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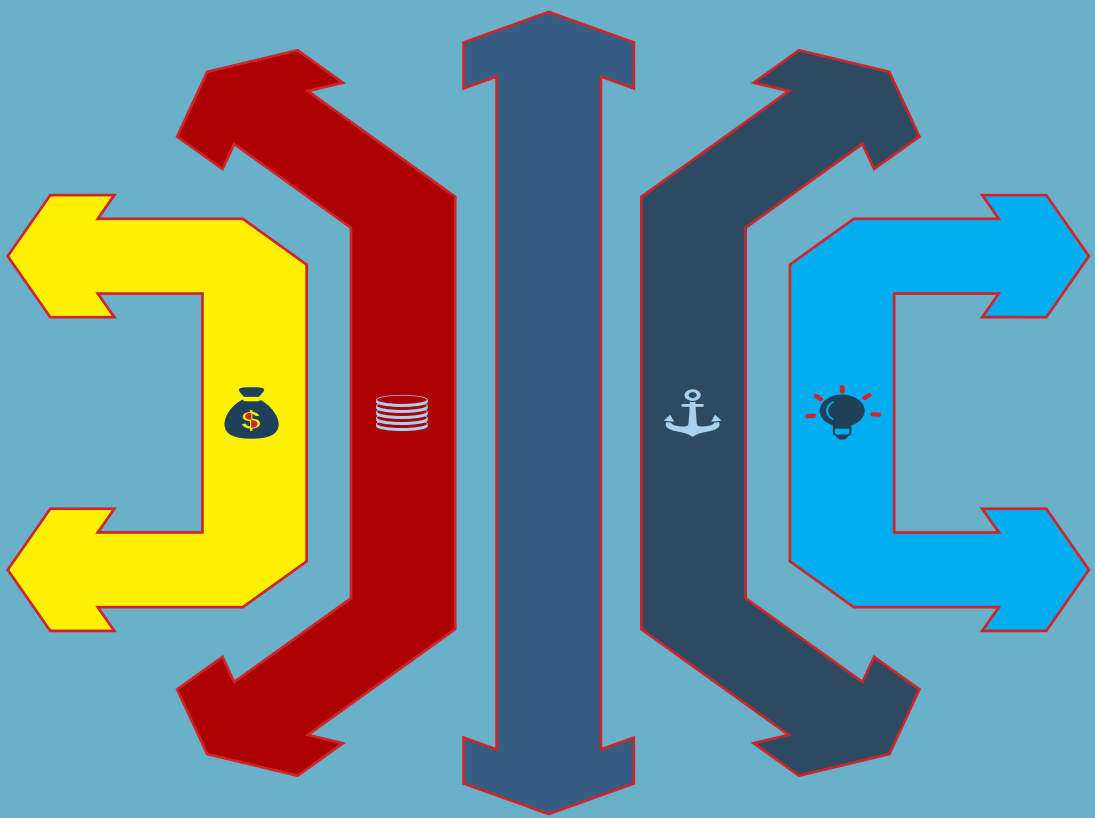

Stavros Mavroudeas
Aylin Soydan
Tulin Altun

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# GLOBAL ECONOMY ECONOMIC CRISIS & RECESSIONS

**Edited By**
Stavros Mavroudeas
Aylin Soydan
Tulin Altun

**Global Economy, Economic Crisis & Recessions**

*(Edited by: Stavros Mavroudeas, Aylin Soydan, Tulin Altun)*

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# INTRODUCTION

*Stavros Mavroudeas, Aylin Soydan, Tulin Altun*

This book is one of the products of the ICOPEC 2018 International Conference on Political Economy that was held at Panteion University in September 2018. ICOPEC 2018 was co-organised by the Greek Association for Political Economy (GAPE) and the Department of Social Policy of the Panteion University. The main theme of the conference was "**10 years after the Great Recession: Orthodox versus Heterodox Economics**". It focused on the blatant inability of Mainstream Economics to forecast and to face the 2008 global economic crisis but also on their continuing dominance in the universities and policy centres. The main thrust of the conference was that Heterodox Economics and especially the Political Economy tradition are much better equipped to understand and to confront the problems of modern economies.

This volume contains selected papers that benefited from comments and discussion during the conference and were subsequently significantly improved. The title of this volume is '**Global Economy, Economic Crises, and Recessions'**. It is comprised by eight chapters analysing issues in this area.

The first chapter is a contribution by John Milios titled 'Heterodox Economics vis-à-vis crisis and finance - Speculation of the 'absentee rentier' or mechanism of disciplining social action?'. The author criticises the predominant nowadays perception of financialisation as the increasing importance of financial markets, motives, institutions, and elites in the operation of the economy, which results in the predominance of speculation and 'casino-economics' over the production of use-values and the 'real economy'. Milios argues, that in the vein of K.Marx's thought, financial markets are not the 'unproductive sphere of speculation' but a disciplining mechanism superimposed upon other power social relations in order to make them comply more efficiently to capitalist prerogatives. A capitalist firm that goes to the markets to raise funds acquires a risk profile that depends on its ability to pursue effective exploitation strategies. Similarly, a capitalist state acquires a risk profile which captures its ability to organize neoliberal hegemony. The risk profile of a wage earner depends heavily on its docility to the rampant reality of labour relations. The normalisation on the basis of risk does not impose disciplinary roles but it tests and reinforces the compliance to them. Risk calculation along with the resultant pricing of the various types of securities involves systemic evaluation on the part of every market participant of the efficiency in achieving particular targets as defined by the strategies of profit maximisation. At the same time, every market participant becomes caught up in a perpetual effort to improve their risk profile as a competent risk-taker, in this sense closely conforming to what is required by the 'laws of capitalism'.

The second chapter is co-authored by Aylin Altinay Cingoz and Baris Kablamaci and it is titled 'The political consequences of debt crisis and sovereign defaults'. It studies the debt crisis of selected countries and its impacts on their political conditions. It points out the different reasons of sovereign defaults that are the product of different types of debt crisis and different country historical trajectories. The data analysis indicates that sovereign defaults associated with the debt crisis generate different political consequences. In some countries sovereign defaults affected seriously democratic institutions whereas in other countries they did not.

Aysel Arıkboga is the author of the third chapter, which is titled 'Human development in the Euro Zone periphery since the 2007-2008 Crisis'. The paper analyses how the recent crisis of financialised capitalism and the policy

responses to it affected human development in the periphery of the Eurozone. It focuses on the three of the most severely affected countries (Greece, Portugal, and Spain) and analyses the socio-economic outcomes. Regarding the policy responses to the 2007-2008 crisis, it distinguishes two separate phases. During the initial phase of the crisis, the implementation of expansionary fiscal policies along with the bailout packages for the financial sector led to an enormous rise in budget deficits and public debts. In the second phase, as the financial crisis transformed into a fiscal crisis, fiscal discipline policies became prevalent. Compounded with the effects of the crisis the implementation of strict austerity measures severely affected people's well-being via unemployment risk, repression of wages and retrenchment of social expenditures.

The fourth chapter is written by Isil Akgul and Emre Cevik and is titled 'Relationship between oil price volatility and oil import in Turkey: Nonlinear ARDL approach'. It investigates the effects of changes in oil prices on oil imports, by examining whether asymmetric long-run and short-run relationships between these variables and the determination of the relationship between these variables are important for an oil-importing country like Turkey. Thus, by employing the NARDL approach, it seeks to discover whether the effects of the same size shocks on exchange rate, industrial production index and oil prices will have a different effect on oil imports in the short-run and long-run. Studying Turkey for the 1996-2018 period the estimated model reveals the nonlinear effect of oil price volatility on oil imports. Moreover, the results confirm the existence of both long-run and short-run asymmetric behaviour of oil imports. Consequently, in the long-run, the increase in oil price volatility tends to reduce oil imports. In addition, the results show that in the short-run, oil imports are determined by economic growth rather than the changes in real exchange rate. The main difference of this study than the other studies is that it provides more realistic findings through the use of a threshold that is obtained by oil prices.

The fifth chapter is authored by Yasemin Nemlioglu-Koca and it is titled 'The effects of the 2008 global crisis on the Turkish maritime sector: Determinations and considerations'. It argues that globalisation has increased maritime transport but also made it more sensitive to negative events in the world economy. The 2008 global economic crisis hit severely maritime transport and this was particularly evident for Turkish maritime sector. The subsequent decline in imports and exports and also the increased geopolitical risks worsened further the outlook of the Turkish maritime transport sector. The rest of this chapter identifies the effects of the 2008 global crisis and of geopolitical risks on the Turkish maritime sector.

The sixth chapter is co-authored by Deniz Sisman and Mehmet Sisman and it is titled 'An analysis on information technologies in EU transition economies (ICT): Application of Marshall's third law'. It considers the significant 2004, 2007 and 2013 enlargements of the EU and examines whether the information sector can play a powerful part in enhancing their integration in the EU. This examination is related to Marshall's third law (that is derivative demand elasticity with the labor's share in the total cost) and reveals the impact of the new participant countries on the information sector with regards to the qualified workforce. It argues that in the current period of increased protectionism, the EU transition economies have the opportunity of using the cost advantage based on increasing returns with the large-scale countries. Moreover, such a growth factor affects the labour costs for both the EU countries and the EU transition economies.

The seventh chapter is contributed by Cansel Oskay and it is titled '2008-2018 Evaluation of the macroeconomic performance of the Turkish economy'. This paper studies and evaluates the macroeconomic performance of the Turkish economy after the 2008 global economic crisis. It focuses on six main variables (inflation rate, unemployment rate, growth rate, long-term interest rate, current account deficit and budget deficit) and, by using them, calculates

three indicators (Discontent Index, Misery Index and Macroeconomic Performance Index). Then it compares the evolution of these indices for the vulnerable economies in the world (Brazil, Indonesia, India, South Africa, and Turkey). It shows that, according to all indices and for the period 2008-2018, Turkey's economic performance is weak as it exhibited a significant inflation, growing unemployment and borrowing costs and an increasing current account deficit. It concludes that the Turkish economy is advancing rapidly towards recession and that it faces the subsequent danger of stagflation. In order to avoid this outcome, the author suggests that reforms solving structural problems (and particularly those associated with the significant dependence upon foreign inputs) are required.

The last chapter is a contribution authored by Mustafa Erdogdu and titled 'Enhanced Keynesian Economics for overcoming financial crises'. The author argues that after the demise of the Bretton Woods system, the increasing deregulation of financial markets ushered profound changes in the global economy. A crucial feature of this new era is the lack of automatic stabilisers in the international financial architecture. This causes increasing financial fragility that was expressed in a growing number of financial crises, especially in developing countries. Since crises often occur without warning signs, it is crucial to have mechanisms and provisions in place to avoid sudden and significant capital outflows. The author, by following the Keynesian tradition, proposes five automatic stabilisers (four well-known and one original) in order to confront financial crises.

# 1

# HETERODOX ECONOMICS VIS-À-VIS CRISIS AND FINANCE. SPECULATION OF THE 'ABSENTEE RENTIER' OR MECHANISM OF DISCIPLINING SOCIAL ACTION?

*John Milios*[1]

The 2007-2008 financial crisis is without precedent in the post-war period, a fact acknowledged by the majority of economists. At the same time, the crisis is a 'marginal moment' which unveils and helps us rethink the workings of contemporary capitalism. The latter is mostly grasped under the term of financialization in relevant discussions.

Recent heterodox literature is dominated by a single and persistent argument. The argument[2] is that contemporary financial liberalization should be approached as a process in which the financial elites and financial intermediaries, i.e. the absentee financial proprietors or contemporary *rentiers* in the Keynesian terminology, have a leading role in working out the details of the neoliberal form of capitalism. Writing in the mid 1930s, Keynes (1973: 377) predicted the eventual extinction ("euthanasia") of the rentiers "within one or two generations". Many present-day Keynesians portray the developments of the last decades as the return of the rentiers three generations later to take over the economy. Neoliberalism thus amounts to the "revenge of the rentiers" (Smithin 1996: 84, coins this phrase) over the "industrial community" of managers , technicians and workers.

The relevant economic literature coined the term *financialization* to denote: (i) an increase in the economic importance of the financial sector as opposed to the "real" industrial sector of the economy, (ii) the transfer of income from the latter to the former, thereby increasing economic inequalities and depressing effective demand, (iii) the exacerbation of financial instability, transforming it into a central aspect of modern capitalism.

Hence, for Keynesian-like argumentation, neoliberalism is an "unjust" (in terms of income distribution), unstable, anti-developmental variant of capitalism whose direct consequence is contraction of workers' incomes and the proliferation of speculation, as opposed to some supposedly "just" variant of capitalism (e.g. of the first post-War decades).

Although these heterodox approaches reflect significant aspects of present-day capitalism, they are unable to provide a sufficiently inclusive account of the reasons for the neoliberal reforms and the resulting financialization of capitalist societies. Their basic weakness – and it is at the same time the link that holds them together – is that they represent the neoliberal formula for securing profitability of capital not as a question of producing profit but as an issue concerned with income redistribution – one pertaining essentially to the sphere of circulation.

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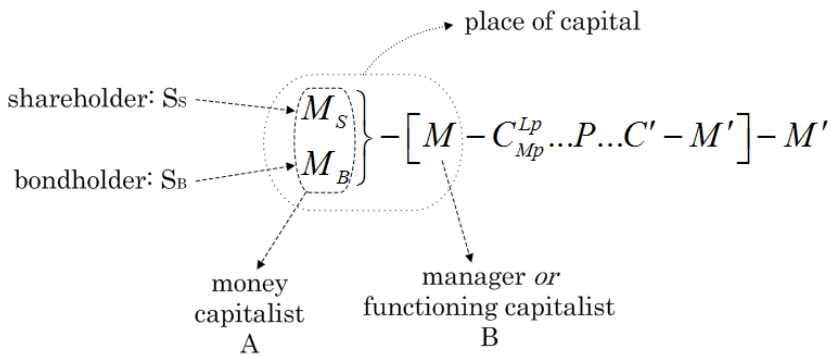
2 For example see Crotty (2005), Wray (2007), Dumenil and Levy (2011), Helleiner (1994), O'Hara (2006).

Contrary to these approaches, I will treat financialization as an organic development, and not as a distortion within capitalist production, drawing from Karl Marx's theory.

Marx in his mature writings emphasizes something which is really missing from other heterodox approaches to capitalism: the *conception of value as a social relationship*. From the lengthy manuscript of *Grundrisse* to the first edition of *Capital* (which he edited himself) this conception of value is the starting point of every concrete attempt to analyze capitalism. It is a central theme with important theoretical and political implications. It also means that what is really missing from the non-Marxian heterodox political economy is the understanding of capital as social relationship. That's why in Marx's system the concepts of value, money, capital, ideology, finance and class struggle are systemically interlinked to each other. In Marx's analysis, the value relation is an abstract expression (embryonic form) of the capital relation where the money functions as end in itself. From this point of view, debt as a social category is now subsumed to the logic of capital. This is an important analytical conception with many crucial implications for the understanding of capitalism. Capital's most concrete form in capitalist societies has always been an asset attached to a liability.

The theory of capital is not an analysis of the actions of the capitalist. It is not a response to the actions of a *subject*. On the contrary, *it is the movement of capital that imparts "consciousness" to the capitalist.* The power of capital is impersonal. In reality it is the power of money as such.

Proceeding to a more concrete level of analysis, Marx acknowledges that *the place of capital* may be occupied by more than one subject. There may be both a *money capitalist* and a *functioning capitalist*. This means that a detailed description of capitalism cannot ignore the *circulation of interest-bearing capital*, which depicts the structure of the financial system. Marx's argumentation might be represented in the following schema (see also Milios and Sotiropoulos 2009).




In the course of the lending process, the money capitalist A becomes the recipient and proprietor of a *security S*, that is to say a written *promise* of payment (contingent in character) from the functioning capitalist B. This promise certifies that A remains *owner* of the money capital *M*. He does not transfer his capital to B, but cedes to him the right to make use of it for a specified period. We will recognize two general types of securities: *bonds* $S_B$ and *shares* $S_S$. In the case of the former the enterprise undertakes to return fixed and prearranged sums of money irrespective of the profitability of its own operations. In the latter case it secures loan capital by selling a part of its property, thereby committing itself to paying dividends proportional to its profits. If the company has entered

the stock exchange and what is involved is share issue, then capitalist B corresponds to the managers and capitalist A to the legal owner.

In any case, in the hands of B the sum *M* functions as capital. Money taken as the independent expression of the value of commodities enables the active capitalist B to purchase the necessary *means of production Mp* and *labour power Lp* for organizing the productive process. The latter takes place under a regime of specific *relations of production* (comprising a specific historical form of relations of exploitation) and in this way is transformed into a process for producing surplus value. The money reserve that B now has at his disposal is the *material expression of his social power to set in motion* the productive process *and to control it*.

When Marx attempted to describe the social nature of financial markets he introduced the concept of 'fictitious capital' and spoke of fetishism. He wanted to draw our attention to the fact that capital assets are reified forms of appearance of the social relations of capital. They are in effect structural representations of capitalist relations, objectified perceptions which obscure the class nature of capitalist societies while, at the same time, signaling and calling forth the proper mode of behavior required for the effective reproduction of capitalist power relations.

Four very basic consequences are implied by this analysis and are, briefly, as follows.

*Firstly*, the place of capital (the incarnation of the powers stemming from the structure of the relations of production) *is occupied both by the money capitalist and by the functioning capitalist*. In other words, the place of capital is occupied by agents that are both "internal" to the enterprise (managers) and "external" to it (security holders). Marx's general conception abolishes the basic distinction drawn by Keynes between the productive classes "within" the enterprise and the parasitical class of "external" rentiers. In his own words: "*in the production process, the functioning capitalist represents capital against the wage-labourers as the property of others, and the money capitalist participates in the exploitation of labour as represented by the functioning capitalist*" (Marx 1991: 504). The *secondary* contradictions developed between the managers and the big investors certainly do exist but they evidently pertain to a more concrete level of analysis.

*Secondly*, the pure form of ownership over capital is the *financial security*, corresponding, that is, to "*imaginary money wealth*" (ibid.: 609). The ownership title is a "paper duplicate", either of the money capital ceded in the case of the bond $S_B$, or of the "material" capital in the case of the share $S_S$. Nevertheless the *price* of security does not emerge either from the value of the money made available or from the value of the "real" capital. The ownership titles are priced on the basis of the estimated (future) income they will yield for the institution or person owning them, which of course is part of the surplus value produced. In this sense they are *sui generis commodities* plotting a course that is their very own (Marx, ibid.: 607-9, 597-8).

*Thirdly*, the financial "mode of existence" of capitalist property – as a *promise* and at the same time a *claim* for appropriation of the surplus value that will be produced in future – brings into existence a broader terrain within which each flow of income can be seen as revenue corresponding to a "fictitious capital" with the potential to find an outlet on secondary markets (ibid.: 597-9). Hence, we observe that in accordance with Marx's argumentation, *the potential for securitization is inherent in the movement of capital.*

*Fourthly*, one of the basic characteristics of the neoliberal model is the increase in non-bank funding of credit, both by states and by enterprises. Above and beyond the other consequences, this places at the centre of the financial markets *risk management*, that is to say the factoring in of the contingency of non-achievement of the expected

yield (particularly in an international market where a number of diverging forces are affecting profitability). The very character of production of surplus value as well as the overall claims being placed on the latter is *contingent*; therefore, risk management is organically linked to capital movement as such. Because the inner workings of an enterprise constitute a political terrain, the production of surplus value, as a battlefield situation where resistance is being encountered, *is never something that can be taken for granted*. Techniques of risk management *are a critical point in the management of resistance from labour*.

Marx's major theoretical contribution to the analysis of Finance is the association of capitalization with fetishism. The pure (and most developed) form of appearance of capital is its fictitious form. It is "fictitious," not in the sense of imaginary detachment from real conditions of production, as is usually suggested, but "fictitious" in the sense that it reifies the capitalist production relations. Marx's message is clear and indisputable:

"Capital appears as a mysterious and self-creating source of interest, of its own increase. The thing is now already capital simply as a thing; the result of the overall reproduction process appears as a property devolving on a thing in itself [. . .]. The social relation is consummated in the relationship of a thing, money, to itself [...] In this capacity of potential capital, as a means of producing profit, it becomes a commodity, but a commodity sui generis. Or, what amounts to the same, capital as capital becomes a commodity" (Marx 1991: 516, 459–60).

Capital exists as a commodity with a certain value. The pricing process is absolutely crucial because it mediates the commodification (securitization) of the capitalist exploitation process. The price of capital is not imaginary, aleatory or psychological: it is fictitious. It does not owe its existence to the "costs of production" and obviously is not equal to the "amount of money that changes hands" or to some principal value written on the IOU. It is an outcome of a particular representation of capitalist exploitation which translates into quantitative signs the results of class struggle. From this point of view, the notion of fictitious capital can only be fully grasped in the context of Marx's materialist theory of fetishism and ideology. This also explains the puzzle of why Marx associated so closely and carefully his discussion on finance with the issue of fetishism.

Financialization embodies a range of institutions, procedures, reflections and strategies that make possible the accomplishment (not without contradictions) of fundamental targets in the context of existing social relations. From the perspective of Marx's analytical framework, this set of institutions, commodities and practices reflects the commodification of social relationships. Financial markets have the dual function of assessing and effectively organizing individual economic actors *and* at the same time promoting a particular form of financing. Derivatives and all other modern financial devices and innovations are the necessary precondition for implementation of financialization. They introduce a formative perspective on actual concrete risks, making them commensurate with each other and reducing their heterogeneity to a singularity.

Their reality as values – the very fact that they are commodities with a price, that is to say economic objects always already quantifiable – makes possible the commensuration of heterogeneous concrete risks. In this sense, they monitor and control the terms and the reproduction trajectories of the contemporary capitalist relation, evaluating and endeavoring to predict (albeit imperfectly) the course of the class struggle, forestalling events that would be unfavourable from the viewpoint of capital.

Financialization is thus not the result of some fatal and persistent inability of capitalism to restore profitability or to realize surplus value. The rise of finance is neither a threat to industrial capital, nor does it indicate a weakness

of the latter (its inability to secure proper accumulation patterns). Finance sets forth a particular technology of power (along with a particular mode of funding economic activities) which is completely in line with the nature of capitalist exploitation. Every capitalist enterprise has a Janus-existence, as production means and as financial securities

*Financial markets generate a structure for overseeing the effectiveness of individual capitals, that is to say a type of supervision of capital movement*. The decisive criterion is that the *value* of the company's securities (shares and bonds) as they are assessed by the international markets, should be *maximized*. The demand for high financial value *puts pressure on individual capitals (enterprises) for more intensive and more effective exploitation of labour, for greater profitability*. This pressure is transmitted through a variety of different channels. To give one example, when a big company is dependent on financial markets for its funding, every suspicion of inadequate valorization increases the cost of funding, reduces the capability that funding will be available and depresses share and bond prices. Confronted with such a climate, the forces of labour within the politicized environment of the enterprise face the dilemma of deciding whether to accept the employers' unfavourable terms, implying loss of their own bargaining position, or whether to contribute through their "inflexible" stance to the likelihood of the enterprise being required to close (transfer of capital to other spheres of production and/or other countries). Evidently the dilemma is not only hypothetical but is formulated pre-emptively: *accept the "laws of capital" or live with insecurity and unemployment*.

The recent crisis was in fact the outcome of active unfolding of the class struggle within the confines of contemporary social forms. The explosion of financial derivatives and the innovating forms of risk management have helped to fuel the crisis. These instruments should be seen as innovations engendering new kinds of rationality for the promotion of exploitation strategies based on the total circuit of capital; not as a dysfunctional configuration impeding the development of the "real" economy. The new rationalities of financialization presume an attitude of compliance with the laws of the capitalist system. Strange to say, these new rationalities systematically push for an underestimation of risks. Contemporary capitalism is caught in this exhausting tension between the need to be "efficient" and the underestimation of risks (see also Sotiropoulos et al. 2013).

There can never be capitalism without crises and all crises finally attain the form of capital over-accumulation: an abrupt fall in profitability referring to the (temporary) inability of the capitalist class to exploit labour "at a given level of exploitation" (Marx 1991: 364) and calling for the necessity for cutbacks in production, in other words overcapacity of the means of production, and the need for a new cycle of restructuring. The 2008 crisis will not be the last, and almost certain not the most acute over-accumulation crisis of the century.

Neoliberalism and financialization *is an exceptionally effective strategy for capitalist (and not rentier) class power*. It is also the means to cope with the crisis, i.e. *to place all the fallout of the economic crunch on the shoulders of the working people*. In bourgeois terms, effectiveness connotes capital's ability to impose the "laws" of capitalist accumulation, overriding labour resistance.

Apart from theoretical consequences, this finding has important political implications: *the community of interest of those "inside" the enterprise (labourers and managers) as against the "outsiders" of the financial markets is a construction of fantasy* derived from the problematic of Keynes. Such an outlook narrows the strategic horizon of the workers' movement to defence of a "better" capitalism, that is to say a "better" system of class domination and exploitation.

The fight against finance, is practically a process of de-normalization (de-individualization) which liberates people from the threat of risk, providing them more space to breathe and organize their struggles against the multiple

capitalist power relations. But it does not eliminate or disintegrate the latter. In this sense, the fight against modern finance should be associated with a general anti-capitalist plan which among other frontiers must seek to take over and destroy the capitalist state…

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# 2

# THE POLITICAL CONSEQUENCES OF DEBT CRISIS AND SOVEREIGN DEFAULTS

*Aylin Altınay Cingöz [1], Barış Kablamacı[2]*

***Abstract***

*This study reviews the debt crisis of selected countries and its impacts on their political conditions. The paper argues the diversified reasons of sovereign defaults depending on debt crisis as well as looks on historical patterns of some countries. The data used in this paper indicates that sovereign defaults associated with the debt crisis result with different political consequences. In addition, while some countries experienced a slight decrease and increase in their liberal democracy, some of them did not have a significant change after their defaults. Russia and Venezuela had continuous decrease after their defaults and only Ecuador had a sharp decrease after its default along with its new constitutional change.*

*Keywords: sovereign default, debt crisis, political changes, liberal democracy*

## 1. Introduction

After the 1990s, recent developments in the international financial system show that macroeconomic policy mistakes do not only generate economic problems but also cause political upheavals in some countries.

Twenty-six countries defaulted since 1990, according to Standard & Poor's Global Ratings Report (2018), which are twice or more, as a sovereign foreign-currency selective default. Although past defaults enlighten the recent circumstances in the global financial system, there are some particular features of the past defaults, such as; a high debt/Gross Domestic Product (henceforth GDP) ratio, huge foreign currency debt, debt affordability, and economic weakness and weak institutions (Moody's, 2013). Therefore, a debt crisis could increase from domestic fiscal or political turbulence, regime switches or economic-political transitions relying on trade deficits or a loss of confidence in the global financial market and could lead to the roll of the external debt.

Sovereign defaults could arise from a sovereign debt crisis and could end generally with the absolute exclusion from financial markets, which are presented as reputational cost and trade sanctions from creditors' residential countries (Borensztein and Panizza, 2008). The difference between the impacts of these two effects mainly depends on how open the economy is. The more open an economy is, the more it could face with a higher default point. Before this point, International Monetary Fund (henceforth IMF) or other global financial system units could have an international intervention role to soften or prevent a debt crisis, which may generate a reduction in domestic economic activity and production in the economy (de Paoli et al., 2006).

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On the other side, sovereign defaults cause significant political implications in developing countries, such as the political conflict in the country and political isolation in a global political system that leads to adverse influences on the consolidation and a reduction in the level of liberal democracy (Adam and Karanatsis, 2018).

This study provides two main contributions in the international political economy literature. Primarily, this is the first paper that investigates the relationship between liberal democracy and external debt in recent and selected defaulted countries. Second, this is also the first paper which utilizes nine different political variables; political corruption, public sector corruption, core civil society, civil liberties, clean elections, government attacks on judiciary, government censorship effort, barriers to parties and freedom of academic and cultural expression.

The main purpose of this study is to investigate the political conditions of selected countries; Argentina, Dominican Republic, Ecuador, Indonesia, Pakistan, Russia and Venezuela, for the period after their economies defaulted. It was the data availability that led us to the selection of these countries. For this purpose, we examine the political changes, particularly the change of liberal democracy in these countries, which defaulted in the period of 1990 – 2016, using datasets from the World Bank Indicators and V-Dem. The essential argument is whether sovereign default or debt crisis directly generates political conditions towards an authoritarian regime in all economies that are defaulted or not. In other words could debt crisis or defaults trigger major changes in liberal democracy in these societies?

We find evidence that there were no significant changes in Argentina, after its both first and second defaults, and in Indonesia after its second and third defaults. Dominican Republic and Indonesia experienced a slight increase only after their first defaults; Ecuador and Pakistan had a weak decrease in their liberal democracy; and both Russia and Venezuela experienced continuous decrease in their liberal democracy after their defaults.

The remainder of this paper is organized as follows. Section 2 presents the literature review. Section 3 describes the data set. Section 4 investigates and analyses the overview and assessment of the selected countries that are presented. Section 5 concludes.

## 2. Literature Review

The relationship between either debt crisis or defaults and political conditions has always drawn a notable attention from both by political science and economics literature. However, we only reviewed the modern economics literature, particularly based on the significant debt crisis in the early 1980s that substantially affected the world economy.

To begin with, we should refer to the previous centuries experiences. Lindert and Morton (1989) presented the sovereign debts historically and start by presenting the lending wave of the 1820's as first, which ended with most Latin American governments defaulting to some degree. Then around 1850s Latin American and the Eastern Mediterranean countries (Turkey, Greece, and transiently Egypt) fell into defaults. By the end of the 1880s a smaller lending wave came, which seriously hit Argentina and a little less Colombia. The 1910s introduced wholesale defaults in the Mexican Revolution, the Russian Revolution, and half of the Ottoman Empire. Then the greatest wave came in the 1930s, in which essentially all of Latin America, most of Eastern Europe, Turkey and Chine defaulted (Lindert and Morton, 1989). Sachs (1989) cited that the National Bureau of Economic Research (NBER) historical records show that moratoriums played an important role in the resolution of earlier

crises. The writer points out that the debt crisis of the 1930s was managed with a one-sided debt rescheduling in most Latin American countries.

When we come to 1980s, World Economic and Social Survey 2017 asserted that the sovereign debt crises of 1980s were set off by the call of Fed in October 1979 to raise interest rates steeply. It had a direct impact on debt service since much of the external debt in developing countries had been contracted at floating interest rates. A sharp drop in non-oil commodity prices compounded the difficulties. Arezki and Brückner (2010) examined the way commodity exporting countries react to international price booms and come to the conclusion that there is a significant difference in the way different political regimes managed the situation.

Sachs (1989) denoted the genesis of 1980s debt crisis as a combination of policy actions in the borrower states, macroeconomic shocks in the world economy, and a noteworthy spurt of uncontrolled bank credits between 1979 and 1981. The global economy was set on lower growth, higher interest rates, declining terms of trade for commodity exporters and protectionism. Most of the developing countries followed the same vicious pattern of policy actions. They were dealing with chronically large fiscal deficits, balance-of-payments difficulties, and overvalued exchange rates. Under restrictive monetary policies, they targeted to cut down inflation, which resulted in both high nominal and real interest rates. These ill-judged domestic policies, when combined together with external problems, created an overreliance on borrowing from international banks. For developing countries, this meant higher costs of borrowing and reduced demand for their exports (Sachs, 1989).

In August 1982, Mexico announced that it would not be able to continue debt service as scheduled unless it received help through new loans or rescheduling. After Mexico's default, a decade-long process started. While circumstances varied from region to region and from country to country, in general, large current account deficits made it impossible to continue the service of debt. Most of the Latin American countries, many African countries and some countries in Asia suffered from debt overhang until the early 1990s. Ocampo (2013) argued that the sovereign debt crisis of the 1980s as the most traumatic incident in Latin America's economic history, having been responsible for the region's "lost decade" of development. It took even more time for sub-Sahara to recover. According to Ocampo, the end of the debt crisis came, in practical terms, when debt relief was agreed and international investors returned to the region.

The history of sovereign states borrowing money and the financial crisis related to it, has been a long one. Tomz and Wright (2012) described sovereign debt as one of the first financial assets ever to be traded and indicate that it continues to be a significant part of global financial assets. Borenzstein and Panizza (2008) underlined that unlike private debt, sovereign immunity protects the debtors and loosens the rights of creditors. In the case of a private firm, creditors have well-defined legal rights that secure them. So if the firm goes bankrupt, and is unable to pay its total debt, creditors may claim rights on the company's assets. But under the act of sovereign immunity, it becomes almost impossible to enforce a debt and governments are usually limited to suit against defaulters. But the literature supports that sovereign debt markets still prevail because costs of sovereign default cause a motivation for the borrowers to repay their debts.

In describing state defaults Tomz and Wright (2012) made a comparison between the narrow and broad version of definitions. In the narrow definition, a violation of the terms of a debt contract such as a failure to meet a principal or interest payment on the due date identifies a sovereign default. (S&P Global Ratings, 2016). In the broader version of Standard and Poor's, Beers and Chambers (2006) included the offer of a "voluntary" revision

of contract with less favorable terms than the original issue and this definition is in line with the concept used by other credit rating agencies.

There is a broad consensus on what the costs of default are, but most of the sovereign debt literature is based on the economic costs of sovereign defaults. To name some; reputational costs, view on sanctions (or default and its impact on international trade) and the economic costs on the domestic banking system make up the economic side of the problem (Borensztein and Panizza, 2008). Although these views have a well-identified theoretical and historical background, the political reflections of state defaults have been examined much less.

There is also a line of literature that focuses on quantitative models of sovereign default. Following the seminal work of Eaton and Gersovitz (1981), Novelli (2015) cited the names of Aguiar and Gopinath (2006) and Arellano (2008) and based his study on the theoretical attitude of Battaglini and Coate (2007, 2008) and the political economy background of Tirole (2012). Novelli's (2015) work is important since it suggests four stylized facts that stimulate the sovereign default model to spread out to political economy.

Jeffrey Frieden's prominent book emphasizes how economic policies change the national development patterns. The idea that every nation has its own growth path or the emphasis on the national characteristics of the sovereign states also carries the argument of political economy: It is the political institutions that matter in the economic development. Frieden's asserted "government actions are the response of policymakers to sociopolitical pressures brought to bear upon them by interest groups" (Frieden, 1991). He argued that why and how individuals and interest groups reciprocally influence each other in the politic field, which brings him to explain and break up the core of democracy and authoritarianism.

This brings us to the notion of democracy. Defining the determinants of democracy has been an issue of scholars in many fields; historians like Huntington or political scientists like Lipset and Rustow. Both theoreticians and practitioners have subscribed Lipset's modernization theory that as a country becomes more prosperous greater democratization will follow automatically very much. Major studies on democracy revised Lipset's modernization theory that focuses on developing countries of the 1980s and 1990s. Therefore it is clear that the relationship between economic crisis and democracy also covers a vast amount of area that interests both economists and political scientists. Examining through related literature shows different starting points of causality between these terms. Acemoglu et al. (2008) presented a similar but different line of relationship between income and democracy, and define this "statistical association" as the momentous milestone of modernization theory (Acemoglu et al. 2008). Combes and Ouedraogo (2014) cited from Huntington's "third wave" democratization and state that poverty hinders democratic development significantly. Therefore what hinders economic development also hinders the future of democracy (Combes and Ouedraogo, 2014). However, Acemoglu et al. (2008) indicated the shortcomings of modernization theory and conclude that countries, which grow faster, do not show any greater tendency to become democratic or to consolidate the democracy that already exists.

A more backdated study by Haggard and Kaufman (1997) showed the economic crisis of Latin American and Asian countries and their consequences on democratic transitions also from the political economy perspective. Within this framework, they give two defining characteristics of the economic crisis of the 1970s and 1980s. The first one is the aggregate economic setback, seen by the declining growth and accelerating inflation levels. They also highlighted the fact that all groups are affected differently from the crisis, one group may gain while the others lose. The other characteristic was that crises of the 1970s and 1980s could not fix themselves. And

because these countries were performing poorly, the bargaining power of authoritarian incumbents was decreasing and the strength of oppositions was enhancing. This leads them to the conclusion that economic crisis enabled democratization in these countries (Haggard and Kaufman, 1997).

Acemoglu and Robinson (2001) led the drive for providing the theoretical motive behind the forces that lead to polity transitions and conclude that political transitions result from the conflict among a rich elite and the citizens made up of poor. Therefore, both authoritarian coups and democratic revolutions are more likely to occur in times of economic (or political) crisis. Acemoglu and Robinson (2006) added if international trade and financial integration are hindered democracy cannot be solidified. Their argument is based on a framework in which nondemocratic countries are labor abundant, political conflict is between a rich capital owning elite and the poor labor owning citizens, and inequality is sufficiently high that the elite use repression to stay in power (Acemoglu and Robinson, 2006). If this country suddenly faces a halt of international capital and defaults in its external debt, the disruption of trade and lack of foreign credit will carry the country to economic isolation. By the convention of trade theory, this will make the relatively abundant factor owner of workers to gain less, and the relatively scarce factor owner of capitalists to gain more. This in turn, changes the income inequality in favor of capitalists. However, as inequality gets even higher, democracy might threaten or frighten the ruling elite more, since they will face highly adverse policies, such as punitive rates of redistribution if they democratize. Thus the rich elite may be more willing to use power, either to keep the nature of an existing autocratic regime or to restrict the power of the poor within a democracy. Hence, when an economic crisis ends with a sovereign default, the setting becomes ready for deterioration in the level of democracy (Acemoglu and Robinson, 2006).

Adam and Karanatsis (2018) argued some of the related literature that follows the framework of Acemoglu and Robinson (2001, 2006) but underlines that the empirical results do not necessarily follow the theoretical predictions. They state that a large part of the literature shows a higher probability of coups as a result of economic shocks. In addition, Adam and Karanatsis (2018) suggested that a significant number of contributions fail to find any effect. Their own findings conclude that sovereign defaults are interrelated with autocratic regime switches. Their paper draws upon a sample of 105 sovereign states and shows that a sovereign default causes a considerable fall in the level of democracy.

## 3. Data

Political changes take some time if there is a stable economic circumstance. However, a profound economic crisis could cause significant political democratic changes according to Lipset (1993). Although every country has its own economic, political and social characteristics, some of them react to an economic crisis, in the same way, others do not. Hence, data we used in our study gives an opportunity to present a broad perspective on each country's political environments, individually. Our definition of developing countries depends on the UNCTAD's country group classification in January 2018 (UNCTAD, 2018). According to liberal democracy and external debt data from V-Dem and World Bank Indicators, respectively, one could see that liberal democracy in Russia, Ecuador, and Uruguay fell down significantly after a default in their economy. Default dates are obtained from S&P Ratings Report (2017) and are presented in Table 1 and showed as a black straight line in the following figures.

*Table 1. Default Dates of Selected Countries*

| Country | Date of Default |
|---|---|
| Russia | January, 27, 1999 |
| Pakistan | January, 29, 1999 |
| Indonesia, first default | March, 29, 1999 |
| Indonesia, second default | April, 17, 2000 |
| Argentina, first default | November, 6, 2001 |
| Indonesia, third default | April, 22, 2001 |
| Venezuela | January, 18, 2005 |
| Dominican Republic | February, 1, 2005 |
| Ecuador | December, 15, 2008 |
| Argentina, second default | July, 30, 2014 |

Besides, Pakistan, Indonesia, and Argentina had a stable democratization process during their economies defaulted. There is an important situation for Venezuela and those they had a reduction in their liberal democracy before their defaults. In addition, only the Dominican Republic had a positive change after its economy gets into a default. The relationship between liberal democracy and external debt of the selected countries could be seen individually, in the following figures. We mainly utilize ten political indices, from the Varieties of Democracy. The indices are described in Coppedge et al. (2018):

### *Political Indices*

- **Liberal Democracy Index:** The index presents the importance of protecting individual and minority rights against the tyranny of the state and the tyranny of the majority. The liberal model takes a "negative" view of political power insofar as it judges the quality of democracy by the limits placed on government. This is achieved by constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks and balances that, together, limit the exercise of executive power. To make this a measure of liberal democracy, the index also takes the level of electoral democracy into account. The index is between 0 and 1.
- **Political Corruption Index:** The index includes measures of six distinct types of corruption that cover, both different areas, and levels of the polity realm, distinguishing between the executive, legislative and judicial corruption. Within the executive realm, the measures also distinguish between corruption mostly pertaining to bribery and corruption due to embezzlement. Finally, they differentiate between corruptions in the highest echelons of the executive (at the level of the rulers/cabinet) on the one hand, and in the public sector at large on the other.
- **Core Civil Society Index:** The index presents the level of the sphere of civil society lies in the public space between the private sphere and the state. According to this index, citizens organize in groups, which are called civil society organizations (CSOs) to pursue their collective interests and ideals. CSOs include, but are by no means limited to, interest groups, labor unions, spiritual organizations (if they are engaged in civic or political activities), social movements, professional associations, charities, and other non-governmental organizations.

The core civil society index (CCSI) is designed to provide a measure of a robust civil society, understood as one that enjoys autonomy from the state and in which citizens freely and actively pursue their political and civic goals, however, conceived.

- **Civil Liberties Index:** The index shows the level of civil liberty, which is understood as liberal freedom, where freedom is a property of individuals. Civil liberty is constituted by the absence of physical violence committed by government agents and the absence of constraints of private liberties and political liberties by the government.
- **Government attacks on judiciary:** Attacks on the judiciary's integrity can include claims that it is corrupt, incompetent or that decisions were politically motivated. These attacks can manifest in various ways including, but not limited to prepared statements reported by the media, press conferences, interviews, and stump speeches.
- **Government censorship effort:** Indirect forms of censorship might include politically motivated awarding of broadcast frequencies, withdrawal of financial support, influence overprinting facilities and distribution networks, selected distribution of advertising, onerous registration requirements, prohibitive tariffs, and bribery.
- **Clean elections:** Free and fair connotes an absence of registration fraud, systematic irregularities, government intimidation of the opposition, vote buying, and election violence.
- **Barriers to parties**: Barriers include legal requirements such as requirements for membership or financial deposits, as well as harassment.
- **Freedom of academic and cultural expression:** This data based mainly on the assumption, which is, academic activities and cultural expressions are severely restricted or controlled by the government, and censorship and intimidation are frequent. Data measures the level between scales of these expressions weakly, which means academic freedom and freedom of cultural expression are practiced occasionally, but direct criticism of the government is mostly met with repression; and fully respected that is there are no restrictions on academic freedom or cultural expression. The freedom level represented between 1 and 4, from weak to full, respectively.
- **Public sector corruption index:** The index shows, to what extent do public sector employees grant favors in exchange for bribes, kickbacks, or other material inducements, and how often do they steal, embezzle, or misappropriate public funds or other state resources for personal or family use.

***Debt Index***

- **External Debt:** Total external debt stocks to gross national income. Total external debt is a debt owed to on residents repayable in currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. GNI (Gross National Income) is the sum of value added by all resident producers plus any product taxes (fewer subsidies) not included in the valuation of output plus net receipts of primary income from abroad.

*Table 2. Details of dataset*

| Variable | Unit/definition | Data source |
|---|---|---|
| Liberal Democracy Index | Index/ v2x_libdem | V-Dem |
| Political Corruption Index | Index/v2x_corr | V-Dem |
| Public Sector Corruption Index | Index/v2x_pubcorr | V-Dem |
| Core Civil Society Index | Index/v2xcs_ccsi | V-Dem |
| Civil Liberties Index | Index/v2x_civlib | V-Dem |
| Clean Elections | Index/v2xel_frefair | V-Dem |
| Government Attacks on Judiciary | Ordinal/v2jupoatck, *_osp, *_ord | V-Dem |
| Government Censorship Effort | Ordinal/v2mecenefm, *_osp, *_ord | V-Dem |
| Barriers to Parties | Ordinal/v2psbars, *_osp, *_ord | V-Dem |
| Freedom of Academic and Cultural Expression | Ordinal/v2clacfree, *_osp, *_ord | V-Dem |
| External Debt Stocks | Annual (% of GNI) | World Bank, WDI |
| Default Dates | Raw Data | Standard & Poors |

## 4. Country Analysis

### 4.1. Argentina

As a major trade partner, the devaluation in Brazil in 1999 triggered Argentinean economy for one of the most severe default in international debt with its unique political conditions. The country faced with an economic turmoil through the devaluation of the peso in 2001 and saw five presidents in two weeks. This significant economic change led to important social and political results via coming across to exceeding poverty in the country. Even in its 2001 crisis, Argentina did not change its election pattern, which held from 1880. However, political turnover existed at the first election and removed its government. According to Hatchondo and Martinez (2010), Argentina is the only one country, which had a continually low political risk before and high political risk after its default.

*Figure 1. Liberal Democracy Index and External Debt of Argentina*

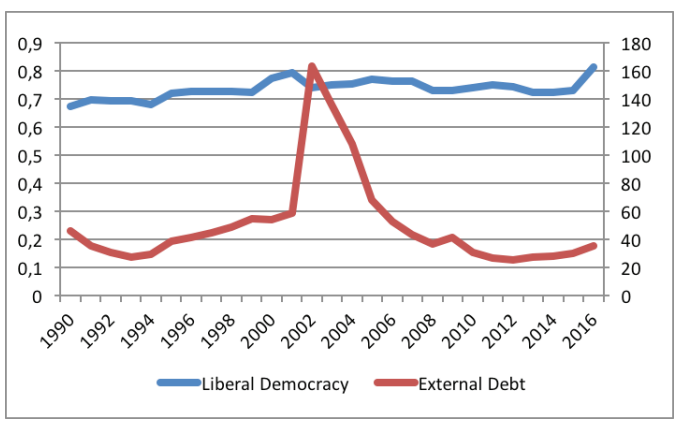
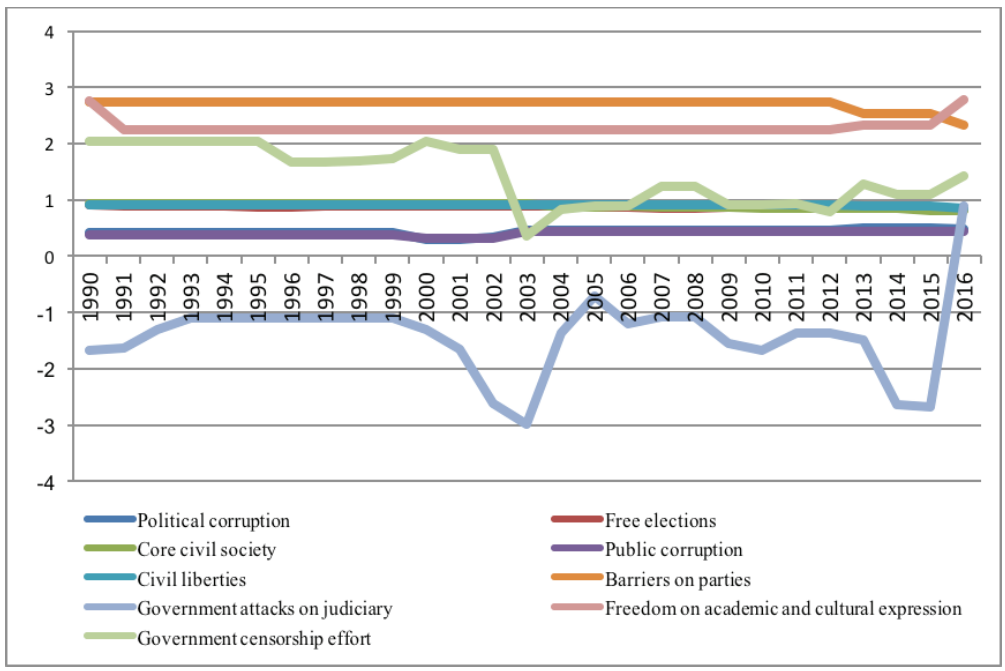


Figure 2 shows that while some political conditions responded in the same manner, some did not after the two defaults. Although political, public sector corruption, free elections, civil liberties, and core civil society remained at the same levels, barriers to parties tended to decrease and freedom of academic and cultural expression tended to increase after the second default. Government censorship effort decreased after the first default, however, tended to increase after the second default in 2014. The prominent fact in the figure is that government attacks on judiciary rose in short while after the two defaults in Argentina.

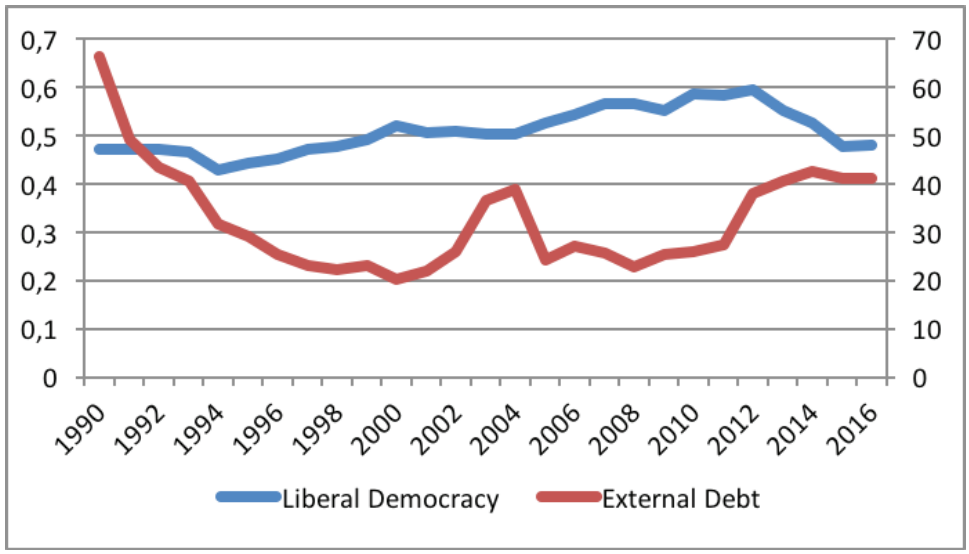
*Figure 2. Selected Political Indices of Argentina*




## 4.2. Dominican Republic

The long time in default, as the period of 1982-1994, Dominican Republic experienced severe economic environment until 1994. From this time to 2003, Dominican Republic had fostered its macroeconomic conditions by improving its fiscal accounts and debt profile through performing significant reform measure that enhances fiscal balances of the general government (Bhagoo and Watson, 2009). However, a notable fraud at the country's third largest bank, Banco Intercontinental led to a banking crisis, which made central bank to intervene in the bank and financed its payout deposits without any restriction. According to Erce (2012), the mismanagement of the banking crisis induced a debt crisis, such as the problems in the banking sector spread to other banks and made central bank to help banks, which had problems. These conditions generated an increase of the public debt and triggered depreciation in the currency and an inflation associated with the macroeconomic problems.

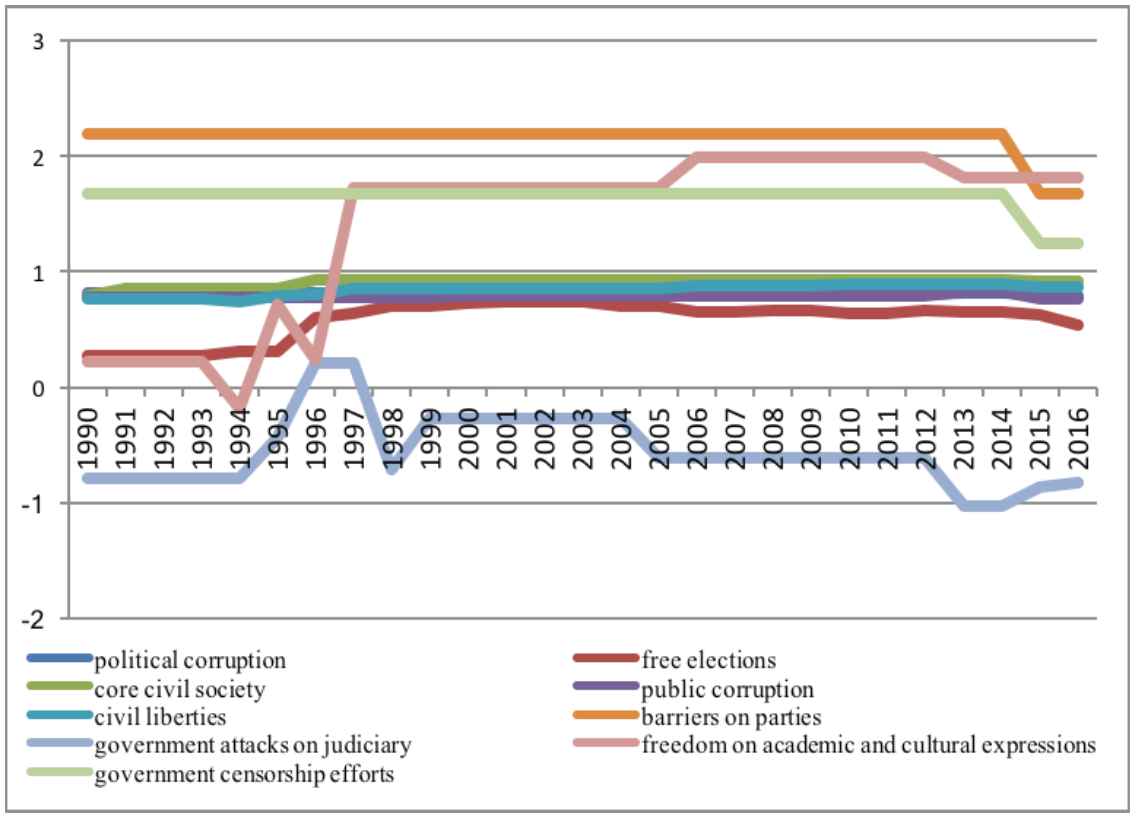
*Figure 3. Liberal Democracy Index and External Debt of Dominican Republic*




By 2003, Dominican Republic made a Stand-By Agreement with the IMF, consisting particularly reforms on fiscal, banking and electricity sectors. Furthermore, the fruitless of this program that could not achieve the aim of the single digit inflation through a tight monetary policy and political uncertainty remained until the Presidential election in 2004, made economic conditions unstable. By the next year's-beginning IMF approved a new agreement depending on its default (Rambarran and Bhagoo, 2005). However, as it could be seen from Figure 3, the liberal democracy index shows that default did not dramatically influence democratic conditions in the Dominican Republic.

Although the default in 2005 did not make any significant changes in the political environment in the Dominican Republic, only government attacks on judiciary decreased and freedom of academic and cultural expression increased slightly after the economic difficulty that the country faced with.

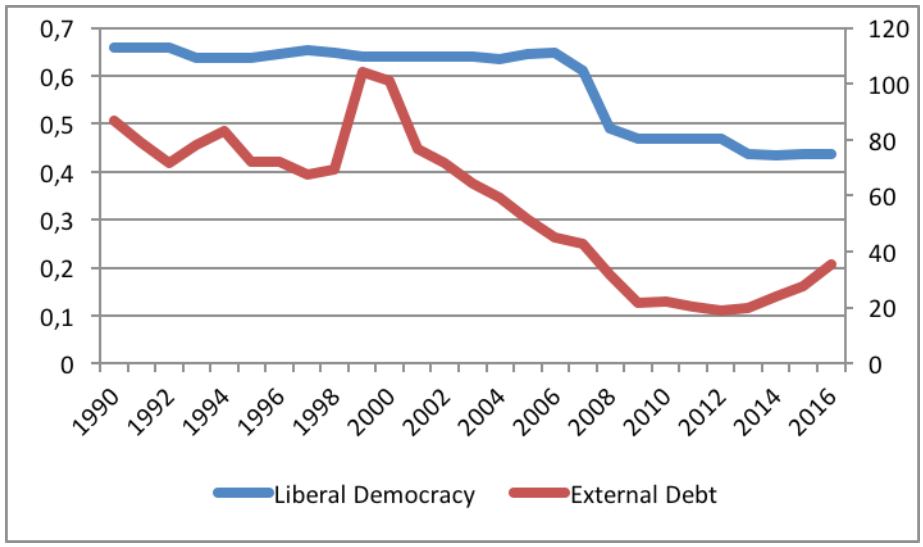
*Figure 4. Selected Political Indices of Dominican Republic*




## 4.3. Ecuador

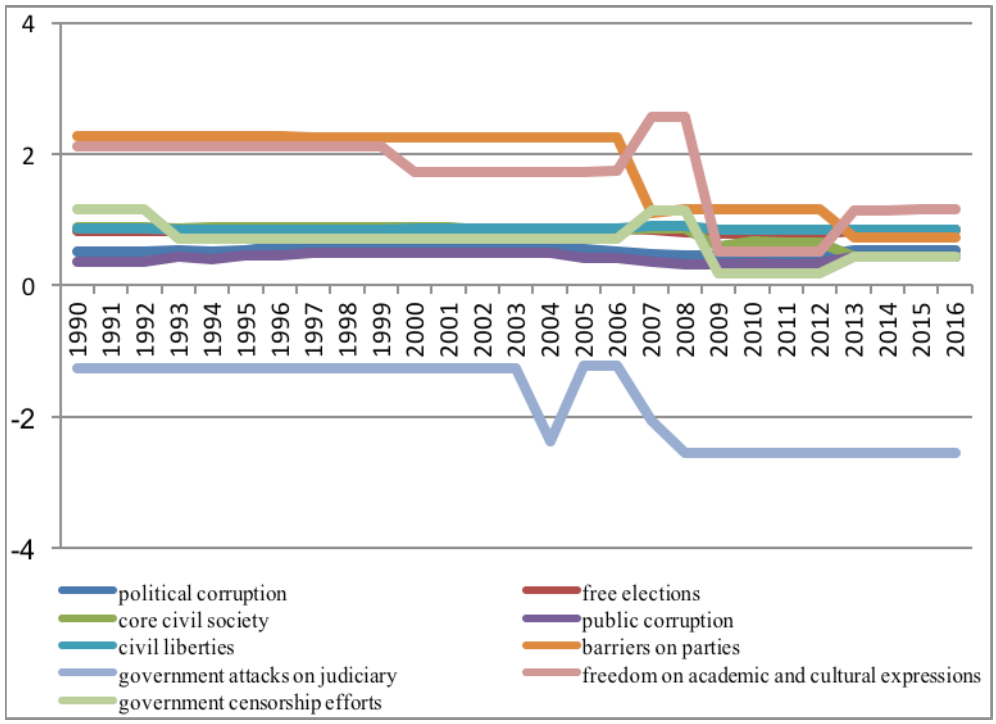
As the smallest producing oil producing country in OPEC (Organization of the Petroleum Exporting Countries), the oil earnings are the main part of its economy. Buchheit and Gulati argued that the presidential election that took place in 2006 generated default in 2008 (Buchheit and Gulati, 2009). Rafael Correa made his campaign to switch the money that Ecuador assigned to pay its external debts to the social programs. At the beginning of a new presidential period, Correa administration made an effort to legal excuse to form its debt policy change. "Illegitimate and immoral" characteristics of debt contracts according to the administration, which set the ground for the main difference factor of Ecuador's default from the others was its one-sided feature of the debtor (Vidal, 2017).

*Figure 5. Liberal Democracy Index and External Debt of Ecuador*




After a short time from the default, the Presidential referendum and a new constitution were held in Ecuador. The new constitution three months later after the default of date had a significant potential to recognize the marginalized citizens and to enhance a more democratic environment respectively to the previous one (Freedom House, 2011). However, Figure 5 shows that there was a sharp decline in liberal democracy in Ecuador following this period. The 2008 default of Ecuador generated a significant decrease in freedom of academic and cultural expression associated with a moderate decrease in government censorship effort and government attacks on the judiciary in the country. The other conditions remain the same as before the default period.

*Figure 6. Selected Political Indices of Ecuador*




## 4.4. Indonesia

Before the economic crisis that stroked Indonesia through a currency crisis, which occurred from devaluation in the rupiah in summer 1997, its political system was one of the most centralized political powers in the executive. There were no checks and balances to control and ability to veto for the authority and policy preferences of the president Suharto. According to MacIntyre (1998), these conditions increased the unpredictability of either political or economic policies. The action of the Suharto's closing of six sunken banks heats up the financial panic, which ended up with mass demonstrations and violence. After a year, Suharto resigned and his regime collapsed and international institutions, such as IMF and WB. Development organizations also played a critical role to implement political conditions via laws.

*Figure 7. Liberal Democracy Index and External Debt of Indonesia*

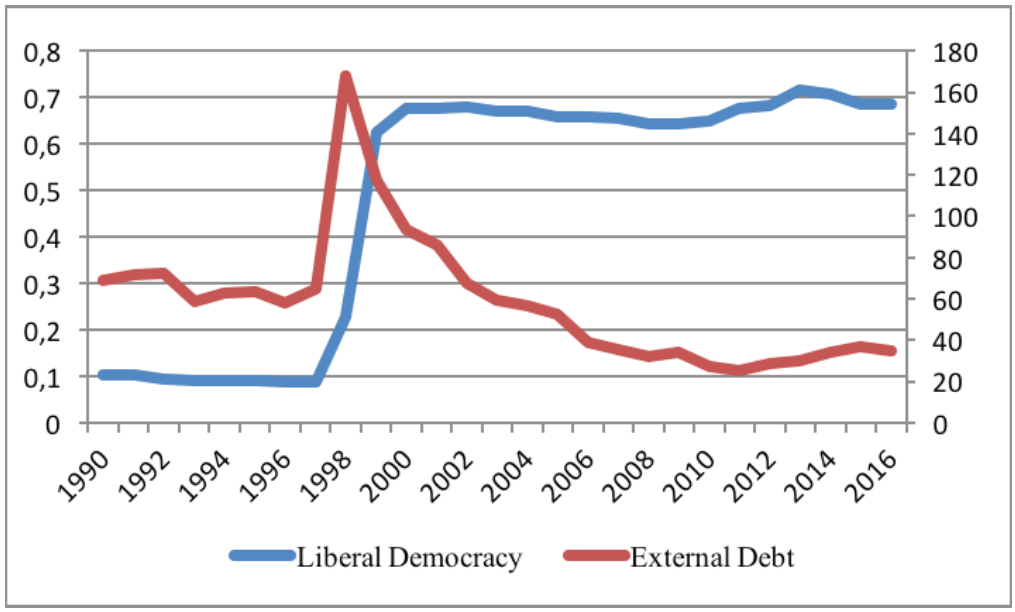
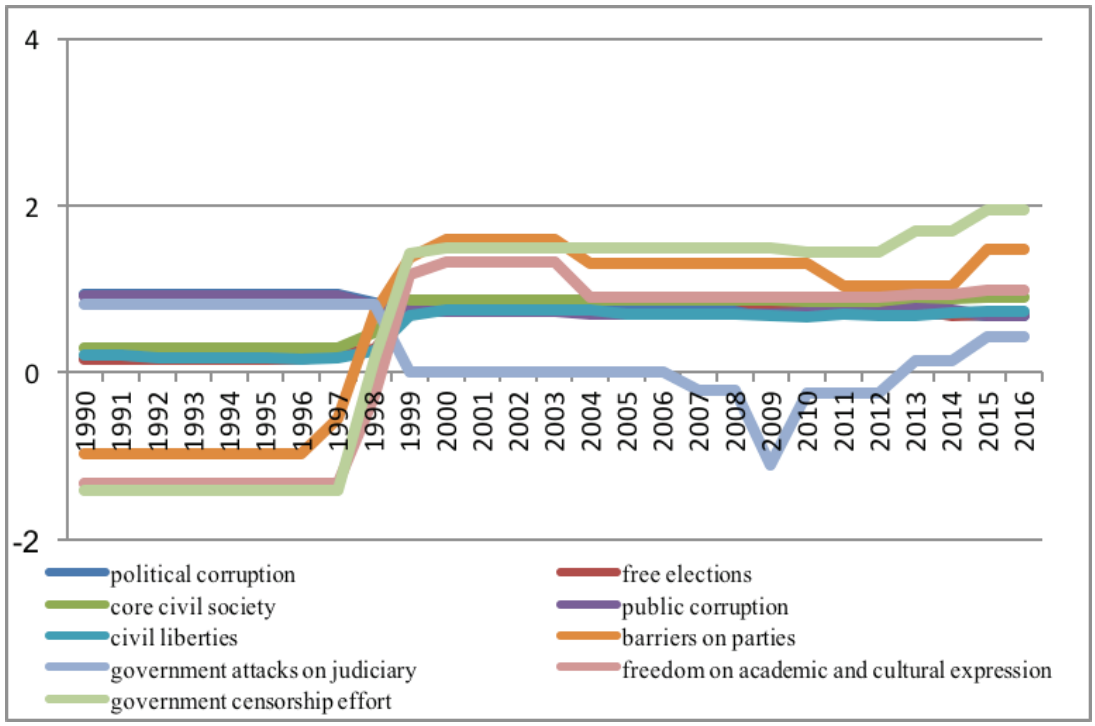



Figure 8 presents that, in a three-year period, Indonesia had three significant economic defaults in its history. Since the time span is narrow, it could be seen that the initial default had a huge impact on political conditions in Indonesia. Although government censorship effort and barriers to parties increased, core civil society, civil society and the freedom of academic and cultural expression also rose in a similar significant level. Free elections level remained at the same level during and after the default period; however, by 2004 it started to decrease. Government attacks on judiciary sharply fell by the first default. Only public sector corruption and political corruption remained the same after the default periods in Indonesia.

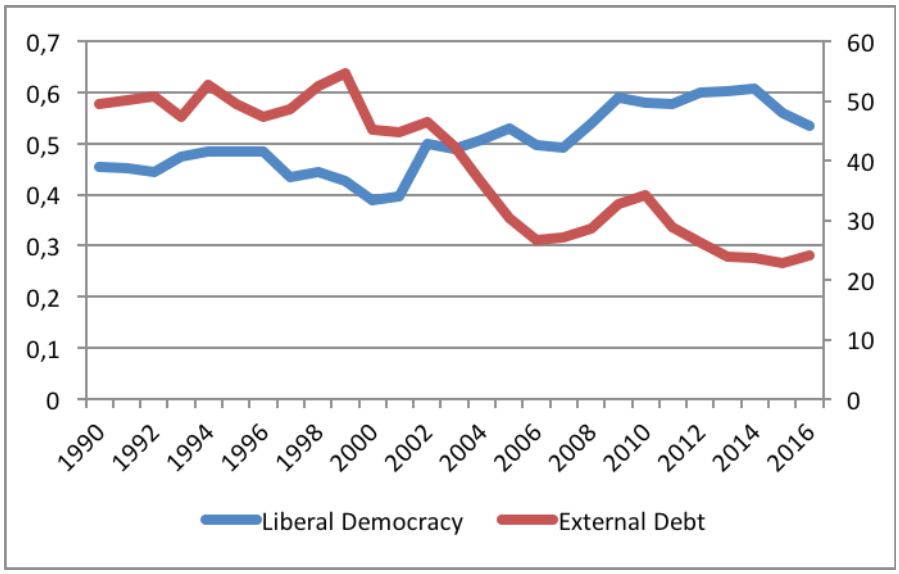
*Figure 8. Selected Political Indices of Indonesia*




### 4.5. Pakistan

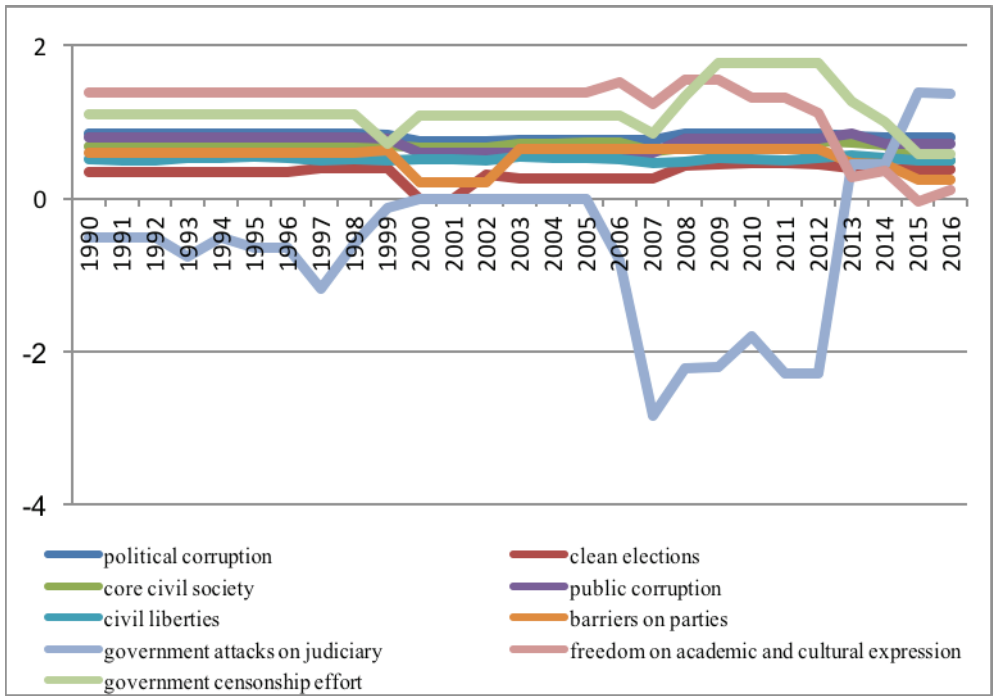
Since 1998, that Pakistan defaulted on its international debt, it's the good relations with international institutions and investors turned down and became discordant. The attempts of the Prime Minister of the period, Nawaz Sharif, to centralize political power and demolishing the checks and balances of the institutional structure and democratic regime generated an unrestful sociopolitical condition associated with the polarization in the sectarianism, unlawfulness, and corruption through society.

*Figure 9. Liberal Democracy Index and External Debt of Pakistan*




Nearly a year after, the military took the power under the control of the Chief of Army Staff, General Pervez Musharraf, who assigned himself as the Chief Executive. According to Zaidi (2005), the large sections of the middle classes of the Pakistan society supported the new regime for potential prospective policies due to political actors. Figure 12 shows that there was a gently increase in government censorship effort and government attacks on judiciary and barriers to parties and clean elections slightly decrease after 1999 default in Pakistan. All other political conditions held similar levels as before the default.

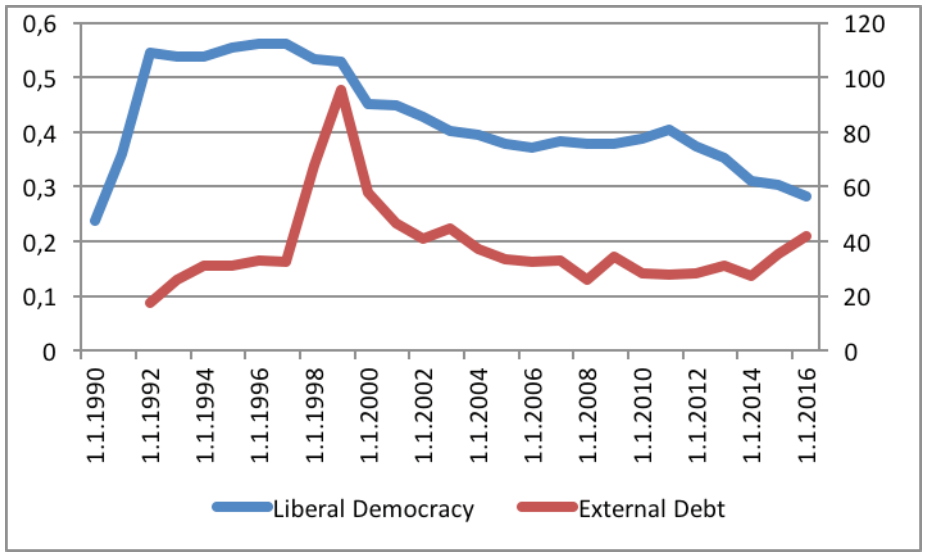
*Figure 10. Selected Political Indices of Pakistan*




## 4.6. Russia

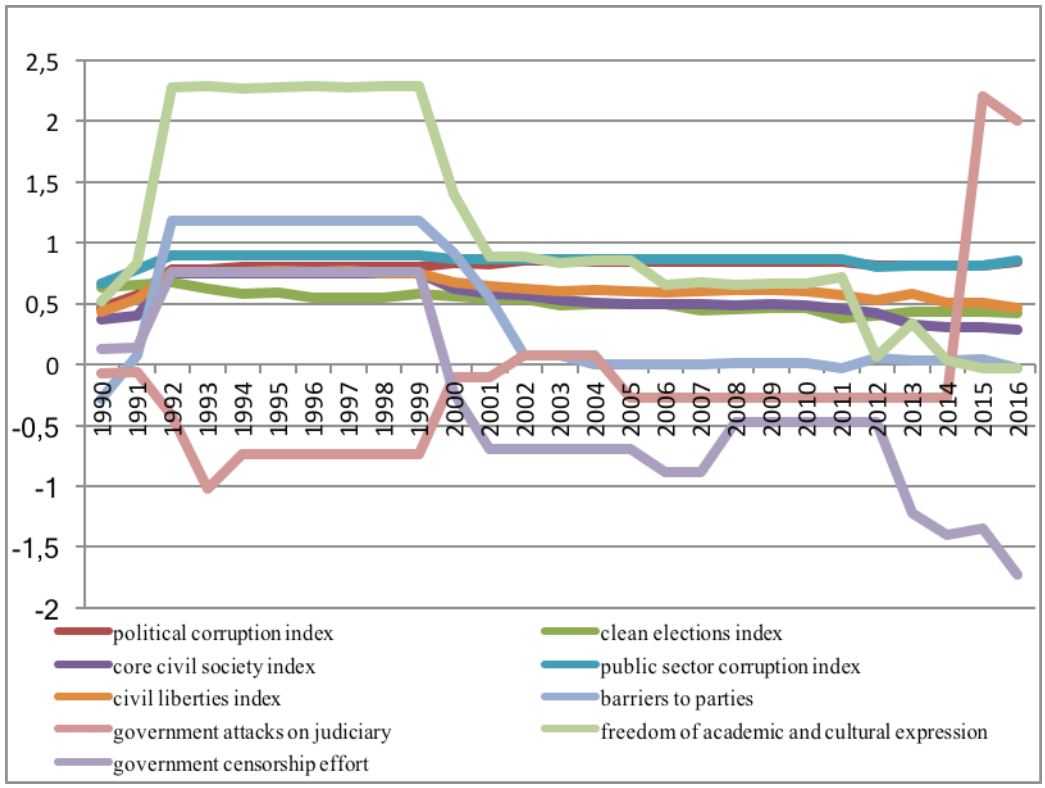
Although Russia was in stabilized Ruble that was anchored by the economic policy after 1995, the political disorder conditions and fiscal instability led to arise through a fragile economy. Besides, the Asian economic crisis had adversely affected the Russian economy that ended up with soaring domestic interest rates up and high unemployment. This default on government debt in Russia resulted as a decrease in the liberal democracy, which was already missing through characteristics of political parties that lacked alignment and mass participation and making towards a centralization of the political power. According to Petukhov (2006), the response of the Russian society to the severe economic conditions after the 1998 default, did not trigger mass protests, led to small political protests, such as rallies, strikes and the activities of political parties.

*Figure 11. Liberal Democracy Index and External Debt of Russia*




As it could be seen from the Figure 16, after the default period in Russia, although freedom of academic and cultural expression, barriers to parties, government censorship effect indices sharply fell down, civil liberties, core civil society and clean elections indices smoothly decreased. While political corruption index had a moderate increase, there is no evidence on the change of political sector corruption index. Furthermore, there is an increase in the government attacks on the judiciary in Russia in this period.

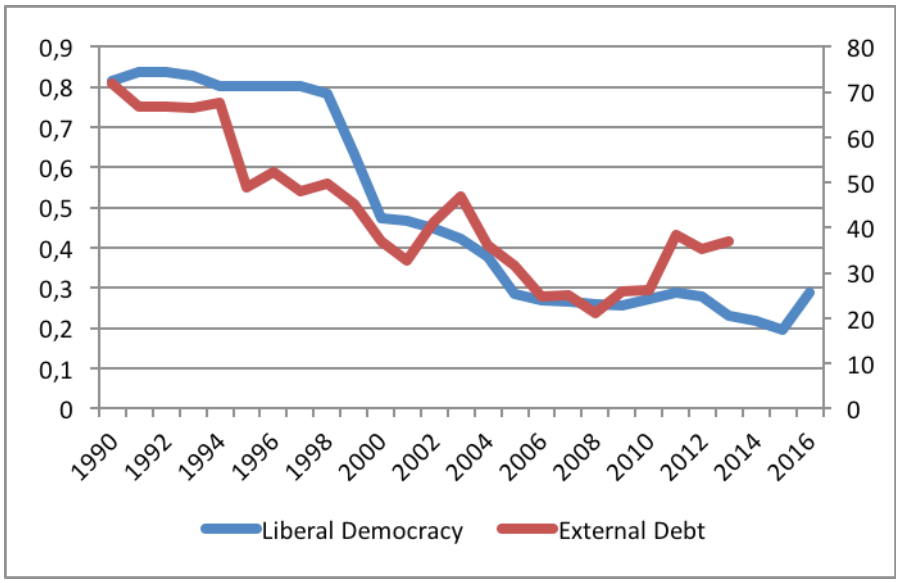
*Figure 12. Selected Political Indices of Russia*




## 4.7. Venezuela

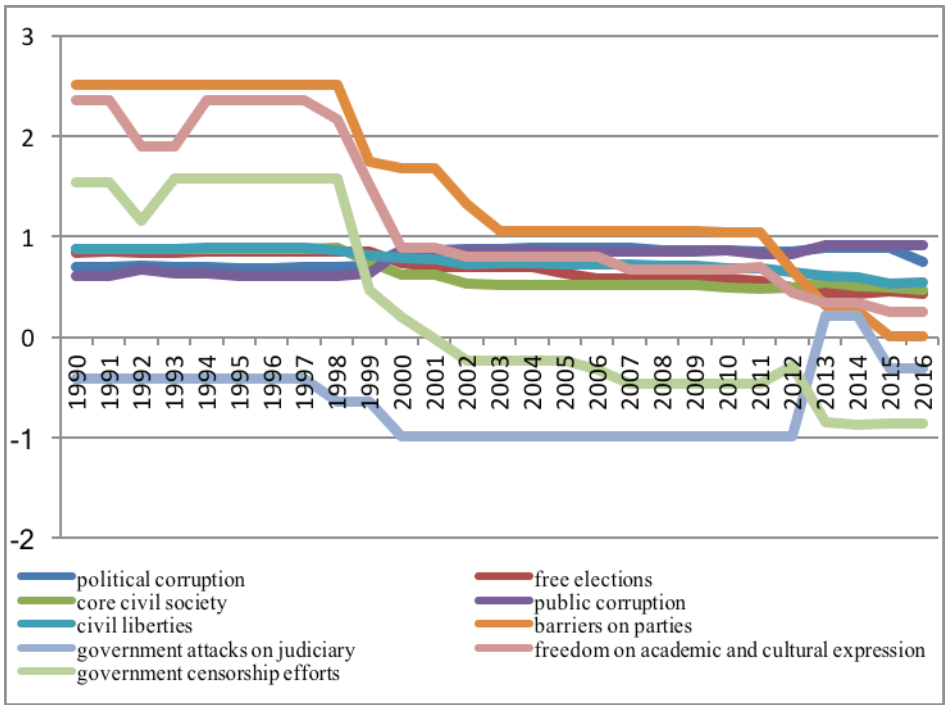
Venezuela met with its structural adjustment program in 1989 right in line with the Washington Consensus. As with many structural adjustment programs, macroeconomic stabilization was combined with economic liberalization. From 1989, until the emergence of Hugo Chavez's presidency in 1998 was marked by the continued stagnation of output and productivity growth. Chavez's economic policies of the first half of the decade focused on land reforms and nationalization drives (John, 2005). Hyperinflation has been one of the major weaknesses of the Venezuelan economy, and government enlarged price controls on basic goods to fight against it. Venezuelan economy depends largely on oil, therefore the drop in oil prices after 2014 has caused the economy unable to maintain the system of subsidies and price controls that functioned during the oil boom years.

*Figure 13. Liberal Democracy Index and External Debt of Venezuela*




After Chavez's death in 2013, his chosen follower Maduro devaluated their currency devaluation in a battle with the economic crisis. In August 2018 Venezuela removed five zeros from its currency, and most of the bonds issued in the international capital markets by the Republic of Venezuela and its state-owned oil company, Petróleos de Venezuela, have now fallen into default. Figure 22 showed that there was no considerable change in the political environment after the 2005 default in Venezuela. All conditions remain the same as before the default except a weak decrease in civil liberties.

*Figure 14. Selected Political Indices of Venezuela*




## 5. Concluding Remarks

This paper studies the political consequences of debt crisis and sovereign defaults of selected countries, which defaulted in the period of 1990 – 2016. In line with that aim, we investigate whether debt crisis or defaults could induce major changes in liberal democracy in these countries. Using liberal democracy and external debt (% of GNI) data from V-Dem and World Bank Indicators, our findings respectively show that after the default dates, political conditions in Argentina led to an initial decrease and then sharp increase in government attacks on judiciary, and showed no other major changes. In Dominican Republic, there was only a slight decrease in government attacks on judiciary and freedom of academic and cultural expression increased. In Ecuador, while freedom of academic and cultural expression fell sharply, government attacks on judiciary and government censorship effort slightly decreased. In Indonesia, government censorship and barriers to parties sharply increased and government attacks on judiciary weakly decreased. In Pakistan, only government censorship effort and attacks on judiciary slightly increased. In Russia freedom of academic and cultural expression sharply decreased and attacks on judiciary weakly increased. In Venezuela only government censorship effort weakly decreased and there were no major changes in their other political conditions following their defaults. Our results imply that the characteristics of each country play an important role in their economic situation and political change, and it might be useful to examine these country specific characteristics for further study.

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United Nations, World Economic and Social Survey 2017: Reflecting on 70 Years of Development Policy Analysis.

# 3

# HUMAN DEVELOPMENT IN THE EURO ZONE PERIPHERY SINCE THE 2007-2008 CRISIS

*Aysel Arıkboğa*[1]

***Abstract***

*The aim of this paper is to analyse the outcomes of and the policy responses to the most recent crisis of financialised capitalism in terms of their impacts on human development in the Euro zone periphery. In this context three of the most severely affected countries -Greece, Portugal, and Spain- will be analysed with respect to various socio-economic outcomes. Regarding the policy responses to the 2007-2008 crisis, two distinguishing phases have been prominent. During the initial phase of the crisis, the implementation of expansionary fiscal policies along with the bailout packages for the financial sector led to an enormous rise in budget deficits and public debts. In the second phase, as the financial crisis transformed into a fiscal crisis, fiscal discipline policies have become prevalent practices once again. Compounded with the effects of the crisis the implementation of strict austerity measures severely affected people's well-being via unemployment risk, repression of wages and retrenchment of social expenditures.*

**Keywords:** *2007-2008 Crisis, fiscal policy, human development*

## Introduction

Albeit it has been a decade after the outbreak of the Great Recession, adverse impacts of the crisis could not be overcome fully yet. The crisis burst out in the USA in September 2007 and has affected a wide range of economies, notably in the European Union, since 2008 and was distinguished from the previous episodes of crises that originated in mostly emerging markets.

Since the emergence of the crisis, there has appeared a fruitful research regarding almost all aspects of the economy and the society. However, the impacts of the crisis on the human development indicators have been studied less, perhaps because of the perception that the problems of human development are more related to the developing world. The rationale behind this may be the fact that the developed countries have already achieved a significant progress in human development, particularly with respect to the indicators of the human development index. It is not the focus of this paper to explore neither the roots and the path of the 2007-2008 crisis nor the human development approach in depth; but to open up a discussion on the various indicators of human development process since the crisis.

More specifically, the aim of this paper is to analyse the human developmental impacts of the 2007-2008 crisis in the Euro zone periphery. The countries to be analysed will be the three of the severely affected economies, Greece, Portugal, and Spain, that have implemented austerity policies, particularly since the transformation of the financial crisis into a sovereign debt crisis. However, it will be pointless to focus solely on the human development index

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as these countries have already achieved high values of human development index for decades. Rather, indicators other than the components of the human development index will be explored in order to analyse the socio-economic effects of the crisis in these countries. So as the indicators of the human development index would not be adequate per se for the evaluation of the impacts of the crisis on human development; indicators such as income inequality, labour income share, unemployment, and severe material deprivation rate will be taken into account. The devastating impacts of the crisis compounded by the effects of the austerity policies, eventually, bring out social effects along with the economic ones. Besides the resemblance of these countries in many respects it should be evident that each country has its own dynamics. However, the responses to the crisis around the world not alone in Europe have had many commonalities. Retrenchment in public expenditures, reduction in public sector wages, decreasing employment, and increasing privatisation were among the significant ones. In this framework, the socialisation of the costs of the crisis and the state of the human development will be examined via the analysis of the functional classification of the public expenditures and the composition of the tax revenues.

Evaluating the impacts of the crisis on human development is a challenging task; as there are difficulties in measuring human well-being because of data availability problems and also for the reason that these effects can be better analysed in the longer term. However, basic indicators regarding inequality, labour markets, and poverty along with the fiscal policy stance after the crisis can provide a general view of the issue. The organisation of the paper will be as follows. In the first part human development approach will be discussed briefly. In the second part human developmental impacts of the 2007-2008 crisis will be analysed for Greece, Portugal, and Spain. In the third part, the role of the governments during the crisis will be explored via the analysis of the composition of the fiscal policy. And the final part concludes.

## Human Development Approach

Amartya Sen's views on development have significant impacts on the Human Development Approach (HDA) which has been widely accepted as a radical alternative to the predominant neoliberal paradigm. The evaluation of the development process via indicators other than merely growth objectives or industrialisation strategies and focusing on people who will achieve these goals has been perceived as a serious turning point in development thinking. Sen emphasised on the role of freedom in the development process. However, Sen's view of freedom is basically related to freedom in the markets in terms of free exchange of thoughts or labour or any other thing. To quote from his seminal book Development as Freedom; "The freedom to enter markets can itself be a significant contribution to development, quite aside from whatever the market mechanism may or may not do to promote economic growth or industrialization." (Sen, 2000, p. 7). Accordingly, smooth functioning of markets can pave the way for development. This perception of the role of markets raises questions on whether the HDA can be interpreted as a real paradigm shift. The compatibility of the HDA with the neoliberal approach is pointed out by Jolly (2003) as; "Both human development and neo-liberalism share many common roots, most notably in the liberal economic tradition, which emphasizes the fundamental importance of individual choices and the value of well-functioning markets to enable individuals to exercise these choices." (p. 108).

The United Nations Development Programme (UNDP) launched the first Human Development Report (HDR) in 1990. The outputs of the reports have made a tremendous impact on debates about the state of the human development each year when published since then. It is noteworthy that human development is more related to less developed countries since the widely accepted measure of human development -the human development index- covers

only the basic dimensions of health, education, and income. The indicators of each of these dimensions have changed throughout the years; the most recent change has been in 2010 and the indicators included in the index have been life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income (GNI) per capita respectively since then. The index was defined as a composite measure of these basic three dimensions that enables to evaluate and compare the process of development through a more comprehensive perception than focusing merely on income (United Nations Development Programme, 2010, p. 13). It is noteworthy that all of these indicators are already at very high levels in the developed countries compared to the underdeveloped ones. Therefore, it is difficult to assess the human developmental impacts of the crisis in the developed countries solely by focusing on the components of the human development index. However, the global crisis affected predominantly the developed countries, particularly in Europe and the economic outcomes of the crisis have had severe social impacts. In this framework, the most known cases of the crisis affected countries in the Euro zone periphery will be analysed with respect to indicators of human development other than the ones included in the index as these countries have already been ranked in the very high human development index group.

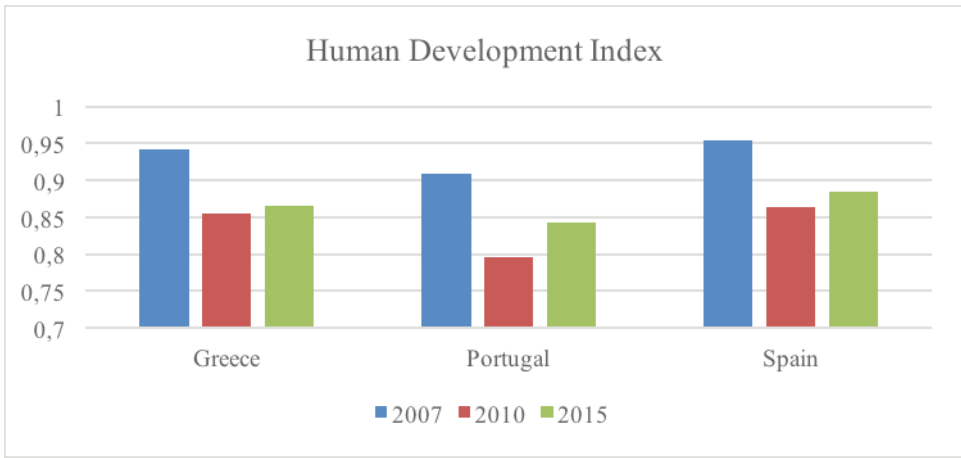
## Human Developmental Impacts of the 2007-2008 Crisis

Because of its prolonged economic and social effects, 2007-2008 crisis is generally defined as the most severe crisis since the Great Depression. However, it is noteworthy that none of the themes of the Human Development Reports (HDRs) have been devoted to the impacts of the crisis on the human development process. Although there has not been a HDR dealing exclusively and profoundly on the effects of the crisis; some aspects of the issue were mentioned briefly in these reports. For example, 2010 HDR emphasised on the poverty and the income effects of the crisis (United Nations Development Programme, 2010, pp. 78-83); 2013 HDR pointed out to the possible negative impacts of the crisis on less developed countries due to fiscal consolidation in the affected developed economies (United Nations Development Programme, 2013, p. 21). Even though it is a compelling task to assess the human developmental impacts of the crisis, it is also very crucial to open up the issue for discussion in order to view the real impacts on society. For example, increasing unemployment rates have been one of the serious outcomes of the crisis that cannot be perceived just as "economic" indicators; affecting households via multidimensional aspects ranging from deprivation to increased stress for both the parents and the children.

Human development index values in Greece, Portugal, and Spain can be viewed respectively in Figure 1. The reference years are chosen as 2007, 2010, and 2015; in order to compare the values of the index before the emergence of the crisis, during the most severe year of the crisis, and for the most recent available data when this paper was written. However, it is important to note that it is actually misleading to compare the values of human development index for different years since the education and the standard of living components of the index were changed in 2010.[2] Albeit this factor the comparison provides a rough estimate of the implications of the crisis for human development by comparing the values of the human development index in pre-crisis, severe crisis and the aftermath of the crisis years. Accordingly, the decrease in the human development index could not be compensated yet; the values for all of the three countries in 2015 are below the pre-crisis years.

2 Please see United Nations Development Programme (2010, p. 15) for the relevant modification.

*Figure 1: Human Development Index*




*Source: United Nations Development Programme (2009, p. 171), United Nations Development Programme (2010, p.143), United Nations Development Programme (2016, p. 198).*

The crisis of financialised capitalism[3] was, initially, defined as a global financial crisis. However, it severely affected the real economy in many aspects including the effects on the households. The transmission channels of the crisis, particularly when it transformed into a sovereign debt crisis and therefore a fiscal crisis, are defined to be through the labour market, the financial market, and the public sector. The impacts on households and hence on children through these channels have been basically via income losses as a result of rising levels of unemployment, increasing taxes and decreasing transfers, asset depletion, worsening conditions in the quality of public services along with the problems of access to these services, decreasing consumption levels, increasing stress, problems related to nurture and care, social exclusion. (Natali, Martorano, Handa, Holmqvist, & Chzhen, 2014, p. 8).

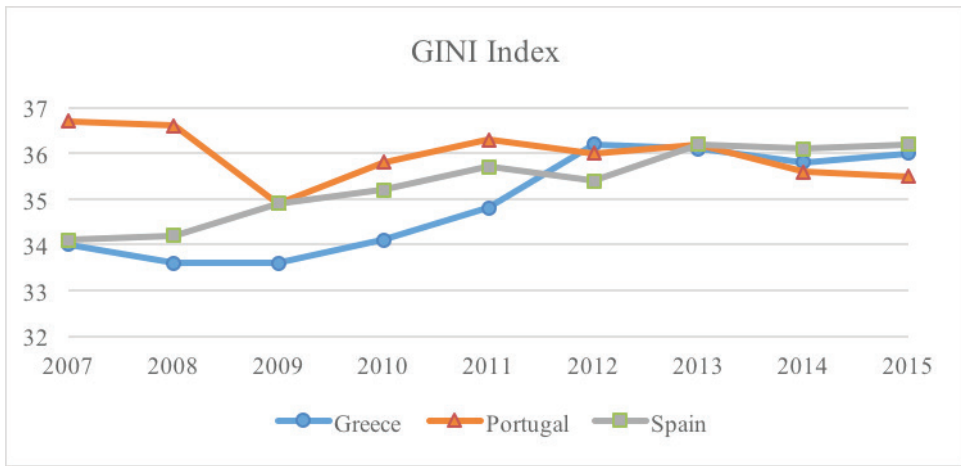
According to Fallon and Lucas (2002)[4] even crises that end in a relatively short time period, may produce long-term effects with some negative impacts continuing also following the recovery period, basically for three factors: "First, some workers who lose their jobs during a crisis may not be reemployed in the same field during the recovery. Second, families forced to liquidate assets to smooth consumption may be unable to regain their former livelihood. Third, any declines in nutrition, health, and continuity of schooling may have long-term consequences for labor productivity." (p. 42). The first one of these factors is both linked with income losses and also personal dissatisfaction because people may not work at jobs that they enjoy. This has also impact on the second and the third factors. Furthermore, these deteriorating impacts on labour productivity have long-term effects on economic growth and more than that economic and social development process may be harmed.

3 In this paper, the term financialised capitalism signifies the increasing role of finance in the process of capital accumulation and also emphasises on the link between the financialisation and the crisis. For an analysis of the term please see Lapavitsas (2009) where the unfolding of the crisis is attributed to the combined effects of investment banking and financialisation of household income. Lapavitsas (2009) states that; "Thus, the crisis is directly related to the financialisation of workers' personal income, mostly expenditure on housing but also on education, health, pensions and insurance." (p. 115). Therefore, defined as the basic dimensions of human development index; health, education, and income have been seriously affected in the process of financialised capitalism.

4 The emerging market crises of the 1990s occurred in Argentina, Indonesia, Malaysia, Mexico, Republic of Korea, Thailand, and Turkey were analysed with respects to their impacts on labour markets, household incomes, poverty, and social spending in the paper.

Increasing inequality is a significant outcome of the crisis, which may occur as a result of the crisis conditions and/or the policy responses of the governments. The inequality levels in terms of the GINI index can be viewed in Figure 2; the GINI index increased in Greece, Portugal, and Spain particularly since 2009. There is a prominent rise in inequality during the initial phase of the crisis, notably in Greece and Spain. Meanwhile, Gini coefficient of equivalised disposable income was 30.0 in 2007, reached up to 31.0 in 2014 and was 30.5 in 2017 in the Euro area. (European Commission, Eurostat Database). According to the United Nations Development Programme (1990, pp. 10-11) there are two sides of human development: the formation of human capabilities which are directly enhancing human abilities (i.e. improved health or knowledge) and the use that people make of their capabilities which may be effective for work or leisure purposes. Regarding the deteriorating conditions in human development; increasing inequality is important in terms of both of the aspects of human development; the ones that are directly enhancing human abilities and the use that people make of their capabilities can be affected by this situation.

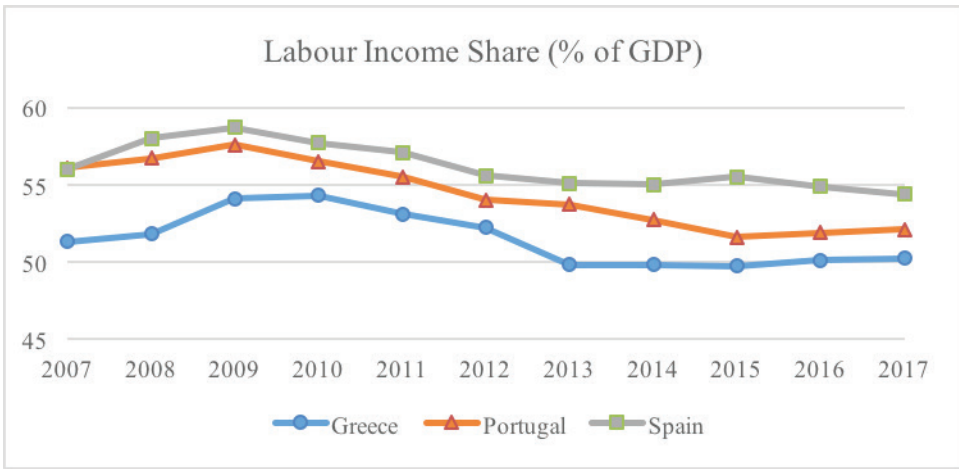
*Figure 2: GINI Index*




*Source: The World Bank, World Development Indicators Database.*

In connection with the rising inequality the labour income share in GDP has been decreasing in Portugal and Spain particularly since 2009 and in Greece since 2010; and as of 2017 the labour income shares are below the pre-crisis levels in all of the three countries (Figure 3).

*Figure 3: Labour Income Share in GDP*

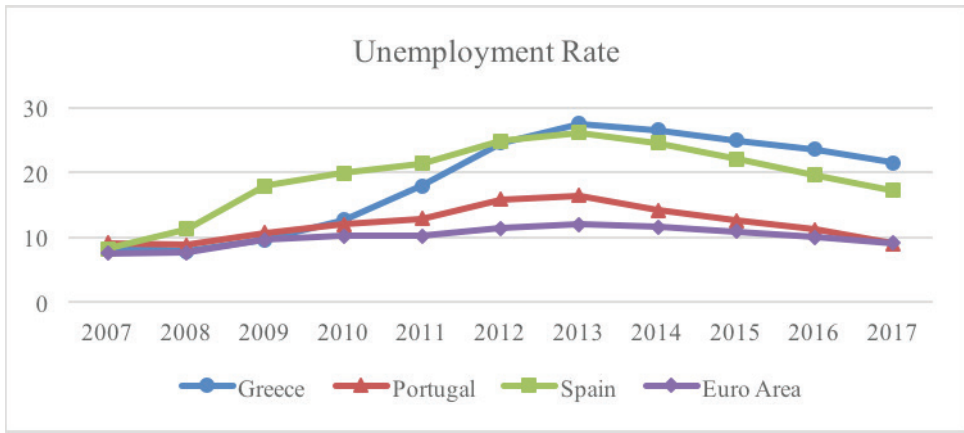



*Source: International Labour Organization, Statistics and Databases, ILOSTAT.*

According to the estimates of International Labour Organization (2016, p. 13); the average real wage index in four of the most affected countries -Greece, Ireland, Portugal, and Spain- decreased during the crisis and the decline in Greece has been at a considerable rate of almost 25 per cent between 2007-2015. According to the Organisation for Economic Co-Operation and Development's Economic Survey on Greece, "almost half of workers' salaries are below the poverty line for a family of four" (Organisation for Economic Co-Operation and Development, 2018, p. 33). In addition to all these severe conditions for wage earners, the crisis conditions also increased the attempts towards labour market flexibility which has actually been a common practice particularly since the 1990s and pave the way for precarious employment.

Soaring unemployment level has been the most devastating impact of the crisis on households and therefore on the well-being of not only the adults but also the children. Figure 4 depicts the unemployment rates for the three countries and the Euro area. Accordingly, Greece and Spain have significantly higher rates of unemployment in 2017 compared to the pre-crisis year. Portugal also has a higher rate of unemployment, but it is relatively low compared to that of Greece and Spain. The dramatic increase in unemployment rate has started in 2009, reached up to peak levels in 2013 in all of the countries observed, Greece and Spain have been the worst affected ones. Despite the partial recovery of the growth rates, unemployment has still been at significantly high rates.

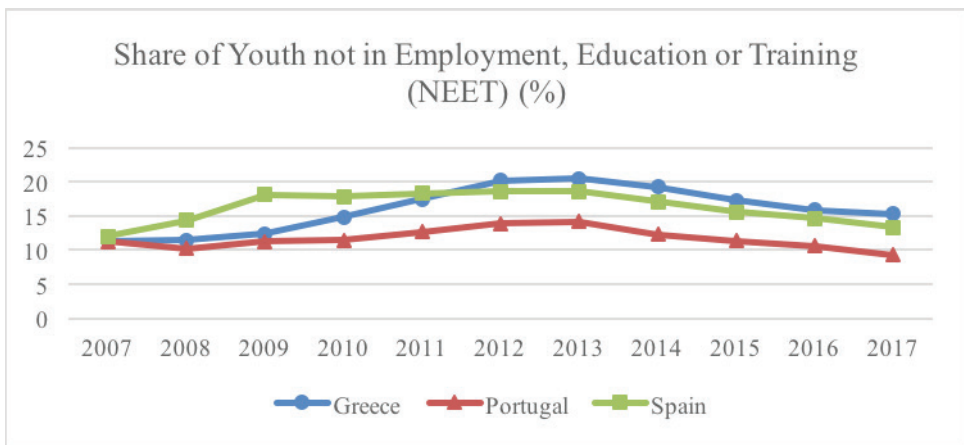
*Figure 4: Unemployment Rate*




*Source: European Commission Economic and Financial Affairs, AMECO Database.*

Regarding the long term effects of the crisis on human development process of countries, indicators concerning youth and children are of critical importance. The negative impacts are not only on human development, but also on the human capital capacity of the countries and therefore on productivity growth that has important bearings on the competitiveness of economies in the international arena. The share of youth aged between 15-24 years that are not in employment, education or training (NEET) can be viewed in Figure 5. Accordingly, the most dramatic increase in this ratio was observed in Greece and Spain where it reached up to 20.4 and 18.6 respectively in 2013 and these countries have a higher share of NEET rate in 2017 compared to the pre-crisis year.

*Figure 5: Youth not in Employment, Education or Training*



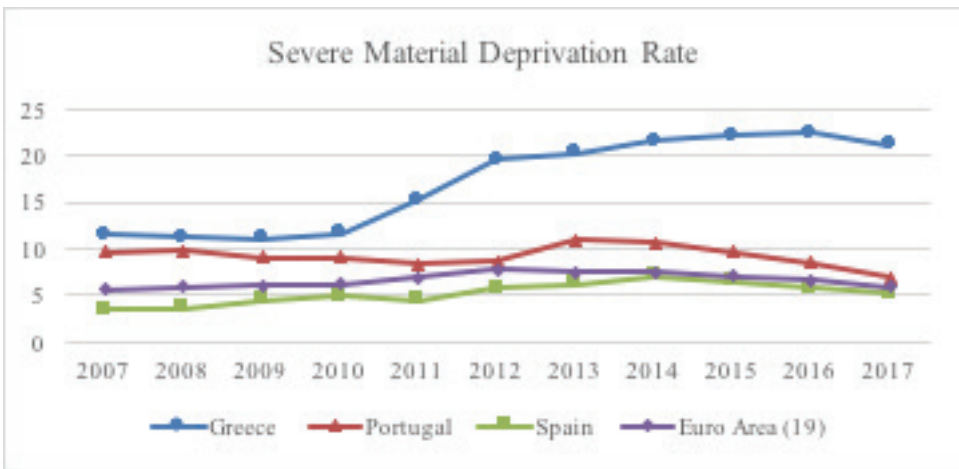

*15-24 years old are defined as youth.*
*Source: International Labour Organization, Statistics and Databases, ILOSTAT.*

Another significant indicator of long-term effects of the crisis on human development is related to child poverty as deprivation during childhood will have serious impacts on health conditions, educational attainments, and

therefore working conditions and wage levels which have direct links with the quality of living conditions. In this sense child poverty in 2012 compared to 2008 revealed dramatic increases, particularly in Greece and Spain. The child poverty rate was 23 per cent in 2008 and raised to 40.5 per cent in Greece; the same indicator was 28.2 per cent and 36.3 per cent in Spain. In Portugal, the increase was 1 per cent; rising from 22.8 per cent in 2008 to 23.8 per cent in 2012 (United Nations Children's Fund Office of Research, 2014, p. 8).

The severe material deprivation rate[5] that can be viewed in Figure 6 soared notably in Greece. The increase of the rate has been striking among children. (Organisation for Economic Co-Operation and Development, 2018, p. 10).

*Figure 6: Severe Material Deprivation Rate*




*Source: European Commission, Eurostat Database.*

## Fiscal Policy Stance since the 2007-2008 Crisis

The severity and the intensity of the 2007-2008 crisis was compared to that of the Great Depression. Developed countries were the centre of the crisis unlike the ones experienced in the Latin American debt crisis in the 1980s or the financial crises in the emerging market economies in the 1990s. There has been an extensive debate on the impacts of the crisis in the Euro area. The critics mostly focused on the integration of the peripheral Euro area countries like Greece, Ireland, Portugal, and Spain and the role of Germany in rising current account deficits in these countries[6].

Regarding the policy responses to the crisis, two distinguishing phases have been prominent. During the initial phase of the crisis, the implementation of expansionary fiscal policies and the bailout packages for the financial sector led to an enormous rise of budget deficits and public debts. In the second phase, as the financial crisis transformed into a fiscal crisis, fiscal discipline policies have become prevalent practices once again. The rationale behind the

5 Defined as "the proportion of the population living in households unable to afford at least four of the following items: unexpected expenses, a one-week annual holiday away from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, colour television, telephone or car, or are confronted with payment arrears." (Organisation for Economic Co-Operation and Development, 2018, p. 10).

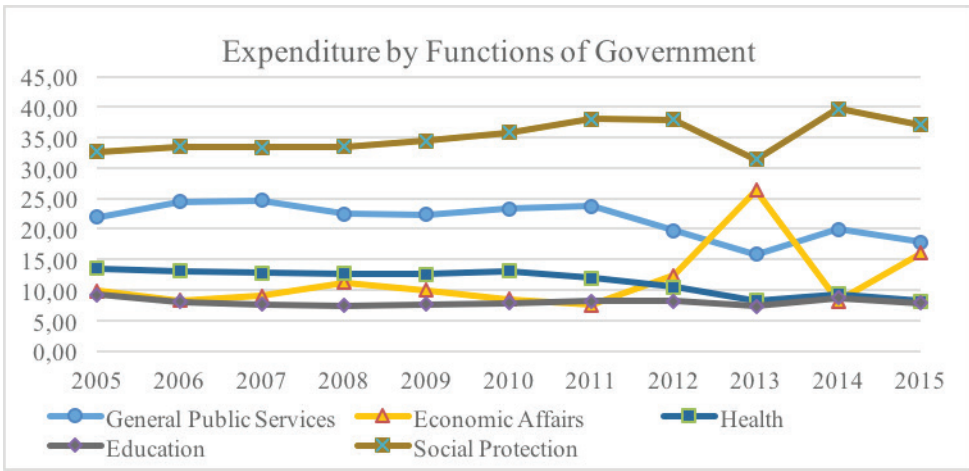
6 See for example Stockhammer (2010, 2011), Truger (2013), Weeks (2011).

strict austerity measures was overcoming the fiscal crisis; the implementation of which severely affected people's well-being via unemployment risk, repression of wages and retrenchment of social expenditures. As emphasised in the HDR 2013, implementing austerity measures in a very fast manner can deepen and extend the recession process. (United Nations Development Programme, 2013, p. 21). Truger (2013, p. 170) indicates that the recession in Greece, Italy, Portugal and Spain is linked with drastic fiscal contraction. Therefore, people have been affected not only as a result of the crisis in the markets, but also through governments' responses to overcome the crisis that basically favoured capital accumulation process.

Austerity policies implemented in the Euro zone periphery can be interpreted as part of the policy responses to particularly the sovereign debt crisis and in a broader perspective as part of the neoliberal restructuring of the economic role of the state for the last three decades. The first had impacts particularly on wages and employment and affected the economy through its impacts on aggregate demand. The second had impacts through the institutions and the economic policies which have altered the functioning of the state compatible with the needs of financialised capitalism. Human development on the other hand was defined as the aim of the development process and institutions were means of reaching this end. Therefore, from the perspective of the human development approach any policy response should eventually contribute to human well-being in a wider view. So the point is that whether the austerity policies -in harmony with the neoliberal economic policies- implemented in peripheral Europe could contribute to human development process, or rather had adverse impacts on the conditions of human development.

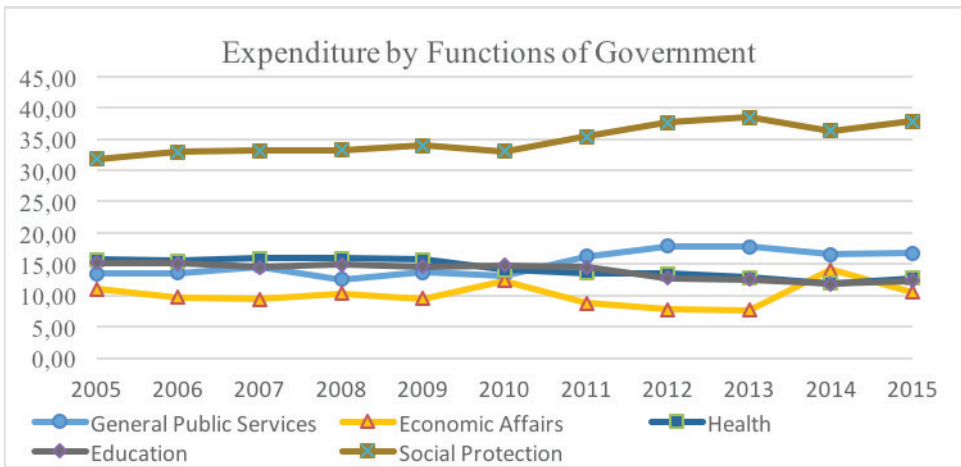
The policy responses may be evaluated in terms of their effectiveness in coping with the crisis. However, any economic policy cannot be assessed merely technically as they also bear social consequences. The composition of public expenditures and tax revenues provide a general view on the role of the government during a crisis. In this perspective, per cent share of various government expenditures in total expenditures are depicted in the following figures for Greece, Portugal, and Spain. The data in the figures are from the International Monetary Fund's Government Finance Statistics - Expenditure by Function of Government (COFOG) Database which includes ten types of expenditures. The share of general public services, economic affairs, and social expenditures (albeit in a very narrow sense; including expenditures on education, health, and social protection) in total expenditures, are depicted in the figures so as to have a rough idea of how the government functions were used in order to mitigate the effects of the crisis (see Figure 7, Figure 8, Figure 9). Expenditure on economic affairs can partly be viewed as a very rough estimate of government response for bailing out purposes. Education, health, and social protection expenditures, on the other hand, can be viewed as directly affecting human development. The very common point of these figures is that while the expenditures on economic affairs increased in the second phase of policy responses in all of the three countries, the share of education and health expenditures decreased. This striking outcome signifies how the costs of the crisis have been socialised; as education and health expenditures, reflect the impacts of the crisis on the human development process. There is also a considerable decrease in expenditures on general public services in the case of Greece.

*Figure 7: Expenditure by Functions of Government - Greece*



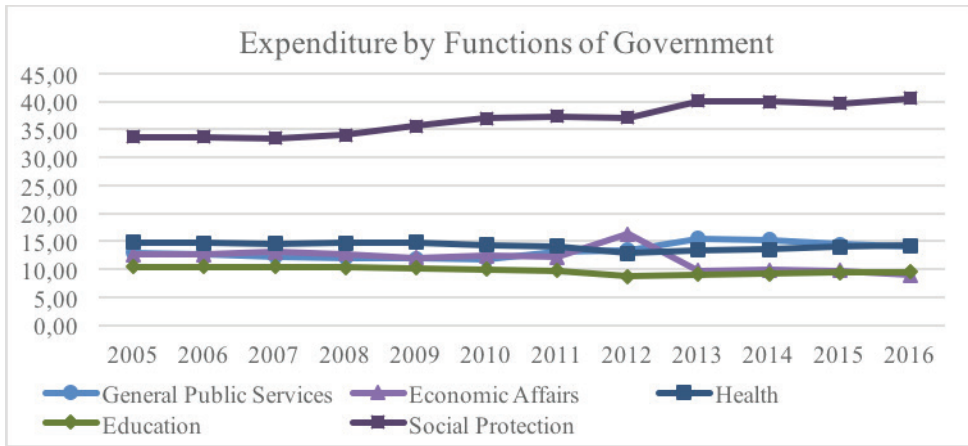

*Source: International Monetary Fund, Government Finance Statistics.*

*Figure 8: Expenditure by Functions of Government - Portugal*




*Source: International Monetary Fund, Government Finance Statistics.*

*Figure 9: Expenditure by Functions of Government – Spain*

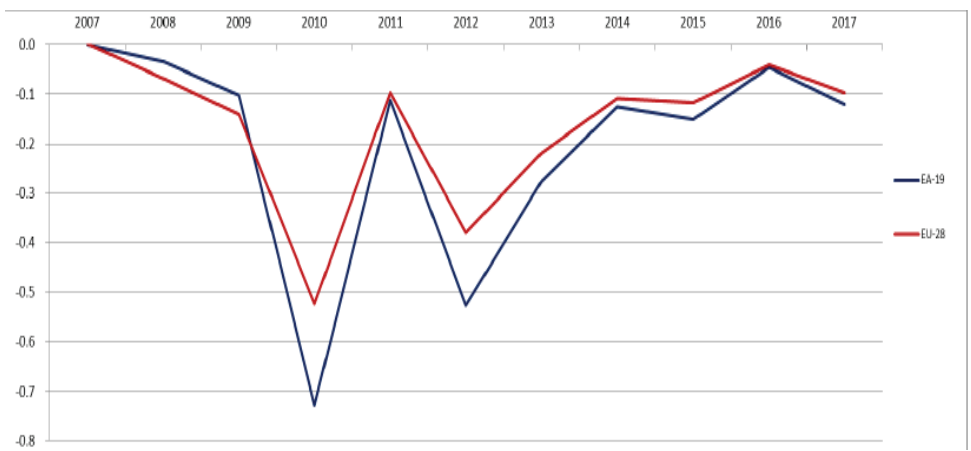



*Source: International Monetary Fund, Government Finance Statistics.*

Meanwhile, especially for the Spanish case, Jordana (2014, p. 233) emphasised that the increasing share of social protection expenditures has been due to increasing unemployment and the widespread view that pensions were "politically untouchable" and eventually the fiscal crisis led to decreases in education and health expenditures.

As mentioned earlier, although the crisis started in the financial markets sooner turned into a fiscal crisis. Consequently, bailout programs for the financial sector have been criticised in terms of their role in rising of budget deficits and soaring of public debts. Impacts of the government interventions to support financial sector on budget deficit in the European Union can be viewed in Figure 10.

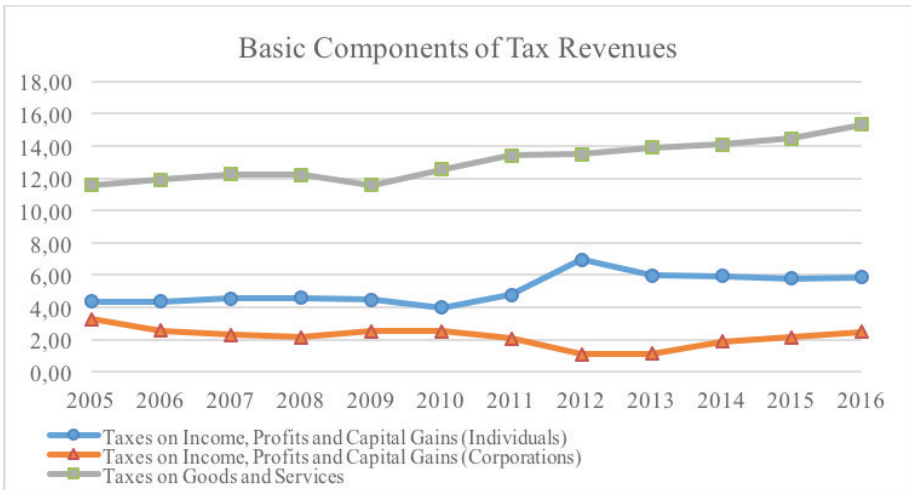
*Figure 10: Impact of the Interventions on Government Deficit in the Euro Area (EA19) and the EU28 (% of GDP)*




*Source: European Commission Eurostat, 2018, p. 5.*

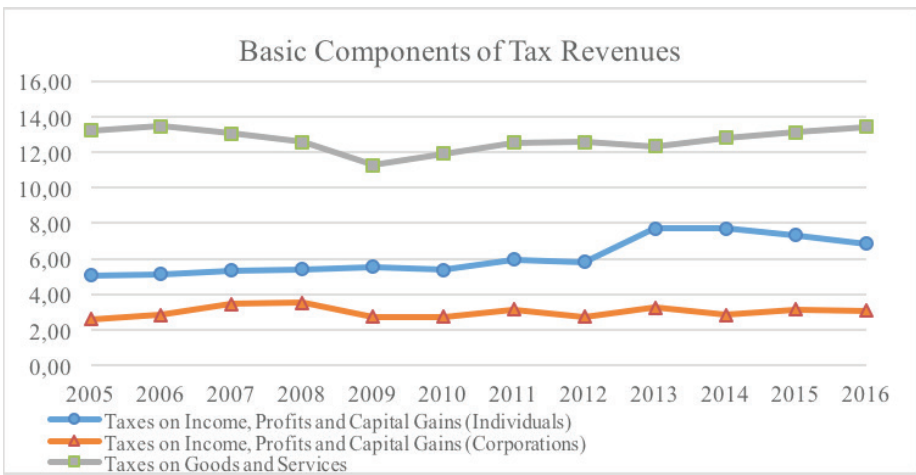
If the government expenditures have been effective on behalf of the capital for the prevention of an economic meltdown with the justification that the government support for capital would expand employment as a result of which the households would be the beneficiaries at the end, while the taxes on corporations have been decreased with concomitant increases in indirect taxes; then it can be argued that the burden of the crisis fell on the society in general and the labour income and the unemployed in particular. In this sense, the rising regressivity of the tax system is noteworthy regarding the fiscal policy tools. Basic components of tax revenues as a per cent of GDP can be viewed in the figures below for Greece, Portugal, and Spain respectively (see Figure 11, Figure 12, Figure 13). Accordingly, the most significant increase in the share of indirect taxes has been in Greece.

*Figure 11: Basic Components of Tax Revenues - Greece*



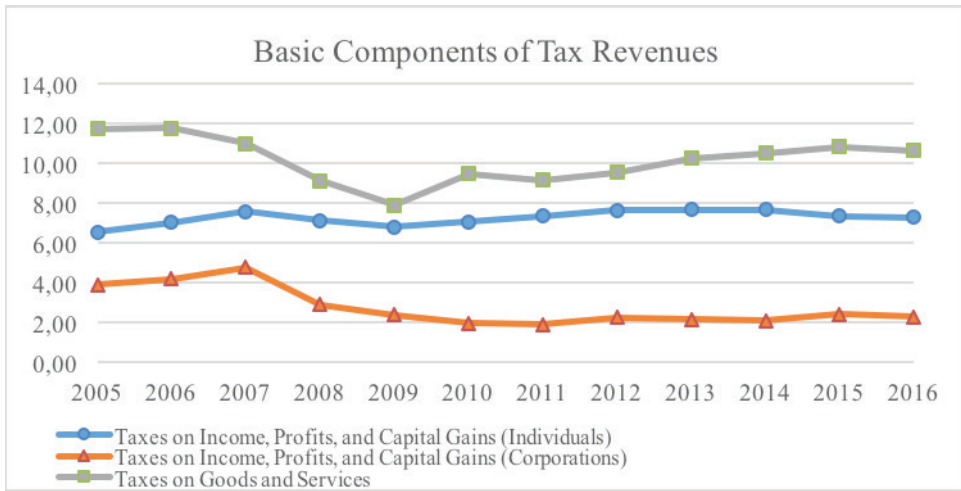

*Source: International Monetary Fund, Government Finance Statistics.*

*Figure 12: Basic Components of Tax Revenues - Portugal*




*Source: International Monetary Fund, Government Finance Statistics.*

*Figure 13: Basic Components of Tax Revenues - Spain*




*Source: International Monetary Fund, Government Finance Statistics.*

According to Ranis and Stewart, human development is related to the growth rate and how it is produced and allocated. The primary income distribution and the secondary income distribution are jointly effective on the link between growth and human development process (Ranis & Stewart, 1999, pp. 108-109). Therefore, fiscal policy has an indispensable role in ensuring progress in human development. In order to achieve a reduction in income inequality through the secondary income distribution a progressive tax system combined with a well-structured social expenditure programme will be needed. This type of a policy mix concomitant with the improvements in wages and working conditions can generate a progress in human development.

## Conclusion

Human developmental impacts of the 2007-2008 crisis in the Euro zone periphery is analysed in this paper. For this purpose, various indicators of human development in Greece, Portugal, and Spain are examined. Since all of the three countries are ranked in the very high human development index group; indicators other than the components of the index are chosen to have a better and comprehensive understanding on the well-being of people. These indicators include income inequality, labour income share, unemployment rate, rate of youth not in employment, education or training, and severe material deprivation rate. Accordingly, inequality increased, labour income shares in GDP decreased, the unemployment rate reached up to dramatic levels, and the conditions get even worse for youth and children particularly for Greece.

Regarding the policy responses, the crisis led to the implementation of expansionary fiscal policies until it transformed into a fiscal crisis. Since then, the goal of fiscal discipline has become prevalent once again. Austerity policies were rationalised in order to achieve a balanced budget and ensure the sustainability of public debt. Regarding the composition of public expenditures, the most striking point is that the share of expenditures on economic affairs increased in all of the three countries, whereas the share of education and health expenditures decreased. On the other hand, regressivity of the tax system increased through rising indirect taxes. Therefore, it seems that the most affected people during and after the crisis have been the unemployed who have also paid higher taxes via

increased share of indirect taxes, and most probably the children of these unemployed people facing with severe material deprivation. Meanwhile, it is important to note that increasing employment is not the ultimate goal of the real human development process; rather it is to increase the opportunities for people to work at jobs they desire most where they can use full of their capacity and also creativity. However, the combined impacts of the crisis and the fiscal policy stance, severely affected people's wellbeing, let alone achieving progress in terms of real human development. Therefore, the main question addressed in the paper is that; what prospects for real human development under neoliberal ideals?

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# 4

# RELATIONSHIP BETWEEN OIL PRICE VOLATILITY AND OIL IMPORT IN TURKEY: NONLINEAR ARDL APPROACH

*Işıl Akgül[1], Emre Çevik[2,3]*

***Abstract***

*Investigation of the effects of changes in oil prices on oil imports, by examining whether an asymmetric long-run and short-run relationships between these variables and determination of the relationship between these variables are important for the oil importer countries like Turkey. Thus, it will be determined whether the effects of the same size shocks on exchange rate, industrial production index and oil prices will have a different effect on oil imports in the short-run and long-run. For this purpose, the relationship between nonlinear variables will be investigated by using the NARDL models, developed by Shin et al (2014). This approach allows us to simultaneously test the short-run and long-run nonlinearities through positive and negative partial sum decompositions of the predetermined explanatory variables.*

*In this study, the long-run and short-run relationship between oil import changes and oil price volatility are examined for Turkey in the period of 1996:01-2018:07. The estimated model reveals the nonlinear effect of oil price volatility on oil imports. Moreover, the results confirm the existence of both long-run and short-run asymmetric behaviour of oil imports. As a result, in the long-run, the increase in oil price volatility tends to reduce oil imports. In addition, the results show that in the short-run, oil imports are determined by economic growth rather than the changes in real exchange rate. The main difference of this study than the other studies is to provide more realistic findings through using a threshold that is obtained by oil prices.*

**Keywords***: Oil price volatility, Oil import, Asymmetry, NARDL, Turkey*

## 1. Introduction

Energy has become an important resource for countries day by day because of industrialization. The production of energy from fossil fuels, especially for electricity usage, has become widespread after the development of technology and energy production. However, since the usage of non-renewable energies such as coal and natural gas are relatively limited, the demand for oil has increased significantly and this increase still remains today. Because of necessity for oil consumption in a wide variety of industries such as textile, transportation and agriculture, it

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became an indispensible source of energy for countries. Therefore, oil and oil prices play an important role on macroeconomic variables such as GDP, current account balance or/and foreign trade balance.

The following statistical information highlights the importance of the oil across the world. While petroleum consumption was 2251.1 million tons in 1970, it increased to 4469.7 million tons in 2017 by 98.6% in the world. In 1970, oil consumption in Turkey was 7.1 million tons, and 48.3 million tons in 2017, with an increase at the percentage of 580.3%[4]. The reason behind this increase is the rise in both population and the demand to the oil and petroleum products. Because of the oil price volatility, oil dependence affects the economies of oil importing countries structurally, in the regards of economic growth or balance of payment etc. (Ozturk & Kilic, 2018). High oil prices lead to a decrease in the national income of oil importing countries. Academic studies and government programs are more concentrated on oil prices, since the fluctuations in oil prices have significant economic consequences. The increase in oil prices is considered as good news for oil-exporting countries and bad news for oil importing countries. Besides, there are the other factors that may affect the countries in terms of industrial structure, relative position or differential tax composition. Hence, as most of the monetary authorities try to control the trade balance, the empirical relationship between oil prices and oil imports becomes more important. Knowledge of the effects of oil prices aids the monetary authorities to conduct economic policy implications for according the shocks.

Because of the important reasons stated above, the main motivation of this paper is to investigate the long-run and short-run asymmetric association between oil prices volatility and oil import for Turkey. As it is known, the volatility measures the potential risks in prices. It increases in the periods of high uncertainty such as war, government crisis and financial crisis. In difference series, this uncertainty may not be more pronounced than the volatility. For this reason, taking the measures against volatility in oil prices by modelling the short-run volatility allows more control over macroeconomic variables. This study contributes to the literature through using nonlinear autoregressive distributed lags (NARDL) model that has not been applied in previous studies to the best knowledge. The paper proceeds as follows: Section 2 presents a review of previous studies on the empirical evidence of oil price changes and their effects on macroeconomic variables. Section 3 covers the methodological issues. Section 4 includes information about the data used in the analysis and discusses the empirical results. Section 5 concludes with a summary and policy implications.

## 2. Literature Review

In the related literature, it is seen that the fluctuations in oil prices are investigated especially by the economists. This may be due to the fact that the changes in oil prices have a significant effect on inflation, balance of payments and many other macroeconomic variables. As a result, these fluctuations also lead to revisions to monetary policies. Moreover, it is seen that the theoretical and practical studies on oil prices increased with the oil crisis of 1973.

Hamilton (1983) finds that oil prices have an impact on real GDP and unemployment rates, and this effect is associated with the price deflator, hourly labor wages, export prices and M1 money supply, which are composed of non-agricultural income. Burbidge and Harrison (1984) shows that there is a significant relationship among oil prices, consumer price index, industrial production index, short-run interest rates, foreign exchange rates, demand deposits and industrial production indices of OECD countries for the USA, Japan, Germany, UK and Canada

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by using the VAR model. Gisser and Goodwin (1986) examine the relationship between real GDP, general prices level, unemployment rates, real investments and oil prices.

Tatom (1988), Mork (1989), Mory (1993), Lee et al. (1995) and Hamilton (1996), are the pioneering researchers investigating the asymmetric effect of oil prices on macroeconomic variables. It is discussed that asymmetric behaviour of oil prices causes technological changes, and besides shifting in the monetary policies, exchange rates, trade balances (Altıntaş, 2013). Jimenez-Rodriguez and Sanchez (2005) studies the effects of oil price shocks on the real economic activity of the main industrialized OECD countries, by distinguishing between net oil importing and exporting countries. By using VAR, they find that the real GDP growth of the oil importing economies is adversely affected by the increase in oil prices in both linear and non-linear models. Le and Chang (2013) investigates the causality relation between trade balance change and oil price fluctuations using Toda-Yamamoto (1995) approach for Malaysia, Singapore and Japan. They examine the impact of oil price shocks on overall trade balances as well as their oil and non-oil components. They use Gregory and Hansen (1996) approach for cointegration with structural change, the procedure for non-causality test popularized by Toda and Yamamoto (1995) and the generalized impulse response function (IRF) by Koop et al. (1996) and Pesaran and Shin (1998). Bahmani-Osookee and Fariditavana (2015) investigate whether the effect of exchange rate changes on trade balance is asymmetric in the period of 1971-2013 using quarterly data. They use real effective exchange rate as the measure of asymmetry and realize the estimations using ARDL method.

Brini et al. (2017) investigate the cointegration relationships among renewable energy, trade, oil prices and growth using ARDL method. In their study for Tunisia, they indicate a short-run bidirectional relationship between renewable energy consumption and trade for the period of 1980-2011. In addition, they prove that there is a one-way relationship between renewable energy and oil prices in the short-run.

Bahmani-Oskooee et. al. (2017), investigate the relationship between UK and her 19 trade partners for 2000-2016 by using monthly data. They use the ARDL and NARDL methods for symmetric and asymmetric effects on the UK's trade balance. They find symmetric effect, respectively, for the 11 and 5 countries, in the short and long-run with linear ARDL method. However, they find different results by using NARDL method. Accordingly, they determine asymmetric relation for 14 countries in the short-run and 8 countries in the long-run.

Alike Bahmani-Oskooee et. al. (2017), Liev and Balasubramaniam (2017), investigate ARDL and NARDL models comparatively. They suggest that the policymakers must consider the non-linear effects of oil prices shocks to formulate economic growth policies.

Zambrano-Monserrate et al. (2018) investigate the causal relationship between GDP, CO2 emissions, total renewable electricity consumption, dry natural gas consumption and total oil consumption for Peru, in the period of 1980-2011. They investigate the cointegration relationships using ARDL method and causality analysis by Granger causality test VECM based. They also use the innovative criterion approach developed by Narayan and Narayan (2010) to test the environmental Kuznets curve. As a result, they could not find any relationship between the inverted U-shaped and EKC and obtained indirectly relationship between CO2 and its determinants.

The related literature for Turkey's trade balance and oil price started to study at the beginning of the 1990s. Rose (1990) indicates that the real exchange rate has no effect on the trade balance for the period 1970-1988 with annual and quarterly data for 30 countries, including Turkey.

Domaç (1993) analyzed J-curve effect using Almon lag polynomial for Turkey. Brada et al. (1997), Kale (2001) and Akbostancı (2004) investigate cointegration analysis between the real exchange rate and trade balance. They emphasise that the depreciation of the exchange rate could improve the Turkey's trade balance in the long-run.

Öksüzler and İpek (2011) explore the relationship among oil prices, inflation and growth for Turkey. The analyzed period covers the period of 1987-2010 with monthly data. According to the results of VAR and Granger causality, it is concluded that oil prices are the Granger cause of economic growth. However, they state that there is no causality between oil prices and inflation. According to the impulse-response analysis, the shock in oil prices affects both growth and inflation positively.

Yaylalı and Lebe (2012) investigate the relationship between crude oil prices and Turkey's monetary policy using the VAR method. They conclude that crude oil prices are effective on both money supply and inflation for the period of 1986-2010 with quarterly data. Ozdemir and Akgul (2015) analyze the correlations between oil and gasoline prices with industrial production index for Turkey by applying MS-VAR method. They conclude that crude oil and gasoline prices have an impact on industrial production for the period between 2005 and 2014. They also state that the price changes have important impact on industrial production index.

Bayat et al. (2013) analyze the long-run cointegration and causality between oil price and trade balance for Turkey. For analyzing cointegration relation, they prefer Hansen-Seo (2002) nonlinear cointegration and Hiemstra-Jones (1994) and Breitung-Candelon (2006) tests for causality. The analysis results show that there is a long-run nonlinear cointegration between oil price and trade balance. In addition, in both short and long-run, there is an one-way nonlinear causality from oil price to trade balance.

Bayar and Karamelikli (2015) investigate the role of energy in the chronic foreign trade deficits of Turkey using Hatemi-J (2008) cointegration test and Toda-Yamamoto causality test. Their study presents that there is a long-run relationship between the foreign trade deficit, oil and natural gas prices and real effective exchange rate and there is a unidirectional causality from oil and natural gas prices to the foreign trade balance.

Rasasi and Yılmaz (2016) examine the impacts of oil price shocks on macroeconomic aggregates of Turkey by using Johansen and Juselius (1990) cointegration approach and Threshold Model. They testify the influential role of oil price shocks on macroeconomic aggregates. They find that oil price shocks affect output growth negatively with a delay. Also, their empirical results reveal that higher oil prices are associated with higher inflation by depreciating exchange rate. They also explored the role of asymmetric oil shocks on macroeconomic aggregates.

Nazlıoğlu et. al. (2018) test the causal relationships between oil prices and monetary policy for the emerging markets (Brazil, India, Indonesia, South Africa, and Turkey). They explore the role of exchange rates, inflation, and interest rates employing Toda–Yamamoto causality framework and they augment the model to account for structural shifts. The empirical findings show that accounting for gradual structural shifts matter for the causal linkages between oil prices and the monetary policy variables.

## 3. Methodology: ARDL and NARDL Model

In this section, ARDL (Auto Regressive Distributed Lag) and NARDL (Nonlinear Auto Regressive Distributed Lag) models are introduced first, then empirical analysis are performed. Pesaran and Smith (1998) and Pesaran et al. (2001) have introduced a cointegration technique known as the "ARDL bound test". This technique has an

important advantage among other cointegration techniques. ARDL approach is a cointegration technique which depends on what the variables wouldn't be I(2), while other cointegration techniques require all of the regressors to be integrated with the same order. This means the ARDL approach avoids the pre-testing problems associated with standard cointegration, which requires the variables are already classified into I(1) or I(0) (Pesaran et al, 2001, p.312).

The advantageous of this approach can be summarized as follows: First, in other cointegration techniques known as Engle-Granger and Johansen approach, unit root test should be performed first. Besides, the traditional approach determining long-run and short-run relationships among variables use the standard Johanson Cointegration and VECM framework, but this approach suffers from serious flaws as discussed by Pesaran et al. (2001). Furthermore, in both approaches, the variables should not be stationary and should be integrated in the same order. However, the ARDL model examines the long-term relationship regardless of whether the series is I (0) or I (1). The ARDL method yields consistent and robust results both for the long-run and short-run relationship between oil import and various policy variables. This approach does not involve pretesting variables, which means that the test for the existence of relationships between variables is applicable irrespective of whether the underlying regressors are purely I(0), purely I(1), or a mixture of both. Secondly, while the ARDL method can distinguish dependent and explanatory variables, the cointegration methods listed above may also suffer from the problems of endogeneity. Therefore, the estimates obtained from the ARDL cointegration method are unbiased and efficient; because they avoid problems that may occur in the presence of serial correlation and endogeneity. Besides, Haug (2002) has argued that ARDL approach to cointegration provides better results especially for small sample data as compared to traditional approaches to cointegration i.e. Engle and Granger (1987) and Johansen and Juselius (1990).

The general representation of the ARDL model is as follows:

$$\Delta y_t = \alpha_0 + \gamma_1 y_{t-1} + \gamma_2 x_{t-1} + \sum_{i=1}^{p} \beta_i \Delta y_{t-i} + \sum_{i=0}^{q} \phi_i \Delta x_{t-i} + \varepsilon_t \qquad (1)$$

In this equation, if long-run coefficients are different from zero, it can be mentioned as long-run relationship between variables. The ARDL model testing procedure starts with the bound test. The first step in the ARDL bounds test approach is to estimate Eq. (1) by ordinary least square (OLS) method for p=q. The F-test is conducted to test whether long-run relationship exists among the variables. The null hypothesis in the equation is $H_0 : \gamma_1 = \gamma_2 = 0$. The calculated F-statistics value is then compared with the critical values provided by the Pesaran et al. (2001). If the calculated F-statistics exceeds the upper critical value, then null hypothesis of no cointegration will be rejected.

But if the series are not linear, the symmetric ARDL model will fail to explain the long-run relationships between these variables. In this case, the NARDL model is proposed as a model that can consistently combine the long-run relationship between nonlinear variables and the error correction mechanism.

Because of the nonlinearity of the variables involved in the analysis, NARDL methodology recently introduced by Shin et al. (2014) is applied in the current study. This approach allows for modelling simultaneously the asymmetries and cointegration dynamics among the nonlinear variables.

The general representation of the asymmetric long-run regression is as follows:

$y_t = \beta^+ x_t^+ + \beta^- x_t^- + u_t$ where $y_t$ and $x_t$ are scalar I(1) variables, and $x_t$ is decomposed as $x_t = x_0 + x_t^+ + x_t^-$ where $x_t^+$ and $x_t^-$ are the partial sum processes of positive and negative changes in $x_t : x_t^+ = \sum_{j=1}^{t} \Delta x_j^+ = \sum_{j=1}^{t} \max(\Delta x_j, 0)$, $x_t^- = \sum_{j=1}^{t} \Delta x_j^- = \sum_{j=1}^{t} \min(\Delta x_j, 0)$. After this introduction, Shin et al. (2014) proposed the following flexible dynamic model by extending ARDL approach popularized by Pesaran and Shin (1998) and Pesaran et al. (2001):

$$y_t = \sum_{j=1}^{p} \varphi_j y_{t-j} + \sum_{j=0}^{q} (\theta_j^+ x_{t-j}^+ + \theta_j^- x_{t-j}^-) + \varepsilon_t \qquad (2)$$

where $x_t$ is a $k \times 1$ vector of multiple regressors, $\varphi_j$ is the autoregressive parameter, $\theta_j^+$ and $\theta_j^-$ are the asymmetric distributed-lag parameters, and $\varepsilon_t$ is an i.i.d. process. Shin et al. (2014) decomposed the $x_t$ around the zero threshold, thus consider the negative and positive changes in $x_t$ separately. The ECM form representation of the NARDL model is as follows:

$$\Delta y_t = \rho\, y_{t-1} + \theta^+ x_{t-1}^+ + \theta^- x_{t-1}^- + \sum_{j=1}^{p} \varphi_j \Delta y_{t-j} + \sum_{j=0}^{q} (\pi_j^+ \Delta x_{t-j}^+ + \pi_j^- \Delta x_{t-j}^-) + \varepsilon_t \qquad (3)$$

In this equation, long-run symmetry restrictions $\theta^+ = \theta^- = \theta$ and short-run symmetry restrictions $\pi_i^+ = \pi_i^-$ are tested with Wald test. When imposing such restrictions in the presence of an asymmetric long-run relationship, NARDL is defined as follows:

$$\Delta y_t = \rho\, y_{t-1} + \theta^+ x_{t-1}^+ + \theta^- x_{t-1}^- + \sum_{j=1}^{p-1} \gamma_j \Delta y_{t-j} + \sum_{j=0}^{q-1} \pi_j \Delta x_{t-j} + e_t \qquad (4)$$

In Equation 4, the short and long-run asymmetry is tested by Wald-F test for $\theta^+ = \theta^-$ and $\sum_{j=1}^{p-1} \gamma_j = \sum_{j=1}^{q-1} \pi_j$ $\sum_{j=1}^{p-1} \gamma_j = \sum_{j=1}^{q-1} \pi_j$ respectively, and $e_t$ is i.i.d. $(0, \sigma^2)$. With the CUSUM and CUSUMSQ tests, the stability of the coefficients is checked from the recursive residuals.

In addition to ARDL approach advantages explained above, NARDL also allows the analysis of the asymmetry relationship. In order to obtain robust results, we utilize the NARDL approach to establish the existence of long-run and short-run relationships between nonlinear variables. ARDL/NARDL is extremely useful because it allows us to describe the existence of an equilibrium/relationship in terms of long-run and short-run dynamics without losing long-run information. Finally, it has a flexible structure, i.e. not all series need to be I (1), which provides flexibility in use. More importantly, it is an appropriate model to accomplish the purpose of the study.

## 4. Data and Empirical Analysis

### 4.1. Data

Following Goldstein and Khan (1985) and Rose and Yellen (1989), we analyze oil trade function of Turkey by NARDL method proposed by Shin et al. (2014). The analysis period of this study is between 1996:01 and 2018:07. Turkey's logarithmic oil import ($) (LOILIMP) taken as a dependent variable[5] and logarithmic real effective exchange rate (LREXRATE), logarithmic crude oil price ($/barrel WTI) (LOILP) and logarithmic industrial production

5 In the analyzes, the oil import bill ($) series is taken because it reflects the effects of changes in oil prices. In the series of quantities, although it gives small responses to the changes in price, it does not appear to be a real reflection since it is the mandatory import product for production and growth.

index (LIPI) are taken as independent variables.[6] All data are obtained from Turkish Statistical Institute (TSI), U.S. Energy Information Administration (EIA) and the CBRT-EVDS.

In this study, the foreign trade balance (TB) function proposed by Goldstein and Khan (1985) and Rose and Yellen (1989) is used during the selection of the variables:

$TB=f(LREXRATE, GDP^{D}, GDP^{F})$

where $GDP^{D}$ and $GDP^{F}$ are national gross domestic product and foreign gross domestic product, respectively. Unlike this proposition, the Turkish oil trade balance is being investigated here. This is due to the fact that Turkey's oil trade export is close to zero during the analysis period. Thus, oil import data will be used instead of TB. Besides, we do not need to include $GDP^{F}$, because oil is a natural and non-renewable energy source, and this is not to reason for the foreign income. In the view of this information, we investigate following equation:

$LOILIMP=f(LREXRATE, GDP^{D})$

However, since our analysis is based on monthly data, we use proxy variable LIPI for $GDP^{D}$. We also analyze the asymmetric effect of the oil price on the Turkey's oil import. The proposed approach shown above applies to linear variables and since the variables in this study are not linear, the equation can be defined by adding asymmetry terms of oil price ($LOILP^{-}$ and $LOILP^{+}$) as follows:

$LOILIMP=f(LREXRATE, LIPI, LOILP^{-}, LOILP^{+})$

The empirical analysis will begin by testing whether the variables are stationary and linear. Then appropriate models will be specified according to the findings.

In this context, the steps of the analysis are as follows.

Step 1. Testing whether the series are stationary and linear or not.

Step 2. Selecting an appropriate volatility model for oil price series and obtaining volatility series.

Step 3. Finding the threshold value for volatility series.

Step 4. Obtaining partial cumulative totals for observations remaining above and below the threshold and investigating the long-run relation between variables by the NARDL approach.

Step 5. Estimating restricted and unrestricted Error Correction Model (ECM) by the NARDL (p,q,r,s,l).

## 4.2. Empirical Results

The ADF and ERS unit root, KPSS stationarity and KSS nonlinear unit root tests results are shown in the Table 1. KPSS and KSS has been used for control because ADF test has some shortcomings. To control of the results of ADF test are very important since the false rejection of unit root can arise through an application of standard ADF.

6 Logarithmic transformation in all series is performed because they are not stationary in the variance. For example, in the IPI series, log transformation has been made especially due to the differences in variability (i.e. showing nonstationarity in the variance) after 2008.

*Table 1. Unit Root Test Results*

| Variable | ADF<br>(C+T) : -3.42<br>(-) : -1.94 | KPSS<br>(C+T) : 0.14<br>(C) : 0.46 | ERS DF-GLS<br>(C+T) : 2.91 | KSS<br>(C+T):-1.937<br>(C): -2.597 |
|---|---|---|---|---|
| LOILIMP | -3.30 | 0.35 | -3.065 | 0.371 |
| LREXRATE | -1.85 | 0.46 | -1.52 | -0.276 |
| LIPI | -2.63 | 2.06 | -2.14 | 1.817 |
| LOILP | -2.18 | 0.36 | -2.17 | -0.064 |
| ΔLOILIMP | -23.59 | 0.05 | - | -4.091 |
| ΔLIPI | -3.13 | 0.14 | - | -6.583 |
| ΔLREXRATE | -11.72 | 0.22 | - | -5.480 |
| ΔLOILP | -12.520 | 0.077 | - | -4.125 |

**all critical values are given for 5% level.*

Unit root test results in Table 1 show that all variables are nonstationary at the level, but all are first-order stationary. After determining that the series are not I (2), the BDS and Tsay NL tests determined whether the series are linear or non-linear and the results are given in Table 2.

*Table 2. Nonlinearity Test Results*

| | Dimension | LOILIMP | LREXRATE | LIPI | LOILP |
|---|---|---|---|---|---|
| BDS Test | 2 | 0.144 (0.000)* | 0.170 (0.000) | 0.160 (0.000) | 0.187 (0.000) |
| | 3 | 0.254 (0.000) | 0.283 (0.000) | 0.278 (0.000) | 0.318 (0.000) |
| | 4 | 0.326 (0.000) | 0.357 (0.000) | 0.360 (0.000) | 0.407 (0.000) |
| | 5 | 0.375 (0.000) | 0.405 (0.000) | 0.413 (0.000) | 0.466 (0.000) |
| | 6 | 0.405 (0.000) | 0.433 (0.000) | 0.448 (0.000) | 0.504 (0.000) |
| | Lag | | | | |
| Tsay NL Test | 1 | **6.157 (0.002)** | 2.450 (0.088) | 2.125 (0.121) | 1.387 (0.254) |
| | 2 | 2.334 (0.042) | 3.070 (0.010) | 0.543 (0.741) | 1.757 (0.130) |
| | 3 | 3.233 (0.001) | **7.324 (0.000)** | **3.472 (0.000)** | 1.515 (0.156) |
| | 4 | 2.782 (0.000) | 5.356 (0.000) | 2.863 (0.000) | 1.028 (0.436) |
| | 5 | 2.592 (0.000) | 4.597 (0.000) | 1.998 (0.008) | **2.076 (0.014)** |
| | 6 | 2.219 (0.001) | 4.053 (0.000) | 1.819 (0.011) | 1.874 (0.023) |

**probability values in parenthesis.*

Nonlinearity test results in Table 2 show that all variables are nonlinear at all dimensions and all lags. As a result of the tests, it is revealed that all series are stationary at the first difference and nonlinear in all lags.

In step 2, the conditional variance series must be calculated, for this purpose the appropriate ARCH model for the oil price series will be determined. The reason for this is that conditional variance will be used to show the volatility in oil prices and thus the threshold value will be calculated.

At this stage, this study differs from the existing literature in the context of determination of threshold value. Instead of taking the threshold proposed by Shin et al (2014) as zero, the threshold value is calculated from the oil price volatility. Here, the oil price volatility is investigated with the GARCH, EGARCH and GJR models. The mean equation is selected for AR(1) process with SIC information criteria. The results for the oil price volatility models are shown in Table 3, and the GJR model is chosen as the appropriate model with the help of SIC, AIC, HQ criteria and LogL.

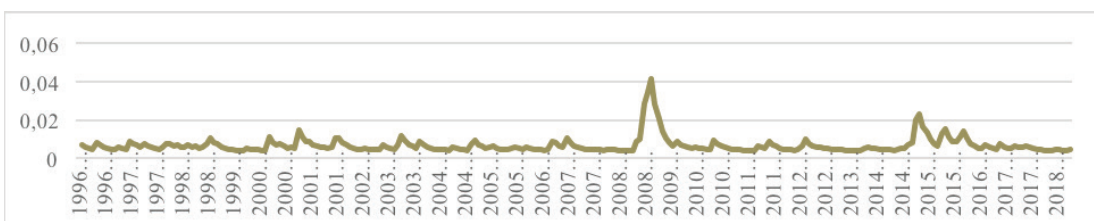
**Table 3**. *Oil Price Volatility Model Estimation Results*

| *-2.1763* | AR(1)-GARCH(1,1) | AR(1)-EGARCH(1,1) | AR(1)-GJR(1,1) |
|---|---|---|---|
| Conditional Mean Equation | | | |
| Constant | 0.0084 (0.0056)* | 0.0039 (0.0073) | 0.0050 (0.0058) |
| AR(1) | 0.1609 (0.0643) | 0.2349 (0.0802) | 0.1795 (0.0677) |
| Conditional Variance Equation: $GARCH(1,1): \sigma_t^2 = c + \alpha u_{t-1}^2 + \beta \sigma_{t-1}^2$ $EGARCH(1,1): \ln(\sigma_t^2) = c + \alpha \left\| \frac{u_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right\| + \beta \ln(\sigma_{t-1}^2) + \gamma \frac{u_{t-1}}{\sqrt{\sigma_{t-1}^2}} + \alpha_1$ $GJR(1,1): \sigma_t^2 = c + \alpha u_{t-1}^2 + \beta \sigma_{t-1}^2 + \gamma u_{t-1}^2 I_{t-1}, \quad (I_{t-1} = 1 \quad if \quad u_{t-1} < 0 \quad and \quad 0 \quad otherwise)$ | | | |
| Constant (c) | 0.0012 (0.0004) | -5.346 (1.221) | 0.0014 (0.0004) |
| *a* | 0.1648 (0.0618) | 0.041 (0.1491) | -0.0135 (0.0473) |
| *b* | 0.6502 (0.0991) | -0.0504 (0.2400) | 0.6451 (0.0822) |
| $\gamma$ | - | -0.3573 (0.0824) | 0.2676 (0.1010) |
| ARCH 1-2 | 0.3644 [0.6949]** | 3.473 [0.0325] | 0.1956 [0.8224] |
| ARCH 1-5 | 0.5818 [0.7139] | 2.053 [0.0718] | 0.6316 [0.6758] |
| ARCH 1-10 | 0.8480 [0.5828] | 1.8842 [0.0541] | 1.0424 [0.4083] |
| LogL | 302.264 | 303.042 | **306.027** |
| AIC | -2.2020 | -2.2085 | **-2.2224** |
| SIC | -2.1353 | -2.1283 | **-2.1903** |
| HQ | -2.1752 | -2.1763 | **-2.1425** |

**Standard error in parenthesis. **Probability values in bracket.*

With the help of GJR model, estimated conditional variance is shown in the Figure 1.

*Figure 1. Graph of Estimated Conditional Variance*



In Figure 1, it is seen that the conditional variance representing the volatility in oil prices clearly reveals increase and decrease in the periods of price. In this study, the logic behind the choice of price volatility as a threshold variable instead of the price of oil is that the crude oil has recently been recognized as a financial asset. In addition, oil prices are responding to macroeconomic shocks more rapidly as a result of this financialisation of the oil market.

In step 3, the threshold number and the threshold value will be determined. At this stage, the nonlinearity of the conditional volatility is tested with the Tsay (1989) approach and then number of threshold and threshold values are obtained with the Bai and Perron (1989) approach. These results are shown in Table 4.

*Table 4. Tsay Nonlinearity and Bai-Perron Threshold Test Results*

| ***Tsay Test*** | | | ***Bai-Perron Test: Threshold Variable=CondV(-1)*** | | | |
|---|---|---|---|---|---|---|
| Lag | Test Statistic | Prob. | Hypothesis | Test Statistic | Critical Value | Threshold Value |
| 1 | **13.1436** | **0.0000** | No threshold | 136.0733 | 8.58 | 0.00823 |
| 2 | 5.4823 | 0.0002 | One threshold | 7.6432 | 10.13 | |
| 3 | 2.7339 | 0.0078 | | | | |
| 4 | 1.6658 | 0.0824 | | | | |
| 5 | 0.8713 | 0.6214 | | | | |
| 6 | 0.9813 | 0.5072 | | | | |
| 7 | 0.8841 | 0.6441 | | | | |

The results in Table 4 show that the linearity is rejected for the lag one of the conditional variance. According to Bai and Perron test, there is a single threshold, and the estimated threshold value is 0.00823.

In the 4th stage, the long-run relationship between the series is being investigated with NARDL approach.

Firstly, a symmetrical ARDL model is specified in order to show the difference between models.

$$\Delta LOILIMP_t = \alpha_0 + \gamma_1 LOILIMP_{t-1} + \gamma_2 LREXRATE_{t-1} + \gamma_3 LIPI_{t-1} + \gamma_4 LOILP_{t-1} + \sum_{i=1}^{a} \beta_i \Delta LOILIMP_{t-i} + \sum_{i=0}^{a} \delta_i \Delta LREXRATE_{t-i} + \sum_{i=0}^{a} \phi_i \Delta LIPI_{t-i} + \sum_{i=0}^{a} \theta_i \Delta LOILP_{t-i} + \varepsilon_t \quad (5)$$

Secondly, the asymmetric NARDL model to be used in the study is defined:

$$\Delta LOILIMP_t = \alpha_0 + \alpha_1 LOILIMP_{t-1} + \alpha_2 LREXRATE_{t-1} + \alpha_3 LIPI_{t-1} + \alpha_4 LROILPV^+_{t-1} + \alpha_5 LROILPV^-_{t-1} + \sum_{i=1}^{p} \beta_i \Delta LOILIMP_{t-i} + \sum_{i=0}^{q} \theta_i \Delta LREXRATE_{t-i} + \sum_{i=0}^{r} \gamma_i \Delta LIPI_{t-i} + \sum_{i=0}^{s} \delta_i SROILPV^+_{t-i} + \sum_{i=0}^{k} \psi_i SROILPV^-_{t-i} + \varepsilon_t \quad (6)$$

where OILPV is volatility of oil price, $\Delta OILPV_i^+ = SROILPV_i^+$, $\Delta OILPV_i^- = SROILPV_i^-$ $LROILPV_i^+$ and $LROILPV_i^+$ are partial sum of the changes in oil price volatility $(SROILPV_i)$ above and below threshold, respectively, and calculated as

$$LROILPV_t^+ = \sum_{i=1}^{t} SROILPV_i^+ = \sum_{i=1}^{t} \max\left(OILPV_i, c\right)$$

$$LROILPV_t^- = \sum_{i=1}^{t} SROILPV_i^- = \sum_{i=1}^{t} \min\left(OILPV_i, c\right).$$

where c is the threshold value. Thus, the asymmetric effect of the oil price volatility is calculated by including the changes above the threshold value $(SROILPV_i^+)$ and the changes below the threshold $(SROILPV_i^-)$.

Finally, the cointegration equation (7) taking asymmetries into account are estimated and the long-run coefficients of the model are obtained (Table 5).

$$LOILIMP_t = \theta_0 + \theta_1 LREXRATE_t + \theta_2 LIPI_t + \theta_3 LROILPV_t^+ + \theta_4 LROILPV_t^- + \varepsilon_t \qquad (7)$$

where $\theta_1, \theta_2, \theta_3, \theta_4$ are the long-run coefficients. Asymmetric impact of oil price volatility is accounted by including $LROILPV_i^+$ and $LROILPV_i^-$. In specification (7), the magnitude of the long-run relationship between positive shocks in oil price volatility and oil import is captured by $\theta_3$, whereas the long-run relation between negative shocks in oil price volatility and oil import is shown by $\theta_4$. Both coefficients are expected to have different sign, and they are not anticipated to have similar magnitude, since positive changes in oil price volatility will have different effect on oil import as compared to the negative changes in oil price volatility.

*Table 5. Long-Run Model*

| Variable | Coefficient | t-Statistic |
|---|---|---|
| Constant | 12.12715 | 11.40878 |
| LREXRATE | 0.982692 | 5.621760 |
| LIPI | 0.699036 | 4.453835 |
| LROILPV$^-$ | 2.214857 | 7.725833 |
| LROILPV$^+$ | -3.356397 | -8.765574 |

Following the estimation of the model, the stationarity of the residuals have been tested and they have been found to be stationary, I(0). The residuals of the cointegration equation, i.e. $\hat{\varepsilon}_t \sim I(0)$, indicate a long-run relationship between the series. In other words, it shows the existence of long-run equilibrium between series.

The values in Table 5 can be interpreted as follows:

$LREXRATE$, $LIPI$ and $LROILPV_i^-$ have a positive and statistically significant effect on oil imports, while the effect of $LROILPV_i^+$ is negative and statistically significant. This indicates that oil imports are positively affected if the oil price volatility is below the threshold level and are negatively affected if the volatility is above the threshold level.

The results reveal that the long-run impact of real exchange rate on oil import is positive and statistically significant at 1%. In particular, it suggests that 1% increase in real exchange rate leads to 0.98 % increase in oil import. Besides, the long-run effect of industrial production index taken as a proxy for economic growth, on oil import is positive and statistically significant at 1%, too. It suggests that 1% increase in IPI leads to 0.69 % increase in oil import. One of the important findings emerge from this study is that oil price volatility is found to have an asymmetric impact on oil import.

The effects of positive and negative changes in oil price volatility on oil import are found to be significant at %1 level. This shows that there is a big magnitude pass-through effect of oil price to the oil import. The findings obtained by our study suggest that 1% changes in oil price volatility above threshold level will lead to approximately 3% decrease in oil import, while 1% changes in oil price volatility under threshold level will lead to approximately 2% increase in oil import.

As mentioned above, one of the advantages of NARDL is that it enables us to capture asymmetries in the oil price volatility – oil import relation not only in the long-run but also in the short-run. In this paper, the lag lengths of the NARDL model are determined from general to the specific approach and statistical significance of the coefficients. The delay length started at 8 and the coefficients which are not statistically significant at each stage are removed from the model and the final model is obtained. In these models, residuals must be distributed independently with constant variance, so tests have been conducted to show the validity of the assumptions.

In the final stage, the NARDL model is estimated by specifying it in the restricted and unrestricted form.

Equation (1) can be written in an unrestricted error correction form as:

$$\begin{aligned}\Delta LOILIMP_t = {} & \alpha_0 + \alpha_1 LOILIMP_{t-1} + \alpha_2 LREXRATE_{t-1} + \alpha_3 LIPI_{t-1} + \alpha_4 LROILPV^{+}_{t-1} + \alpha_5 LROILPV^{-}_{t-1} \\ & + \sum_{i=1}^{p} \beta_i \Delta LOILIMP_{t-i} + \sum_{i=0}^{q} \theta_i \Delta LREXRATE_{t-i} + \sum_{i=0}^{r} \gamma_i \Delta LIPI_{t-i} + \sum_{i=0}^{s} \delta_i SROILPV^{+}_{t-i} + \sum_{i=0}^{k} \psi_i SROILPV^{-}_{t-i} + \varepsilon_t \end{aligned} \quad (8)$$

and Equation (8) can be written in a restricted ECM form.

$$\begin{aligned}\Delta LOILIMP_t = {} & \alpha_0 + \lambda ECT_{t-1} + \sum_{i=1}^{p} \beta_i \Delta LOILIMP_{t-i} + \sum_{i=0}^{q} \theta_i \Delta LREXRATE_{t-i} \\ & + \sum_{i=0}^{r} \gamma_i \Delta LIPI_{t-i} + \sum_{i=0}^{s} \delta_i SROILPV^{+}_{t-i} + \sum_{i=0}^{k} \psi_i SROILPV^{-}_{t-i} + \varepsilon_t \end{aligned} \quad (9)$$

The unrestricted NARDL model in Table 6 where the estimation results of Equation (8) is given the model that satisfied all the assumptions. In addition, we test for the existence of long-run relationship among variables, for nonlinear specifications as in Equation (8), using bounds testing for cointegration in an unrestricted error correction model (Shin et al., 2014). The null hypothesis of no cointegration, i.e. $\alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 0$ is tested against the alternative of cointegration, i.e. $\alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5 \neq 0$ using F-test. Bound test results are given under the Table 6.

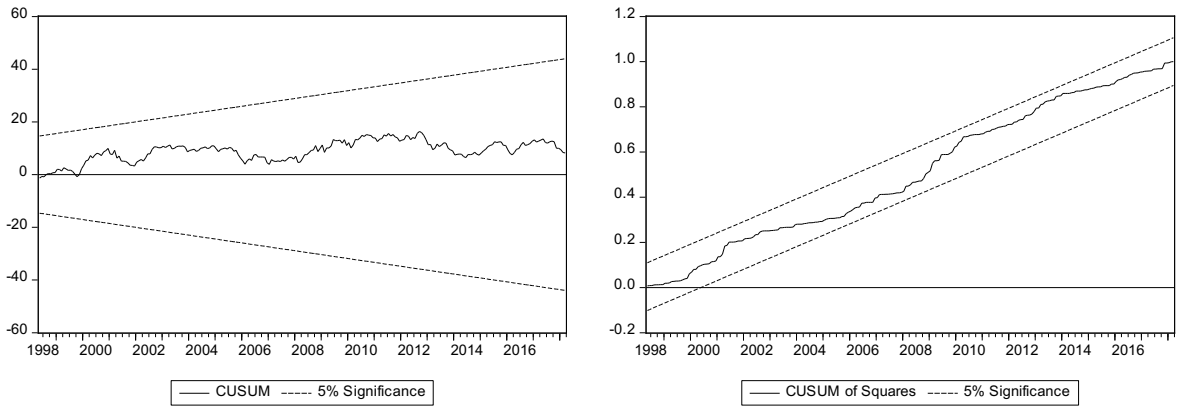
Table 6 also includes the Wald test result which shows whether asymmetric shocks are different from each other. The calculated value of 3.42 for long-run and 12.56 for short-run shows that the effects of the shocks below and above the threshold obtained from volatility are different from each other, in other words, have an asymmetric effect. Thus, the nonlinear cointegration between the variables is demonstrated by the boundary test. Furthermore, the stability of the model coefficients can be seen from the CUSUM and CUSUMSQ test results given in Figure 2.

*Table 6. NARDL model-unrestricted ECM form Estimation Results*

| Dependent Variable: $\Delta LOILIMP_{t-1}$ | Coefficient | t-Statistic | |
|---|---|---|---|
| Constant | 1.637 | | 1.793 |
| $LOILIMP_{t-1}$ | -0.139 | | -2.983 |
| $LREXRATE_{t-1}$ | 0.306 | | 2.563 |
| $LROILPV^{-}_{t-1}$ | 0.393 | | 1.848 |
| $LROILPV^{+}_{t-1}$ | -0.465 | | -1.709 |
| $LIPI_{t-1}$ | -0.038 | | -0.341 |
| $\Delta LOILIMP_{t-1}$ | -0.530 | | -7.983 |
| $\Delta LOILIMP_{t-2}$ | -0.174 | | -2.497 |
| $\Delta LOILIMP_{t-3}$ | -0.124 | | -1.793 |
| $\Delta LOILIMP_{t-4}$ | -0.121 | | -2.126 |
| $\Delta LREXRATE_{t-3}$ | -0.638 | | -2.015 |
| $\Delta LREXRATE_{t-4}$ | 0.521 | | 1.676 |
| $\Delta LIPI_{t}$ | 0.298 | | 2.313 |
| $\Delta LIPI_{t-1}$ | 0.639 | | 4.262 |
| $\Delta LIPI_{t-2}$ | 0.453 | | 3.459 |
| $SROILPV^{-}_{t}$ | -31.412 | | -4.125 |
| $SROILPV^{-}_{t-2}$ | 14.481 | | 1.625 |
| $SROILPV^{-}_{t-3}$ | -19.971 | | -2.328 |
| $SROILPV^{-}_{t-5}$ | 16.116 | | 2.225 |
| $SROILPV^{+}_{t}$ | -32.091 | | -8.941 |
| $SROILPV^{+}_{t-2}$ | 14.361 | | 2.449 |
| $SROILPV^{+}_{t-3}$ | -13.442 | | -2.348 |
| $SROILPV^{+}_{t-5}$ | 12.028 | | 3.268 |
| $R^2$ | 0.504 | Wald LR 3.425 (0.065) | |
| AIC | -0.810 | Wald SR 12.567 (0.000) | |
| SIC | -0.497 | JB 0.740 (0.690) | |
| Durbin-Watson stat | 2.048 | LM 16.672 (0.162) | |
| F-Statistic | 11.048 (0.000) | White 38.818 (0.015)<br>Bound 3.899 | |

**For bound test critical values I(0) and I(1) are 2.26 and 3.48 respectively*

*Figure 2. CUSUM and CUSUMSQ for the NARDL Model*




When the coefficients obtained from the estimation of the unrestricted form NARDL-ECM model are evaluated, that is regarding the short-run impact of REXRATE changes on oil import from the results in Table 6, it is seen that ΔLREXRATE increases affect oil import after three and four lag periods, (t-3) and (t-4). Their effect on oil import is negative and significant at lag (t-3), and their effect on oil import is positive and significant at lag (t-4). Besides, regarding the short-run impact of IPI on oil import from the results in Table 6, it is seen that ΔLIPI increases affect oil import instantaneously, and after one and two lag periods (t), (t-1) and (t-2). Their effect on oil import, for all lags is positive and significant at %5 level.

The restricted NARDL-ECM model in Table 7 where the estimation results of Equation (9) is given the model that satisfied all the assumptions.

*Table 7. NARDL model-restricted ECM form Estimation Results*

| Variable | Coefficient | t-Statistic |
|---|---|---|
| $\Delta LOILIMP_{t-1}$ | -0.483 | -7.494 |
| $\Delta LOILIMP_{t-2}$ | -0.102 | -1.741 |
| $\Delta LIPI_{t}$ | 0.388 | 3.056 |
| $\Delta LIPI_{t-1}$ | 0.540 | 3.818 |
| $\Delta LIPI_{t-2}$ | 0.386 | 2.993 |
| $SROILPV^{-}_{t}$ | -23.613 | -3.654 |
| $SROILPV^{-}_{t-2}$ | 21.3661 | 2.511 |
| $SROILPV^{-}_{t-3}$ | -13.355 | -1.651 |
| $SROILPV^{-}_{t-5}$ | 19.020 | 3.098 |
| $SROILPV^{+}_{t}$ | -29.120 | -8.845 |
| $SROILPV^{+}_{t-2}$ | 18.201 | 3.161 |
| $SROILPV^{+}_{t-3}$ | -9.134 | -1.657 |
| $SROILPV^{+}_{t-5}$ | 11.241 | 3.528 |
| $ECT_{t-1}$ | -0.145 | -3.359 |
| $R^2$ | 0.464 | |
| AIC | -0.802 | |
| SIC | -0.611 | |
| Durbin-Watson stat | 2.039 | |

When the coefficients obtained from the estimation of the restricted form NARDL-ECM model are evaluated, it is seen that the real exchange rate (REXRATE) is not an important variable for oil import. Regarding the short-run impact of IPI on oil import from the results in Table 7, it is seen that ΔLIPI increases affect oil import instantaneously, and after one and two lag periods, (t), (t-1) and (t-2). Their effect on oil import, for all lags is positive and significant at %5 level.

In addition of these, the negative and statistical significance of the ECM coefficient in the model indicates that the error correction mechanism works. This finding can be interpreted that cointegrated variables will converge to their old equilibrium at a rate of 14% each month and return to the old equilibrium will take approximately 7 months. Besides, these results can be interpreted as the oil import is determined by economic growth rather than the real exchange rate.

The direct comparison of the findings of this study with other studies does not seem possible because it analyzes the nonlinear cointegration by considering the model structure and asymmetry. However, since this model is similar to J curve phenomenon, it can be said that the short and long-run coefficients are different when compared to the results of Goldstein and Khan (1985), Rose (1990) and Durusoy and Tokatlıoğlu (1997). As the Almon method is used in their analysis which has a dynamic and linear model structure that determines only short-run and long-run coefficients, and since the data of this study is not linear, further comparison will not contribute theoretically.

## 5. Conclusions

In this paper, the effects of the changes in oil prices volatility on oil imports are examined and, since the variables are not linear, a nonlinear ARDL model is used to analyze the long-run and short-run asymmetric relationships between these variables. Besides, asymmetric cointegration is discussed with a nonlinear perspective.

Estimated results confirm the existence of both long-run and short-run asymmetric behaviour of the oil import. According to the analysis results, in the long-run, oil price volatility increase tends to decrease oil import while oil price volatility decrease tends to increase oil import in Turkey. Their effects are found to be different in size and sign. In other words, oil imports react differently to the shocks in oil price volatility of the same magnitude, above and below the threshold. The increase in oil imports through IPI increases indicates that that production and thus growth is dependent on oil, economic growth is the determinant of oil imports in the short-run, and that oil imports cannot be reduced unless economic growth is not abandoned. This is also the reason why oil imports increase when oil price volatility increases.

The existence of the cointegration between the variables indicates that the variables will be in equilibrium in the long-run, and with the help of the ECM model it is found that the variables will temporarily move away from each other but tend to return to their long-run level. In addition, it is found that the variables that move away from the equilibrium with the shock effect will converge to their old equilibrium level by 14% every month, and the return to the long-run equilibrium level will take approximately 7 months.

The economic interpretation of the findings can be as follows:

In the analysis period, increase in the real exchange rate increases oil imports in periods (t-3) and (t-4), and the increase in ΔLIPI increases the oil imports instantaneously and in periods (t-1) and (t 2). This shows that increase in ΔLIPI effects oil import at short-run, while ΔLREXRATE increase affects oil import at long-run. In other words, this shows that the increase in oil import is determined by economic growth rather than the real exchange rate in the short-run. Besides, while the volatility of oil prices has increased above the threshold level, it has a statistically significant and negative effect on oil imports in the long-run. In case the volatility of oil prices falls below the threshold level, it has a statistically significant positive effect on oil imports. This shows that in the long-run, the volatility in long-run oil prices has a significant and different effect on oil imports.

As a result of the analysis, the effect of negative and positive shocks on oil imports is different in both long and short-run because of the presence of asymmetric relationship. The estimated short-run coefficients are higher than long-run for both negative and positive asymmetry. These results show that the impact of volatility on oil trade is high in the short-run. Thus, it can be said that uncertainty in short-run oil prices is more effective in oil imports. The fact that long and short-run coefficients are different indicates that the long-run impairment will not increase. All findings of the study show that it provides important information for more effective policy making and foresight in relation to oil import.

According to Killian (2010), a positive shock in oil prices is a trade shock for an oil importing country. Such a trade shock situation can be considered as a problem affecting the production decisions of the economy as oil is an important production input. The increase in the price of this production input will also disrupt the trade balance.

Even though the oil price volatility in the short-run has increased or decreased, the Turkish lira depreciates, however, as long as economic growth is not abandoned, oil imports will be continued and thus, it will be allowed to disrupt the foreign trade balance. However, it may be useful to adopt policies that will provide energy saving in the short and medium run, to develop alternative energy resources and to implement export-oriented policies in competitive sectors in sectors with intensive energy needs in the long-run. In addition, alternative energy resources need to be developed in order to reduce the dependence on oil, which has a very high share in total import and energy imports.

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# 5

# THE EFFECTS OF THE 2008 GLOBAL CRISIS ON THE TURKISH MARITIME SECTOR: DETERMINATION S AND CONSIDERATIONS

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***Abstract***

*The increase of the trade volume during the globalization process of the world economy has intensified maritime transport, which provides rapid and safe trans-continent transportation. The negativities in the world economy affect the maritime sectorsignificantly. In the global economic crisis in 2008, maritime transport was directly affected by the markets and freight markets declined by 11 times in comparison to the pre-crisis period. The 2008 economic crisis seriously affected the Turkish maritime sector. With the geopolitical risks, the decline in import and export turned into a negative outlook in the maritime sector growth in 2009.In this study attempted todetermine, the effects of the 2008 global crisis on Turkish maritime sector, the effects and results of geopolitical and geo-economics risks in this sector.*

**Key Words:** *2008 Global Crisis, Maritime Sector, Turkey*

## Introduction

By acceleration of globalization and institutionalization of energy, raw material and commodity markets have carried international trade to the global level. The increase of the trade volume in the globalization process of the world's economy has intensified maritime transport, which provides rapid and safe trans-continent transportation. According to UNCTAD data (2017, p.11) the world maritime trade volume, which was 500 million tons in 1950, reached 2.6 billion tons in 1970, 5.98 billion tons in 2000 and 10.3 billion tons in 2017. The total value of world trade in monetary value is USD 18.3 trillion, of which USD 15 trillion is carried by seaway.The total value of world trade in volume is carried by seaway 75%, by railway and motorway 16%, by pipeline 9% and by airway 0,3%.Through carryingof three-quarters of world trade by seaway, maritime transport has become one of the cornerstones of globalization. In this context, the negativities in the world economy seriously affect the maritime sector. Furthermore, maritime transport is very sensitive to macroeconomic parameters due to e.g. cyclicality in freight rates, variable ship prices, sector-specific financing structure, shipping operationson international level and insecurity economies. Globalization, growth in international trade, energy security, instability of oil prices, shipbuilding finance, freight expenses, financial crises, etc. directly affect global maritime trade. For these reasons, the maritime sector was affected by the global financial crisis tothe highest level in the period of 2008-2010. In the 2008 global economic crisis, maritime transport directly affected by the markets, and freight markets declined 11 times in comparison to the pre-crisis period; according to Baltic Dry Index(BDI) 11.973 points in May 2008, 684 points in December 2008. BDI is shipping and trade index created by the London-based Baltic Exchange that measures change in the cost of transporting various raw materials. The exchange directly contacts shipping brokers to assess price levels for a given route, a product to transport and time to delivery, or speed. As a result of

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the reduction in the balance sheets of banks in Europe, credits to the sector was limited (EspeciallyHSH NordBank, Deutsche Schiffsbank, DnB NOR, BNP Paribas, Lloyds Banking Group) and financing became difficult.

Turkey is located in the heart of a major trade route between the East-West and the North-South corridors throughmore than 8.400 km of natural coastlinesandin a geopolitically significantlocation in the Europe and Asia. Turkey has a potential to attract transit maritime cargoes to differentports by this advantageous position.The maritime sector which consists of port activities, cabotage and international transport, and shipbuilding industry, is considered to be as a strategic area in development activities of Turkey as a result of its geopolitical position whichis a transition point between Europe and Asia and located on main transport lines. In Turkey, the maritime sector is developing rapidly and it is an extremely important function for achievement of economic goals, development of external trade, integration intothe world economy. The role and importance of the maritime sector is increasing for Turkey that aims exportof USD 500 billion in 2023 for economic development.Turkey, which is located in the Eastern Mediterranean and Black Sea basins in world sea transport lines, has invested a total of 186.5 billion TL in transport infrastructure by public-private sector cooperation in 2003-2014.As a result of effective and intensive inspection and training, Turkish flagged ships passed the Grey List in 2006 and to White List in 2008 from the Black List under the Paris Memorandum on Port State Control. The Paris Memorandum of Understanding on Port State Control is the official document in which the 27 participating maritime authorities agree to implement a harmonized system of Port State Controlin a more comprehensive memorandum which covered safety of life at sea, prevention of pollution by ships, and living and working conditions on board ships. The “Black”, “Grey” and “White” (BGW) lists present the full spectrum, from quality flags (White list) to flags with a poor performance (Black list) that are considered: medium risk, medium to high risk, high risk and very high risk. Flags with an average performance are shown on the “Grey list”.

In this study attempted to determine, the effects of the 2008 global crisis on the Turkish maritime sector, as well as the effects and results of geopolitical and geo-economic risks in this sector.Assessments were made in four main sections, consisting of three main sections and conclusion. The effects of the crisis were determined on cabotage transportation in the first section; the effects of the crisis were determined on Turkish external trade transportation in the second section; the change in the Turkish maritime fleet was examined in the third section and conclusion section.Source datas are from Republic of Turkey Ministry of Transport, Maritime and Communications Directorate General of Merchant Marine (DTGM), Turkish Statistical Institute (TUIK), United Nations Conference on Trade and Development (UNCTAD).

## 2008 Global Economic Crisis and Turkey

Crises are exceptional circumstances that are not always anticipated, showing different properties from ordinary situations, having peculiar conditions. The most important characteristic that differentiates a crisis from ordinary situations is the urgent necessity to respond.Due to changing situations, crises cannot be predicted and requires require quick action, while purposes of action are vary. As a result, acrisis situation arises when the system becomes insufficient to determine the crisis, prevent it or respond appropriately to the changes.An economic crisis arises as a major decline in consumer demand and investments of companies, high rates of unemployment, and thusdecline in living standards. Such economic crises are often accompanied by uncertainties in financial markets and decline in stock prices and value of domestic currency relative to foreign currencies. Economic crises are categorized under two main categories: real economic crises and financial economic crises. While the crises in the first class are mostly

related to industrial production, the second class of crises is generally based on monetary facts (Taşdemir, 2013, p.8). Meanwhile, a crisis in one of the real or financial sectors is rapidly reflected in the other. Therefore, the crises between the sectors are in a sense a trigger and feeder of each other.

The global financial crisis begun in June 2007, and started to spread very rapidly and destructively after the last quarter of 2008. The origin of the crisis was the housing market in the United States (US).The US government focused on budget-deficit enforcements in order to rapidly revivethe demand in a constantly growing economy. Meanwhile, the US Federal Reserve (FED) started to pursue a monetary policy that caused abundance of liquidity in the markets by reducing interest the rate from 6,5% in 2001 to 1% in 2 years.Capital mobility caused an increase in the number and volume of derivative instruments in the financial markets; consequently, the crisis in the housing markets spread to other sectors and this led to the deepening of the crisis (Yıldız & Durgun, 2010, p.4). Another dimension of the 2008 crisis was the high current account deficit of the US economy.Together with the high current account deficit, the increase in import rates and the decline in domestic savings increased the fragility of the US economy; China, which has become the world's topexporter by increasing its production power, was effective in the deepening of the crisis through its economic policies.In the US and Europe, central banks and governments announced rescue packages andtook precautions to increase confidence in the financial system in the face of the developments in the international markets.

Since the 2000s, the use of derivatives based on financial instruments has been booming.Derivatives, which include currency, interest, gold, commodity,stock and etc., are defined as financial instruments whose values depend on the values of other assets and contracts that include these instruments that are specified in the form of futures, options, swaps and forwardtransactions.Futures contracts (or simply futures, colloquially) are an agreement between two parties for the sale of an asset at an agreed upon price. One would generally use a futures contract to hedge against risk during a particular period of time.Option contracts are similar to a futures contract in that it is an agreement to exchange an underlying asset ata fixed price at a predetermined future date. The key difference between options and futures is that with an option, the buyer is not obligated to make the transaction if he or she decides not to, hence the name "option." Like with futures, options may be used to hedge the seller's stock against a price drop and to provide the buyer with an opportunity for financial gain through speculation. Swaps are most often a contract between two parties agreeing to trade loan terms. One might use an interest rate swap to switch from a variable interest rate loan to a fixed interest rate loan, or vice versa.Swaps can be made using interest rates, currencies or commodities. Forward contractsare a customized contract between two parties to buy or sell an asset at a specified price on a future date. A forward contract can be used for hedging or speculation, although its non-standardized nature makes it particularly apt for hedging. Unlike standard futures contracts, a forward contract can be customized to any commodity, amount and delivery date. A forward contract settlement can occur on a cash or delivery basis (Whaley, 2006, pp.3-8).The purpose of all these contracts is to reduce or control the price uncertainties or variations of a financial instrument or asset. The reasons for the use of derivatives by managers are to:

- Reduce funding costs by taking advantage of the opportunities in the financial markets
- Prevent or reduce risks from interest and currency rates,
- Increase the borrowing capacity and liquidity levels,
- Protect self-constructed assets or liabilities and commitments from financial risk

- Protect investments and use futures contracts,
- Complete capital markets and increase the effectiveness of prices(Selvi, 2000, p.7).

*Table 1: Global Currency Markets Transactions Amounts (USD Billion)*

| **Years** | **1998** | **2001** | **2004** | **2007** |
|---|---|---|---|---|
| Spot transactions | 568 | 387 | 621 | 1.005 |
| Forward transactions | 128 | 131 | 208 | 362 |
| Swap transactions | 734 | 656 | 944 | 1.714 |
| Gap in reports (open) | 61 | 26 | 107 | 129 |
| **Total transaction amount** | **1.490** | **1.200** | **1.880** | **3.210** |

*BIS (2008), Quarterly Review, Triennial Central Bank Survey, Statistical AnnexTables.*

The largest density in the functioning of the world financial system was in the currency markets. According to the Bank for International Settlement data(2008, p.4), the average daily volume of the world currency markets experiencedan increase of 71% from USD 1.8 trillion in 2004 to USD 3.2 trillion in 2007.The second major increase was in swap transactions by an increase of 82 % from USD 944 billion in 2004 to USD 1.7 trillion in 2007. Forward transactions experienced an increase of 74 % from USD 208 billion in 2004 to USD 362 billion in 2007. Spot transactions had an increase of 62 % from USD 621 billion in 2004 to USD 1 trillion in 2007. According to the world currency markets analyses, these high increase rates in the use of derivatives before the global crisis could be considered as the first signals of the crisis. The reason why the crisis firstly affected Europe and then developing countries was primarily that US based derivatives were also used by European banks. The problem at the source of these instruments directly affected the European banks and the financial system. The impact of the crisis on developing countries was mainly due to capital movements and export channels. The crisis in developed countries, which was the source of capital movements (hot money), has led to the rapid evacuation out of foreign capital from these countries and these countries faced financial crisis. In Turkey the amount of foreign capital flowing out of the economy was USD 32.6 billion between September 2008 and January 2009. Especially, due to decline in export caused by the economic recession in the European Union (EU)and difficulties in international financing, Turkey's economy was rapidly and profoundly affected by the global crisis (Göçer, 2013, p.171).The decline in the growth rates in the US and EU led to a decline in external demand and import from developing countries started to decline. This situation led to the decline in external trade incomes of developing countries and consequently their economies started to decline. Although the EU economies started to recover in 2010, in Greece, Ireland and Spain,the decline continued. Turkey was among the fastest growing countries in developing countries after the crisis.

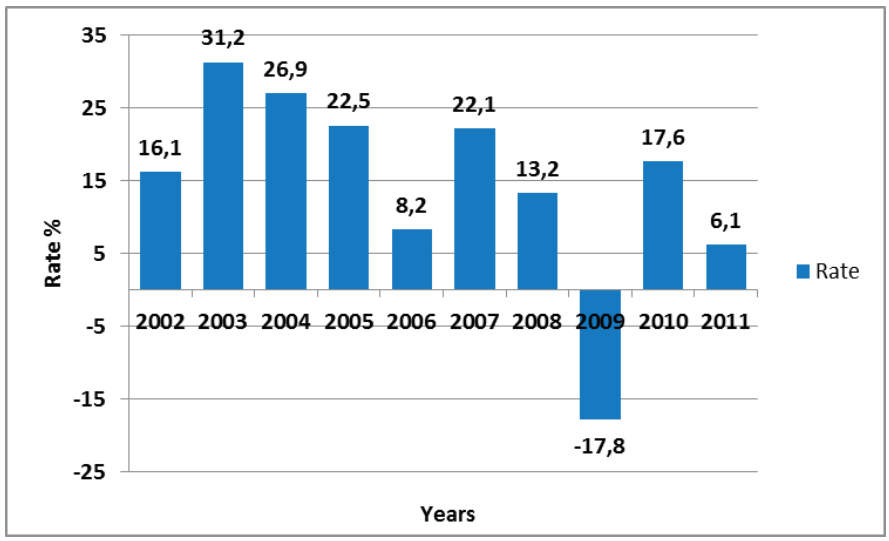
*Table2: World Trade Volume Increase Rates (in comparison to the previous year %)*

| Years | World Trade Volume | Export | | Import | |
|---|---|---|---|---|---|
| | | Developed Countries | Developing Countries | Developed Countries | Developing Countries |
| 2005 | 7,6 | 6,0 | 11,1 | 6,3 | 12,0 |
| 2006 | 9,3 | 8,4 | 11,0 | 7,5 | 14,7 |
| 2007 | 7,2 | 5,9 | 9,5 | 4,5 | 14,2 |
| 2008 | 2,6 | -0,1 | 5,6 | -2,2 | 7,2 |
| 2009 | 4,1 | 2,5 | 7,4 | 1,1 | 10,5 |

*IMF, World Economic Outlook, October 2010.*

The effects of the economic crisis on Turkey's economy showed itself both on the financial markets and on the real economy. In the last quarter of 2008, while foreign investment and unemployment in Turkey increased, the Annual Gross Domestic Product (GDP) declined significantly. According to TUIKdata (2018), as a result of the negative expectations in the world markets, Turkey's exportdecreased by 22,6 % in 2009 andimportdecreased by 30,2%in the same period.Investment expenditures decreased by 3 % and the ratio of investments to GDP, which was 20,2% in 2008 decreased to 17,2% at the end of 2009.Tax collection decreased due to the decline in production and sales, closed companies and unpaid checks-bills, and Turkey had to increase public sector expenditures due to the suspension of investments by the private sector.Therefore, the ratio of public sector debt to GDP increased to 5,1 % by the end of 2009. Based on the macroeconomic indicators, the global economic crisis had a significantly negative impact on Turkey's economy, but since 2000 thanks to the reforms in the economy, it has been observed that the macroeconomic balance was not significantly deteriorated(Sancak & Demirbaş, 2011, p.175).However, there has been a contraction in the GDP after 2008, due to contraction in the export-oriented industrial sector. Especially the contraction in the GDP in the last quarter of 2008 and 2009 shows that the negative outlook in the labor market continued and unemployment rates increased by the deepening of the economic crisis.

*Graphic 1: Turkey per Capita GDP Growth Rates (Current Prices % -USD)*




*TUIK, http://tuik. gov.tr, Ulusal Hesaplar.*

*Table 3: Turkey's External Trade Data in 2002-2011 (USD 000)*

| Years | Import | | Export | | External Trade Balance | Total External Trade | Export/Import Coverage Ratio % |
|---|---|---|---|---|---|---|---|
| | Value | Change % | Value | Change % | | | |
| 2002 | 36.059.089 | 15,1 | 51.553.797 | 24,5 | -15.494.708 | 87.612.886 | 69,9 |
| 2003 | 47.252.836 | 31,0 | 69.339.692 | 34,5 | -22.086.856 | 116.592.528 | 68,1 |
| 2004 | 63.167.153 | 33,7 | 97.539.766 | 40,7 | -34.372.613 | 160.706.919 | 64,8 |
| 2005 | 73.476.408 | 16,3 | 116.774.151 | 19,7 | -43.297.743 | 190.250.559 | 62,9 |
| 2006 | 85.534.676 | 16,4 | 139.576.174 | 19,5 | -54.041.499 | 225.110.850 | 61,3 |
| 2007 | 107.271.750 | 25,4 | 170.062.715 | 21,8 | -62.790.965 | 277.334.464 | 63,1 |
| 2008 | 132.027.196 | 23,1 | 201.963.574 | 18,8 | -69.936.378 | 333.990.770 | 65,4 |
| 2009 | 102.142.613 | -22,6 | 140.928.421 | -30,2 | -38.785.809 | 243.071.034 | 72,5 |
| 2010 | 113.883.219 | 11,5 | 185.544.332 | 31,7 | -71.661.113 | 299.427.551 | 61,4 |
| 2011 | 134.906.869 | 18,5 | 240.841.676 | 29,8 | -105.934.807 | 375.748.545 | 56,0 |

*TUIK, http://tuik. gov.tr, Yıllara Göre Dış Ticaret.*

Since the last quarter of 2008, the financial crisis has turned into a global recession which has become more evident by affecting the real sector negatively.The continuation of the effectiveness of the financial crisis despite the precautionsthat have beentaken in international coordination,the inadequacy of the implemented policies to eliminate uncertainty and the contraction of financial opportunities have resulted in pressure on production and trade by the decline in demand.Turkey also adopted methods against the crisis based on export growth policies

as many countries in the world.The intensification of the outward trend by external trade volume approaching USD 350 billion,damaged Turkey's economy not only through financial markets, but also made it susceptible to external influences by the real sector.The decline in the 2001 economic crisis was overcome by the high export in 2002-2003. However, there was a simultaneous decline in Turkey and abroad in the 2008 economic crisis. The possibility of increasing the growth rate by replacing internal demand with external demand is weak.The disruption in growth is creates the employment problem.Sustainable growth is increases risks and creates vulnerabilities in Turkey's economy.

## The Effects of the 2008 Global Economic Crisis on the Turkish Maritime Sector

Turkey is a natural bridge between Central Asia, Middle East and Europe, has a great potential and an extremely appropriate structure in sea transport by its geographical location. The maritime sector in Turkey has gained importance since the 1980s especially by the impact of liberalization. According to DTGM data (2017), 26,6 % of the total 1.531 ships in operation are registered in the national registry and 73,4 % are registered in the international registry.The Turkish fleet is 17' in the world with a total capacity of 29.2 million DWT (Deadweight tonnage).By an average age of 19 years, the contribution of the fleet to the economy is USD 20 billion. In Turkey 94,9 % of the import transports, 73,5 % of export transports and 84,2 % of the total external trade transports are carriedout by seaway in recent years.

*Table 4: General Status of Turkish Maritime Sector in 2017*

| **Turkish Fleet** | **World Fleet Ranking** | **Average Age of Turkish Flagged Ship** | **Rate of Turkish Flagged Ships** | **Rateof Foreign Flagged Ships** | **Total Capacity DWT** | **Port & Marina** |
|---|---|---|---|---|---|---|
| 1531 | 17 | 19 Years | 26,6 % | 73,4 % | 29,2 Million | 214 |
| Rateof External Trade Transports | | | Import 94,9 % | Export 73,5 % | Total 84,2 % | |
| Total Contribution to Economy | | | USD 15 Billion | | | |

*DTGM, http://www.denizticareti.gov.tr, 2017 Yıllık İstatistikleri.*

The 2008 economic crisis affected the Turkish maritime sectorsignificantly. The decline in import and export with the geopolitical risks in 2009, turned into a negative outlook in the growth of the maritime sector, which started in 2000 and lasted until 2008. The Istanbul Freight Index (ISTFIX) decreased by 70 % and showed a structural change with the 2008 crisis and a weak long-term continuity (Köseoğlu & Mercangöz, 2012, p.35). According to Masry *et. al.*(2010, p.454) and Dursun & Erol (2012, p.380) the maritime sector is mainly funded by debt capital; In the financing of assets, the debt capital rises above the equity capital and thus the sector is under debt pressure; In this instance financial leverage, where a company uses fixed-income securities such as debt and preferred equity, increases.After the 2008 crisis in the maritime sector, mortgage-based credits, corporate credits, shipyard credits, intermediate-term financing, tending to Euro/USD markets, currency option contracts, interest futures contracts, freight futures contracts, syndicated credits, junk bonds, special funds and initial public offeringwere introduced as financing methods and tools(Stopford, 2009, p.283). In this period, the government adopted an anti-conjuncture policy by implementing an expansionary finance policy as in other sectors. Although

the maritime sector was privatized in order to reduce public expenditures forfinancial discipline, opportunities were provided for the purpose of the restructuring credits and extension of the maturity; Privileged tax regimes were offered to maritime transport companies in order to recover the fleet of the country and attract capital. However, an understanding to save the day was demonstrated instead of making long-term development plans in uncertainty caused by the impact of the crisis.

## Cabotage Transports

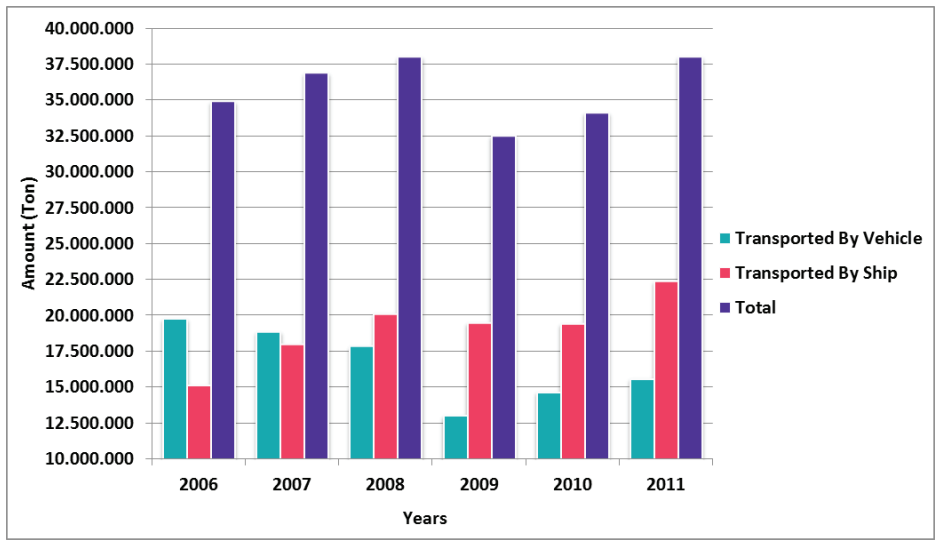
The legal definition of Cabotage is trade transit of a vessel along the coast (coastal trading), from one port to another within the territorial limits of a single nation. Maritimetransports in Turkish territorial waters by Turkish flagged ships are called cabotage and include cargo, passenger and vehicle transports.Handling, also called freight handling, is coordination and integration of operations such as loading, unloading, packaging and movement of materials or goods in ports. In general, it is observed that most of the cabotage transports are carried out in Marmara ports where the population and industrial facilities are intense.According to the amount of cargo handling in cabotage,although the growth continued until 2008 in comparison to the previous year, there was a decline of 14,4 % in 2009 due to the negative impact of the crisis and the recovery started in 2010.The highestrate of decline was observed in cargotransportation within the vehicle, in other words, in domestic transportation dependent on import-export.The amount of cargo handling in cabotage is usually the lowest in December and January and the highest in August each year.The impact of the global crisis on cabotage passenger transport was recorded by a decline of 3,1% in 2010. It is observed that seasonality in cabotage transportation, the impact of the 2008 crisis reached its highest levels in vehicle transports in 2009;Cabotage passenger transportation was affected by the crisis in 2010. Itis noteworthy thatŞehir Hatları Administration (City Line) and Istanbul Ferries under the umbrella of the Turkey Maritime Organization which were the largest cabotage transportation lines, were privatized immediately after the crisis.The government privatized thesereduce public expenditures forfinancial discipline in the sector affected by the crisis.Furthermore, since 2006, the impact of the crisis has been reduced by providing ÖTV(Special Consumption Tax) tax-free fuel incentives to cabotage passenger ships and ferries.

*Table 5: Cabotage Transportation in Turkish Ports in 2006-2011*

| Years | Transported By Vehicle(Ton) | Transported By Ship (Ton) | Total (Ton) | Change % | Transported Passenger | Change % |
|---|---|---|---|---|---|---|
| 2006 | 19.756.679 | 15.133.337 | 34.890.016 | - | 135.348.554 | - |
| 2007 | 18.873.278 | 18.004.619 | 36.877.897 | 5,7 | 149.824.929 | 10,6 |
| 2008 | 17.856.494 | 20.136.037 | 37.992.531 | 3 | 151.645.639 | 1,2 |
| 2009 | 13.027.429 | 19.485.900 | 32.513.329 | -14,4 | 159.194.370 | 5,1 |
| 2010 | 14.686.657 | 19.434.485 | 34.121.142 | 4,9 | 154.198.088 | -3,1 |
| 2011 | 15.612.213 | 22.389.570 | 38.001.783 | 11,4 | 156.842.003 | 1,7 |

*DTGM, http://www.denizticareti.gov.tr, 2012 Yıllık İstatistikleri.*

*Graphic2: Cabotage Transportation in Turkish Ports in 2006-2011*




## Seaway External Trade Handling Quantities

Maritime trade depends on the economic developments in the world and the country, and therefore macroeconomic courses are important.Changes in GDP directly affectthe demand for commodities and services, and the amounts of maritime trade fluctuate depending on the amounts of import and export.According tothe amounts of import and export in Turkey in 2006-2011, it is observed that there was a similar tendency towards the country's import series due to generally import giving direction to external trade by seaway.Total external trade handling transactions declined by 1,6% in 2009 as a result of the contraction in import;In the mid-2009 period, it increased rapidly and exceeded the pre-crisis level in 2010.Although generally the export volume of Turkish ports has been fluctuating, it is observed that there was a small decline due to the crisis, where the pre-crisis amount had a 13% increase in 2010 due to the strong base effect.The diversification of the export markets has been effective by the low level impact of the crisis on export transportation.Especiallyexport to Russia and the Middle East markets enhanced the total amount.The volume of unloading import at Turkish ports fluctuated. It is observed that import continuously increased until 2008 decreased by 7,1% in 2009 due to the crisis;while increasing by 14,4% and exceeding the pre-crisis level in 2010. The amount of transit transports handling at the ports increased every year unaffected by the global crisis and transit handling kept the decline of total handling in a low level.The increase in transit handling was mainly due to the fact that the Turkish ports tended to container handling especially during the crisis period.While export loads and transit loads constituted half of the cargo handling in Turkish ports, import loads constituted the other half. According to the monetary value of external trade carried by seaway,the decline in currency rates after 2006 was particularly effective in the decline of the monetary value of import; Thedepreciation that started in 2008,reached 55,5 % at the end of 2009. Although there was no a significant decline in the total amount of cargo due to the impact of the crisis, the increase in the value of the Euro, the increase in the Euro/USDparity and the increase in commodity prices were effective onhalving the monetary value.In 2008, freight expenditures increased more than their incomes and the net freight approached USD -3 billion (Kalaycı, 2013, pp. 103-108).By overcoming the crisis, the freight incomes started to increase more than the expendituresin the

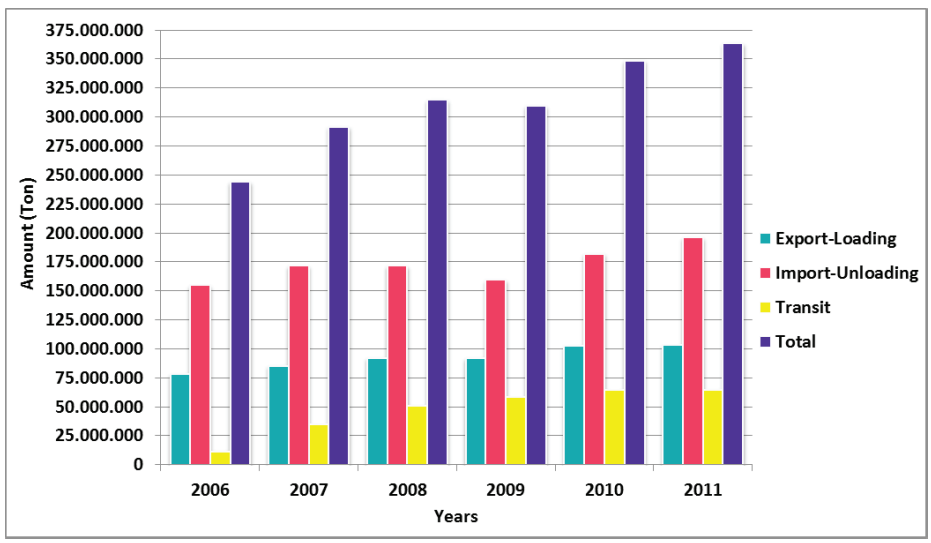
balance of payments.Furthermore, commodity prices, general prices and changes in currency rates were effective in opening and closing the ratios between tonnage values and monetary values of external trade transportation. In general, maritime transport in Turkey was in parallel with the developments in external trade volume due to import and export by seaway.It is thought that these two markets should be evaluated together.

*Table 6: Seaway External Trade Handling Quantities in 2006-2011 (Ton)*

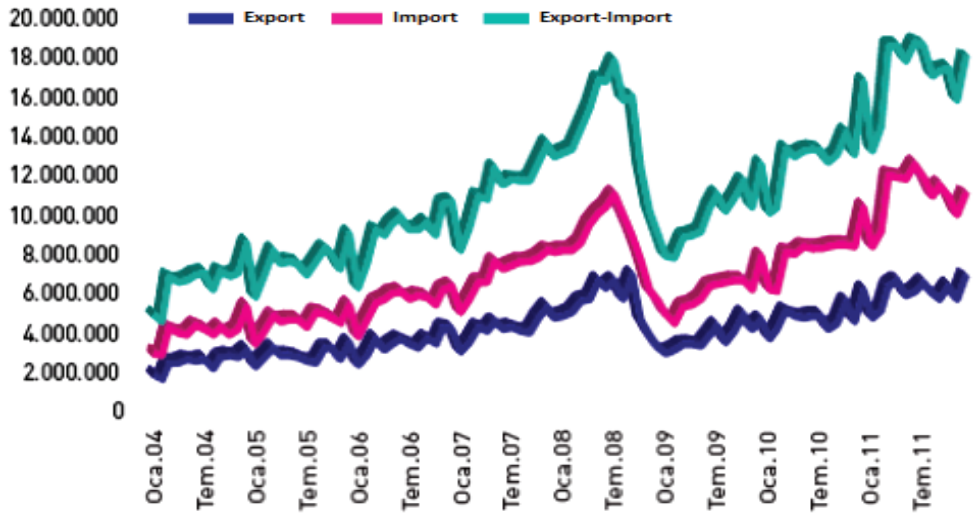
| Years | Export-Loading | Import-Unloading | Transit | Total | Change % |
|---|---|---|---|---|---|
| 2006 | 77.987.641 | 154.762.531 | 11.251.754 | 244.001.926 | - |
| 2007 | 85.354.515 | 171.657.360 | 34.561.755 | 291.573.630 | 19,4 |
| 2008 | 92.168.600 | 171.688.299 | 50.752.817 | 314.609.716 | 7,9 |
| 2009 | 92.076.130 | 159.347.990 | 58.012.586 | 309.436.706 | -1,6 |
| 2010 | 102.494.306 | 182.018.851 | 64.122.784 | 348.635.941 | 12,6 |
| 2011 | 103.033.885 | 195.933.698 | 64.379.150 | 363.346.733 | 4,2 |

*DTGM, http://www.denizticareti.gov.tr, 2012 Yıllık İstatistikleri*

*Graphic 3: Seaway External Trade Handling Quantities in 2006-2011 (Ton)*



*Graphic 4: Seaway External Trade Value in 2006-2011 (USD 000)*




## Types of Cargo Handling in Ports

Global economic developments directly affect global maritime trade.Especially the decline in world trade causes disruption of maritime trade activities. The 2008 global financial crisis was influentialall over the world including Turkey;It reduced cargo handling in ports in Turkey.The most frequently transported liquid cargoes are grouped as petroleum derivatives, chemical liquids and beverages.It is in the first place in terms of quantity within the maritime transport cargo groups.It is observed that the liquid cargo handling in Turkish ports in 2006-2011 increased over the years.Although the amount increased from 133.3 million tons to 134.5 million tons after 2009, it decreasedto 129.9 million tons in 2011.Meanwhile, there was no significant difference in liquid cargoes on a yearly basis.The reason for this situationwas that, including times of crisis, Turkey is a regular importer in particular of natural gas and petroleum products.The container is a tool used in the transportation of goods and industrial products and suitable for carrying all kinds of cargoes, which provides standardization in transportation. Carrying by liner, fast and safe loading and unloading, and carrying more than one kind of cargo at the same time differentiate container transportation from other types of transport. Container transportations are highly sensitive to internal and external demand conditions due to the fact that the import of processed products are made by container. Container transportation shows a parallel with import-export due to internal and external demand and credit facilities. It is observed that the highest loss was in container transports by 12.3 % in 2009 and this decline was 15 % on the TEU (A twenty-foot equivalent unit is a shipping container whose internal dimension measure).The economic crisis, which started in mid-2008 and increased in 2009, reduced the external demand and this was reflected in the container transportations.The decline in container import affected total container transport but the container import-export recovered after the crisis and made a strong leap in 2010 by 30 % increase.General cargoes include solid bulk cargoes, general cargoes and in-vehicle cargoes.General cargoes, which constitute approximately 45 % of the cargo handling in Turkish ports, decreased by 7 % in 2009 in comparison to the previous year. It is thought that the decrease in the vehicle cargoes was the effect of this decline. According to the total amount in 2009, there was a contraction by 1.6 % as a result of the delayed crisis.The continuity of

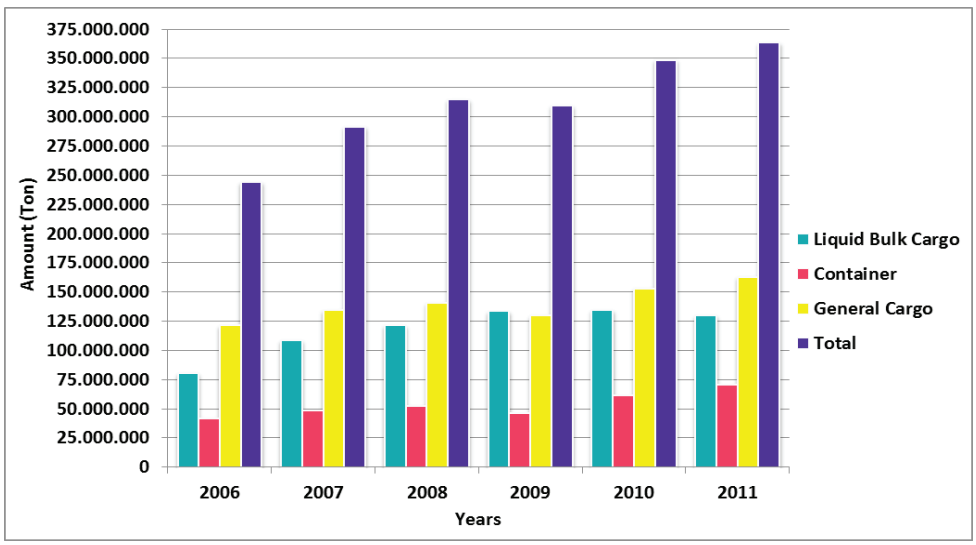
the importation of liquid cargoes and the viability of the internal demand limited the impact of the crisis in total amount.According to the geographical regions, although the amount of cargo handling in 2009 decreased in the Black Sea Region by 6,7%, in the Marmara Region by 4,7 %, in the Aegean Region by 15 %;there wasan increase by 10,5 % in the Mediterranean Region.This may have been due to the fact thatthe Mediterranean Region's ports are import portsand the other ports are export ports.

*Table 7: Types of Cargo Handling in Ports of Turkey in 2006-2011 (Ton)*

| Years | Liquid Bulk Cargo | Container | General Cargo | Total | Change % |
|---|---|---|---|---|---|
| 2006 | 80.847.217 | 41.815.705 | 121.339.004 | 244.001.926 | - |
| 2007 | 108.622.167 | 48.644.314 | 134.307.149 | 291.573.630 | 19,4 |
| 2008 | 121.486.988 | 52.530.084 | 140.592.644 | 314.609.716 | 7,9 |
| 2009 | 133.352.244 | 46.030.743 | 130.053.719 | 309.436.706 | -1,6 |
| 2010 | 134.474.303 | 61.175.130 | 153.040.508 | 348.635.941 | 12,6 |
| 2011 | 129.992.302 | 70.381.257 | 162.973.174 | 363.346.733 | 4,2 |

*DTGM, http://www.denizticareti.gov.tr, 2012 Yıllık İstatistikleri*

*Graphic 5: Types of Cargo Handling in Ports of Turkey in 2006-2011 (Ton)*




## Turkish Maritime Fleet

The situation of the Turkish Maritime Fleet will be usefulin determining the impact of the 2008 crisis.The analysis of the Turkish Maritime Fleet was based on the number of ships over 1000 DWT of the Turkish-owned national flag and foreign flag.Among the types of ships, 50% are bulk carriers, 20% are liquid bulk carriers-tankers, 15 % are dry bulk carriers and 8% are container ships.It is observed that there was a decrease only in 2010 and 2011 based on development of the fleet in terms of quantity and tonnage by years.The decrease in the number

of ships despite increase in capacity in 2010 and 2011 shows that large tonnage ships have participated in the Turkish maritime trade fleet.Lower tonnage ships were removed from the fleet and large tonnage ships have participated in the fleet.In the 5-year period including the crisis, the total number of ships increased by 33,9 % while the capacity increased by 100 %. It is noteworthy that the number and capacity of the foreign flagged ships in the fleetand the transition to foreign flags increased in 2008 due to the impact of the crisis.According to the flag distribution of the ships in the Turkish Maritime Fleet, while foreign flagged ships have been continuously increasing in terms of capacity, there was a decrease in the number of units in 2011. Especially in 2010 and 2011, high tonnage ships were included in the fleet.Although there was some improvement in Turkish flagged ships in terms of number and tonnage, the national flag rate declined continuously in the fleet.National and foreign flag ratesin terms of capacity were equalized in 2007;Foreign flag rate increased significantly in 5 years after the 2008 crisis.This situation shows that especially during the global crisis Turkish ship owners have avoided the national flag due to high tax rates and bought ships under foreign flags. Furthermore, it is observed that the tonnages of the foreign flagged ships that participated in the fleet were high and the share of the foreign flagged fleet was high in export-import transportation.

*Table 8: Turkish Maritime Fleet Ship Amounts in 2006-2011 (+1000 DWT)*

| Years | Turkish Flagged Ships | Percent in Total % | Foreign Flagged Ships | Percent in Total % | Total |
|---|---|---|---|---|---|
| 2006 | 446 | 51,2 | 424 | 48,8 | 870 |
| 2007 | 490 | 48,8 | 513 | 51,2 | 1.003 |
| 2008 | 520 | 44,9 | 636 | 55,1 | 1.156 |
| 2009 | 560 | 45,7 | 665 | 54,3 | 1.225 |
| 2010 | 547 | 44,8 | 672 | 55,2 | 1.219 |
| 2011 | 523 | 44,8 | 642 | 55,2 | 1.165 |

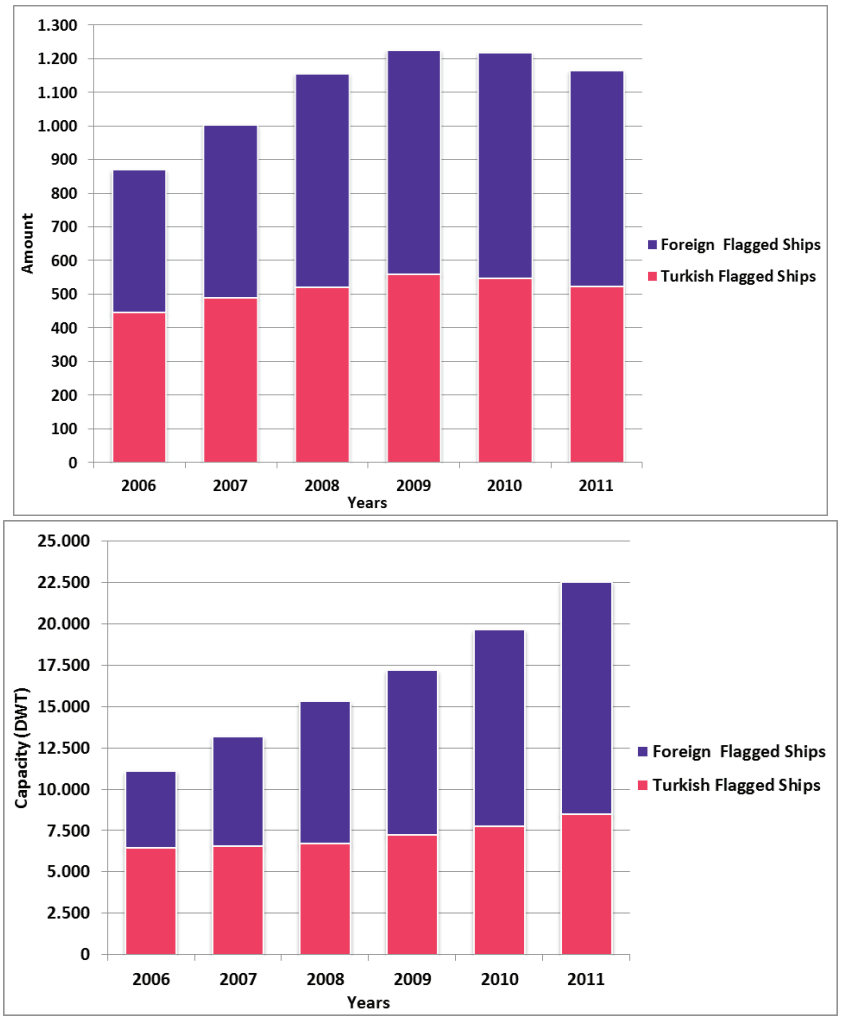
*DTGM, http://www.denizticareti.gov.tr, 2012 Yıllık İstatistikleri*

*Table 9: Turkish Maritime Fleet Capacity in 2006-2011 (+1000DWT)*

| Years | Turkish Flagged Ships DWT | Percent in Total % | Foreign Flagged Ships DWT | Percent in Total % | Total |
|---|---|---|---|---|---|
| 2006 | 6.464 | 58,1 | 4.650 | 41,9 | 11.114 |
| 2007 | 6.592 | 50,0 | 6.591 | 50,0 | 13.183 |
| 2008 | 6.736 | 43,9 | 8.592 | 56,1 | 15.328 |
| 2009 | 7.246 | 42,1 | 9.954 | 57,9 | 17.200 |
| 2010 | 7.797 | 39,6 | 11.863 | 60,4 | 19.660 |
| 2011 | 8.479 | 37,5 | 14.093 | 62,5 | 22.572 |

*DTGM, http://www.denizticareti.gov.tr, 2012 Yıllık İstatistikleri*

*Graphic 6: Turkish Maritime Fleet Amount and Capacity in 2006-2011 (+1000DWT)*

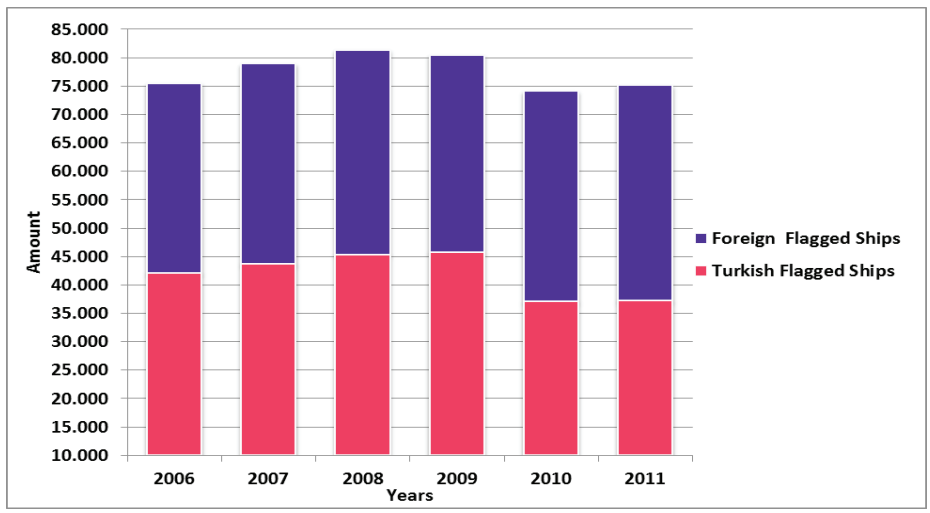



One of the indicators of the domestic and external trade volume and traffic is the number of ships in transaction in ports.According to the total numbers of ships in transaction in Turkish ports in 2006 and 2011, it is observed that there was a continuous increase until 2009, but after this year, the decline reached 7,8% in 2010 and continued in 2011.This situation was in parallel with external trade volume.On the other hand, it is observed that while the number of Turkish flagged ships decreased since 2010, the number of foreign flagged ships increased in Turkish ports. The fact that foreign flag ships within the capacity of the ships transaction in the ports have a major rate explains the major decline in the total capacity of the cargo handling in 2010.

*Table 10: Ships Transactions in Ports of Turkey in 2006-2011*

| Years | Turkish Flagged Ships | Turkish Flagged Ships % | Foreign Flagged Ships | Foreign Flagged Ships % | Total |
|---|---|---|---|---|---|
| 2006 | 42.058 | 55,7 | 33.461 | 44,3 | 75.519 |
| 2007 | 43.662 | 55,3 | 35.262 | 44,7 | 78.924 |
| 2008 | 45.362 | 55,7 | 36.042 | 44,3 | 81.404 |
| 2009 | 45.813 | 56,9 | 34.631 | 43,1 | 80.444 |
| 2010 | 37.060 | 50 | 37.055 | 50 | 74.115 |
| 2011 | 37.234 | 49,6 | 37.900 | 50,4 | 75.134 |

*Graphic 7: Ships Transactions in Ports of Turkey in 2006-2011*




## Conclusions

As in all over the world, the 2008 crisis also affected Turkish maritime trade.The crisis was manifested in the Turkish market by being delayed in 2009 and the effects of the crisis were felt in 2010.It is observed that there was a decline by 14,4 % in the amount of cargo handling in the cabotage line and by 3,1 % in cabotage passenger transport in 2009. Total external trade handling declined by 1,6 % in 2009 as a result of the contraction in import, while it increased rapidly and exceeded the pre-crisis level in 2010.While there was no large decrease in export handling, import handling affected the monetary value of externalmaritime trade by a decrease of 7,1% in 2009. The monetary value depreciation in external trade transactions that started in 2008 reached 55,5% at the end of 2009. According to the types of cargo handlingamounts in Turkish ports, there was no decrease in liquid loads, while general cargoes decreased by 7% in 2009. It is observed that the maximum loss in cargo types was realized in container transportation by 12,3%.In the Turkish Maritime Fleet, despite the increase in the number of ships and capacity, as a result of the crisis, transitions to foreign flags intensified in 2008; foreign flag rate has increased significantly in 5 years since 2009. According to the total number of ships transaction in Turkish ports, there was a decline by 7,8 % in 2010 and which continued in 2011. As a result, the Turkish maritime sector, which

is an international sector, was highly affected by the crisis.Turkey has tried to compensate for the contraction in external demand by opening up to the Middle Eastern and Russian markets.External trade volume was affected negatively by interest rates, currency rates and liquidity conditions; whereas the negative real interest rates based on developed countries and the upward trend in commodity prices had a negative impact on Turkish maritime trade. The financing problem and supply surplus for the Turkish maritime sector are other problems that are ongoing and affecting maritime.

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# 6

# AN ANALYSIS ON INFORMATION TECHNOLOGIES (ICT) IN EU TRANSITION ECONOMIES: APPLICATION OF MARSHALL'S THIRD LAW

*Deniz Şişman[1], Mehmet Şişman[2]*

***Abstract***

*The new participant States as a result of the expansion of the EU on May 1, 2004 accounted for the largest member participation namely: Czech Republic, Cyprus, Estonia, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia. Then, on January 1, 2007, Bulgaria and Romania were admitted to the Union. Lastly, on July 1, 2013, Croatia participated in the European Union as a full member. This study debates the idea that the information sector in the aforementioned European Union participants can play a powerful part in the integration. The debate associates Marshall's third law that is derivative demand elasticity with the labor's share in the total cost and reveals impact of these last participant States in the EU on the information sector, with regards to qualified workforce. In the current period as protection tendencies get stronger in the Global Economy , the EU transition economies obtain the opportunity of using the cost advantage based on increasing returns with the large-scale countries. On the other hand, this growth tendency transforms the labor costs for both the EU countries and the EU transition economies to exit from the 2008 global crisis.*

*Keywords: Digital Economy, Transition Countries, ICT, Skilled labor, Marshall Laws, Importance of being unimportant.*

## Introduction:

Themain research question of this study is to question the integration in the EU of 13 Eastern Europe States that became full members of the EU between 2004 and 2013, particularly in the information sector. Within this framework, based on the deductive method, the idea that "the developments in the information sector of the EU accession States can be explained with the Marshall's third law " constitutes the subject of the study. According to Marshall, the labor demand gets more inelastic, as the share of the labor in the total costs reduces. The opinion underlying that argument is that any increase in the wages will affect the average costs more, according to the rule three (Hoffman, 2009). In other words, while the price of the good emerges, as the share of the labor input reduces, labor costs will become more important, since more inelastic demand is seen. It is observed that given the increasing demand for the qualified workforce by the information sector in the EU countries, qualified workforce supply in the accession countries meet with the integration. And this fact reduces the qualified workforce costs required for the information sector, according to Marshall's third law .

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## I. Developments in the Information Technologies: International Information Communication Technologies Development Index (ICT)

For sure, there are important reasons for the emergence of the Information Technologies in 1990's. In this process that coincided with the breakdown of the bipolar world, the previous works brought results and as a result of the development and dissemination of the Internet (that was discovered in 1960s) in 1992, foundation of the interoceanic information infrastructure was laid. The development in the computer technology dates back to 1950's. After microchips that constitute the basic infrastructure of the information processing technology were developed in 1958 in the USA, they allowed the computers, which used to hardly fit in a large room, to get smaller dimensions and to become the indispensible communication and information processing tools of our life, together with the mobile phones. While hardware and software are being combined, software or operating system has an extraordinary impact inarguably. The actual source of value of the current technology companies emerges with the development of the software. Particularly the increase in the Open Source free software licenses in the public space paves the way for the Information Processing Technologies to be developed with the contribution from all around the world. This way, the countries that want to use information-processing technologies although they lack the power and capital to produce hardware will develop the software, want to obtain an opportunity of development in the operating system and programming and also will be a part of the communication network somehow.

An index was prepared in 2008 by the United Nations International Telecommunication Union (ITU) for the purpose of comparing the developments in the information processing technologies (ICT) in line with the demands of the Member States. Consisting of 11 different indicators, the composite index was published in 2009 for the first time. The index, where a methodological change was made after 2016, allows us to compare the ICT data of 176 countries over 11 indicators and 3 sub-indexes. As can be seen in the table, among 3 sub-indexes, first ICT access and then ICT use are attached importance. ICT access actually provides the opportunity of both to compare the subscription of the available infrastructure for the use of mobile phone, computer and Internet that is rapidly increasing with the land phone and to compare the potential group that is able to access to ICT technologies. The use of the ICT, on the other hand, takes Internet, land phone and wireless broadband Internet subscription as data and reflects the extraordinary development in that field on the sub-index. The last data of the sub-index allow conducting an ability analysis through education by determining the rate of education periods of those who use the ICT, their rate of schooling in secondary and higher education. This way, the ICT index that consists of 11 indicators of the three sub-indexes indexes and compares the basic ICT access, use and ability indicators of 176 UN Member States by weighing the same.

*Table 1: Sub-indexes, indicators and weights thereof*

| ICT Access | % | |
|---|---|---|
| 1. Land phone subscription per 100 people | 20 | % 40 |
| 2. Mobile phone subscription per 100 people | 20 | |
| 3. International bandwidth per Internet user (bit/sec) | 20 | |
| 4. Rate of homes using computer | 20 | |
| 5. Rate of homes having access to Internet | 20 | |

| ICT UseICT Access | % | |
|---|---|---|
| 6. Rate of individuals using Internet (%) | 33 | % 40 |
| 7. Fixed broadband Internet subscription per 100 people | 33 | |
| 8. Wireless broadband Internet subscription per 100 people | 33 | |

| ICT Abilities | % | |
|---|---|---|
| 9. Average schooling year (Reference value: 15 years) | 33 | % 20 |
| 10. Rate of schooling in secondary education (%) | 33 | |
| 11. Gross rate of schooling in higher education (%) | 33 | |

*Source:https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis/methodology.aspx*

According to the ICT Development Index in the Table 2, among the EU transition countries, Estonia in the 17th rank is followed by Slovenia, Lithuania, Croatia and Czechia, Hungary, Poland and Bulgaria. In the index figures, higher tendencies are observed in 2017, compared to 2016. When it is taken into consideration that the index also covers the sub-indexes, it makes it possible to grow for transition countries. Given that the growth opportunities concentrate on the investments that are attraction centers with regard to direct investments, the fact we stated hosts the potential that can also affect the EU direct investments (lszewski, 2009).

*Table 2: ICT Development Index*

| IDI 2017 Rank | Economy | IDI 2017 Value | IDI 2016 Rank | IDI 2016 Value | IDI 2017 Rank | Economy | IDI 2017 Value | IDI 2016 Rank | IDI 2016 Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Iceland | 8.98 | 2 | 8.78 | 89 | Albania | 5.14 | 89 | 4.9 |
| 2 | Korea (Rep.) | 8.85 | 1 | 8.8 | 90 | Seychelles | 5.03 | 92 | 4.8 |
| 3 | Switzerland | 8.74 | 4 | 8.66 | 91 | Mongolia | 4.96 | 87 | 4.91 |
| 4 | Denmark | 8.71 | 3 | 8.68 | 92 | South Africa | 4.96 | 88 | 4.91 |
| 5 | United Kingdom | 8.65 | 5 | 8.53 | 93 | Cape Verde | 4.92 | 91 | 4.83 |
| 6 | Hong Kong, China | 8.61 | 6 | 8.47 | 94 | Panama | 4.91 | 93 | 4.8 |
| 7 | Netherlands | 8.49 | 10 | 8.4 | 95 | Uzbekistan | 4.9 | 103 | 4.48 |
| 8 | Norway | 8.47 | 7 | 8.45 | 96 | Peru | 4.85 | 97 | 4.61 |
| 9 | Luxembourg | 8.47 | 9 | 8.4 | 97 | Ecuador | 4.84 | 101 | 4.52 |
| 10 | Japan | 8.43 | 11 | 8.32 | 98 | Jamaica | 4.84 | 96 | 4.63 |
| 11 | Sweden | 8.41 | 8 | 8.41 | 99 | Tunisia | 4.82 | 95 | 4.7 |
| 12 | Germany | 8.39 | 13 | 8.2 | 100 | Morocco | 4.77 | 98 | 4.57 |
| 13 | New Zealand | 8.33 | 12 | 8.23 | 101 | Philippines | 4.67 | 100 | 4.52 |
| 14 | Australia | 8.24 | 16 | 8.08 | 102 | Algeria | 4.67 | 106 | 4.32 |
| 15 | France | 8.24 | 17 | 8.05 | 103 | Egypt | 4.63 | 104 | 4.44 |
| 16 | United States | 8.18 | 15 | 8.13 | 104 | St. Lucia | 4.63 | 99 | 4.53 |
| 17 | Estonia | 8.14 | 14 | 8.16 | 105 | Botswana | 4.59 | 102 | 4.51 |
| 18 | Singapore | 8.05 | 20 | 7.85 | 106 | Dominican Rep. | 4.51 | 107 | 4.26 |
| 19 | Monaco | 8.05 | 18 | 8.03 | 107 | Fiji | 4.49 | 105 | 4.34 |
| 20 | Ireland | 8.02 | 19 | 7.9 | 108 | Viet Nam | 4.43 | 108 | 4.18 |
| 21 | Austria | 8.02 | 24 | 7.7 | 109 | Kyrgyzstan | 4.37 | 110 | 4.06 |
| 22 | Finland | 7.88 | 21 | 7.83 | 110 | Tonga | 4.34 | 109 | 4.13 |
| 23 | Israel | 7.88 | 22 | 7.71 | 111 | Indonesia | 4.33 | 114 | 3.85 |
| 24 | Malta | 7.86 | 25 | 7.65 | 112 | Bolivia | 4.31 | 115 | 3.84 |
| 25 | Belgium | 7.81 | 23 | 7.7 | 113 | Paraguay | 4.18 | 111 | 4.02 |
| 26 | Macao, China | 7.8 | 29 | 7.55 | 114 | Gabon | 4.11 | 118 | 3.62 |
| 27 | Spain | 7.79 | 27 | 7.61 | 115 | Libya | 4.11 | 112 | 3.93 |
| 28 | Cyprus | 7.77 | 31 | 7.3 | 116 | Ghana | 4.05 | 113 | 3.88 |
| 29 | Canada | 7.77 | 26 | 7.64 | 117 | Sri Lanka | 3.91 | 116 | 3.77 |
| 30 | Andorra | 7.71 | 28 | 7.58 | 118 | Namibia | 3.89 | 123 | 3.33 |
| 31 | Bahrain | 7.6 | 30 | 7.46 | 119 | El Salvador | 3.82 | 117 | 3.62 |
| 32 | Belarus | 7.55 | 32 | 7.29 | 120 | Belize | 3.71 | 120 | 3.54 |
| 33 | Slovenia | 7.38 | 33 | 7.2 | 121 | Bhutan | 3.69 | 119 | 3.58 |
| 34 | Barbados | 7.31 | 37 | 7.11 | 122 | Timor-Leste | 3.57 | 127 | 3.11 |
| 35 | Latvia | 7.26 | 40 | 7.05 | 123 | Palestine | 3.55 | 122 | 3.42 |
| 36 | Croatia | 7.24 | 42 | 6.96 | 124 | Guyana | 3.44 | 121 | 3.44 |
| 37 | St. Kitts and Nevis | 7.24 | 35 | 7.18 | 125 | Guatemala | 3.35 | 125 | 3.19 |
| 38 | Greece | 7.23 | 38 | 7.08 | 126 | Syria | 3.34 | 124 | 3.32 |
| 39 | Qatar | 7.21 | 36 | 7.12 | 127 | Samoa | 3.3 | 129 | 2.95 |
| 40 | United Arab Emirates | 7.21 | 34 | 7.18 | 128 | Cambodia | 3.28 | 128 | 3.04 |
| 41 | Lithuania | 7.19 | 41 | 6.97 | 129 | Honduras | 3.28 | 126 | 3.14 |
| 42 | Uruguay | 7.16 | 48 | 6.75 | 130 | Nicaragua | 3.27 | 132 | 2.85 |
| 43 | Czech Republic | 7.16 | 39 | 7.06 | 131 | Côte d'Ivoire | 3.14 | 134 | 2.84 |
| 44 | Portugal | 7.13 | 44 | 6.88 | 132 | S. Tomé & Principe | 3.09 | 131 | 2.91 |
| 45 | Russian Federation | 7.07 | 43 | 6.91 | 133 | Lesotho | 3.04 | 130 | 2.94 |
| 46 | Slovakia | 7.06 | 47 | 6.84 | 134 | India | 3.03 | 138 | 2.65 |
| 47 | Italy | 7.04 | 46 | 6.84 | 135 | Myanmar | 3 | 140 | 2.59 |
| 48 | Hungary | 6.93 | 49 | 6.74 | 136 | Zimbabwe | 2.92 | 133 | 2.85 |
| 49 | Poland | 6.89 | 50 | 6.73 | 137 | Cuba | 2.91 | 135 | 2.8 |
| 50 | Bulgaria | 6.86 | 53 | 6.66 | 138 | Kenya | 2.91 | 137 | 2.67 |
| 51 | Argentina | 6.79 | 52 | 6.68 | 139 | Lao P.D.R. | 2.91 | 144 | 2.43 |
| 52 | Kazakhstan | 6.79 | 51 | 6.72 | 140 | Nepal | 2.88 | 139 | 2.6 |
| 53 | Brunei Darussalam | 6.75 | 54 | 6.56 | 141 | Vanuatu | 2.81 | 136 | 2.75 |
| 54 | Saudi Arabia | 6.67 | 45 | 6.87 | 142 | Senegal | 2.66 | 142 | 2.48 |
| 55 | Serbia | 6.61 | 55 | 6.51 | 143 | Nigeria | 2.6 | 143 | 2.44 |
| 56 | Chile | 6.57 | 59 | 6.28 | 144 | Gambia | 2.59 | 145 | 2.43 |
| 57 | Bahamas | 6.51 | 58 | 6.29 | 145 | Sudan | 2.55 | 141 | 2.56 |
| 58 | Romania | 6.48 | 61 | 6.23 | 146 | Zambia | 2.54 | 149 | 2.19 |
| 59 | Moldova | 6.45 | 63 | 6.21 | 147 | Bangladesh | 2.53 | 146 | 2.37 |
| 60 | Costa Rica | 6.44 | 57 | 6.29 | 148 | Pakistan | 2.42 | 148 | 2.21 |
| 61 | Montenegro | 6.44 | 56 | 6.3 | 149 | Cameroon | 2.38 | 150 | 2.14 |
| 62 | Oman | 6.43 | 64 | 6.14 | 150 | Mozambique | 2.32 | 147 | 2.23 |
| 63 | Malaysia | 6.38 | 62 | 6.22 | 151 | Mauritania | 2.26 | 152 | 2.08 |
| 64 | Lebanon | 6.3 | 65 | 6.09 | 152 | Uganda | 2.19 | 158 | 1.9 |
| 65 | Azerbaijan | 6.2 | 60 | 6.25 | 153 | Rwanda | 2.18 | 151 | 2.1 |
| 66 | Brazil | 6.12 | 67 | 5.89 | 154 | Kiribati | 2.17 | 155 | 2.04 |
| 67 | Turkey | 6.08 | 72 | 5.66 | 155 | Mali | 2.16 | 153 | 2.05 |
| 68 | Trinidad & Tobago | 6.04 | 71 | 5.71 | 156 | Togo | 2.15 | 159 | 1.86 |
| 69 | TFYR Macedonia | 6.01 | 68 | 5.88 | 157 | Solomon Islands | 2.11 | 154 | 2.04 |
| 70 | Jordan | 6 | 66 | 5.97 | 158 | Djibouti | 1.98 | 161 | 1.8 |
| 71 | Kuwait | 5.98 | 70 | 5.75 | 159 | Afghanistan | 1.95 | 165 | 1.71 |
| 72 | Mauritius | 5.88 | 75 | 5.51 | 160 | Angola | 1.94 | 156 | 2 |
| 73 | Grenada | 5.8 | 77 | 5.39 | 161 | Benin | 1.94 | 157 | 1.92 |
| 74 | Georgia | 5.79 | 73 | 5.59 | 162 | Burkina Faso | 1.9 | 163 | 1.74 |
| 75 | Armenia | 5.76 | 74 | 5.56 | 163 | Equatorial Guinea | 1.86 | 160 | 1.82 |
| 76 | Antigua & Barbuda | 5.71 | 76 | 5.48 | 164 | Comoros | 1.82 | 162 | 1.78 |
| 77 | Dominica | 5.69 | 69 | 5.76 | 165 | Tanzania | 1.81 | 164 | 1.73 |
| 78 | Thailand | 5.67 | 79 | 5.31 | 166 | Guinea | 1.78 | 166 | 1.71 |
| 79 | Ukraine | 5.62 | 78 | 5.31 | 167 | Malawi | 1.74 | 169 | 1.58 |
| 80 | China | 5.6 | 83 | 5.17 | 168 | Haiti | 1.72 | 168 | 1.63 |
| 81 | Iran (I.R.) | 5.58 | 85 | 5.04 | 169 | Madagascar | 1.68 | 167 | 1.7 |
| 82 | St. Vincent and the Grenadines | 5.54 | 80 | 5.27 | 170 | Ethiopia | 1.65 | 171 | 1.42 |
| 83 | Bosnia and Herzegovina | 5.39 | 81 | 5.23 | 171 | Congo (Dem. Rep.) | 1.55 | 170 | 1.48 |
| 84 | Colombia | 5.36 | 84 | 5.12 | 172 | Burundi | 1.48 | 172 | 1.39 |
| 85 | Maldives | 5.25 | 86 | 4.97 | 173 | Guinea-Bissau | 1.48 | 173 | 1.38 |
| 86 | Venezuela | 5.17 | 82 | 5.22 | 174 | Chad | 1.27 | 174 | 1.06 |
| 87 | Mexico | 5.16 | 90 | 4.87 | 175 | Central African Rep. | 1.04 | 176 | 0.89 |
| 88 | Suriname | 5.15 | 94 | 4.77 | 176 | Eritrea | 0.96 | 175 | 0.96 |

*Source: http://www.itu.int/net4/ITU-D/idi/2017/index.html*

When the production of the hardware tools used in the information sector (ICT) is considered, it is observed that none of the EU transition countries takes part in production or import. It is known that some metals such as cobalt, palladium, tin, of which production is led by developing countries from Africa (Zambia), Far Asia, Latin America and Australia due to their underground sources are used in information tools such as hard drive and laptop computer and their import has been made in several countries, particularly China (Fuchs, 2014, 171). EU transition countries that are not among this chain of raw material and semi-product production have no other option than existing in the software and operating system, within information technology.

## II.Marshall's Third Law and Information Sector: Factor elasticity of demand

Determination of the derivative factor elasticity of demand by the change in the labor and capital shares within the production function has been the subject of several studies in the literature of economics. First Alfred Marshall (1920), then J. R. Hicks (1932) and R.G.D. Allen (1938), and then M. Bronfenbrenner (1961) and G.J. Stigler (1966) associated the reasons determining the derivative factor elasticity of demand with four known rules, in their studies. These rules are generally called Marshall Laws. The first two laws of Marshall-Hicks is that as the factor elasticity of substitution gets easier in production, in other words, as the substitution of the labor used for producing the goods of the same quantity with the capital gets easier, in connection with the increase in the final good elasticity of demand, elasticity of demand of the good concerned increases. Nevertheless, the opposite of the first two rules is valid (Hoffman, 2009). In short, as the quantity of labor used in the goods cannot be substituted with the capital or as the factor elasticity of substitution reduces, the derivative demand elasticity reduces, in connection with the decrease in the elasticity of demand of the final good. The fourth rule argues that the same is valid with regard to supply elasticity. Thus, the positive impact in the supply elasticity is in connection with the elasticity of the factors.

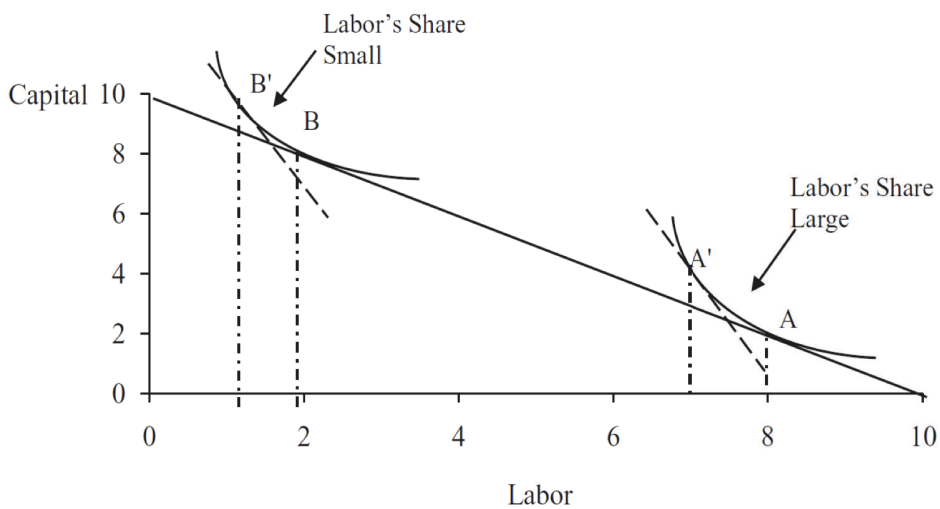
According to our subject that is the Marshall's Third Law that bears importance in understanding the impact of the information communication technologies on the transition countries in the EU, elasticity of derivative demand is associated with the share of labor in the total cost. According to Marshall, the labor demand gets more inelastic, as the share of the labor in the total costs reduces. The opinion underlying that argument is that any increase in the wages will affect the average costs more, according to the rule three (Hoffman, 2009). In other words, while the price of the good emerges, as the share of the labor input reduces, (unimportant) labor costs will become more important, since more inelastic demand is seen. When it is considered with regard to the commerce between the large country (important country) and small country (unimportant country) that does not affect the foreign trade limit, cost of the qualified workforce in the small or "unimportant" country will reach the level of the large or "important" country. As a result of that, when the mutual trade is considered with regard to the information (ICT) sector that makes production according to the qualified labor-intensive factor demand, it carries the unimportant country to the position of an important actor.

Despite the fact that the production function shows the active input-output component combinations in the literature, it does not show which combination will maximize the profit of the entrepreneur. One also needs to take into consideration the technology used for the information sector that we addressed in this regard. Therefore, return of the technology used according to the scale and elasticity of substitution are of importance. As we are to state with reference to the studies conducted on the information sector later on, it is a sector where increasing return according to the scale realizes. Because as the scale gets bigger, expertise and efficiency are expected to

increase. Then, a significant decline is observed in the costs and this tendency is stronger in the capital goods used in the sectors such as information. In addition to these, because information technology (ICT) externality is high, the probability of its creating derivative demand for the other sectors is high. Another issue characterizing the technology is elasticity of substitution. Elasticity of substitution associates substitution of the inputs by one another with factor prices. In this regard, in the commercial and investment relationships between two countries, the labor costs in the large country are important compared to those in the small country and the labor costs in the small country are unimportant compared to those in the large country. Therefore, small country labor costs are considered with respect to the labor costs in the large country (Perloff, 2013).

As observed in our analysis, in figure 1, let us assume that they produce on the same cost line according to different labor and capital combinations. In this case, as the wages that determine the labor's share in the information sector in the large country (B) increase, if the companies do not enter into a commercial and investment relationship with the country A, they are obliged to prefer the point B' containing a higher isocost line compared to the point B that contains a low elasticity of substitution and intersects the isocost line. On the other hand, in the figure 1, after entering into an investment and commercial relationship with the large country, the small country *is able to prefer the combination of higher labor demand and lower capital demand with the same elasticity of substitution* on the same isocost line, at the point A. In this case, capital cost of the small country remains far lower compared to its labor cost (Hoffman, 2009).

*Figure 1. Input Adjustments to a change in factor prices when the share of labor in total costs differs*




*Source: Hoffman, p.443, 2009.*

In sum, since the capital cost of the small country is high before the commerce, labor demand thereof is higher. In the small country where labor demand is high, the wage raises its tendency to increase compared to the large country. After the small country and large country enter into a commercial and investment relationship, due to the high elasticity of substitution that emerged as a result of the wage increase in the small country, because the cost

of capital reduces as observed in the figure 1, use of more capital compared to labor (A') shall emerge. Therefore, since the capital cost reduced more despite the wage increases in the small country, elasticity of substitution is far higher than in the large country, compared to the post-commerce period. Because this situation explains the logic of the commerce between the small country with qualified labor at low prices (being unimportant) and the large country or important country within the European Union. Small country, on the other hand, combines its qualified labor supply with the cheap capital of the large country. This fact that is possible also with the shift from the point B to the point A with the company choices after the commerce on the same isocost line in the Figure 1 contributes to both the coordination in the growth rates within the EU and integration of the Union, as we will detail later. According to the studies, the convergence in the growth rates within the EU more positively affects the EU growth rate. Every 10% increase realized in the field of information technologies increases the growth rate by 0.5-0.6% on average, with respect to the developed countries. In the developing countries, impact of the information sector on the general economic growth is much higher. In the developing countries in which Turkey is included as well, the impact of the 10% growth in the information sector spending on the general growth can increase up to 1% (İmamoğlu, Soybilen; 2014).

When the analysis of large (important) or small (unimportant) country within the European Union is evaluated with respect to the total factor productivity (TFP), components of the TVP become important for continuation of the commerce. Because economies of scale functions particularly in the information sector, so efficiencies increasing according to the scale are valid. If the TFP components are determined as qualified workforce, R&D activities, commercial openness and advanced technological product import (Gömleksiz, Şahbaz, Mercan; 2017, 67-68), distribution of these components between the small country and large country is of importance. It is observed that the European Union is trying to increase its growth performance in the last years, by making use of the qualified workforce in the transition countries that left the former eastern bloc. In addition, this fact provides the trend of reducing the efficiency differences among countries, specific to the information sector. This study will try to reveal the economic causality behind the reason the transition countries within the EU are forwarded properly to the information sector.

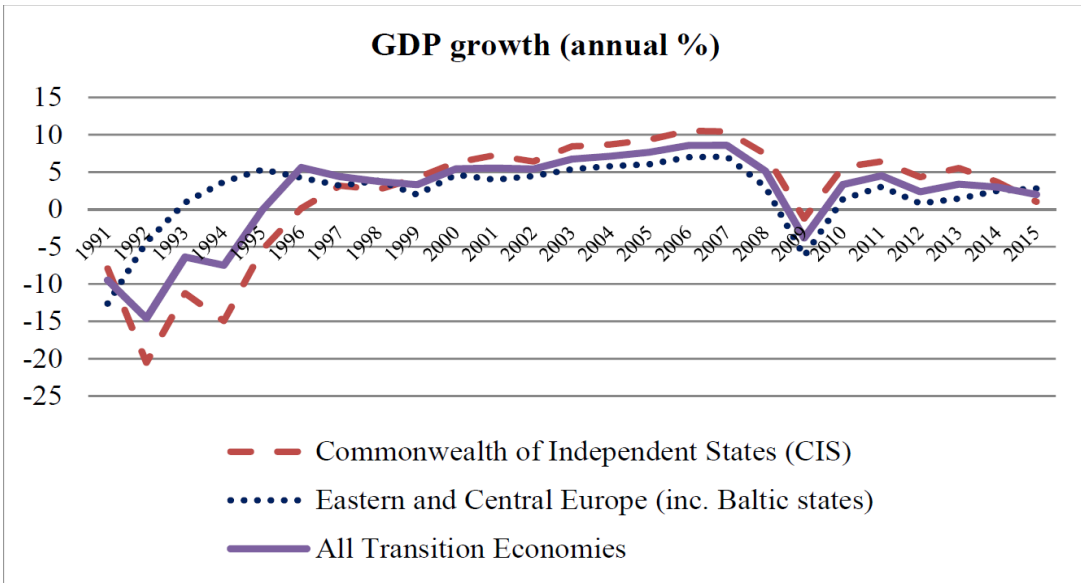
## III. Developments in the Information Technologies: Marshall's Third Law in the EU Transition Economies

In the study conducted by Vincenzo Spiezia based on EU KLEMS Database, an econometric approach is used for the purpose of estimating the contribution of three types of ICT investments (hardware, software and communication) in 26 industries (the entire business sector) within 18 OECD countries between 1995 and 2007. Estimated contribution of the ICT investments to the added value increase in the business sector varies from annually 1.0% in Australia to 0.4% in Japan. In one third of the countries that were taken into consideration, contribution of the ICT investments was either equal to or higher than the non-ICT investments. In many countries, information equipment made the highest contribution and accounted for more than 50% of the general ICT contribution. The only exception is Finland where the investments made in the communication equipment exceeds those made in the computer hardware and Japan where the ICT software investments is the most dynamic component. **While industries producing ICT constitute at least two third of the total factor productivity (TFP) in Germany, Slovenia and United Kingdom,** it is approximately 60% in the United States and slightly below 50% in France and the Netherlands. While in Denmark, **Czech Republic** and Italy, **TFP increases in the sectors producing ICT, it reduced for the total business sector** (Spiezia, 2013)**.** The point that attracts attention in this study is

that the increase in the TFP in the ICT investments in the transition countries such as Sloveniaand Czechia is higher thanthe USA, France and the Netherlands.

When we consider our analysis with respect to EU transition countries, the ICT developments in Latvia, Hungary, Croatia, Czechia, Slovakia, Estonia, Bulgaria, Poland, Romania, Slovenia and Lithuania indicate that the growth rates in these countries increase.

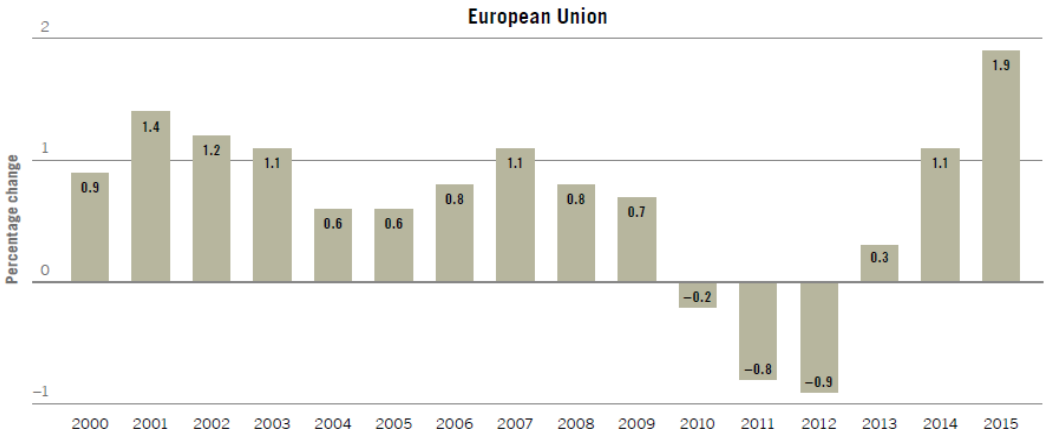
Despite the fact that the growth rates in all Transition Countries were over 5% in parallel with one another in 1990's and 2000's, impacts of the 2009 Global Crises reflected on this group of countries as can be observed in the Graph 2. As we stated above with regard to the country analyses, the rapid growth tendency of the information sector in the EU transition countries that is seen in blue dots actually reflects positively on the general growth rates in those countries.




*Graph 2: Annual Growth Rates (%) in the Transition Countries*
*Source: Çınar Y., Tuzcu S.E.; (2016), p.25*

According to the econometric study by Fahmani, İsmail and Fooladi that questions the impacts of the investments in the Information sector on the growth (Information and Communication Technology, ICT) in 159 countries between 2000 and 2009, an increase by 1% in the ICT index in the previous year increases per capita GDP by 0.09% (Fahmani, İsmail, Fooladi, 2012).

With respect to our questioning in the study, when it is considered based on the Marshall's Third Law, when the increase in the labor prices that is wages and salaries of the countries within the European Union are analyzed, we see data proving our analysis.




* Growth rates published as tentative estimates due to low data coverage.

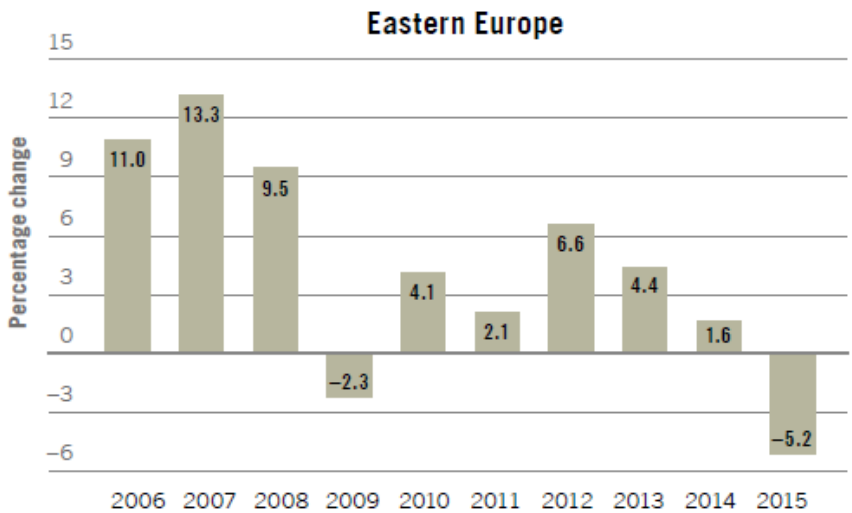
Note: Regional wage growth is calculated as a weighted average of year-on-year growth in average monthly real wages. For a description of the methodology, see Appendix I.

Source: ILO estimates based on official sources.

*Graph 3: Annual developments over the average monthly real wage increase in the European Union (%)*

*Source: ILO Global wage report, 2016-17*

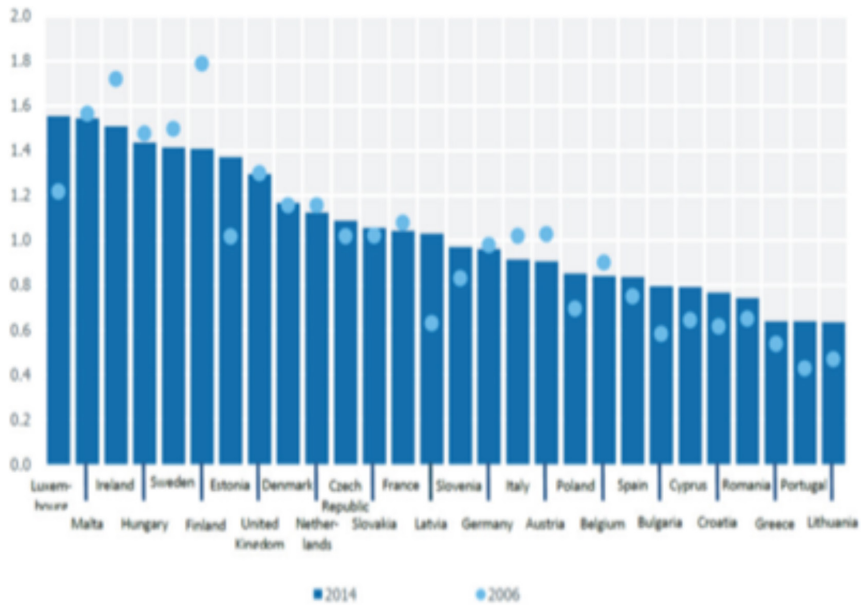
On the other hand, in the EU, the tendency of the monthly real wage increases by years that is observed after 2010 changed with an increase by 2% approximately for all sectors in 2015, as can be observed in the graph 3. Although this increase is the highest increase within the last 15 years, it is actually the wage increase that compensates the years of decrease following the Global crisis.




*Graph 4: Annualized average monthly real wage increase in the Eastern Europe or EU Transition Economies (%)*

*Source:ILO Global wage report, 2016-17*

On the other hand, on the contrary, in the Eastern Europe countries that are the EU transition countries we addressed, after 2010 real wage increase compared to the prior years was observed to continue, as can be understood from the Graph 4. Nevertheless, wages in the EU transition countries faced a high decrease in 2015. According to the annual real wage averages, a reverse correlation is observed between the EU main countries and EU transition countries with respect to the wage increases. According to us, this fact brings along new opportunities for the information sector capital in the EU. For as much as low real wages and qualified labor in the EU transition countries make it possible for them to focus on the EU transition countries where the capital is lower than the EU main countries and wages are increasing, as we are to address in detail. As an evidence supporting validity of the Marshall's Third Law, it is understood with the data of the Graph 5 that the capital increases the employment in the EU transition countries.




*Graph 5: Ratio of ICT sector employment share of total employment over EU ICT sector employment share of total employment (%). EU Member States (2006 and 2014)*

*Source:European Commission, JCR Technical Reports, The 2017 Predict Dataset Methodology,2017. https://ec.europa.eu/jrc/en/publication/2017-predict-dataset-methodology*

Therefore, as can be understood from the data in the Graph 5, we obtain evidences that can be evaluated with respect to the share of ICT sector employment within the total employment in the EU states. When the years 2006 and 2014 are compared with respect to the ICT sector in the EU Transition Countries that we addressed in the study, it is observed that the employment share within the total employment recorded a striking increase, compared to the other EU states. While the ICT sector employment share is 1% of the total employment in 2006 in Estonia that is one of the transition countries, this ratio is observed to approach to 1.4% in 2014. On the other hand, in Latvia, this ratio increases from 0.6% to over 1%. When analyzed in detail, between 2006 and 2014, Latvia, Portugal, Bulgaria, Lithuania and Estonia had the largest increases in their ICT sector's share

in total employment. By contrast, the employment shares of the ICT sector in Finland, Ireland, Austria, Italy and Belgium dropped sharply. In terms of VA, Finland's ratio was almost twice (1.78) as much as the EU levels at the beginning of the period. In 2014, Luxembourg, Malta, Ireland, Hungary and Sweden overtook Finland, presenting ratios more than 1.4 times as much as the EU levels did. Nevertheless, in Austria, Sweden, Finland, Ireland, France, Italy, England and Malta that are from the developed the EU, significant declines are observed in the ICT employment ratios.

When evaluated from that point, according to the Europe 2020 strategy, objectives to allow the use of the employment and qualified workforce in the EU transition countries are included (İKV, 2014). Objectives of the Europe 2020 strategy are as follows in general:

- in the field of employment; employment of 75% of the population between ages 20 and 64;
- allocation of 3% of the GDP to R&D spending in the EU states;
- reducing the dropout rate in the field of education to the level of 10% and increasing the contribution to higher education to 40%;
- improving the conditions of the young people's entering into the labor market for reducing the rate of youth unemployment.

Aforementioned objectives have been those that bear importance for the information sector as well.

*Table 3: Gross and net average wages in the entire European Union*

| 2018 | | | | 2017 | | |
|---|---|---|---|---|---|---|
| Rank | Country | Gross | **Net** | TAX | NET | % |
| 1 | Denmark | €5,191.00 | €3,270.00 | 37.01% | €3,095.00 | 5.35% |
| 2 | Luxembourg | €4,412.00 | €3,159.00 | 28.40% | €3,009.00 | 4.75% |
| 3 | Sweden | €3,340.00 | €2,570.00 | 23.05% | €2,465.00 | 4.09% |
| 4 | Finland | €3,380.00 | €2,509.00 | 25.77% | €2,509.00 | 0.00% |
| 5 | Ireland | €3,133.00 | €2,479.00 | 20.87% | €2,464.00 | 0.61% |
| 6 | Austria | €3,632.00 | €2,324.00 | 36.01% | €2,009.00 | 13.55% |
| 7 | Germany | €3,703.00 | €2,270.00 | 38.70% | €2,270.00 | 0.00% |
| 8 | France | €2,957.00 | €2,225.00 | 24.75% | €2,157.00 | 3.06% |
| 9 | Netherlands | €2,855.00 | €2,155.00 | 24.52% | €2,263.00 | -5.01% |
| 10 | United Kingdom | €2,498.00 | €1,990.00 | 20.34% | €2,102.00 | -5.63% |
| 11 | Belgium | €3,401.00 | €1,920.00 | 43.55% | €2,091.00 | -8.91% |
| 12 | Italy | €2,534.00 | €1,758.00 | 30.62% | €1,762.00 | -0.23% |
| 13 | Spain | €2,189.00 | €1,749.00 | 20.10% | €1,718.00 | 1.77% |
| 14 | Cyprus | €1,779.00 | €1,658.00 | 6.80% | €1,658.00 | 0.00% |
| 15 | Slovenia | €1,626.00 | €1,062.00 | 34.69% | €1,074.00 | -1.13% |
| 16 | Malta | €1,379.00 | €1,021.00 | 25.96% | €1,021.00 | 0.00% |
| 17 | Estonia | €1,221.00 | €957.00 | 21.62% | €945.00 | 1.25% |
| 18 | Portugal | €1,158.00 | €925.00 | 20.12% | €984.00 | -6.38% |
| 19 | Greece | €1,092.00 | €917.00 | 16.03% | €947.00 | -3.27% |
| 20 | Czech Republic | €1,149.00 | €873.00 | 24.02% | €837.00 | 4.12% |
| 21 | Croatia | €1,081.00 | €802.00 | 25.81% | €792.00 | 1.25% |
| 22 | Poland | €1,102.00 | €784.00 | 28.86% | €752.00 | 4.08% |
| 23 | Slovakia | €980.00 | €748.00 | 23.67% | €755.00 | -0.94% |
| 24 | Latvia | €1,013.00 | €738.00 | 27.15% | €703.00 | 4.74% |
| 25 | Lithuania | €885.00 | €693.00 | 21.69% | €637.00 | 8.08% |
| 26 | Hungary | €955.00 | €635.00 | 33.51% | €622.00 | 2.05% |
| 27 | Romania | €787.00 | €565.00 | 28.21% | €515.00 | 8.85% |
| 28 | Bulgaria | €586.00 | €457.00 | 22.01% | €406.00 | 11.16% |

https://www.reinisfischer.com/average-salary-european-union-2018

*Source:Reinis Fischer, Average Salary in European Union,*
*https://www.reinisfischer.com/average-salary-european-union-2018*

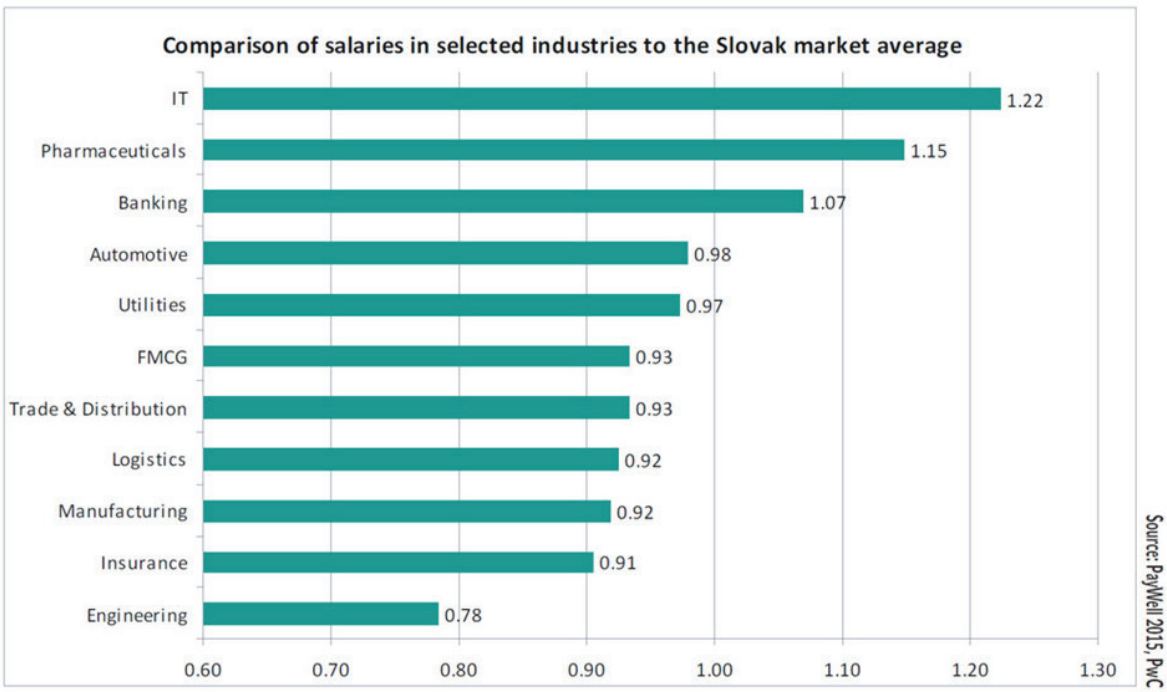
Average wage increases observed in the Table 3 increase and decrease with different effects in different countries within the EU. For example, in the transition from 2017 to 2018, while wages in Belgium, Portugal, England, the Netherlands, Greece and Italy had a significant decrease, sharp wage increases in the transition countries, particularly Bulgaria attract attention. Nevertheless, although the wage decreases in the EU main states are important, when compared with the current transition countries, it is observed that the wages relatively preserve their high level. This fact can be accepted as an indicator of the fact that there is an increase with respect to the use of qualified workforce (demand) in the EU transition countries.

*Table 4: Average wages in the ICT sector in the entire European Union (by age and other qualifications), 2018*

| rage earnings across all sectors (highest to lowest) | 22-year-old ICT professional | 22-year-old technician / associate professional | 35-year-old manager | Average wages |
|---|---|---|---|---|
| Denmark | 4654 | 4269 | 6712 | 5211,667 |
| Sweden | 3437 | 3042 | 4859 | 3779,333 |
| Luxembourg | 4147 | 3551 | 6765 | 4821 |
| Belgium | 3775 | 3385 | 5287 | 4149 |
| Finland | 3568 | 2912 | 5221 | 3900,333 |
| Ireland | 3202 | 2793 | 4696 | 3563,667 |
| France | 3129 | 2474 | 3942 | 3181,667 |
| Netherlands | 3049 | 2740 | 4189 | 3326 |
| Germany | 3875 | 3635 | 5434 | 4314,667 |
| UK | 3911 | 2888 | 4515 | 3771,333 |
| Italy | 2822 | 2200 | 4788 | 3270 |
| Austria | 3659 | 3291 | 5166 | 4038,667 |
| Malta | 2046 | 1653 | 2323 | 2007,333 |
| Spain | 2188 | 1794 | 3172 | 2384,667 |
| Cyprus | 2232 | 1835 | 3601 | 2556 |
| Slovenia | 2181 | 1812 | 3412 | 2468,333 |
| Portugal | 1934 | 1491 | 2941 | 2122 |
| Estonia | 1402 | 1136 | 1820 | 1452,667 |
| Czech Republic | 1590 | 1455 | 2186 | 1743,667 |
| Slovakia | 1402 | 1183 | 1887 | 1490,667 |
| Hungary | 1041 | 986 | 1567 | 1198 |
| Poland | 1186 | 965 | 1732 | 1294,333 |
| Latvia | 871 | 743 | 1068 | 894 |
| Lithuania | 686 | 587 | 898 | 723,6667 |
| Romania | 673 | 567 | 1041 | 760,3333 |
| Bulgaria | 574 | 484 | 810 | 622,6667 |
| | 2432,076923 | 2071,961538 | 3462,76923 | 2655,603 |
| https://alldigitalweek.eu/ict-jobs/ | | | | |

*Source: https://alldigitalweek.eu/ict-jobs/*

As another element that proves our thesis in the study, when considered specific to the information sector, wages in all transition countries are at the bottom ranks as of 2018, as can be seen in the Table 4. As can be understood, workers and directors (as of ages and qualifications) in the information sector that do the same job in the EU transition countries work for far lower wages compared to the other EU states and this provides an important insight regarding the factor mobility in the information sector.

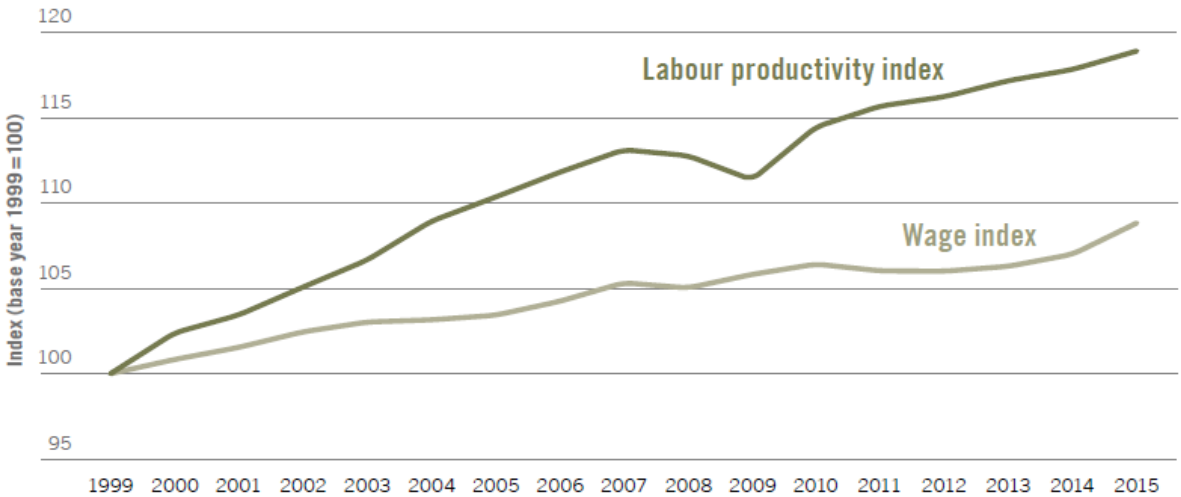



*Graph 6: Percentage of increase of the average wages in the information (IT) sector in Slovakia by value sectors, 2018*

*Source:https://www.pwc.com/sk/en/tlacove-spravy/2015-10-21-remuneration-study-paywell-2015.html*

As can be understood from the Graph 6, IT sector showed the highest increase in the wage increases on sectoral basis in Slovakia. When considered with respect to the wage increases in the pharmaceuticals, banking and industrial sector activities, the wage increases in these sectors increased at a lower rate than the wages of employees in the information sector.

**Figure 11 Trends in growth in average real wages and labour productivity in developed economies, 1999–2015**




Note: Wage growth is calculated as a weighted average of year-on-year growth in average monthly real wage in 36 economies (for a description of the methodology see Appendix I). The base year is set in 1999 for reasons of data availability.

Source: ILO Global Wage Database; ILO *Global Employment Trends* (GET).

*Graph 6: Comparison of the average real wage and labor productivity indexes between 1999 and 2015 in the developed countries*

*Source: ILO Global wage report, 2016-17*

## Conclusion:

It is observed that the EU transition economies became an important part of the information sector that expanded after 2000's. The elements that draw attention in that expansion can be stated to support the main hypothesis of the study. First of all, the qualified labor structure in these countries which can be considered to be of minor importance (unimportant) in the trade, but to be important with respect to their share in the Information Technologies attracts attention. In the study, we analyzed the economic logic of this information integration that is summarized as the importance of being unimportant and that developed in line with the elasticity of substitution. Here, an analysis of the shift of the wage costs to the transition countries where qualified labor is abundant, in cases where it is not possible to reduce the labor's share in the information sector, was made. When the structure of the ICT index is analyzed, it is striking that the success and EU harmonization process in the country groups that we addressed with respect to the importance of information consumption and proliferation of software. In addition to these, it is emphasized with the reference to the studies that the information sector has a significant share in the general growth increase in those countries. Therefore, we have established that in the EU objectives, which we attach value not only due to the Marshall's Third Law, but also with respect to the concept of importance of being unimportant, transition economies have an important position in developing the digital structure, with their young and highly qualified labor structure.

When considered in terms of the general trend, the difference between the labor productivity index and wage index was getting higher in 2000's. Despite the fact that the growth in the labor productivity was 20% from 1999 to 2015 in the developed sector, the age increase in the same years approached to the level of 10%. In addition, this explains how the capital in the developed countries tends towards the low wages in the developing countries which cause the increase in the relatively high wages in the developed countries to be lower than the increase in the labor productivity, as we had already addressed. In the future, a convergence between the developed countries and developing countries in certain sectors with respect to wages can be expected, as in the example of the information sector. Marshall's Third Law also anticipated that the labor demand would increase in places where elasticity of substitution is high, that is the developed countries. With respect to our subject, elasticity of substitution can be increased in the information sector, with the evidences we addressed, as in the example of the EU transition countries. That is to say that the factor elasticity of substitution is low in the ICT sector in the developed EU states, according to the Marshall's Third Law. When considered with respect to the information sector, it is understood that in the developed EU countries, the labor's share of high wage quality due to the nature of the information sector could not be decreased, and capital cannot be substituted instead of that. Employment of the qualified labor in the EU transition countries for relatively low wages increases the elasticity of substitution there and therefore, creates investment and employment opportunities for the information sector. Marshall's Third Law is in accordance with the concept of "importance of being unimportant", which indicates that the countries with a small share in the commerce and investment would be advantageous, when they orient their commerce and investments over their costs of the countries with large shares. We believe that the expansion of EU into east and Central Europe in 2000's with regard to accepting new members is in accordance with the thesis of our study. Nevertheless, it is noteworthy that the increases in the wages and salaries that show the prices of the qualified labor working in the ICT sector within the EU transition countries are higher than the central EU average. This fact indicates that the elasticity of substitution in the sector is continuing.

Lastly, inference of the study is that in the countries where educated and qualified workforce is abundant and accumulation of capital is relatively low, information sector has the opportunity of development with regard to the fields of software or programming. This fact reveals a structure that supports the information sector and creates demand for the qualified workforce in the countries, in terms of both EU Economy and Global Economy .

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# 7

# 2008-2018 EVALUATION OF MACROECONOMIC PERFORMANCE OF TURKISH ECONOMY

*Cansel Oskay*[1]

***Abstract***

*Turkey is significantly affected by the global crisis that erupted in 2008 like many countries. Macroeconomic performance was severely weakened during the crisis period. Macroeconomic performance was positively affected by the expansionary policies implemented in the period following the crisis. However, after a while, it was again disturbed and fluctuated. For this purpose, the study is designed to evaluate the macroeconomic performance of the economy of Turkey. It covers the period from 2008 until today. In order to measure the macroeconomic performance of the economy, six main indicators were selected: inflation rate, unemployment rate, growth rate, long-term interest rate, current account deficit and budget deficit. Using these indicators, Discontent Index, Misery Index and Macroeconomic Performance Indices were calculated. After the global crisis, identified as the most vulnerable countries in the world, Brazil, Indonesia, India, South Africa, and Turkey's macroeconomic performance was also compared.*

*As a result, no matter which index it is, it appears that Turkey's economic performance is weak. Being placed near the top in terms of vulnerability in Fragile Five, Turkey comes in last in terms of macroeconomic performance. Turkey during 2008-2018, has an economic outlook that can not lower inflation, growing unemployment and borrows at a high cost with an increasing current account deficit. In recent years, the Turkish economy is advancing rapidly towards recession. The onset of stagnation with high inflation will lead to the problem of stagflation in the economy. In order to strengthen the macroeconomic performance of Turkey, primarily by reducing dependence on foreign sources, reforms generating solution to the structural problems are needed to put into practice.*

**Keywords:** *Macroeconomic Performance, the Economy of Turkey, Fragile Five Countries, Misery Index*

## Introduction

The global crisis experienced in 2008-2009 negatively affected the macroeconomic performance of many developed and developing countries. Particularly Turkey's growth and macroeconomic performance have weakened significantly. The countries, whose economy contracted with the crisis, started to implement expansionary fiscal and monetary policies with the purpose of growth. As a result of the expansionary policies implemented after the crisis, emerging market economies and developing countries were affected to a different extent (Yükseler, 2017, p.1). As a result of these expansionary policies applied, with a large amount of short-term foreign capital inflow, Turkey has entered a process of recovery. Since the Federal Reserve (FED) announced that it will gradually tighten its monetary policies as of May 2013, fluctuations in the short-term foreign capital flow towards emerging countries have been observed. As a result of the Fed's explanations for terminating the bond purchases by reducing step by step, most currencies depreciate in emerging market economies including Turkey. Rising current account deficit, rising inflation, falling

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growth rate, political problems increased uncertainty and risks. Therefore, it increased the fragility of the Turkish economy. As its external financing needs increasing, its fragility is increased and macroeconomic performance of Turkey gradually weakened. It is among the five most fragile countries in the world. Countries most affected by the Fed's monetary tightening policy are Brazil, India, Indonesia, South Africa and Turkey. Whose currencies are most affected by external shocks these countries were referred to as Fragile Five by the US-based investment bank Morgan Stanley in August 2013(Bayat, Kayhan and Taşar, 2018, pp. 203-204). Today, with its ongoing macroeconomic performance problems, Turkey is among the first places in fragile economies.

For this purpose, the study is designed to evaluate the macroeconomic performance of the economy of Turkey. The study covers a period of ten years from the global crisis that affected almost all countries, albeit in different dimensions. When evaluating Turkey's macroeconomic performance, the Index of Economic Discontent, Misery Index and the Macroeconomic Performance Index (MPI) have been utilized.

Macroeconomic performance of the Turkish economy with a total of six main indicators that make up the index are primarily evaluated in this study. These indicators are defined as; inflation rate, unemployment rate, long-term government bond interest rate, GDP growth rate, the ratio of the current account balance to GDP and ratio of central government budget balance to GDP. Then the macroeconomic performance of the Turkish economy, compared with Fragile Five consisting of Brazil, India, Indonesia and South Africa. Index indicators used in the study are provided from a single source instead of local resources in order to avoid differences in definition and scope. Extracted from International Monetary Fund (IMF), World Economic Outlook Database, April 2018. India's unemployment rates were obtained from Tradingeconomics. Interest rates for long-term bonds were taken from Investing. Inflation rates are taken as the year-end percentage value of budget balance/GDP rates were also taken as year-end percentage values. The long-term interest rate is based on 10-year government bond interest rates. Due to the transition of Turkey to 10-year government bond issuance in 2010, the 5-year government bond interest rate for 2008 and 2009 was based.

## 1. Turkey after the Global Crisis According to the Basic Macroeconomic Indicators

The 2008-2009 global crisis period has been quite troublesome for Turkey; particularly the growth rate has decreased along with all macroeconomic indicators. Turkey is affected by the crisis like other countries and could not reach the targeted numbers. Turkish economy contracted by 4.7% in 2009 due to the global crisis. 2010 and 2011 was the period of recovery after the crisis. Growth rate increased to 8.5% and 11.1%, respectively. In 2012, it decreased to 4.8% due to the measures are taken to balance domestic and foreign demand. In 2013, it was again increased to 8.5% with the increase in domestic demand (Table 1). Although some decrease was observed in the following years, an average growth rate of more than 5% was realized during the period. Despite the growth, especially in the period of 2010-2015, the average inflation rate and unemployment rate have also increased. In this period, a growth that cannot create employment is noteworthy (Sungur, 2015, p. 248).

The Turkish economy grew by 3.2% particularly in 2016, increased by 7% in 2017, showing more than doubled. The effect of credit guarantee funds and other incentives on the increase of the growth rate was great (Yükseler, 2018a, p.2). It is estimated that the growth rate will decline in 2018.

As can be seen in Table 1, the unemployment rate, which rose up to 13.1% in 2009 due to the impact of the crisis, showed a slight decline in the following years. Although it decreased to 9% in 2013, it increased to 11% in

2017. The unemployment rate, which was realized at an average of 10% in the period, has a tendency to increase especially in recent years.

The inflation rate, which was realized as 10.1% in 2008, was 6.5% - 6.4% in 2009-2010. In 2011, it was 10.4% which is well above the target of 5.5%. It has continued to be above the inflation target of 5% as of 2012. The inflation rate, which was 8.5% in 2016, increased to 11.9% in 2017.

*Table 1: 2008-2018 Turkish Economy with Basic Macroeconomic Indicators*

| | **Inflation Rate%** | **Unemployment Rate%** | **Long-Term Bonds Interest Rate%** | **Real GDP Growth Rate%** | **Budget Balance / GDP%** | **Current Balance/ GDP %** |
|---|---|---|---|---|---|---|
| **2008** | 10,1 | 10 | 17,5 | 0,8 | -1,8 | -5,2 |
| **2009** | 6,5 | 13,1 | 10,7 | -4,7 | -5,3 | -1,8 |
| **2010** | 6,4 | 11,1 | 8,6 | 8,5 | -3,5 | -5,8 |
| **2011** | 10,4 | 9,1 | 10,0 | 11,1 | -1,3 | -8,9 |
| **2012** | 6,2 | 8,4 | 6,6 | 4,8 | -1,9 | -5,5 |
| **2013** | 7,4 | 9,0 | 10,3 | 8,5 | -1 | -6,7 |
| **2014** | 8,2 | 9,9 | 8,1 | 5,2 | -1 | -4,7 |
| **2015** | 8,8 | 10,3 | 10,5 | 6,1 | -1,1 | -3,7 |
| **2016** | 8,5 | 10,9 | 11,1 | 3,2 | -1,1 | -3,8 |
| **2017** | 11,9 | 11,0 | 11,4 | 7 | -1,5 | -5,5 |
| **2018*** | 10,9 | 10,7 | 17,0 | 4,4 | -0,9 | -5,4 |

**Source:** *IMF, World Economic Outlook Database, April 2018, www.imf.org; www.investing.com/rates-bonds*
**: Forecast*

The increase in the rate of 3.4% was mainly due to the increase in exchange rates and food prices. The rise of inflation cannot get under control.

In the global crisis period, due to the implementation of expansionary fiscal policy and the contraction in the global economy, the budget deficit also increased. In the following years, the budget deficit started to decline and showed a very positive trend (Yükseler, 2017, p. 7). In 2009, while the deficit was 5.3%, the budget deficit gradually decreased in the following years. In 2013 and beyond, an average deficit of 1% was observed. However, in 2017, it was relaunched. This increase was mainly due to the significant increase in non-interest expenditures such as current transfers and goods-service procurement expenditures (Yükseler, 2018a, p. 4).

Turkey is one of the countries with the most negative performance in terms of current account deficit. The current account deficit, which fluctuated continuously in the mentioned period, reached its peak in 2011 with a rate of 8.9%. With the rapid decline in the growth rate in 2012, the rate regressed to 5.5%. In 2015-2016, it could be controlled by decreasing to 3.7% -3.8%. In this development, the contribution of measures aimed at the slowing down of the growth rate, the decrease in crude oil prices and the decrease of dependence on external sources have

been important (Yükseler, 2018b, p. 7). However, as seen in Table 1, it increased from 3.8% to 5.5% in 2017. The rapid increase in non-monetary gold imports and the deterioration in foreign trade balance are important in this rise.

In addition, we can see the course of long-term government bond interest rates throughout the period in Table 1 from Investing. Turkey began issuing the 10-year government bonds in 2010. For this reason, 5-year government bond interest rates were taken for 2008 and 2009 and 10-year government bond interest rates were taken for other years. When we examine long-term government bond interest rates of Turkey, we see that the state's borrowing costs are high. It has especially been in an increasing trend since 2015. This rate is expected to increase significantly in 2018. On average, it was over 10% during the period.

Despite the important increase in growth rate in 2017, inflation rate, unemployment rate, current account deficit, budget deficit and state borrowing cost increased. In 2018, the situation is not seen bright. According to the latest data of September 2018, the inflation rate increased to 17.9%. Unemployment rate to 10.2%, growth rate to 5.2%, the current account deficit to 5.5%, the budget deficit to 1.5% and the 10-year government bond interest rate is increased to 18,12% (Tradingeconomics, 2018b).

According to the New Economy Plan (YEP) announced at the end of September, the end of 2018 inflation rate will be 20.8% and in 2019, it will be 15.9%. The growth rate declining to 3.8% in 2018 is expected to decline further and become 2.3% in 2019. The unemployment rate is projected at 11.3% in 2018 and 12.1% in 2019. The current account deficit also projected to decrease and occur at 4.7% in 2018, 3.3% in 2019. The budget deficit, which is expected to increase to 1.9% in 2018, is expected to realize as 1.8% 2019 (T. C. Treasury and Ministry of Finance, 2018).

## 2. Macroeconomic Performance of the Turkish Economy after the Global Crisis

To examine a country's macroeconomic performance and even to compare countries, many basic indicators are used. The most important ones of these are the inflation rate and unemployment rate (Yıldırım, Karaman and Taşdemir, 2016, p. 21). Analysis of Basic indicators alone is not enough to understand the economic and social prosperity of countries. For this reason, more extensive and multi-component indices are preferred more. Macroeconomic performance indices are including some basic macroeconomic indicators to accounts in certain amounts and performance measurement of countries based on these basic indicators (Benlialper, Cömert and Düzçay, 2015, p. 13).

In the 1970s, when unemployment and inflation rates increased in the United States, Economic Discontent Index (Original Misery Index) was developed by Arthur Okun being the most important one of these indices. This index is one of the most commonly used methods to measure the macroeconomic performance of economies and life satisfaction of the society (Cohen, Ferretti and McIntosh, 2014, p. 2). The index, which is calculated by adding the unemployment rate and inflation rate, gives both variables fixed and equal weight, assuming that both of them are equally important from the economic point of view. Looking quite simple, this index is based on the assumption that the rising unemployment rate and high inflation causes economic and social costs (Hanke, 2018). Being the basic macro indicators that are monitored carefully by society, unemployment rate and inflation rate changing over time reflect changes in countries' economic performance (Pogoy and Plaisent, 2016, p. 31). The rise of one of these indicators affects national welfare negatively. Therefore, Economic Discontent Index can be thought as the opposite of economic welfare.

Playing a fundamental role in determining the national welfare, the most important indicator is the growth rate of real gross domestic product (GDP) (Cohen, Ferretti and McIntosh, 2014, pp. 2-6). In 1996, Robert Barro found it insufficient to take into account the changes in the unemployment rate and inflation rate, which constitute the discontent index. In addition to these, he found it necessary to take into account the changes in real GDP growth rate and long-term interest rates. A.Okun and R.Barro's misery index indicators:

*A. Okun's Economic Displeasure Index = A + B*

*R. Barro's Misery Index = (A + B + C)-D*

A. Inflation rate: Annual percentage change in the consumer price designed for international price comparisons is taken into account.

B. Unemployment rate: Taken as the annual percentage of the workforce.

C. Long-term government bonds interest rate: Taken as the ten-year government bonds interest rate.

D. Real GDP growth rate: Annual percentage change value taken (Lechman, 2009, pp. 2-3).

Changes in the indicators of misery index set the value of the index. In most of the country experiencing periods of crises, the value of misery index rises, macroeconomic performance deteriorates, when they achieve stability, the index recovers. As the value of the index increases, it is stated that the unrest in the society or the pessimism in the economy has increased (Yıldırım, Karaman and Taşdemir, 2016, p. 21). According to R. Barro's misery index, if real GDP growth rate is below the average and the unemployment rate and long-term interest rate are both rising, inflation rate rises will increase dissatisfaction. When inflation, unemployment and interest rates are on the rise and growth rate is negative, meaning the economy is shrinking, misery index rises. The rising of the value of index shows that macroeconomic performance is decreasing and there is deterioration in the economy (Özcan and Açıkalın, 2015, p. 160). If the real growth rate is positive, this rate needs to be subtracted; if the growth rate is negative, it needs to be added to the total. The reason for this is that negative growth increases misery while economic growth reduces misery (Eğilmez, 2018).

In economic terms, the increase in inflation, coupled with high unemployment, causes a contraction in the economy and consumer spending. The rise in consumer prices, reducing the purchasing power of nominal income, can result in a welfare loss. As the inflation increases, the cost of living increases and as unemployment increases, more and more people exceed the poverty threshold. The increase in inflation, causing interest rates to increase, negatively affects the real sector investment decisions and declining investments can cause unemployment. This situation causes a decline in household income and the loss of welfare (Akpınar, Taşçı and Özsan, 2013, p. 61). In addition to the loss of real production, unemployment is a phenomenon that causes unequal distribution of income and reduces tax revenue. The increase in long-term government bonds interest rates means increasing the cost of public borrowings and the value of the index increases. The higher interest rate contributes to the misery and weakens the macroeconomic performance. Being the most basic indicator, growth rate to be high is important in decreasing the index value and thus is important in strengthening macroeconomic performance (Lechman, 2009, p. 3). The index, which shows the change in the economic indicators, is also effective on social parameters. Improvements of the economic discontent index have a positive influence on levels of happiness and hope of the society (Çondur, 2016, p.1317).

In addition to Economic Discontent Index and Misery Index, Macroeconomic Performance Index (MPI) is used in the study. MPI is composed of five main indicators consisting of the growth rate of real GDP, annual percentage change rate of CPI, unemployment rate annual percentage change, the ratio of the balance of current account deficit to GDP, and the ratio of Central Government budget balance to GDP ratio. MPI value of it was obtained by a simple method. The index is formulated by adding 100 to these five main indicators, expressed as percentage change ratio or percentages. The growth rate of these indicators is subjected to positive processing. The other four indicators are subjected to negative processing. The increase in the growth rate positively affects the index. Inflation rate and the increase in unemployment rate affect the index negatively. The positive balance of the current account balance, i.e. the surplus of the index, affects the index positively and the deficit has a negative effect on the index. The positive balance of the budget effects index positively and the deficit of the budget balance effects index negatively. The changes in the five indicators in the index are weighted differently. Growth rate is 30%, inflation rate is 20%, unemployment rate is 20%, current account balance / GDP is 15%, budget balance / GDP ratio is 15%. The fact that the MPI is below 100 or declines compared to the previous year shows the negative development of the economy. The index value of over 100 shows that macroeconomic performance strengthened and the economic situation improved (Yükseler, 2017, pp. 9-10). MPI indicators:

*MPI=100-(A. %30-B. %20-C. %20-D. %15-E. %15)*

A. Real GDP growth rate: Annual percentage change value taken

B. Inflation rate: Annual percentage change in the consumer price designed for international price comparisons is taken into account.

C.Unemployment rate: Taken as an annual percentage of the workforce.

D.Current account balance / GDP rate: Annual percentage change value taken

E.Budget balance / GDP rate: Annual percentage change value taken

Table 2, shows the macroeconomic performance values of the Turkish economy, measured with the help of the Index of Economic Discontent, Misery Index and Macroeconomic Performance Index (MPI). Looking at the Index of Economic discontent resulting from the sum of inflation and unemployment rates, while the macroeconomic performance of Turkish economy was bad during the 2008-2009 period, it improved depending on the fall in the inflation rate in 2010. However, in 2011, due to the severe increase in inflation rate, it deteriorated again. In 2012, both the inflation rate and the unemployment rate have fallen and the best macroeconomic performance realized. However, in the years that followed, the situation is reversed and the increase in unemployment rate and inflation rate affected macroeconomic performance negatively.

When we examine R. Barro's the Misery Index values, macroeconomic performance development of the Turkish economy it is not much different. During 2008-2009, the global crisis period, it has the highest index value. High inflation and unemployment, as well as the Government's borrowing costs to be fairly high, have been effective in Turkish economy showing very bad macroeconomic performance during this period. At the same time, despite the negative situation in these three basic indicators, the low growth rate is another important factor. In 2010, the decrease in the borrowing cost of the state and the increase in the growth rate decreased the index value. However, the improvement in 2010 was not sustainable. In 2011, despite the high growth rate and the falling unemployment

rate, the index deteriorated due to the high borrowing costs and the high inflation rate. Although the rate of growth has decreased in 2012 compared to the previous year, the decrease in the inflation rate, unemployment rate and the state's borrowing cost had a positive impact on the macroeconomic index, However, we can see that the index value has been continuously increasing since 2013. It is expected to rise even more in 2018. Despite the growth in the economy, continuous deterioration in the other three main indicators leads to the constant negative macroeconomic performance of the economy of Turkey.

When we examine the results of the Macroeconomic Performance Index in Table 2, the results are not much different from other indices. MPI index values were below 100 in the period of 2008-2018. The year that economic performance was the worst was the year 2009 when MPI was the lowest with 93.6. In 2010, MPI increased significantly with a value of 97, demonstrating a positive performance. In 2011, an increase of the inflation rate and the current account deficit caused index rate to decrease to 95.4. In 2012, it increased back to 97 but decreased to 96 in 2013. Although there was an increase in MPI in 2014 and 2015, it decreased in 2016 and 2017. The macroeconomic performance is expected to weaken further in 2018 and 2019.

*Table 2: 2008-2018 Macroeconomic Performance of the Turkish Economy*

| | **A. Okun's Economic Discontent Index** | **R. Barron's the Misery Index** | **Macroeconomic Performance Index** |
|---|---|---|---|
| **2008** | 20,1 | 36,8 | 96,1 |
| **2009** | 19,6 | 32 | 93,6 |
| **2010** | 17,5 | 17,6 | 97,0 |
| **2011** | 19,5 | 18,4 | 95,4 |
| **2012** | 14,6 | 16,4 | 97,0 |
| **2013** | 16,4 | 18,2 | 96,0 |
| **2014** | 18,1 | 21 | 97,1 |
| **2015** | 19,1 | 24,5 | 97,2 |
| **2016** | 19,4 | 27,3 | 96,3 |
| **2017** | 22,9 | 27,3 | 96,5 |
| **2018*** | 21,6 | 34,2 | 96,1 |

**Source:** *IMF, World Economic Outlook Database, April 2018, www.imf.org; https://tr.tradingeconomics.com/india/unemployment-rate; www.investing.com/rates-bonds data prepared by us.*
**: Forecast*

## 3. Comparison of Macroeconomic Performances of the Fragile Five Countries

The six basic indicators that we have mentioned before have been used in the measurement of the macroeconomic performance of the fragile five countries since the global crisis. Index indicators used in the study are provided from a single source instead of local resources in order to avoid differences in definition and scope. Retrieved from International Monetary Fund (IMF), World Economic Outlook Database, April 2018. India's unemployment rates were obtained from Tradingeconomics. Interest rates for long-term bonds were taken from Investing. Inflation rates are taken as a year-end percentage value of consumer price index. Unemployment rates, growth rates, current

balance /GDP and budget balance/GDP rates were also taken as year-end percentage values. The long-term interest rate is based on 10-year government bond interest rates. Due to the transition of Turkey to 10-year government bond issuance in 2010, the 5-year government bond interest rate for 2008 and 2009 was based.

In Table 3, the performance of Turkey, Brazil, India, Indonesia, South Africa was compared based on 6 key indicators. According to Table 3, the best performance in the unemployment rate belongs to India. It maintained the first place in the unemployment rate during 2008-2018. India is followed by Indonesia. According to Table 4 showing Turkey's ranking among fragile five countries with the highest performance based on key indicators, Turkey is ranked as number 4 according to the unemployment rate.

*Table 3: Fragile Five Countries with the Highest Performance in Basic Macroeconomic Indicators*

| | **Inflation Rate%** | **Unemployment Rate%** | **Long-Term Bonds Interest Rate%** | **Real GDP Growth Rate %** | **Current Balance/ GDP%** | **Budget Balance/ GDP** |
|---|---|---|---|---|---|---|
| **2008** | Brazil | India | India | Indonesia | Indonesia | Indonesia |
| **2009** | Indonesia | India | India | India | Indonesia | Indonesia |
| **2010** | South Africa | India | Indonesia | India | Indonesia | Indonesia |
| **2011** | Indonesia | India | Indonesia | Turkey | Indonesia | Indonesia |
| **2012** | Indonesia | India | Indonesia | Indonesia | Indonesia | Indonesia and Turkey |
| **2013** | South Africa | India | South Africa | Turkey | India | Turkey |
| **2014** | South Africa and India | India | South Africa and Indonesia | India | India | Turkey |
| **2015** | Indonesia | India | India | India | India | Turkey |
| **2016** | Indonesia | India | India | India | India | Turkey |
| **2017** | Brazil | India | Indonesia | Turkey | Brazil | Turkey |
| **2018*** | Indonesia | India | Indonesia | India | Brazil | Turkey |

**Source:** *IMF, World Economic Outlook Database, April 2018, www.imf. org; https://tr.tradingeconomics.com/india/unemployment-rate; www.investing.com/rates-bonds data prepared by us.*
**: Forecast*

Indonesia is at the top with the best performance in inflation. In 2008, 2012 and 2013, while Turkey was ranked 3rd; in 2009, 2010, 2014 and 2015 ranked 4th; it is ranked 5th with the worst performance since 2016. Indonesia has the best performance in terms of 10-year government bond interest rate. India is ranked 2nd. Being ranked 5th in the 2008-2009 period, Turkey took 4th place except for the year 2012.

According to the growth rate indicator, India has the best performance. Turkey was ranked number 1 by showing the best performance in 2011, 2013 and 2017. Indonesia has taken first place in terms of the current balance for the first five years. In 2013-2016, India took the first place. However, Brazil showed the best performance in 2017. Turkey is the country with the worst performance during the period. The highest performance in the

budget balance indicator is showed by Indonesia in the early years. However, since 2012, Turkey has risen to rank 1. Indicators that Turkey has the best performance at have been the growth rate and budget balance in 2017. The indicators with the lowest performance are the inflation rate, which it was ranked 5th and the current account balance. It was also the fourth one according to the long-term interest rate (see Table 3 and Table 4).

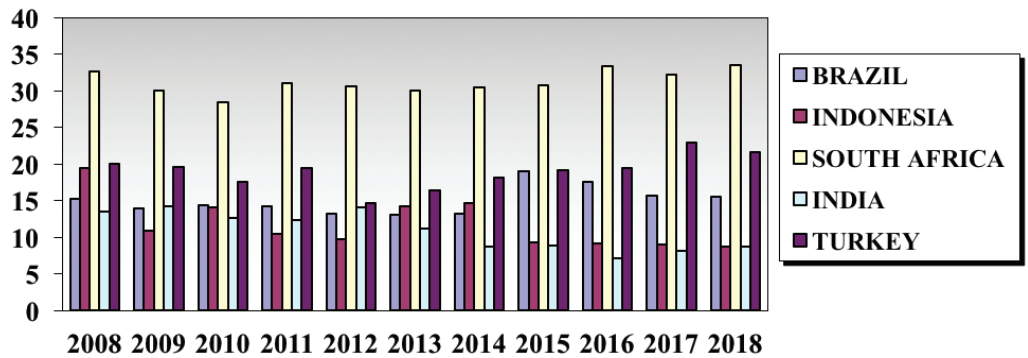
*Table 4: Place of Turkey among the Fragile Five Countries with the Highest Performance in Macro Indicators*

| | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018*** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Inflation Rate%** | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 4 | 5 | 5 | 5 |
| **Unemployment Rate%** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 |
| **Long-Term Bonds Interest Rate%** | 5 | 5 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 5 |
| **Real GDP Growth Rate%** | 5 | 5 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 1 | 3 |
| **Current Balance/ GDP%** | 4 | 3 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 |
| **Budget Balance/ GDP%** | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**Source:** *IMF, World Economic Outlook Database, April 2018, www.imf. org; https://tr.tradingeconomics.com/india/unemployment-rate; www.investing.com/rates -bonds data prepared by us.*
**: Forecast*

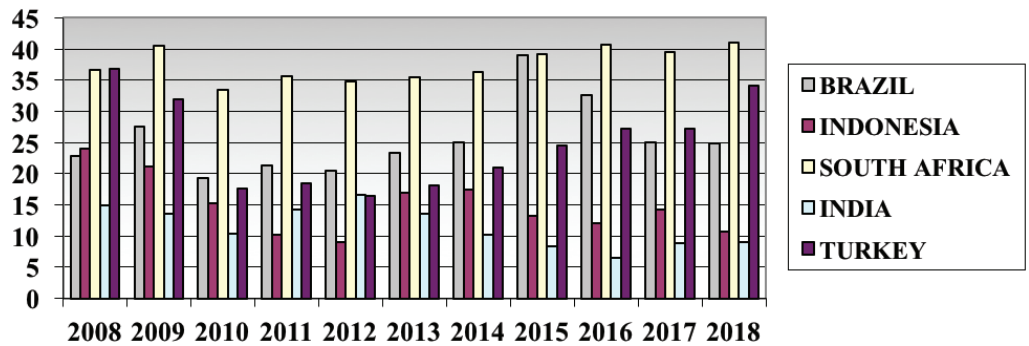
The misery index values of R. Barro and A. Okun were calculated separately and given as a graphic. Graphic 1 shows the values of the fragile five countries with the indicators of A.Okun's Economic Disorder Index (A + B). When we examine the graphic, the country of which index value decrease most during the crisis in India, thus, its macroeconomic performance strengthen severely. The index, which was 14.3 in 2009, was realized as 8.2 in 2017. In this success of India, it is lowering the double-digit rate of inflation in a controlled way was effective. The other country that significant improvement was observed in the value of the poorness index was Indonesia. In 2008, when the crisis was experienced, the index, which was 19.5, was continuously decreasing and was realized as 9 at the end of 2017. Although the decline in the index value of Indonesia was affected by the decrease in the unemployment rate, the control of the inflation was much more effective. The third country is Brazil. Turkey and South Africa come after Brazil. Although Brazil and Turkey's misery index value decline after the global crisis, it has been passed on to an upward trend since 2013. Brazil, after reaching its highest level with an index value of 19 in 2015, started to decline to 15.7. Even though the double-digit unemployment rate continued to increase after 2015, the country's economic performance improved in recent years due to the significant decrease in the inflation rate. In Turkey, index value has been increasing in recent years due to the upward trend of both the inflation rate and the unemployment rate. There is little change in the index value of South Africa. South Africa's macroeconomic performance has not improved since 2008, despite the decline in the inflation rate. The reason for this is the unemployment rate, which is high and has a continuous upward trend.

**Graphic 1: A. Okun's Economic Discontent Index Values**




Graphic 2, shows R. Barro's misery index values for 2008-2018. During the global crisis, macroeconomic performance deteriorated in most of the countries, but recovery was observed in the following years. According to the misery index, the country that is in the best position in terms of macroeconomic performance in India. Indonesia and Brazil follow India. Turkey ranks fourth. South Africa is the country with the worst case. When analyzed by years, there is no improvement in the macroeconomic performance of South Africa.

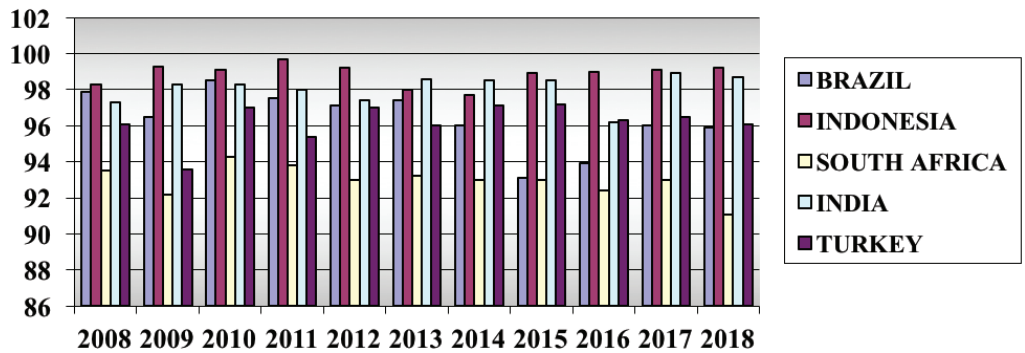
**Graphic 2: R. Barro's Misery Index Values**




While the misery index in 2008 Turkey was realized as 36.8, it realized as 17.6 in 2010. Since 2013, it has increased continuously and realized as 27.3 in 2017. In 2018, it is estimated that it will increase by 34.2. Turkey is the country with the highest growth rate among the fragile five countries, especially in recent years. However, there is a growth with an average unemployment rate of 10%, which cannot create employment. Especially since 2013, Turkey's macroeconomic performance has been weakening. This was due to the deterioration of other poverty index indicators except for the growth rate. Among the fragile five countries, the highest unemployment rate was in South Africa and Turkey has the highest inflation rate and 10-year government bond interest rates. As the inflation rate rises, the long-term interest rate rises. Especially the recent rise in the exchange rate causes the depreciation of the Turkish lira and a further rise in inflation. Since the first time the classification of fragile five has been mentioned in 2013, the fragility of India and Indonesia has decreased significantly. Brazil, Turkey

and South Africa have become more fragile increasingly under the influence of being largely currency-dependent, having weak currencies, domestic political unrest and/or the fight against corruption (Kular, 2016).

**Graphic 3: Macroeconomic Performance Index Values**




Steve Hanke (2018) compared the poverty index value of 216 countries in total inflation and unemployment rates. According to this report, South Africa ranks fifth among countries with the highest misery index value. In addition, it is predicted that it will be in second place in 2019 with over 25% unemployment rate. Also, the report includes estimates for 2018 of other countries among the fragile five. Of these countries Turkey ranks 19, Brazil ranks 35, Indonesia ranks 71, while India ranks 88 (Hanke, 2018). As we have seen in this study, the ranking of fragile five countries in terms of macroeconomic performance is the same.

Graphic 3 is prepared with macroeconomic performance index values of Fragile Five countries. The index values of the five countries are below 100 from the time of global crisis. Within the 10-year period examined, Indonesia, having an average MPI value of 98.8 percent and India, having an average MPI value of 98 percent, take place near the top. In some years, India may seem to be performing better, but Indonesia performs better than India. These countries are followed by Brazil which comes 3rd with an average MPI value of 96,4. With the average MPI value of 96.2 during the period, Turkey ranks 4th in these five countries. Turkey had the worst MPI value in 2009. It was 3% below the period average. It showed a fluctuating course in the following years. South Africa has the lowest value with an average of 93.1. MPI value increased only during 2010 during the period. In 2010, it was about 1.5% above the average of the period.

## Conclusion

Six main indicators were used in order to measure the macroeconomic performance of Turkish economy in the post-crisis period: inflation rate, unemployment rate, growth rate, long-term interest rate, current account deficit, and budget deficit. With these indicators, Economic Discontent Index, Poverty Index and Macroeconomic Performance Indices of Turkey in 2008-2018 were calculated. At the same time, Turkey is compared with the macroeconomic performances of Fragile Five countries consisting of India, South Africa, Brazil and Indonesia.

With the global crisis, the macroeconomic performance of the fragile five countries has deteriorated but they have improved gradually in the following years. Especially in August 2013, India and Indonesia have entered into a significant recovery process by separating themselves positively from all countries in terms of indicators. In

recent years, India and Indonesia have the best misery indicators with over 5% growth rate, low-interest rate, low unemployment rate and low inflation rate. With the positive developments in their macroeconomic performance, the fragility of these two countries decreased significantly. According to the three indices, these countries have the best position in terms of macroeconomic performance considering 2017 data and 2018 forecasts. The Indian economy shows high macroeconomic performance with an excellent rapid growth thanks to the economic reform policies implemented. India and Indonesia are followed by Brazil and Turkey. Despite the high unemployment rate, Brazil's macroeconomic performance has improved in recent years due to the inflation being kept under control. South Africa has the most negative macroeconomic performance.

According to each of the three indices, Turkey is the country with the most increased fragility. During the period examined, the country's macroeconomic performance was severely deteriorated. Turkey, having a significantly contracted economy due to the global crisis in 2008, has recovered from 2010. However, its structure continued to be fragile and open to external shocks. Turkey has a current account deficit of over 5%, while in other countries the current account deficit is less than 3%. Turkey seems to grow with an increasing current account deficit, cannot lower inflation rate and unemployment and borrow at a high cost in this period. The Turkish economy is moving rapidly towards recession. With high inflation and the economic recession, it will be inevitable for the economy of Turkey to experience stagflation. According to the New Economy Plan, the macroeconomic indicators, which started to deteriorate in 2017, will continue to deteriorate in 2018 and 2019 will be severely difficult. IMF forecasts are also in this direction.

Turkey should seriously implement corrective reforms to solve structural problems and strengthen its macroeconomic performance. Coordination between economic policies and public borrowing policies is also important. Chronic high unemployment problem should be solved by generating industrial and technological investments that create employment and a sustainable growth rate should be the aim. On the other hand, reducing the current account deficit by reducing dependence on foreign sources and controlling inflation is another target. Thus, it will be possible to achieve better macroeconomic performance by reducing the cost of borrowing. The better macroeconomic performance will also increase social welfare.

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# 8

# ENHANCED KEYNESIAN ECONOMICS FOR OVERCOMING FINANCIAL CRISES[1]

*M. Mustafa Erdoğdu*[2]

***Abstract***

*After the demise of the adjustable exchange rate pegs of Bretton Woods in the early 1970s, a profound change has taken place in the global economy. The central and shaping feature of this transformation seems to be the abolition of capital controls and the increasing deregulation of financial markets. The consequence of this transformation is that there is currently no automatic stabilizer that works in the international financial architecture. In the new era, capital movements increased dramatically, resulting in high volatility in currency transactions. This has led to a growing number of financial crises, especially in developing countries. Since crises often occur without warning signs, it is crucial to have mechanisms and provisions in place to avoid sudden and significant capital outflows. This article contains five automatic stabilizers, one of which is original to overcome financial crises.*

**Keywords:** *Financial Crises, Automatic Stabilizers, Employer of Last Resort, Capital Controls, Currency Transactions Taxes, Keynesian Economics*

## 1. Introduction

The high volatility of the currency markets has been a growing problem for the global financial system since the end of the Bretton Woods system in the early 1970s. After the dissolution of the monetary system, established opinion took the view that the best formula was the unrestricted free market, a limited role of the state, and integration into the world economy. This formula has come to be known as the "Washington Consensus", through which many economies abolished virtually all restrictions on cross-border capital flows. As a result, the global economy has entered a period characterized by financial globalization, a process that is expected to increase profitability and accelerate economic progress. In contrast to the generally positive expectations, however, the result has been increasingly frequent and serious financial crises.[3] As Dulien *et al.* (2010: 5) underlines the point, the crunch of the mater is that "financial globalization, can make developing countries more vulnerable and thus impede growth."

The risk of a financial crisis in a country depends to a large extent on the maturity structure of foreign loans received, as the potential outflow of short-term capital inflows entails a serious exchange rate risk.[4] While such financial crises are the result of many other factors, short-term excessive flows can be considered as the main causal factor leading to a dramatic increase in the incidence of financial crises and nearby crises. Eichengreen *et*

1 A short version of this paper with a different title presented at the 8th International Conference of Political Economy on *10 Years After the Great Recession: Orthodox versus Heterodox Economics*, 6-9 September, Panteion University, Athens.

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3 Racickas and Vasiliauskaite (2012) have identified 394 financial crises that occurred worldwide during the period of 1970-2007. The most common type was a currency crisis.

4 According to Martinez (2016: 35), domestic credit to the private sector, as a percent of GDP, is the most widespread and significant indicator in forecasting banking crises.

*al*. (2017, February 24) indicate that flows associated with foreign direct investment (FDI) are less volatile, while flows brokered by banks fluctuate most. Other portfolio flows are somewhere in between: within this intermediate category, debt flows are generally considered more volatile than equity-based ones. Apparently, if a country has a short-term credit structure, the risk of a financial crisis is high.

If expectations worsen due to some negative political and economic developments, short-term funds may suddenly leave the country in huge amounts. It is important to note that negative development in the host country is not necessary for short-term funds to leave the country. The emergence of higher earning opportunities in any part of the world, or even just a change of perception in that direction, can trigger an outflow. Such a situation may negatively affect investment, consumption and savings decisions in the country where instability is experienced and may result in an economic crisis if it deepens. Moreover, more importantly for this paper, crises have gained the ability to become contagious with the integration of the financial markets on a world scale.

The last decade was marked by a series of broad-based economic crises and negative shocks, starting with the global financial crisis of 2008-2009, followed by the European sovereign debt crisis of 2010-2012 and the global realignment of commodities from 2014-2016 (UN, 2018: vii). Nowadays, we started to hear from some of the IMF economists, which long supported financial liberalization, "emerging markets may benefit from more proactive management of capital flows, and thus avoid crises when the flows recede" (Ghosh *et al.*, 2017, May 12). While there are valuable lessons to be learned in crisis management, as Claessen and Kose (2013) point out, countries are still far from applying the "best" practices to tackle the financial crisis.[5]

The Keynesian economics has very effective tools for overcoming crises and Keynes is one of the first persons, who revealed that there is a strong relationship between employment and aggregate demand. Keynes's realization that every unemployed individual leads to a reduction in aggregate demand is critical to solving economic crises. Keynes would have been follow this lead further and focus on employment policy both to overcome economic crises and to reduce social and economic costs to the lowest possible levels. However, Keynes did this only partly and left the employment issue almost solely to the market.[6] The main aim of this study is to fill this gap so to strengthen the ability of Keynesian economics to fight effectively with economic crises.

The current global economic conditions and the associated problems are undoubtedly very different from the 1930s. To provide satisfactory solutions to current problems, Keynesian theory requires a top-to-bottom rejuvenation and reinforcement with some improvements. In contrast to Keynes, this study centred on preserving and even increasing employment in tackling financial and economic crises. In the choice of tools, instead of the classic Keynesian open budget applications, preference is given to anti-cyclical policies, which should be activated automatically. In dealing with a crisis, priority is given to removing the elements that feed the crisis cycle and, in particular, to stop the rise in unemployment by supporting employment. In order to reduce crisis risk, or to ensure that the crisis is prevented, a total of five automatic stabilizers are proposed, one of which is original. The original proposal is to

5 The East Asian Crisis provided several cases in this respect. Jomo (2004: 32) observed that "the key factors that contributed to economic recovery in the region were … counter-cyclical economic strategies, including the willingness to run the fiscal deficits frowned upon by financial markets." Shin (2004) and Erdoğdu (2004) document how IMF policies were counterproductive for the recovery of the South Korean economy. Shin puts it bluntly that "the Korean economy recovered mainly thanks to typically Keynesian policies rather than due to the IMF programme" (Shin, 2004: 254).

6 Keynesian theorists saw wages and employment slow to respond to the needs of the market and they recommended governmental intervention to stay on track (Investopedia, 2018). Obviously, however, this was not like establishing automatic stabilizers to preserve employment as this paper suggests.

create a mechanism to automatically reduce the tax burden and other costs on employers when a certain threshold is reached. Second, the state should be the ultimate employer. The third is the introduction of a capital control at the entrance. The fourth is the introduction of a two-tier currency transaction tax. The last is the introduction of capital control for outflows.

In order to effectively combat a crisis, it is necessary to know how the mechanisms that feed crisis formation work and how these mechanisms are triggered. In this respect, it will be discussed below briefly the basic mechanisms of crises. Next, the answer to the question of how Keynesian economics can be developed to overcome the economic crises will be sought and in this context, some anti-crisis automatic stabilizers will be proposed.

## 2. Basic Mechanisms of Finacial Crises

In situations where there is a crisis of confidence, the market mechanism may be disrupted, sometimes even completely locked.[7] The first thing that happens during financial and economic crises is the collapse of trust, which is very similar to a crystal vase. To witness the loss of bankruptcy and extinction of a giant organization that cannot be imagined starts to disorient and shake the beliefs of people. In such a situation, most people begin to question whether the things they previously trusted are actually safe enough. Even if it is possible to restore trust, it is as difficult as restoring a crystal vase.

Crises can deepen as a result of negative cycles that feed themselves. As Türkan (2006: 99) points out, there is a close relationship between the sensitivity to trust and confidence in the economy and transaction costs. Because the transaction costs level determines the need for trust. In a situation where transaction costs are zero, the need for trust is low. The decision-makers are required to make decisions after they compare the transaction costs and the cost of trust. Most people prefer to act based on trust to avoid high transaction costs. But when the balloons in the financial system explode, it is inevitable to emerge a confidence crisis. This crisis of confidence will block the credit channels of the financial system. Because, as a result of uncertainty and insecurity, individuals prefer to hold cash rather than hold a debt. This situation is defined by Keynes as "Liquidity Trap". In this case, although central banks provide liquidity, funds are kept for speculative purposes and do not return to the system.

In every crisis, the confidence fades. The same occurred in the formation of the Great Recession in 2008. The problems that started to emerge in relation to loans in the US mortgage market were not considered important in the beginning. However, everything changed when it turned into a crisis of confidence. That was not only limited to lowering the volume of loans provided by banks but also caused a serious contraction in the demand for goods and services as a result of the negative expectations.

An economic crisis feeds on the deterioration of expectations for the future. In the crisis conditions where uncertainty, insecurity and expectation of facing losses are increasing, both supply and demand shrink. However, demand shrinkage is more severe than supply shrinkage. As a natural consequence of the decline in demand, companies are more likely to fail to fulfil their obligations, which increases the risks of lending institutions and credit-selling businesses. In an economy where demand shrinks, credit facilities follows the suit and credit costs rise. Under such conditions, weaker enterprises find it hard to survive and job cuts increase. The increase in unemployment further intensifies the contraction in demand.

7 For example, in order for an exchange between the parties to occur, either there should be a currency that they can agree to or another value-measuring unit that can replace money. Otherwise, an exchange can hardly occur.

As is known, economic demand depends on purchasing power. However, demand is closely related to also many other factors, such as how the income distribution is, current risks and expectations for the future. In this study, I will first deal with what determines the level of demand during the crisis. It can be said that the basic needs are the most important elements of demand during the crisis. It is not humanly acceptable to abandon starving people to the mercy of the markets. Moreover, when such people would be left to the mercy of the market mechanism, it is not uncommon for people to commit crimes to survive. The looting in Argentina[8] following the economic crisis in 2001 is an example of such a situation.

Income and wealth determine the purchasing power of individuals. However, when the issue is the aggregate demand in an economy experiencing a crisis, the income distribution is of greater importance. Because low-income people has the highest propensity to consume in a society. Low-income individuals are unlikely to reduce their expenditures since overwhelming share of their expenditures are basic needs. High-income individuals, on the other hand, have a low expenditure share of basic needs in normal times. This makes it possible for them to reduce their expenses drasticaly during economic crises to take advantage of profit opportunities.

The rapid reduction of spending in an economy means that the demand for goods or services of many enterprises will become insufficient. This leaves at least two serious problems with commercial enterprises whose main objective is to make a profit. One is the reduction of the opportunities for profitable work by maintaining the employment levels of enterprises when demand shrinks. However, the issue that is more important in terms of enterprises is the difficulty in the collection of instalment sales. This situation naturally has a contracting effect on the business volumes of enterprises.

From an employer's perspective laying off some of the employees can be a rational decision since that would positively affect the profitability. However, if the number of lay offs exceeds a certain threshold, a negative cycle in the economy may become unavoidable. Because, as Keynesian economic theory puts it, every individual who is unemployed means a further contraction of the total demand. The new contraction in demand leads to new layoffs, and new layoffs lead to new demand contraction, and thus to a self-feeding and deepening vicious cycle. As can be seen from the micro perspective, a rational choice of policy can mean an irrational policy choice, which, from a macro point of view, will affect a large part of the society. The results of this phenomenon are very important for economic theory. Because, as is known, one of the most fundamental assumptions of classical economic theory is that the whole society will benefit if individuals pursue their own interests.[9] However, the vicious circle caused by the intensified lay off in times of economic crisis reveals that there are cases where the opposite is true.

The next section will briefly discuss the critical elements of Keynesian economics, which I consider to have the most appropriate means to effectively combat economic crises.

## 3. Best Tools to Enhance Keynesian Economics for Overcoming Financial Crises

In the second half of the 1970s, the supply-side approach to economics, which is based on the assumption that economic problems can be solved the best by market mechanism and the state's intervention in the economy could only worsen the situation, emerged as if the best solution to the stagflation that started after the oil crises.

8 See, for instance, Gago (2015).

9 Adam Smith in his book *The Wealth of Nations* says that "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest (2003: 23-24).

Supply-side economics proposed monetary policy as the main tool for influencing economic events. Since the late 1970s, an effective monetary policy has been implemented in many countries, mainly in the US and Great Britain, limiting aggregate demand. However, these policies have been ineffective in preventing the increase in unemployment, which is of greater social importance. This, however, did not prevent fashionable opinion to prefer monetary policy as the main tool for influencing economic events. In the meantime, the Phillips Curve, based on the idea that full employment and price stability are not compatible, and that a choice should be made between unemployment and inflation, has rapidly become the dominant view despite the fact that it is not based on scientific evidence.[10]

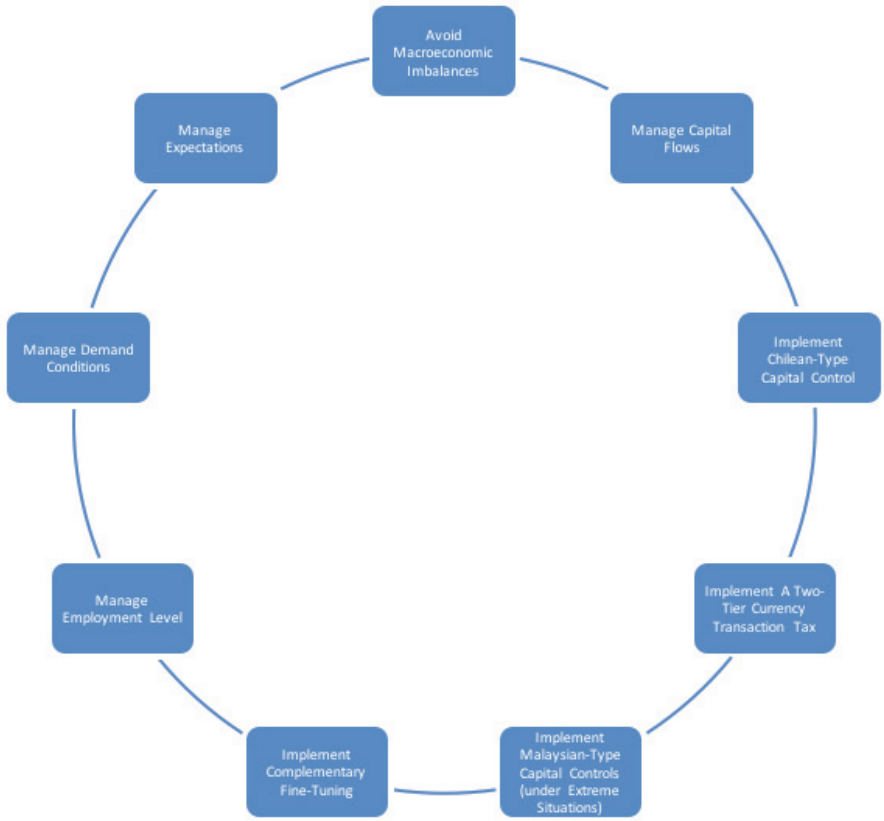
As Kaboub (2007: 3) pointed out, the main proposition of economics today is that governments must not increase their spending even in times of high unemployment, and they must not interfere with the labor market except making it more flexible. Macroeconomic priority is given to the fight against inflation. The fact is there is no guarantee that demand-restrictive policies will lead to a continuous and non-inflationary growth in the long run.

Keynes is one of the first economists, who revealed that there is a strong relationship between employment and aggregate demand. Keynes would have follow this lead and focus on employment policy to overcome the crises. However, Keynes did this only partly and left the solution of unemployment to the market. One of the aim of this study is to fill this gap so to strengthen ability of Keynesian economics to fight effectively with economic crises.

In times of crisis, where pessimism is prevalent, a strong stimulus is needed to initiate virtuous cycles. The state may provide the necessary finance to stimulate the economy. As Keynes points out, at the point where individuals cut their demands, the state can increase public spending by means of open budget policy, thus revitalizing the economy and reducing unemployment. (Keynes, 1973 [1936]: 129). It should be noted that there are a number of stimulants that can feed the positive cycle. If the overall severity of these stimulants exceeds the overall severity of the stimulants that cause the vicious circle, the severity of the current crisis will diminish and the economy will gain momentum. It is obvious that it will be difficult to keep the social and economic costs of the crisis at low levels if the necessary steps are delayed. Therefore, it is extremely important for governments to start taking the necessary steps without any delay.

10 For instance, see Niskanen (2002) and Reichel (2004).

*Graph 1. The Ways to Overcome Financial Crises*




### 3. 1. Avoiding Macroeconomic Imbalances

A crisis can only come to the fore if there is a situation that might go wrong. Therefore, it is very important that macroeconomic fundementals will be sound to avoid a crisis. In other words, macroeconomic imbalances that could lead to the crisis remain at manageable levels. For example, the key variables like the external debt level and the current account deficit, which have high potential to lead to the crises should be closely monitored and ensured that they do not exceed certain thresholds. Of course, the best is to solve the structural problems altogether.

It is obvious that the policies which will serve to maintain or even increase employment would be much more effective than to transfer purchasing power to consumers. In order to create more jobs at a lower cost, it is appropriate to increase employment in labor-intensive areas. However, it should not be forgotten that the investments to be made to permanently reduce unemployment in an economy should serve to solve the structural problems of the economy. In this respect, to create new employment in renewable energy production and energy saving areas would be wise. Such a policy not only would create new employment areas but also reduce dependence on fossil fuels, which would tend to reduce current account deficit.

In order to overcome a crisis effectively, it is necessary to establish strong anti-cycle automatic stabilizing mechanisms that will be activated without delay. The main aim of such anti-cyclical automatic stabilizing mechanisms should be to increase demand when it is less than satisfactory. Such a policy would reduce the severity of demand contraction.

### 3. 2. Managing Expectations

It is natural for all crises to carry some new and surprising elements and to some extent cause panic. It must be known that the severity of a crisis does not depend solely on the extent of the problem that led to the crisis. There are a number of other factors that determine how severe the crisis will be. We can list these elements as follows:

1. Whether or not there is an authority that can control the crisis and be trusted to resolve it,

2. The existence of institutions, mechanisms and knowledge that can solve the crisis,

3. If the necessary steps for resolving the crisis are implemented in a timely manner,

4. Whether there are sufficient resources to solve the crisis,

5. Whether there are elements that can turn expectations into positive.

As it can be seen, three of these five elements relate to the existence of a leader and a cadre capable of managing the crisis and gaining the trust of the people. Therefore, the presence of a leader and the staff, who will demonstrate the will to put in place the anti-cycle policies that can reverse the cycles that create crises, is of critical importance in order to manage the expectations positively.

### 3. 3. Managing Capital Flows

In line with the recommendations made by the IMF and the World Bank, many countries have removed their capital controls one after the other. With the abolition of capital controls, finance capital gained a great fluidity and a punishment capacity. Therefore, the way in which economic decisions will affect capital movements has become an increasingly critical issue. As a very important consequence of this situation, governments tend to meet the demands of finance capital at the expense of neglecting the problems of ordinary people and the real economy.

Attractive interest rates and various arbitrage earning opportunities stimulate short-term capital flows in an open economy. When capital inflows reach high levels, overvaluation of the local currency occurs against the other countries' currencies. Particular attention should be paid to the fact that overvaluation of the local currencies has nothing to do with the changes in the economic fundamentals, and that this appraisal is merely due to the functioning dynamics of the market mechanism. It is clear that the export of a country will be affected negatively with the overvaluation of the local currency. This would mean the current account balance will gradually deteriorate and the financial fragility will increase.

With the increase in the risk premium of a country whose financial fragility is increasing, it is expected that the interest rate to be applied to the new foreign debts will increase. In a country whose financial fragility is increasing, it is also expected that the central bank should raise the benchmark interest rate with the concern that sudden and high level of capital outflows may occur. In this way, the capital entering the country for arbitrage gains may

be discouraged from going back, and even new capital inflows can be attracted, and therefore capital inflows may increase. The increase in capital inflows to a country whose financial fragility is increasing may seem paradoxical. But in today's world, where capital flows freely except for a few countries, it is a very common situation. Nowadays, capital inflows to countries with financial fragility tend to increase rapidly until they stop and return. Since there is a powerful international institution such as the IMF, which almost guarantees that there will not be any control mechanisms against capital outflows, it is easy to understand why this paradox is formed.

It should be noted that the emergence of such a paradoxical situation does not stem from the tendency of individuals who operate in financial markets to behave irrationally. On the contrary, this paradoxical situation stems from the fact that these individuals know their interests very well and tend to act rationally. I would argue that the main reason why financial crises occur so often is very much related to the fact that the state, which can provide the necessary coordination for the individual behaviour to be rationally oriented, got fired by the decision makers, who adhered to Washington Consensus.

The indicators that stand out in determining the risk of financial crises are the maturity and composition of the capital entering into an economy.[11] Therefore, the best strategy appears to reduce the share of short-term capital movements and increase the long-term capital. In this context, Chomthongdi (2001), Epstein *et al.* (2008) and Ocampo and Palma (2008) emphasize the importance of capital control implementation.

Another way to reduce the risk of a crisis is to tax the foreign exchange transactions. This proposal was first made by Keynes; however, the main comprehensive proposal was raised by James Tobin in the 1970s. It should not be expected that this suggestion of a low-level tax on currency transactions would be as effective as capital control to reduce the risk of crisis. However, it can be said that the Tobin tax, which was made in two-tiers by Spahn, can be effective even against serious speculative attacks.

As it is noted by the Independent Social Scientists, it would be also useful to implement a tax on stock transactions, as well as currency transaction (BSB, 2009: 189). Implementation of such taxes would not only reduce the volatility in those transactions but also provide additional resources for anti-cycle public spending that would reduce the impact of demand contraction associated with the crisis.

### 3. 3. 1. Implementation of Chilean-Type Capital Controls

Probably the most important technique that can reduce the damage caused by speculative capital flows is capital controls. Capital controls would reduce the excessive exchange rate volatility caused by short-term capital flows and limit the loss of foreign reserves. It can be applied to increase the cost of a transaction by tax or other means, to impose quantitative restrictions and to directly prohibit the international trade of some assets (Neely, 1999). According to the former chief economist of the IMF Fisher (2001), even though its effectiveness in the long-term is disputable, controlling capital inflows may allow a country to pursue an independent monetary policy.

Capital controls can be implemented both at the entrance and exit. The most appropriate way to reduce the risk of a crisis is to implement capital control like Chile at the entrance. The best time to implement Chilean-type capital controls is prior to a crisis. Such controls are selective and lead to a reduction in short-term capital without

11 For instance, see Dulien *et al.* (2010), Racickas and Vasiliauskaite (2012), and Eichengreen *et al.* (2017).

deterring long-term capital. Chile conducted controls on capital inflows until May 1998 and it is generally accepted that these practices resulted in positive results.

After 1990, Chile began implementing differentiated controls on capital inflows for the long and short term. The most effective element of the capital controls applied in Chile was the compulsory deposit application whose duration is determined as at least one year. Initially, 20% of short- and medium-term external loans were subject to compulsory deposit (reserve), and domestic and foreign credit transactions up to one year were subject to a 1.2% annual stamp duty (Agosin & Ffrench-Davis, 1998). This practice tightened after May 1992 and the mandatory reserve rate has been increased to 30% and expanded to include all international financial transactions except for commercial loans (Garber & Taylor, 1995).

In addition, the tax was applied at a level that doubled the amount normally received from short-term capital inflows. Since the mandatory reserve application deprived the investors of the alternative interest income that they could obtain and the applied tax increased the costs, the capital controls applied in Chile were effective in deterring short-term capital inflows and changing the composition of the flows. As the decrease in short-term inflows could be compensated by long-term capital inflows, there was no decrease in total capital inflows. The decrease in the ratio of short-term capital in total capital inflows has reduced financial crisis risk (Epstein *et al.*, 2008). As a result of the capital management techniques implemented in the Mexican crisis in 1994, Chile's current account deficit was lower than in other Latin American countries, and Chile was not affected much by the Asian crisis (Chomthongdi, 2001).

### 3. 3. 2. Implementation of A Two-Tier Currency Transaction Tax

After the collapse of the Bretton Woods system, capital flows began to gain a great deal of speed and this increased volatility in the financial markets. Seeing this as a source of problem Nobel laureate James Tobin, proposed a currency transaction tax, which is later called after his name. According to his proposal, which aims to spread some sand on the highly lubricated financial wheels, each country must levy a tax between 0.1% and 0.5% on every private currency transactions (spot, forward, etc.) within its borders. Since such cost of short-term capital flows increased much more than the long-term ones, Tobin suggested that such a tax would lead to a reduction in short-term flows and that would increase financial stability (Tobin, 1978). Whether this expectation will be realized depends to a large extent on the price elasticity of currency transactions. If the price elasticity of currency transactions is high, this tax may limit foreign exchange transactions. Rather than eliminating the destruction of a crisis, Tobin tax has a protective nature to ensure that it is more resistant to such a crisis (Erdoğdu & Balseven, 2006: 111).[12]

According to the critics, such a tax may further increase the financial volatility by reducing the speculation that they assume lies at the source of stability. However, the relationship between liquidity and stability has not been proven to date. Indeed, the fact that the foreign exchange transaction volume decreased by approximately 20% following the use of the Euro in the EU supports the opinion that this claim is invalid. The findings of Westerhoff (2003, 2004), which developed a model of two independent markets, provide very robust evidence that a currency transaction tax would reduce financial volatility. According to the results of this model, speculation and volatility

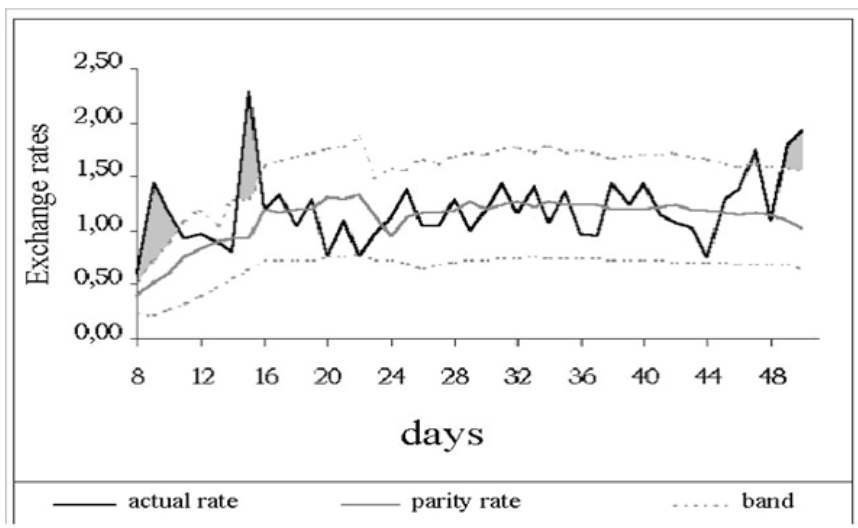
12 China's central bank announced in March 2016 the introduction of a "Tobin" tax on currency transactions to combat currency speculation. The rate of the tax kept at zero while the central bank refines the rules (Bretton Woods Project, 2016).

in a currency transaction tax market are decreasing; in the market where tax is not applied, volatility is increasing. If the same amount of tax is imposed on transactions, both markets are stabilizing.

As Tobin (1978) highlights, a currency transaction tax may help to avoid the crisis by reducing financial volatility in normal times, but should not be expected to be effective in case of large speculation in exchange rates. The solution to these problems came from Spahn, who was asked to carry out a study to prove that the Tobin tax would not give the expected result. Spahn's proposal consists of an incremental tax rate (exchange surcharge) that will be automatically activated at speculative transaction times with a tax rate of ten thousandths (0.001%) applicable to all transactions in the foreign exchange market and that can function as a cycle breaker (Spahn, 1995, 2002). Such a two-tier tax is intended not to allow the speculative attacks against the national currency in the event of a financial crisis.

A Spahn-type two-tier tax is functional in providing macroeconomic stability while eliminating the main objections to the applicability of the Tobin Tax. First of all, it is not necessary for other countries to participate in the implementation of a two-tier transaction tax. The likelihood of such a tax being effective at the national level seems high. Moreover, since the tax rate proposed by Spahn is very low in normal situations, it is clear that the impact on liquidity and resource allocation in the market will be very low. The first step will reduce short-term transactions and contribute to exchange rate stabilty. However, the main stabilizing factor of this tax will be the second step of the tax, which will take place in times of crisis.

**Graph 2. A Two-Tier Currency Transaction Tax**




**Source:** *Spahn (1995: 26).*

As it is seen in Graph 2, in order for a foreign currency transaction tax to be applied in a dual structure, a range or, in other words, a fluctuation band should be defined in which exchange rates can fluctuate freely without being activated. Normal transactions will not be affected by this tax, as there will not be a high rate of incremental tax applied to transactions in the defined crawling exchange-rate band. Transactions that cause exchange rates to surpass the surge band will trigger an incremental tax. Since speculation usually finds its expression in abnormal

exchange rate changes, the tax rate for transactions outside the surge band is high. The effective tax burden here can be increased depending on the extent of deviation from the fluctuation band (Spahn, 2002). There is no drawback in determining the ratio to be applied at high levels such as 50% or even 100%. The width of the fluctuation band can be determined according to the daily fluctuation data of the exchange rates and the socio-economic priorities of the country concerned. Implementation of such taxes would not only reduce the volatility in those transactions, but also provide additional resources for anti-cycle public spending that would reduce the impact of demand contraction associated with the crisis. Despite all possible benefits, however, a two-tier currency transaction tax cannot completely eliminate the risk of a crisis. It is clear that such a tax will be more effective if it is implemented in conjunction with capital inflows.

### 3. 3. 3. Implementation of Malaysian-Type Capital Controls

Malaysian-type capital controls are emergency measures to stop capital outflows during a financial crisis. Control over capital outflows is based on economic rationality and its effectiveness is clear. Nevertheless, widespread belief was that the controls would lead to further loss of market confidence. Because they were contrary to the Washington Consensus and may be punished by the IMF. That was the main reason why the Malaysian government was reluctant to apply it at the beginning of the East Asian crisis (Kaplan & Rodrik, 2001: 11). In addition, there were doubts that controls could reduce the discipline to improve the quality of macroeconomic policies and delay necessary reforms (Frankel, 1999: 3). All these reflections and fears at the beginning of the Asian crisis, which erupted in the summer of 1997, led Malaysia pursue a policy similar to the IMF programs. However, it soon turned out that a policy similar to that of the IMF is unlikely to produce the desired results. As a result, 14 months after the beginning of the crisis Malaysia embarked on extensive and rigorous controls on capital flows and exchange rates.

The local currency Ringgit was set at $3.80. It was imperative that all deposits held in ring banks in the coastal banks to be returned the country within one month and the foreigners have to wait 12 months for the revenues of Ringgit to be converted into foreign currencies. After five months, this practice was converted into a tax payment instead of a waiting period. In addition to these measures, the government has severely curtailed transfer of capital abroad and stopped the foreign portfolio capital into the country for 12 months (Sharma, 2003: 7-8). The capital controls introduced in Malaysia at a time when a political crisis was taking place and implemented with inappropriate instruments. It may, therefore, be misleading to evaluate the impact of capital controls in Malaysia (Jomo, 2001). Nevertheless, it seems possible to say that the implemented policies have been successful beyond expectations.

In retrospect, it appears that Malaysian capital controls accelerated the recovery of the economy compared to IMF-style policies. This was due to the fact that such controls could limit public debt and kept growth hopes in the near future intact. A recent article suggested that "[t]he capital controls have been successful in the short run in switching some of the short-term capital inflows into longer-term portfolio investments, without jeopardizing the Malaysian investment environment in the longer-term" (Amin & Annamalah, 2013: 549). The Malaysian experience has shown that policy options that can be implemented even under crisis conditions are not as small as people think (Chomthongdi, 2001). Success depends to a large extent on coherence and consistency with the general objectives of economic policy. As Epstein (2009: 135) puts it, "capital management techniques are no panacea for economic problems, and they will not work well unless they are part of an overall, appropriate framework of economic management."

### 3. 4. Managing Demand Conditions

As the experience of Great Depression and Great Recession showed, fiscal policy is much more effective than monetary policy to stimulate the economy during deflationary crises. Fiscal policy has three basic tools. These are: spending policy, income policy and borrowing policy. The multiplier effect, which is considered to be the coefficient that reflects the effect of the increases in autonomous (income-independent) expenditures on national income, pushes governments to increase public spending in times of stagnation and unemployment.

Increasing public expenditures is a very important tool to stimulate demand. Increasing public consumption expenditures may lead to an inflationary process, which cannot be easily controlled in countries with a large budget deficit, and the cost of the process may exceed the benefit. However, it is the right move to increase public expenditures with the first signs of an economic crisis. Research and preparation should be carried out earlier to decide what will be these expenditures and how they can be put forward with the lowest costs (Erdoğdu, 2009: 33).

Although it does not look like a good policy at the first sight, one of the best policies to stimulate aggregate demand is to give households shopping vouchers that will be valid for a certain period of time. It is also possible to increase disposable through tax reductions. However, there is the risk that increased disposable income will not be used for consumption. The way to reduce this risk is to apply tax cuts to those with high consumption trends or to reduce indirect taxes. For this, it is necessary to know what the impact of alternative tax cuts on consumption will be.

Lowering the value added tax (VAT) on goods and services for a period of time may slow down the severity of demand contraction. However, such a policy will only be effective during its implementation. In addition, such an application will not be a deterrent to lay off if the demand further declines. In this case, new lay offs will lead to an additional contraction in demand. Moreover, a general VAT reduction would mean giving up an important resource that could be used to stimulate the economy.

Increasing public sector infrastructure investments aims to reduce the severity of demand shrinkage by preventing the decrease in employment in the short term. In the medium and long term, the aim is to stimulate demand by increasing employment opportunities and to encourage new investments by increasing the potential profitability of investments. As Galbraith (2009) points out, the share of the service sector in the economy today is much larger than it was in the 1920s and 1930s. At the same time, the share of the public sector in the economy is much larger than that of the Great Depression. Therefore, the fact that the automatic stabilizers, which were not before, are active today constitute a significant advantage. However, as Bulutoğlu (2003: 491) emphasizes, the impact of fiscal policy is greatly reduced in an open economy where capital movements are free. In addition, when the expectations of the entrepreneurs are very pessimistic and they are too reluctant to invest, the fiscal policy may have almost no effect. In such cases, it becomes a necessity for the state to play a more active role in the economy. This issue will be discussed below.

### 3. 5. Managing Employment Level

The ultimate aim of a business is to make a profit. From a microeconomy perspective, if the revenue of an enterprise remains below its expenses and this situation does not look like to improve within a short time, the employer is oblige to reduce the variable expenses. At this point, laying off employees is the first option to think.

From macroeconomy point of view, on the other hand, every unemployed person who is prepared to work means a reduction in the aggregate demand, and the contraction in aggregate demand means new layoffs.

There are four ways for a government to stop such a vicious circle. The first one is to increase demand by increasing public spending or reducing taxes. The second is to make tax arrangements to ensure that enterprises maintain their employment levels. The third is to implement policies aimed at deterring laying off employees. The fourth is the public sector to become an employer of last resort (ELR).

The first way is explained in the previous section. The second way is to introduce an automatic stabilizing mechanism that will reduce the cost of employment for employers as soon as a sign of a crisis emerge. The basic logic behind this proposal is that if no measures are taken, unemployment would increase rapidly and the crisis deepen. This is followed by high social and economic costs. Under such a crisis situation I would argue that it would be wise for goverments to limit laying off by sharing the employment costs of the enterprises. For instance, the tax and social insurance costs of hiring new employees can be drastically reduced or even eliminated altogether for a certain period of time. There is no tax expenditure here. Because it is not possible to collect an employment-related tax from unemployed individuals.

One other thing to do is to reduce the costs of employment for employers. This would be tax expenditure and requires careful calculation. If this cost can be reduced down sufficiently, there remains no economic reason to lay of employees. The third way is to discourage lay offs by making them costly. For example, the government would not reduce the taxes and social insurance costs for the employers, who lay off their employees in a defined crisis period. Such employers would also be obliged to pay a compensation.[13] When these two approach are used together, a socially desirable result can be achieved.

The fourth way is the public sector to become an ELR. The introduction of such a mechanism means that if a crisis occur, the Keynesian open budget policy will be adopted from the beginning. Unlike conventional open budget policy practices, such an application is automatically activated. The most important advantage of this mechanism is that it produces a direct and precise solution to the unemployment problem, which has a great effect on the deepening of a crisis. In other words, the ELR policy will serve to the economic recovery, which is the main objective of the Keynesian open budget policy, to take place in a shorter time and thus to keep social and economic costs at a lower level.[14] In addition, making such a choice from the beginning will allow the budget deficit to be born due to the crisis to remain at a lower level.

As the some authors like Mitchell and Wray (2005), Tcherneva (2008), Wray (2009), Shubik (2009) and Papadimitriou (2009) suggest, independent national economies, which use their own money and follow a floating exchange rate policy, can always ensure full employment through ELR policy. According to them, a well-established ELR policy does not lead to inflation. On the contrary, by determining the base price of employment for unskilled unemployed people who want to work, they contribute to the stability of the private sector fees, costs and thus the prices. Another important feature of such a program is that the negative impact on the supply and demand of the general labour force in the economy is limited due to the fact that such work areas are not preferred by the private sector since they are not profitable.

13 For instance, the amount of such a compensation might be worth three months of salary.

14 Practices that provide employment guarantee similar to ELR policy have been implemented by many developed countries such as USA (1933-36) and Sweden (1945-1990) in the past. Recently, such policies have been implemented in Argentina and India.

The work in the ELR program includes services such as elderly care, support for health services, environmental clean-up, afforestation, ensuring traffic safety of children at school exits, local security services, maintenance and repair work in poor areas, and community and cultural historiography (Işık, 2009: 147). Being ELR does not mean that the public sector is competing with the private sector for the best workforce. Although the ELR role of the public sector constitutes a solid base for the level of wages in the market, wages are low and fixed, so there is no increase in wages in the market.

Ensuring a corporate employment guarantee by the public sector has a strong automatic stabilizer function. It is important to recognize that there are some other automatic stabilizers, which are similar qualities like the ELR policy.[15] Therefore, it would be wise to coordinate them within the same package. Implementation of the ELR policy may lead to the elimination, or reduction of many economic, psychological and social problems caused by unemployment. As a result of such a policy, on the one hand, there would be a general improvement in public health and an increase in education level, on the other hand, a reduction in crime, security expenditures and court costs. Moreover, considering the multiplier effect of the revenue generated by the said program, it is likely that the cost to be incurred due to such an implementation is much lower than the social and economic benefit to be achieved. However, it should be underlined that the public sector's ELR policy should aim at completing social spending rather than substituting it. From a policy perspective, it is important that automatic stabilizers can be strengthened without necessarily undermining the underlying incentive structure for work and job search.[16] Although ELR has the principle to secure the right to work, it should be kept in mind that the main objective is to provide a temporary job opportunity. ELR programs should be seen as one of the social insurance institutions for the people who are unemployed but want to work.

### 3. 6. Implementing Complementary Fine-Tuning

In principle, the policies to be implemented to overcome the crisis should not be chosen only because they will serve to overcome the crisis in the short term. Alternative policies should also be preferred to those who can contribute to the solution of other important problems in the medium and long term. Likewise, care should be given to select policies that can contribute to the solution of the structural problems of the country and serve to shift the production structure to the high value-added goods and services.

For example, fiscal policies such as incentives, subsidies and tax refunds can be applied to increase the insulation costs for heating housing by using less energy. It is clear that such policies will have positive effects beyond employment growth in relevant sectors. Such a policy primarily serves to save energy consumption. Less use of energy will naturally mean less pollution of the environment. This would also reduce dependence on energy imports and relieves the current account deficit.

On the other hand, if the government would like to increase aggregate demand, it would be appropriate to make purchasing power transfer to the people with low income, who has high tendency to consume. Moreover, as Özatay (2009) points out, these segments tend to use domestic goods more than high-income people. I can also

15 Results of a recent study (Akar & Uysal-Şahin, 2018: 171) reveal that unemployment benefits in Turkey work as automatic stabilizers. However, this automatic stabilizer does not reduce unemployment rates, only alleviates the negative effects of unemployment.

16 Two of these options are the workfare elements in the social safety net and the explicit contingencies of the unemployment insurance business cycle (Andersen, 2016).

add that the demand for such goods tends to be more labour-intensive and therefore will have a positive effect on employment.

## 4. Concluding Remarks

If countries with significant macroeconomic imbalances and political problems do not implement capital controls, their financial crisis risk is high. When the confidence in economy management deterioate, financial crises can emerge. If a certain threshold is reached, financial crises may turn into an economic crisis. Demand shrinks in economic crises and this triggers layoffs, which intensifies demand contraction. The shrinking demand leads to new layoffs and this results in a vicious circle. In times of crisis, where pessimism is prevalent, a strong stimulus is needed to initiate virtuous cycles. The state may provide the necessary finance to stimulate the economy. If the overall severity of these stimulants exceeds the overall severity of the stimulants that cause the vicious circle, the severity of the current crisis will diminish and the economy will gain momentum.

Crises can occur suddenly and can deepen by feeding themselves. For this reason, it is very important to preapare the necessary tools much earlier that it arrives. Also, to fight effectively with crises, it is necessary to quickly dry the veins that feed the crisis and to create positive self-sustaining anti-crisis cycles. The deteriation of the aggregate demand is the key problem in every economic crises. Therefore, strategic priority should be given to employment-enhancing policies. Because, such policies have the function of maintaining aggregate demand. These policies can be realized through the implementation of policies that would reduce the cost of employment on employers and/or the direct creation of employment by the state. For instance, the tax and insurance costs of employing new staff in crisis conditions for employers can be dramatically lowered or even eliminated altogether for a certain period of time, provided that they do not lay off workers. If this costs can be reduced sufficiently, the reason for laying off workers is eliminated. Another way is to deter lay offs. When these two ways are used together, the most desirable result can be obtained at the lowest cost.

Policies aimed at maintaining or even increasing the level of employment are far more effective than the transfering purchasing power to consumers. Employment enhancing policies are essential to overcome economic crisis as they enable continuity in demand, as well as allowing to minimize social costs caused by unemployment. In the medium and long term, it is important to create a production structure that will increase employment opportunities.

Unlike the usual Keynesian focus of open budget applications, the focus of this study is on anti-cyclical policies to combat economic crises. To combat financial and economic crises five automatic stabilizers, of which one is original, have been proposed. The original proposal is the creation of a mechanism for the automatic reduction of the tax burden and other employment related costs on employers when a certain threshold is reached. The second proposal is that the public sector becomes an employer of last resort, which pays a low and fix salary for any unemployed worker who wish to work. In this way, it becomes possible both keeping aggregate demand contraction and socially devastating effects limited. The third is to implement Chilean-type capital controls for inflows to improve the maturity structure of the debts to reduce crisis risk. The fourth is the implementation of a two-tier currency transaction tax to deter capital outflows from the country during the crisis and to provide extra resources to cope with the crisis. The fifth is to implement Malaysian-type capital controls for outflows for a certain period of time, if it is understood that the foreign exchange outflow will reach an extreme level and will cause destruction. To get the best results from these proposals, it would be appropriate to make the necessary preparations prior to the crisis.

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# Global Economy
# Economic Crises & Recessions

This book is one of the products of the Ninth International Conference on Political Economy (ICOPEC) held in September 2018 at Panteion University with the main theme "10 years after the Great Recession: Orthodox versus Heterodox Economics". The conference was co- organised by the Greek Association for Political Economy (GAPE), the Department of Social Policy of Panteion University, and the Faculty of Economics of Marmara University. This volume contains eight selected papers that benefited from comments and discussion during the conference and subsequently improved significantly. They focus on economic crises and their impact on the global economy and on particular economic sectors and countries.

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