of Freedom	21			
Statistical Significance	.00			

Source: Own calculation; data sources and description of variables are available at Annex - 1

Results indicate two factors, which means that the countries in the dataset differs from each other basically in terms of two dimensions defined by institutions. Market Capitalization Rate, Strictness of EPL, and PMR constitute Factor 1. According to the characteristics of the variables constituting this factor, Factor 1 is named as Market Structures. Share of Social Expenditures in GDP, Share of ALMP in GDP, Union Density, and Wage Coordination constitute Factor 2, which represents Government Intervention. Hence, Factor 2 is named as Government Intervention. Weights of variable within each factor are then used to compose the Coordination Index, which is normalized using panel normalization technique. Table 2 reports the Coordination Index constructed by using factor analysis results in scaling.

Table 2: Coordination Index (1990 – 2000)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>AU</b>	1.00	0.90	0.94	0.95	0.93	0.99	0.92	0.99	0.95	0.97	0.94
<b>BE</b>	0.74	0.76	0.77	0.73	0.75	0.74	0.71	0.78	0.73	0.77	0.76
<b>DEN</b>	0.70	0.69	0.66	0.66	0.75	0.70	0.73	0.76	0.72	0.74	0.77
<b>FIN</b>	0.68	0.65	0.66	0.68	0.73	0.72	0.74	0.77	0.75	0.72	0.74
<b>FR</b>	0.69	0.67	0.68	0.66	0.69	0.70	0.68	0.69	0.75	0.73	0.77
<b>GER</b>	0.95	0.97	0.89	0.85	0.88	0.83	0.80	0.84	0.85	0.83	0.89
<b>GRE</b>	0.54	0.56	0.52	0.50	0.58	0.60	0.61	0.58	0.55	0.61	0.62
<b>IRL</b>	0.22	0.29	0.24	0.21	0.19	0.17	0.21	0.17	0.20	0.19	0.21
<b>ITA</b>	0.84	0.81	0.79	0.77	0.80	0.81	0.79	0.81	0.83	0.84	0.88
<b>NL</b>	0.70	0.66	0.64	0.63	0.65	0.68	0.70	0.71	0.74	0.68	0.69
<b>POR</b>	0.71	.70	0.65	0.57	0.61	0.65	0.66	0.69	0.69	0.70	0.71
<b>SPA</b>	0.69	0.66	0.52	0.49	0.60	0.59	0.59	0.61	0.63	0.62	0.60
<b>SWE</b>	0.71	0.70	0.69	0.73	0.75	0.77	0.72	0.75	0.74	0.77	0.78
<b>UK</b>	0.05	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
<b>TUR</b>	0.60	0.51	0.55	0.57	0.52	0.59	0.61	0.63	0.55	0.51	0.59

Source: Own calculation; based on data provided by Table 1.

The methodology of categorization used by Casey (2006), for converting Varieties of Capitalism index into three categories, is replicated in this research to convert coordination index into classification of capitalist models. By averaging and scaling the Coordination Index data in Table 2, 15 countries are assigned to categories by taking the range of values for the index and dividing into thirds. Countries placed in the upper 33% of the scale are classified as CMEs, bottom 33% of the scale are classified as LMEs, and those in the placed in the middle 33% of the scale are classified as intermediate economies. Intermediate economies exhibit both characteristics of the two models of capitalism. Hence they do not exemplify coherent institutional set up of neither models. Classification of countries



according to their coordination index values is demonstrated in Table 3.

Table 3: Classification of Capitalistic Countries

Coordinated Market Economies	Austria (0.95) Germany (0.87) Italy (0.81) Belgium (0.75) Sweden (0.74) Denmark (0.72) Finland (0.71) France (0.70) Netherlands (0.68)
Intermediate Economies	Portugal (0.63) Spain (0.60) Greece (0.47) Turkey (0.45)
Liberal Market Economies	Ireland (0.21) United Kingdom (0.05)

Following this classification, main hypothesis is that LMEs and CMEs exhibit higher economic performances compared to Intermediate Economies. This hypothesis is tested by using the standard growth regression transformed by Hall and Gingerich (2001). GDP growth is taken as an indicator of macroeconomic performance.

$$Y_{it} = \beta_0 + \beta_1 C_i + \beta_2 C_i^2 + \beta_3 \ln GDP_i + \beta_4 Int_{it} + \beta_5 \pi_{it} + \beta_6 ToT_{it} + \beta_7 D_{it} + \varepsilon_{it}$$

Here;

$Y_{it}$  : GDP per capita growth for country i in period t,

$C_{it}$  : Coordination Index value to for country i in period t,

$C_{it}^2$  : Square of Coordination index value for country i in period t,

$\ln GDP_i$  : GDP per capita for country i at the beginning period for controlling of catch up effects, that generate higher rates of growth in nations at lower levels of economic development.

$Int_{it}$ : international demand conditions measured by the average rate of growth for our sample countries in period t weighted by the trade openness of country i.

$\pi_{it}$ : inflation rate for country i in period t,

$TOT_{it}$ : is the percentage change in the terms of trade of country i weighted by trade openness,

$D_{it}$ : the dependency ratio measured as the share of the population below the age of 15 or above the age of 65

Although the Hausman test results suggest use of fixed effects model, the regression is estimated using random effects model, since there is a time – invariant variable, D.

## 2.2. Empirical Findings

First, original growth model is estimated and reported in Table 4 under Model I. Then Coordination variables are included in the Model I and Model II is estimated in order to capture the fact that whether efficiency of the original model is increased by including coordination variables or not.

Table 4: Impact of Institutional Coherence on Macroeconomic Efficiency

	MODEL: I	MODEL: II	MODEL: III
$\beta_1 C_{it}$		-0.12591 (0.03425) 0.00	0.11900 (0.03279) 0.00
$\beta_2 C_{it}^2$		0.14232 (0.03582) 0.00	0.13543 (0.03438) 0.00
$\beta_3 \ln GDP_i$	-0.04819 (0.01319) 0.00	-0.06853 (0.01428) 0.00	-0.06673 (0.01379) 0.00
$\beta_4 Int_{it}$	1.03056 (0.10993) 0.00	0.96583 (0.19686) 0.00	0.98580 (0.10521) 0.00

$\beta_5\pi_{it}$	-0.07584 (0.02469) 0.00	-0.09373 (0.02533) 0.00	-0.09692 (0.02421) 0.00
$\beta_6TOT_{it}$ :	-0.11675 (0.02364) 0.00	-0.10258 (0.02313) 0.00	-0.10183 (0.02312) 0.00
$\beta_7D_{it}$	-0.11741 (0.13083) 0.37	-0.10017 (0.13528) 0.46	
$\beta_0$	0.52501 (0.14499) 0.00	0.73610 (0.15224) 0.00	0.68349 (0.13713) 0.00

Dependent Variable:  $Y_{it}$  GDP per capita growth rate for country i in period t

All the coefficients appear statistically significant except D. D is deducted from the model to increase efficiency and Model III is estimated. Estimation results indicate a negative value for  $\beta_1C_{it}$  and a negative value for its square, which provides evidence that there is a U – shaped relationship between economic coordination and growth. This means that, the macroeconomic efficiency, measured by the growth rate, with higher market coordination or with higher strategic coordination of markets. This is to say, economic efficiency increases as the countries exhibit characteristics of either model, providing institutional coherence. Coefficient of  $\ln GDP_i$  is negative, which verifies the catch up effects. Coefficient of  $\pi_{it}$  is negatively signed, which indicates an inverse relationship between inflation and the growth rate in the long run. Trade openness variable  $TOT_{it}$  has a negatively signed coefficient, which suggests also an inverse relationship with openness to trade and macroeconomic efficiency. Coefficient of  $D_{it}$  appears to be statistically insignificant. However, negative sign of the variable is consistent with the theory.

### 3. Conclusions

The empirical findings support the suggestions of Comparative Institutional Advantages theory. Institutional framework matters for the fact that coherence among the individual institutions in an economy reinforce macroeconomic efficiency due to the institutional complementarities. This is verified with a U – shaped, non – linear relationship between Coordination Index values and GDP per capita growth.

Figure 1 shows this inference, plotting coordination index values on the X – axis and GDP per capita growth rates on the Y – orbit. From the figure, apparently it is observed that the intermediate economies (Turkey, Greece, Spain, Portugal), which do not exhibit an institutional coherence, demonstrate lower GDP per capita growth rates compared to those of CMEs and LMEs.

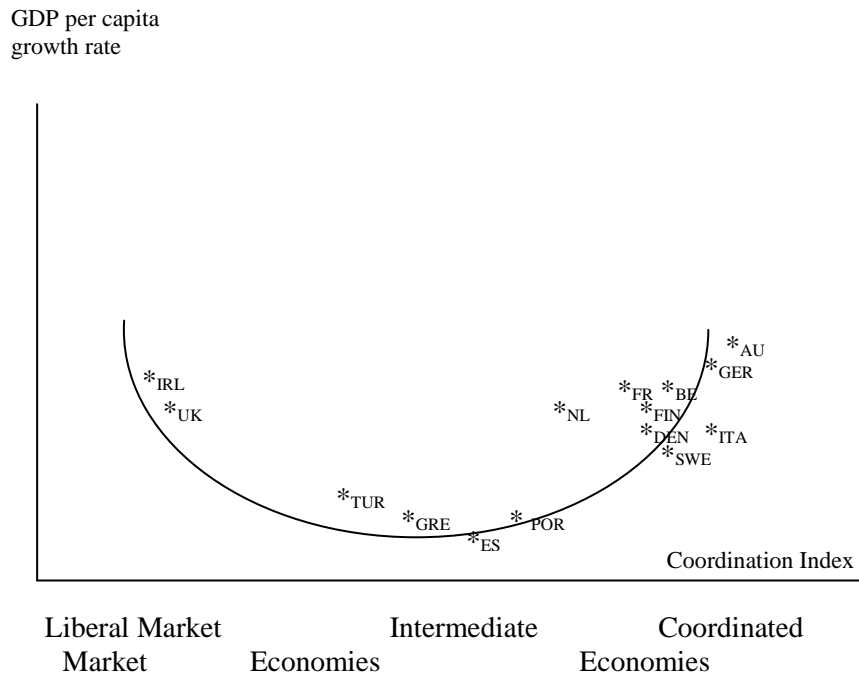


Figure 1: Impact of institutional coherence on macroeconomic efficiency

Of particular concern in this paper is the interpretation of the results for Turkish case. When Turkey's institutionalization process scrutinized, Turkey has had three major periods<sup>3</sup>. First has started with the Republican period from 1923<sup>4</sup>, and lasted until 1960s. This is the period that the first institutionalization experiences has taken place. State intervention was supposed to initiate the industrialization process by establishing industries with strong backward and forward linkages, and lead private sector by stimulating the private investments. In 1932, etatism was formally launched with the development of State Economic Enterprises to lead the limited domestic private capital (Ergin, 1977). As a part of the etatist industrialization drive, First and Second Industrialization Plans were prepared during this period. First plan implemented between the years 1933 – 1937. It was mainly an investment program with which the public investments were directed to the establishment several factories, for yarn, rayon, flour, sugar, glass, cement plantation. These first attempts for industrialization were basically aiming the establishment of light industry. State intervention to the most of the economic activities prevailed with the aim of encouraging private sector. The Second Five Yearly Industrialization Plan could not be implemented due to the Second World War.

The second period started with the 1960. State planning and the import substitution growth model characterizes this period. In this period, again, the role of government in the economy as an initiator was prominent. State Planning Organization was established in 1961 in order to prepare annual and long-term plans and formulate the economic policies. State Planning Organization plans included social and macroeconomic targets and policy recommendation in line with them. Targets were binding for public sector, which was supposed to be the initiator for the private investors, and only indicative for the private sector. In 1961, an integrated 15 year plan was prepared and announced, consisting of five yearly plans of which first was inaugurated in 1963.

Within the first two periods, Turkish economy rather exemplifies a CME. However with the third period started in 1980s, economy has faced a great transformation and started to adopt some

---

<sup>3</sup> The periodical distinction in made in consideration with the radical changes in economy policy.

<sup>4</sup> Turkish Republic was founded officially on October 29th, 1923.

institutional elements of LMEs. Financial liberalization and export oriented growth strategies characterize the main elements of 1980s transformation. Export premiums and subsidies were among the main tool to stimulate export growth which was a strong commitment of the government (Balkır, 1993). However, with this transformation, institutional framework included inconsistent elements together, eliminating institutional coherence and causing macroeconomic efficiency to decrease. For instance, liberalization in capital markets was not accompanied by a similar liberalization in product markets. Suppliers of the product market was both private and public sector. State Economic Enterprises of the public sector used to control prices with the aim of supplying relatively cheap intermediate goods for the private sector. This was considered to be a kind of profit transfer from public to private enterprises, to encourage the private sector (Schachter & Cohen, 1973). However, this dual pricing mechanism constituted a very important distortive element of the institutional framework after 1980 transformation. On the other hand, since the financial markets were not very well developed, market capitalization rates remained very low. This meant that the financial markets could not fully attain their function of financing the productive sector (Acar, 2004; 249). As a conclusion, elements of the institutional framework that are inconsistent with each other, such as regulating certain markets while deregulating others, deteriorates the efficiency of macroeconomic policies in Turkey.

## References

Acar, S.; **Uluslararası Reel Ticaret: Teori, Politika**, Dokuz Eylül Üniversitesi Yayınları, Gözden Geçirilmiş İkinci Baskı, İzmir, 2004.

Amable, B., Ernst, E., & Palombarini, S.; “*How Do Financial Markets Affect Industrial Relations: An Institutional Complementarity Approach*”, **Socio –Economic Review**, vol. 3, 2005, pp.311 – 330.

Amable, B.; “*Institutional Complementarity and Diversity of Social Systems of Innovation and Production*”, **Review of International Political Economy**, vol.7, no.4, 2000, pp.645-687.

Balkır, C.; “*Trade Strategy in the 80s*” in **The Political and Socioeconomic Transformation of Turkey in the 1980s** (ed. By Eralp, A., Yeşilada, B., & Tunay, M.), New York: Praeger, 1993,

pp.135 – 168.

Boyer, R.; “*How and Why Capitalisms Differ?*”, **Economy and Society**, vol. 34, no. 4, 2005, pp. 509 – 557.

Bruno, M. & Sachs, J.; **The Economics of Worldwide Stagflation**, Cambridge: Harvard University Press, 1985.

Calmfors, L. & Driffill, J.; “*Bargaining Structure, Corporatism, and Macroeconomic Performance*”, **Economic Policy**, vol.3, 1988, pp. 13 – 61.

Casey, T.; “*An Empirical Mapping of European Capitalisms*”, **Council of European Studies Fifteenth International Conference**, Chicago, IL, March 29 – April 2, 2006.

Conway, P., Janod, V., & Nicoletti, G.; “*Product Market Regulation in Non-Manufacturing Sectors in OECD Countries, 1998 to 2003*”, **OECD Economics Department Working Paper, No. 419, 2005**.

Eichengreen, B. & Iversen, T.; “*Institutions and Economic Performance: Evidence from the Labour Market*”, **Oxford Review of Economic Policy**, vol.15, no.4, 1999, pp. 121 – 138.

Ergin, F.; **Atatürk Zamanında Türk Ekonomisi**, Yaşar Eğitim ve Kültür Vakfı Yayınları, No: 1, 1977.

Godart, J.; “*Institutional Environments, Employer Practices, and States in Liberal Market Economies*”, **Industrial Relations**, Vol.41, No.2, 2002.

Hall, P. A., ve Gingerich, D. W.; **Varieties of Capitalism and Institutional Complementarities in the Macroeconomy: An Empirical Analysis**, Discussion Paper in Annual Meeting of the American Political Science Association, San Francisco – California, 30/08/2001.

Hall, P. A., & Soskice, D.; “An Introduction to Varieties of Capitalism”, içinde; Hall, P. A., & Soskice, D.; **Varieties of Capitalism: The Institutional Foundations of Comparative Advantage**, Oxford University Press, 2001, ss. 1 – 71.

Hollingsworth, J. R.; “Doing Institutional Analysis: Implications for the Study of Innovations, **Review of International Political Economy**, vol.7, no.4, 2000, pp. 595 – 644.

Kenworthy, L.; “*Institutional Coherence and Macroeconomic Performance*”, **Socio-Economic Review**, vol. 4, 2006, pp. 69 – 91.

Kenworthy, L.; **Wage Setting Coordination Scores**, 2001 (Available at: <http://www.emory.edu/SOC/lkenworthy>)

Kitschelt, H.; “Industrial Governance Structures, Innovation Strategies, and the Case of Japan: Sectoral or Cross – National Comparative Analysis”, **International Organization**, vol. 45, no. 4, 1991, pp. 453 – 493.

Nicoletti, G., Scarpetta, S., & Boylaud, O.; “*Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation*”, **OECD Economics Department Working Papers**, No. 226, OECD, 2000.

Schachter, G., & Cohen, B.; “*The Efficiency of State Economic Enterprises in Forging Development in Turkey*”, **Annals of Public and Cooperative Economics**, vol. 44, no. 2, pp. 165 – 179.

Vitols, S.; “*The Origins of Bank – Based and Market – Based Financial Systems: Japan, Germany and the US*”, içinde Streeck, W., & Yamamura, K.; **The Origins of Non – Liberal Capitalism**, Ithaca, NY: Cornell University Press, 2001.



## Appendix

### Annex – 1

#### Data Sources and Description of Variables

Full Sample: 15 Countries for a period of 1990 – 2000.

Austria, Belgium-Luxembourg, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Turkey, United Kingdom, Sweden

#### Indicators Employed in Factor Analysis

**Wage Coordination:** Kenworthy Wage setting coordination scores based on structural characteristics of wage bargaining process. *Source:* Kenworthy, 2001.

**Union Density:** Net union density, percentage of union members in total employment including active union members, excluding retired members. *Source:* ILO; **Bureau of Labor Statistics – Periodical Data**, 2007.

**Strictness of EPL:** Employment Protection Legislation index that is a composite of quantitative measures evaluating employment protection legislation and other employment protection indicators for regular contracts (procedural inconveniences, notice and severance pay for no – fault individual dismissals, difficulty of dismissal) and short term contracts. *Source:* Nicoletti, Scarpetta & Boylaud, 2000).

**Share of Social Expenditures in GDP:** Total Social Expenditure as a Percentage of GDP. Social expenditures categories include; (a) old age cash benefit, (b) disability cash benefit, (c) occupational injury and disease, (d) sickness benefits, (e) elderly and disabled services, (f) survivors benefits, (g) family cash benefits, (h) family services, (i) active labour market programs, (j) unemployment benefits, (k) health, (l) housing benefits, (m) other contingencies. *Source:* OECD Social Expenditure Database, 2006.

**Share of ALMP in GDP:** Expenditure on active labour market policies as a percentage of GDP. ALMP comprises three basic subcategories; (a) job broking with the purpose of making the matching process between vacancies and job seekers more efficient, (b) labour market training in

order to upgrade and adapt the skills of job applicants, and (c) direct job creation, which may take form of either public – sector employment or subsidisation of private – sector work. *Source:* OECD Expenditure in Labour Market Policies Database, 2006.

**PMR:** A range of indicators of product market regulation at both the economy – wide and sectoral levels, developed by OECD. All of these indicators measure the extent to which policy settings promote or inhibit competition in areas of the product market where competition is viable (Conway, Janod, & Nicoletti, 2005). *Source:* OECD PMR Database.

**Market Capitalisation Rates:** Market valuation of equities on the stock exchanges of a nation as a percentage of its GDP. *Source:* World Bank Development Indicators Database, 2007.

### **Variables Employed in the Econometric Model**

#### **Dependent Variable**

**GDP:** Gross Domestic Product per Capita Growth Rate. *Source:* WorldBank Development Indicators Database, 2007.

#### **Independent Variables**

**Coordination Index:** Factor Scores, adjusted to vary from zero to one, from a factor analysis of seven indicators. Measured as of 1990 – 2000.

**lnGDP:** Logarithmic value of Gross Domestic Product in year 1990. *Source:* WorldBank Development Indicators Database, 2007.

**Int:** International demand conditions measured by the average rate of growth for our sample countries in period t weighted by the trade openness of country i. Trade openness is measured as exports plus imports as a proportion of GDP. *Source:* WorldBank Development Indicators Database, 2007.

$\pi_{it}$ : inflation rate for country i in period t. *Source:* WorldBank Development Indicators Database, 2007.

$TOI_{it}$  : Percentage change in the terms of trade of country  $i$  weighted by trade openness. Terms of Trade is measured as the ratio of price index for exports to the price index for imports. *Source*: WorldBank Development Indicators Database, 2007.

$D_{it}$  : Dependency ratio measured as the share of the population below the age of 15 or above the age of 65. *Source*: WorldBank Development Indicators Database, 2007.

## Annex – 2

### Panel Normalization Technique

The data used in the analysis is a pooled data of 15 countries over 1990 – 2000. In order to be able to make meaningful comparisons over time for a given country and also among countries, data needs to be normalized with a panel normalization technique. Therefore the data were normalized (scaled from 0 to 1) using panel normalization procedures as follows<sup>5</sup>:

To give highest nominal value highest normalised value (X=nominal value):

$$y=(X-MIN)/(MAX-MIN)$$

To give lowest nominal value highest normalised value (X=nominal value):

$$y=(X-MAX)/(MIN-MAX)$$

---

<sup>5</sup> This method is adapted from that used by the University of Warwick's Centre for the Study of Globalization and Regionalization to construct a globalization index. (Available at: <http://www2.warwick.ac.uk/fac/soc/csgr>).