GLOBALISATION & PUBLIC POLICY

Editors

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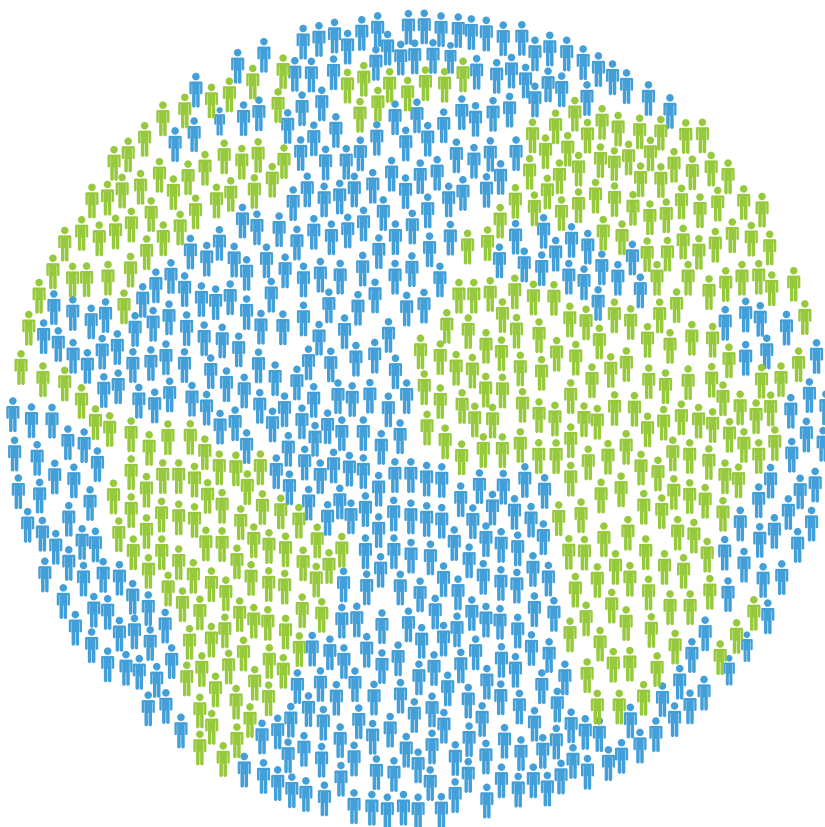**Kaoru Natsuda**
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(Edited by: Kaoru Natsuda, Binhan Elif Yılmaz, Kozo Otsuka)

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EDITORIAL INTRODUCTION

Kaoru Natsuda, Binhan Elif Yılmaz, Kozo Otsuka

This book is one of the products of the 10th International Conference of Political Economy (ICOPEC), held at Marmara University in Istanbul, Turkey in June 2019. ICOPEC 2019 was co-organized by Marmara University and Batman University in Turkey, Panteion University and Greek Association of Political Economy in Greece, University of Belgrade in Serbia, and VUZF University in Bulgaria. It was also supported by University of Westminster and IJOPEC Publication in UK and sponsored by Central Bank of the Republic of Turkey, Marmara University Scientific Research Project Unit, and Alnus Investment in Turkey.

The main theme of the conference, "**If Globalism is Dead – Long Live What?**", explored an economic process of interaction and integration, linked to social and cultural aspects by examining pros and cons under the globalization process. Globalism has led to a wide range of ideologies and social movements in the last few decades. Although globalists emphasize benefits of globalization including availability of lower price of goods and services, lower living costs, higher social welfare, technology and knowledge transfer, poverty alleviation etc., the others strongly concern inequality (Bourguignon 2016, Wade 2004). Although global inequality has been major economic and political issues in the north-south relation for a long time, income inequality has also emerged as a socio-economic problem of developed countries in Europe (particularly yellow vests movement), North America and Asia (see Fredriksen 2012, Inaba 2011, Wallace et al. 2010). With regards to the global north-south debate, it is apparent that development policy space in developing countries has significantly diminished under the globalization process, particularly, with the rise of the World Trade Organization in the last two decades (see Natsuda and Thoburn 2014, UNCTAD 2014, ch. 4). Under such a circumstance, ICOPEC 2019 included a variety of topics in relation to globalism as below:

- Global Economy and the 4th Industrial Revolution;
- Global Crisis, Local Voices;
- Migration, Demography, and Gender;
- Public Economics, Public Finance, and Public Management;
- Economic Development and Sustainability;
- Labor Economics; and
- Business Management.

This volume contains selected papers that benefited from comments and discussions during the conference, and peer-reviewed by the editors and at least two independent experts in the field. The title of this volume is "**Globalisation & Public Policy**" consisting of eight chapters as below.

In Chapter 1: *De-globalisation and the Return of the Theory of Imperialism*, Stavros Mavroudeas argues that the globalization hypothesis since 1990s was coupled with the expansion of a multifaced theoretical trend that rejected previous analytical tools and purported new concept of globalization. In particular, he asserts that new globalization concept has disregarded the theory of Imperialism (stressing antagonisms and the role of the national economy) and started to emphasize the theory of global interconnectedness. However, as the result of the 2008

capitalist crisis, antagonisms along national lines and military conflicts proliferated. In this context, Mavroudeas advocates the importance of the classical Marxist theory of Imperialism to understand the current political economy of the global system.

In Chapter 2: *Intergenerational Income Mobility*, Leyla Firuze Arda Ozalp argues that current socio - economic inequalities can affect not only the opportunities of the current generation, but also the access of the next generation to opportunities. Kruger (2012) pointed out that income inequality has increased, generation-to-generation income mobility has increased as described in the Great Gatsby Curve. Thus, higher income inequalities are charged with the decreases in intergenerational income mobility. In this context, Ozalp focuses on the relationship between income inequality and income mobility. As a result of, countries which have higher inequality level tend to be less mobile society in which family background has become more important than anything else.

In Chapter 3: *Does Openness Help to Overcome Gender Employment Gap in Manufacturing Sector?,* Fatma Didin Sönmez and Yasemin Özerkek quantitatively examine how the openness to influence trade influences gender employment gap. International trade may influence gender gap in labor market through various channels. The impact may vary across industries. Using the panel data of selected European countries, Didin Sönmez and Özerkek compare the impact of international trade and FDI on gender gap in high-tech, and low-tech manufacturing sectors. The estimation results show that international trade and investment have a strong impact on reducing gender gap in mid-to-high tech industries.

In Chapter 4: *Cognitive Capability and Cooperation in Public Goods Experiment*, Abdul-Razak Bawa Yussif and Savas Cevik investigate cognitive levels, co-operation levels of individuals in public goods game (PGG) and risk tolerances. Using the three-question Cognitive Reflection Test (CRT) as a measure of cognitive competence, Yussif & Cevik assesses how individuals' combinations in a multifaceted public good play are affected. The concept of punishment improvement is investigating whether leaders increase their leadership in the public property center. The findings provides evidence that, the existence of strong cognitive capabilities motivates selfishness in PGG. Moreover, the existence of punishment opportunity in PGG enhances cooperation than in a PGG without punishment. Lastly, smart men tend to be risk loving whereas smartness tends to make women more patient.

In Chapter 5: *Does Financial Inclusion Affect Poverty and Income Inequality? Evidence from Emerging and Developing Countries*, Ekin Ayşe Özşuca explores the role of the access to financial sector in reducing poverty and income inequality. Özşuca examines the impact of financial inclusion by conducting dynamic panel GMM estimation. The analysis shows that the accessibility to financial sector, proxied by the number of branches, had significant impacts on poverty and inequality.

In Chapter 6: *Cryptocurrencies and Blockchain in 4th Industrial Revolution Process: Some Public Policy Recommendations*, Dilek Akbaş Akdoğan, Gamze Yıldız Şeren Kurular and Osman Geyik analyze regulations for virtual currencies that gradually increases trading volume under 4th Industrial Revolution. 4th Industrial Revolution (known as Industry 4.0) has been rapidly reshaping economic systems by introducing new business models and new technological management methods. In particular, Akdoğan, Kurular and Geyik pay a special attention to cryptocurrency (Bitcoin) that is the most important and innovative financial technology (fintech) under the digital age, claiming that such an innovative technology brings risks, challenges and opportunities.

In Chapter 7: *The Share of the Investments in the Central Government Budget in Turkey and the Necessity of Reviving Investments in the Context of Global Trends*, Meral Firat argues that started the trade restrictions between the US and China has turned into a global trade war affecting the world economy and Turkey's economy. In this context, she assesses the extent of the general economic impact of trade wars on the global economy. According to Firat, trade wars and economic and political instability in Turkey, reducing foreign direct investment inflow to Turkey. At the same time, investments allocated from the central government budget remain low. In conclusion, the arrival of foreign direct investment to Turkey and reveals what should be done to encourage investment.

In Chapter 8: *The Adaptation of Economic Policies Implemented with the Course of Actions Adopted in the Framework of Izmir 1ˢᵗ Economic Congress to Today's Turkey*, Selman Yilmaz and Olcay Bige Askun sets sight on a new economic policy model suggestion by taking into account Turkey's economic structure, technologic change, social and cultural shift within the framework of decision made during First Izmir Economic Congress. Izmir First Economic Congress paved the way for many purposive economic policies practiced in Turkish Republic in the period of 1923 and after. Public economy and money markets are tremendously enhanced by the help of policies in subject. The research targets to propose a new economy policy model by taking into consideration present dynamics of Turkish economy and reviewing the content of recent successful policies.

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'DE-GLOBALISATION AND THE RETURN OF THE THEORY OF IMPERIALISM'

Stavros Mavroudeas[1]

Abstract

The globalization hypothesis (i.e. the argument that modern capitalism has once and for all discard the nation state and modern capitalism became a truly unified 'global village') was overwhelmingly popular since the 1990s. This was coupled with the expansion of a multifaceted theoretical trend that rejected previous analytical tools and purported that it ushered new ones, tailor-made to the new 'globalisation era'. Especially within Political Economy, the globalization discourse rejected the theory of Imperialism (that emphasized antagonisms and the role of the national economy) for a theory of global interconnectedness (emphasizing co-operation and deterritorialization). However, the course of events of the real world radically diverged from the stylized beliefs of the globalization discourse. Particularly, before and increasingly after the 2008 capitalist crisis, antagonisms along national lines and military conflicts proliferated. These developments signify the necessity for a return to the classical Marxist theory of Imperialism as the appropriate analytical framework to grasp the political economy of the international system.

I. Introduction

'Globalisation' has been a zeitgeist for at least the last thirty years. It dominated the scientific discourses and dictated political decision-making. In its pure version, 'globalisation' maintained that around the 1990s the contemporary world underwent an epochal transformation. The nation-state (with its national economy) ceased to be the fundamental nucleus of politico-economic affairs as both the economy and the polity were supposed to transcend – and make almost irrelevant – national borders. To put it simply, the world has become a unified global village.

The 'globalisation' zeitgeist affected the whole spectrum of economic and political analyses and practices, from Orthodoxy to Heterodoxy and even Marxism. Theoretical analyses were transformed in order account for this purported epochal change. Revered and long-established concepts and models were discarded as no longer applicable. Even statistical indicators changed radically to conform with the 'globalisation' trend (e.g. the distinction between portfolio investment and foreign direct investment [FDI] was practically blurred).

However, at the end of the 20th century – and as the 2008 global capitalist crisis was approaching – cracks began to appear in the 'globalisation' narrative. As capitalist profitability started to falter, international politico-economic conflicts increased. In economic relations the 'accursed' protectionist policies started to creep in. In geopolitics military conflicts proliferated and unilateral policies by particularly dominant politico-economic powers (the US primarily) were increasingly adopted; thus tearing apart the 'globalisationist' narrative about a liberal democratic and free market world order. The eruption of the 2008 crisis was certainly a major turning point. All the aforementioned tendencies increased tremendously and the previously hidden behind 'globalisationist' narratives national

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interests came to the fore bluntly. This affect critically the international politico-economic discourses and the previously relegated to 'underworlds' discussion about 'globalisation' and its end came to the fore. Rather abruptly, the king was found naked and 'de-globalisation' or the end of 'globalisation' came to the centre of discussions.

This paper has a twofold aim. Firstly, it seeks to debunk the 'globalisation' narrative and show that it is a truthlike myth. Secondly, it argues that the classical Marxist theory of Imperialism offers a superior analytically and empirically framework in order to comprehend the political economy of capitalism's international system. The remainder of the paper is structured as follows. In Section II the basic empirical and theoretical foundations of 'globalisation' are being presented and rejected as lacking a sound foundation. In Section III it is argued that the Marxist theory of Imperialism - through its understanding of the capitalist international system as a 'battlefield' with winners and losers - is the more fit one. Finally, Section IV proposes a redefinition of the Marxist theory of Imperialism and concludes.

II. Debunking 'Globalization': a truthlike myth

The thrust of the 'globalisationist' argument rests not in theoretical analysis but on empirical claims. Theoretical analyses, to a great extent, followed these supposedly indisputable empirical claims.

'Globalisationist' empirical claims

Setting aside minor differences, proponents of the 'Globalisation' thesis argued that the late 20th century ushered radical socio-economic transformations that produced a change of epochal dimension: economic activities burst out of national borders and organized themselves in worldwide processes and networks. More precisely, it is argued that product, capital and financial markets have become globally unified. This is supposed to be the differentiae specificae of this new era. Many theories assigned it the status of new stage, era or epoch (depending on the periodization theory adopted by them).

Different theories attribute this hypothetical historical rupture to different (seldom combined) factors. The main candidates as 'globalisation's' cause are the three.

The first one, predominating mainly within Orthodox analyses, is technological change. Orthodox economics, within their a-social framework, have a tendency to attribute major epochal changes to technical factors. Thus, they usually attribute 'globalisation' to some form of technical revolution centered on information technologies. They argue that the development and expansion of the latter made national economic relations obsolete and facilitated the 'globalisation' of economic activities. This is a problematic argument for several reasons. First, the economic impact of the information technologies has been seriously disputed. As Solow (1987) with his famous paradox has pointed out, 'you can see computers everywhere except for productivity statistics'. Second, the misnamed 'New Economy' of the mid-1990s (based on information technology, biotechnology and telecommunications) has long ago collapsed through the burst of its stock-exchange bubble. Last, but not the least, technologies that facilitated international economic activities have existed also in the past (e.g. telegraph, trains) and had possibly a greater impact upon the economy. So, there is nothing significantly new in information technologies.

The second candidate as cause of the 'globalisation' is political. It is argued that the collapse of the Eastern bloc created a 'vacuum' that facilitated the spread of free (capitalist) economic activities to areas governed previously

by planned economy systems. This argument holds also limited water. First, it is true that the Cold War era limited economic relations between the two main blocs. However, within these blocs there were strong international activities and co-operation. Second, 'globalisation' spread not only to the previous Eastern bloc economies but to other areas of the world as well. Third, if there is some truth in the political cause of 'globalisation' this is that it was vigorously promoted by the West (and particularly the US) to the rest of the world as a means for increasing Western domination. The imposition of the Washington Consensus and its post-Washington Consensus successor upon less developed and developing economies is a typical evidence of this.

The third candidate is the argument that there is an inherent tendency of capitalist accumulation towards surpassing national borders. This argument can be found mainly in Heterodox and Marxist 'globalisationist' theories. Immanuel Wallerstein's (1979) World Systems theory is both a pioneer and a typical example of this perspective. There are well-known and devastating critiques of this argument. Among others, one of its main deficiencies is that it cannot account convincingly about the long non-'globalised' periods of the capitalist system. If the capitalist system is prone to such a tendency then why it passes through long periods during which national economies – and blocs formed around them – predominate? Furthermore, it is well-known that the capitalist system has been born through the creation of national economies (that is national centres of accumulation). Moreover, during its period of gestation capitalist economic activities resorted to strong protectionist policies as means to protect themselves particularly their periods of infancy. The era of Mercantilism is a typical example of this.

As already mentioned, the 'globalisation' thesis has two interrelated economic corollaries. The first one is that national economies no longer matter. The second one is that state ability to implement economic policies has been critically curtailed if not totally annuled. Both arguments are highly debatable. Even at the high point of 'globalisation' at least several dominant Western economies exhibited remarkable ability in pursuing national economic policies. The US is the more prominent case in point. But even less developed and influential economies exhibited similar abilities. Such an example is the introduction by Malaysia of capital controls in the 1990s.

These economic arguments were supplemented with several political claims. The most prominent among them were the following.

It was argued that 'globalisation' would lead to the spread of global democracy. As Held & McGrew (1998: 242) typically argue 'through a process of progressive, incremental change geo-political forces will come to be socialized into democratic agencies and practices'.

Moreover, it was argued that in 'globalisation' the 'make business not war' motto would predominate as global entrepreneurship abhors nationalism and militarist conflicts. In fact, this is a renovated version of classical Liberalism's belief that was utterly disproved by the 1st WW.

Unsurprisingly, both these political claims are also highly disputable. During the 'globalisation' era there was actually a proliferation of nation-states (not only because of the disintegration of the Eastern bloc's states) which were seldom accompanied by bloody military conflicts. Furthermore, international agencies never ceased to be dominated by national interests and their workings remained field of power struggles rather than of democratic practices.

On the basis of the aforementioned arguments, 'globalisationist' theory made two bold empirical claims. First, that 'globalisation' is totally new phenomenon. And, second, that it is irreversible. Both claims are equally unfounded.

The initial versions considered 'globalisation' as a totally new phenomenon. However, critics pointed out that all its main features (rates of international trade, capital mobility, financial interconnectedness, transnational politico-economic institutions) have existed in a previous period (the so-called 'first globalisation' (1860-1914)). See, for example, the analysis of Baldwin & Martin (1999) for one of the first Orthodox disputes of the originality in the period 1950-2000. From a more radical point of view, the study by Hirst & Thompson (1999) is indicative.

Subsequently, 'globalisationists' modified their position by arguing that this time is different. Various explanations were proposed. The more prominent between them were that the second 'globalisation' is characterized by different technology, that FDI is more important and that financial 'globalisation' is stronger.

None of the 'globalisationist' counter-arguments is very convincing. For example, international trade to GDP and international capital flows to GDP ratios were similarly high during the era of the so-called 'first globalisation'. This is accepted even by proponents of the 'globalisation' thesis as the following graph by Chandy & Seidel (2016) shows[2].

Globalization Trends, 1870-2015

Foreign Capital Stock (% Developing World GDP) ■ Merchandise Exports (% Global GDP) ■ Migrant Stock (% Global Population)
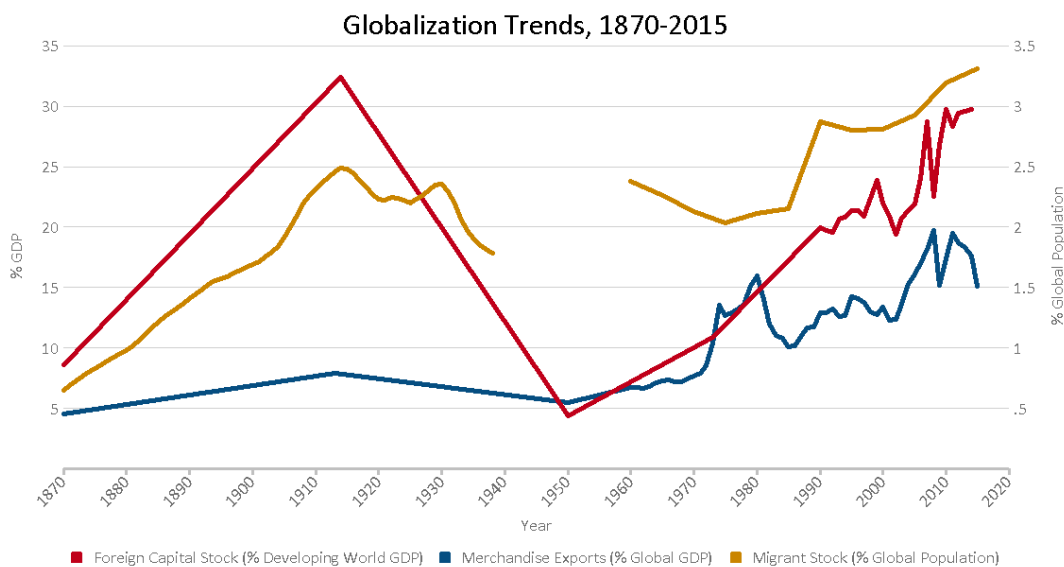
There are additional credible counter-arguments to the modified 'globalisationist' argument. International flows of trade and capital instead of creating unified global circuits they have formed regional blocs. And even the expansion of FDIs (from the 1980s and onwards) have not created a globalized system of production or a borderless global economy in any meaningful sense. Many studies have shown that multinational corporations of all the big capitalist economies exhibit strong 'home country bias' linking them to their home economy (e.g. Hirst & Thompson (1996), Tyson (1991)). Moreover, regarding financial 'globalisation', even Zevin (1988) – a prominent

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2 Various indices have been proposed in order to measure globalization. Setting aside multi-measures (encompassing economic, social and political factors), the predominant economic measures focus on the proportions of foreign investment, international trade to GDP and the proportion of migration to population. This graph shows these trends.

'globalisationist' - accepts that during the 1850-1914 period the consolidation of the financial markets was equally significant.

The refutation of the first 'globalisationist' empirical claim injured critically their second empirical claim as well. If the 'first globalisation' was reversed and if the arguments about the distinctiveness of the 'second globalisation' are unfounded then there is nothing guaranteeing that the latter cannot also be reversed. Indeed, even proponents of 'globalization' recognized that there is nothing inevitable about it: '(T)here is a tendency to see globalization as irreversible. But the political forces that fragmented the world for 30 years (1914–1944) were evidently far more powerful than the accretion of technological progress in transport that went on during that period. (Frankel (2000): 6–7)).

'Globalisationist' analysis

Indisputably, the dominant theory behind the 'globalisation' thesis is the Orthodox Neoclassical analysis of international economics. This dominated the public discourse as well as the commanding heights of the world economy. Heterodoxy (traditional Keynesian, post-Keynesian, Radical Institutionalism approaches etc.) followed behind. Despite their partial analytical differences, they basically succumbed to the main Orthodox arguments. Even Marxist 'globalisation' theories implicitly accepted much of the Orthodox discourse. For reasons of brevity, other versions of the 'globalisation' theories will be left aside and the focus of this section will be on the Orthodox one.

The foundations of the Orthodox Neoclassical version rest upon its theory of international economic relations. Historically, but also analytically, the theory of international economics has been constructed and inaugurated on the basis of the theory of international trade. The founding block of Orthodox international trade theory is its dogma of the *beneficial role of free international trade*. This is based on the beleaguered Ricardian theory of *comparative advantage*. The gist of this thesis is that free trade between developed and less developed economies is beneficial to both as each one will specialise to the production of the commodity in which it is more productive even if one of them is more productive on all commodities. The comparative advantage thesis has been criticized convincingly both on analytical and empirical terms. Its main, and more realistic, alternative is the theory of absolute advantage advanced by A.Smith and K.Marx. The theory of *absolute advantage* argues that an economy that is more productive in internationally traded commodities will produce all of them; thus, leaving the less developed (and less productive) without production and, thus, in a trade imbalance.

Neoclassicals extended the theory of comparative advantage from international trade to international capital flows as well and argued for the beneficial impact of the combination of free trade and free capital flows. However, Ricardo was fully aware that the theory of comparative advantage will not hold if capital is mobile, because in that case specialization will be determined by absolute and not by relative costs.

Despite its 'heroic' assumptions and blatant problems, the Neoclassical approach dominated the area of international economics. As it will be shown in the next section, this dominance is not without problems. Particularly as historical reality systematically fails to vindicate the Neoclassical arguments and conclusions. However, the advent of 'globalisation' offered a golden opportunity to Neoclassical Orthodoxy. Within the 'globalisation' narrative, even Heterodoxy succumbed to its charm. This surrender is typically expressed by Higgot (1999: 26) when he argues that the 'argument for liberalization and open markets as generators of wealth has been won at both *intellectual* and *evidentiary* levels'.

Based on this theory, it was pronounced that globalisation (a) enhances aggregate welfare overall and (b) leads to the convergence between more and less developed economies. Empirically, both arguments have been rejected. Globalization has not reduced inequality of income and wealth. Since the early 1980s the world economy has been characterized by rising inequality and slow growth. Despite the rise of the new emerging economies (BRICS etc.) increasing inequality characterises the world economy. On top of this and to a great extent as a result of 'globalisationist' policies (with the disarming of national economic policies and the deregulation of labour markets), inequality has risen especially within developed economies. The US is a typical example of this trend.

Convergence, the other 'globalisationist' postulate, is equally unfounded. The convergence argument is a product of the Neoclassical Growth Model. As it is well known, it is actually an assumption rather than a result of this model. To put it simply, it is an 'article of faith' rather than a scientific result. This Neoclassical 'article of faith' has an infamous empirical record. Empirical results for several historical eras and periods simply reject this argument. The same holds for the 'globalisation' era. Again, despite the spectacular rise of the emerging markets, divergence in relative productivity levels and living standards is the principal feature of the contemporary world economy. Some 'sunny spells' for the Neoclassical argument (that is periods of some convergence at least within some groups of countries) were very soon reversed or stalled. In front of this blatant failure the Neoclassical approach offered – both in general and regarding the 'globalisation' era – a last ditch defense. It argued that although overall convergence might not materialize, partial convergence within 'clubs of economies' do takes place. However, historical reality has not been kind even to this. Convergence within clubs and/or between clubs has not been verified; quite the contrary. A typical example is the European Union (EU) which was the more prominent case where the convergence hypothesis attempted to vindicate itself. After a limited period of convergence, it is divergence that characterises EU's state of affairs. To sum up, contrary to both these two arguments, divergence rather than convergence epitomises the 'globalization' era.

III. The theory of Imperialism: international economy as a battlefield

The debacle of 'globalisation' exposes serious lacunae in the theory of international economics. The main problem is the dominance of the belief that international economic relations are a win-win game for all participants. This dogma that permeates the economic Orthodoxy serves to present the capitalist system as a benevolent and just one. As it has been shown in the case of 'globalisation' this is a blatantly unrealistic conception. A realistic analysis of international economic relations should be based on the exactly opposite principle: the international economy is a battlefield with winners and losers. The gains of the former are the losses of the latter. There is no win-win situation in such a battlefield. This alternative perspective is offered by the theory of Imperialism.

Interestingly, the theory of Imperialism was formed in a similar to the current historical period. It was constructed after the first global capitalist crisis of 1873-5 and while the 'first globalization' was disintegrating. The structural crisis was followed by a protracted period of economic malaise. The latter ignited capitalist antagonisms and led to a return of trade and currency wars seldom accompanied with military wars. During that turbulent period all the empirical beliefs of Classical Liberalism were demolished; and particularly the dogma that 'capitalism abhors wars'. It was painfully proved that capitalism works – and seldom prospers – through wars. Additionally, it was equally painfully shown that the internationalization of capital can easily revert to protectionism and a return to the national bases.

In this politico-economic landscape the theory of Imperialism was born especially through the pioneering work of Hobson (1902). Various other bourgeois theories of imperialism followed (e.g. Schumpeter (1919)). The main feature of these theories was that they considered imperialism as a deformation of the proper functioning of capitalism that could be rectified and thus return to the mutually beneficial free operation of international markets. Hobson regarded imperialism as the product of underconsumption crisis in developed economies that could be rectified with social reforms (representative parliamentarism, trade unionism) ensuring wage growth that would provide the necessary demand. Once these reforms have been established then international economic relations would again conform to the Classical Liberal model. Schumpeter went even further by considering imperialism not as product of capitalism but as an atavism. If the pre-capitalist remnants that caused it are removed then the Classical Liberal model would operate without problems. In this sense, these theories were a true Heterodoxy; that is a heresy that shared much common ground with the Orthodoxy but disagreed in some crucial 'articles of faith'.

However, the theory of Imperialism was spectacularly developed and shot to fame after its adoption by the Marxist tradition (R.Hilferding (1912), R.Luxemburg (1913) and especially V.I.Lenin (1917)). The Marxist theory of Imperialism departed from the previous bourgeois versions by arguing that imperialism is not a deformation but a normal part of the capitalist modus operandi. This refoundation of the theory of Imperialism produced an analysis of the international economy that is not a Heterodox appendage of the Orthodoxy but a truly alternative tradition.

Contrary to both Orthodox and Heterodox thought, Marxism has a different conception of capitalism's international system. The latter mirrors its national system in being also a system of exploitation: a systemic 'battlefield' with winners at the expense of losers. This stems from capitalism's DNA and it is not a transient feature. Exploitation at the international level is also based on classes but it acquires additional dimensions as a capitalist economy can be exploited by another one. The latter mirrors its national system in being also a system of exploitation. Exploitation on the international level is also based on classes but it acquires additional dimensions. For example, a national bourgeoisie exploits its workers but at the same time it can be exploited by another national bourgeoisie. For Marxism this is a structural – and not a conjunctural – characteristic of the capitalist system. Therefore, capitalist international political-economic relations are antagonistic by nature and operate through war-like competition. Consequently, Marxism disagrees with the Orthodox thesis that international political-economic relations (and particularly free ones) are mutually beneficial for all their participants. It also disagrees with the Heterodoxy because it considers these relations as antagonistic by their very nature and not as specific products of special political choices.

The cornerstone of the Marxist theory of Imperialism is that capitalism's international system is not a harmonious set but a field characterized by competition, conflicts and exploitation of groups of countries by other groups. Consequently, it does not result in mutually beneficial for all participants outcomes but instead it has winners and losers – where the gains of the former are the losses of the latter. This function is considered as a structural characteristic of capitalism and not as a conjunctural product of short-term policy choices.

It is beyond the scope of this section to review the long and winding course of the Marxist theory of imperialism. For reasons of brevity it will delineate the main pillars of a contemporary redefinition of it along the lines of the Classical Marxist Debate on Imperialism. The latter took place at the beginning of the 20th century and was the vehicle through which imperialism was adopted and refounded by Marxism. The major currents of this debate were represented by R.Hilferding, R.Luxemburg and V.I.Lenin. Despite differences one of the main common founding blocks of this debate is that imperialism is primarily an economic mechanism and not a political

mechanism. This implies that its aim is not political dominance but economic exploitation. The former is a means to achieve the latter and not a cause. This thesis is derived from capitalism's fundamental difference from pre-capitalist exploitative systems: capitalist exploitation is not primarily based on direct (political) coercion but on indirect (economic) coercion. This economic mechanism organizes the exploitation at the international level (that is between economies). It is based on transfers of value from the exploited to the exploiting economies. This understanding does not ignore political relations – which are especially important particularly at the international level – but considers them as a corollary of economic relations.

IV. In place of conclusions:
A redefinition of the Marxist theory of imperialism

A modern re-formulation of Marxist theory of imperialism is necessary after the misconceptions that prevailed after the Classical Debate and during the reign of 'globalisationism'. As already argued, imperialism is first and foremost an economic process from which political-military processes derive. Put it simply, imperialism is primarily a mechanism of economic exploitation of one capitalist economy by another. This economic mechanism operates through the export of capital. The latter takes place in all its generic forms; that is as export of commodities, financial capital and productive investment. This export of capital is at the same time an indication of strength and weakness. An imperialist economy tends to export its economic activities both because these have developed more that its national basis can sustain and also because its capital overaccumulation threatens its viability. This economic exodus abroad leads to conflict with capitals from other countries that pursue the same course and which aim to secure wider areas of economic domination and exploitation. Sooner or later (or sometimes even preceding), the states that are the political supports of these capitals are brought in and the conflict acquires also apolitical and seldom military dimensions. As part of this process, more or less stable and permanent blocs of capitals and states are often formed.

Imperialism is not a particular stage of capitalism (although it flourishes in some of them) but the mode through which capitalism organizes its international system from its very birth. Thus, imperialism should not be associated with some form of capitalist competition (e.g. monopolies) – although some of them enhance imperialist relations more than others – but it is a general attribute of the system. Thus, its economic exploitation mechanism – i.e. international value transfers from one economy to another – works via normal capitalist competition and not only in cases of monopolist competition. In other words, imperialist surplus extraction exists irrespectively of the existence of monopolist super-profits. Marxism, contrary to the other main economic theories, has an elaborate dialectical theory of competition. Free competition, oligopoly and monopoly are not distinct cases but expressions of the same mechanism. Competition is the mechanism from which oligopoly and monopoly arise but also in which they subsequently collapse. This dialectical understanding can realistically grasp the tides and ebbs of mergers and acquisitions waves of modern capitalism.

The global system of imperialism is a complex structure comprised not by two groups (imperialist and not imperialist economies) but by more. Particularly since the middle 20th century we have witnessed the emergence of several economies that can be at the same time victims of imperialist exploitation by some economies and agents of imperialist exploitation for others. Thus, the global imperialist system is a *pyramid-like structure* comprising of several levels. Those middle-level economies fall in the category of *sub-imperialism*.

Imperialism is not identical with the notion of *finance capital* (i.e. Hilefrding's influential thesis about the merge between banking and productive capital under the dominance of the former). It has been adequately proved that this fusion was not dominant neither during the early 1900s nor today (Bond 2010). On the contrary other forms of money capital (e.g. those in capital markets) can play a more influential role.

Finally, contrary to 'globalisationism', the basic unit of the global system of imperialism remains the national economy. Bukharin (1917) had accurately pointed out that capitalism is characterized by a permanent contradiction between nationalization and internationalization. Nationalisation denotes capitalism's foundational unit. Internationalisation expresses capital's inherent tendency to expand its accumulation. This permanent and unresolvable contradiction is expressed in tidal waves of internationalization and re-nationalisation (i.e. return to the foundational basis). On the basis of this contradiction antagonistic blocs of capitalist economies are being formed.

Following from the above-mentioned considerations, the primary task for a modern redefinition of the Marxist theory of imperialism is to designate the economic mechanism of imperialist exploitation. More specifically, it must specify how more developed capitalist economies can obtain transfers of value form less developed economies in all three main forms of international economic activities: (a) trade, (b) direct investments and (c) portfolio investments.

a) International Transfers of Value due to Trade

The fundamental mechanism of value transfers in international trade is this described by the absolute advantage theory as presented by A.Smith and K.Marx. According to this, any individual country that holds advantages in production costs at the beginning of the trade transactions will seek to maintain them in the same way as an individual capital struggles to prevail over its competitors in the domestic market (Shaikh 1980a, 1980b, 2016). This is a realistic conception of international economic relations that grasps accurately the existence of persistent disequilibria in international trade, uneven development and geopolitical antagonisms in stark contrast to the fictional world of free trade liberalism.

For Marxism, the absolute advantage thesis implies the existence of a mechanism of unequal exchange that results in value transfers from some countries to others. Needless to say, this hemorrhage impedes the formers' economic development. Beginning with Emmanuel's (1972) seminal contribution there is a heated debate within Marxist Political Economy on the form of this unequal exchange mechanism. Setting aside Emmanuel's problematic 'strict unequal exchange' (i.e. unequal exchange due to differences in wage rates and consequently to rates of surplus-value) we will argue that the proper mechanism is that of 'broad unequal exchange' (i.e. unequal exchange due to different organic compositions of capital, that is levels of development).

The gist of the 'broad unequal exchange' argument lays in a basic tenet of Marx's transformation process of labour values to prices: the equalization of the rates of profit transfers surplus value produced from capitalists with lower organic composition of capital (OCC) to those with higher OCC. This holds both within a national economy and within a multi-national common market like the EU). The conclusion is that when developed economies compete with less developed economies a transfer of value would occur from the latter to the former; thus, constituting a mechanism of international economic exploitation.

b) International Transfers of Value due to Foreign Direct Investments

Foreign Direct Investment (FDI) is a different case. Although existing from the very beginning of capitalism, it increased significantly from the middle 20th century and onwards. Contrary to Dependency Theory's empirical flawed empirical belief, FDI does not flow only from developed to less developed economies but also within these two broad categories. FDI means that a national capital makes a productive investment in another economy in order to extract surplus value. The predominant form of such investment is through multinational corporations (MNCs) which however has distinct national bases (metropole). The profits from an FDI can either be re-invested in the recipient economy or repatriated to the metropole. Only in the latter case they do constitute an international transfer of value. Both practices are common although there are characterized by significant historical variations. As Mandel (1978) accurately points out, there are various ways and accounting devices through which MNCs realise such international value transfers (e.g. transfer pricing).

c) International Transfers of Value due to Portfolio Investment

International Portfolio Investment involves financial transactions through banks (international loans) and capital markets (playing in foreign stock exchanges). In the case of international loans, the international value transfer from the debtor to the lender is obvious: loans are repaid plus interest. In the case of stock exchange gains the case is less obvious (as they can be 'played' again in the same capital market), but a usual practice – particularly since global financial deregulation - is to move them around the world.

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2

INTERGENERATIONAL INCOME MOBILITY

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Abstract

The degree of transmitted income status from one generation to the next is informative about intergenerational income mobility about in a society. Kruger (2012) pointed out that as income inequality has increased, generation-to-generation income mobility has decreased as described in the Great Gatsby Curve. Thus, higher income inequalities are charged with the decreases in intergenerational income mobility. Countries which have higher inequality level tend to be less mobile society in which family background has become more important than anything else. From this point of view, the starting point of this study is to gain valuable insights into intergenerational income mobility. This paper's particularly focus is on the relationship of income inequality and income mobility.

Key Words: Intergenerational Income Mobility, Inequality, Great Gatsby Curve

1. Introduction

Income inequality is combination of stagnating average incomes at the middle and the bottom of the distribution and increasing average incomes at the top (Morelli & Atkinson, 2015, p. 32). Piketty (2014), defined inequality in his famous book called "Capital in the Twenty-First Century". Income inequality in his definition is a result of adding up these two components; *"inequality of income from labor and inequality of income from capital".* And the more unequally distributed each of these two components, the greater the total in equality. Whereas wages and earnings are measures of flow, wealth is a stock which a potential for an income flow that household might use for any economic reason and vulnerability. And also, wealth is much more unequally distributed than earnings and wages (Neckerman & Torche, 2007, p.338).

Piketty state that inequalities of labor in the countries are always much smaller than inequalities of capital. Wealth inequalities exceed income inequalities. Even in the societies where wealth is most equally distributed (Scandinavian countries in particular Sweden), the richest 10 deciles own around 50 percent of total national wealth or even a bit more. In the US, the richest 10 deciles own 72 percent of America's wealth, while the bottom half own just 2 percent (Piketty, 2014, pp. 242-257). Most of the increase in inequality can be traced to gains of the top decile (Lansing & Markiewicz, 2016: p. 1). Total growth of the US economy in the thirty years (1977 to 2007), the richest 10 decile appropriated 75 percent of the growth and more just the richest 1 decile appropriated nearly 60 percent of the total increase of the US national income in this period. (Piketty, 2014, p. 297). It wouldn't be wrong to say that the high concentrated of income or capital can be explained mainly by inherited wealth.

Krueger (2012), pointed out that if low income earners can become high income earners or if children of low-income parents have chance of climbing up the income ladder when they grow up, high income inequality would

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be no longer a concern. Namely having a high degree of *generational income mobility* would ease the all worries about the degree of inequality because income mobility supports the social harmony. That is, the most important factor of concern about inequality is low rate of intergenerational economic mobility. Growing up in a poor family shouldn't have to mean that he or she would stay poor in adulthood or one's children would live this experience (Duncan & Murnane, 2011, p. 3).

The starting point of this study is to gain valuable insights into intergenerational income mobility. This paper's particularly focus is on the relationship of income inequality and income mobility. Because, high inequalities cause family background has an important role in determining adulthood socio-economic status. This study is organized as follows. Section II describes exactly what income mobility means. Section III consists of how inequality could affect the intergenerational income mobility, equality of opportunity and also Great Gatsby Curve with two different inequality measurement. Section IV describes the interaction between family background, educational opportunities and intergenerational income mobility. Section V consists of the related literature and the theoretical framework of income mobility. Section VI summarizes the all information and presents conclusions.

2. What is the "Intergenerational Income Mobility?"

Notion of intergenerational income mobility can define as the relationship between parents and their children' socioeconomic status. Generational mobility is the relationship between the socioeconomic status of parents *i.e. mostly their income and the status* and income of their children will attain in adulthood. It is important not to lose sight of the fact that concern about generational mobility is a first step in understanding the consequences of income inequalities, as well as the extent of equality of opportunity (Corak, 2004, pp. 3-4). Becker (1993) defined intergenerational mobility as*; "Variation in the income and status of a given family in different generations has usually been known as intergenerational mobility, the" circulation of the elites" (Pareto, 1971), or equality of opportunity (p. 209)".*

Intergenerational income mobility is desirable in many respects for an ideal society. But most importantly, mobility protects social harmony: mobile society allows individuals to be rich because of skills, abilities, and individual performance with the except of family background. So, this society could offer equal opportunities (Schad, 2014, p. 2). In a full mobile society individuals' success or failure is irrespective of their parental economic circumstances.

Solon (1999) shows the mechanism of generational income mobility by imagining two societies as society A and B with the same income distribution. These two societies are equally unequal. In society A, people inherit their position in the income distribution from their families. So, if one's families were in the 90th percentile of income in their generation, apparently you place in the 90th percentile in one's own generation. Regardless of how much your effort you inevitably place in your families' income percentile. In case society B, people position in the income distribution is completely independent of their families' position. In contrast to A, society B is not a caste society and therefore there is a complete generational income mobility. Consequently, if your parents' income is informative about your income, the apparent truth that there is no generational income mobility in your society.

3. Inequality's Impact on Intergenerational Income Mobility and Equality of Opportunity

The degree of economic status is transmitted across generations is a non-visible but predominant factor of income distribution of today's world. The persistence of socioeconomical advantages and disadvantages from generation to generation derives from 'parental education, income, family structure, and patterns of racial inequality'.

These factors all together help or hinder young people more or less directly (Hout & Janus, 2011, p. 166). The relationship between individuals' economic status and their parents' status is a picture of equality of opportunity. If the intergenerational transmission of economic status let the children of more affluent parents' access to much more opportunities than the children of poor parents, there is a good reason to concern. Such an income transmitting from one generation to the next undermine the spirit of equal opportunity in a society.

Parents' financial effort on the development of their children could determine children's future economic and social status. Affluent families have much more opportunity for invest in their children's education than poor families. Their investment could affect positively their children's skill acquisition and thus their children's chances of remaining affluent would increase. Therefore, large income differences of parents could build large future income differences between children. These differences help wealthy (poor) children remain wealthy (poor). On the other hand, wealthy (poor) parents' children have much more chance to remain wealthy (poor) (Bloome, 2015, pp. 1049-1051; Neckerman & Torche 2007, p. 339). The fortunes of parents seem to matter for all individual in a society which has no generational income mobility. Unlike of this society, in a mobile society everyone can create own fortune associated with own skills, efforts or intelligence.

Becker (1991) pointed out that a comprehensive analysis of the distribution of income should include both (1) the inequality in income among different generations of the same family –in the context of intergenerational mobility- and (2) the inequality in income among different families in the same generation. There is a widely accepted view that *high inequalities would undermine the intergenerational mobility* (Bloome, 2015, p. 1049). Inequality matters for all individual. But it also matters over time, current inequality could impact next generation's inequality and it determine not only the opportunities of the present generation but also the access of the next generation to opportunities. This is not just income or wealth inequality; this is also the issue of equal opportunity and social mobility. The commonly accepted measure of equality of opportunity is the intergenerational income mobility. Not a strong parent-child income correlation shows that individual economic or social status is not strongly determined by parental economic status, thus it represents high degree equal opportunity in a society (Neckerman & Torche, 2007, p. 339).

Afterall, countries with high inequality probably have less income mobility between the generations. This connection has been called "The Great Gatsby Curve" (i.e., more inequality is associated with less mobility across the generations) by Krueger (2012). Kruger pointed out that as inequality has increased, generation-to-generation economic mobility has decreased. As shown in the Graph 1, countries with high inequality levels such as Italy, UK and US are least mobile countries and countries with low inequality levels such as Sweden, Finland, Denmark and Norway are the most mobile countries.

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Graph 1. The Great Gatsby Curve based on Gini Coefficient
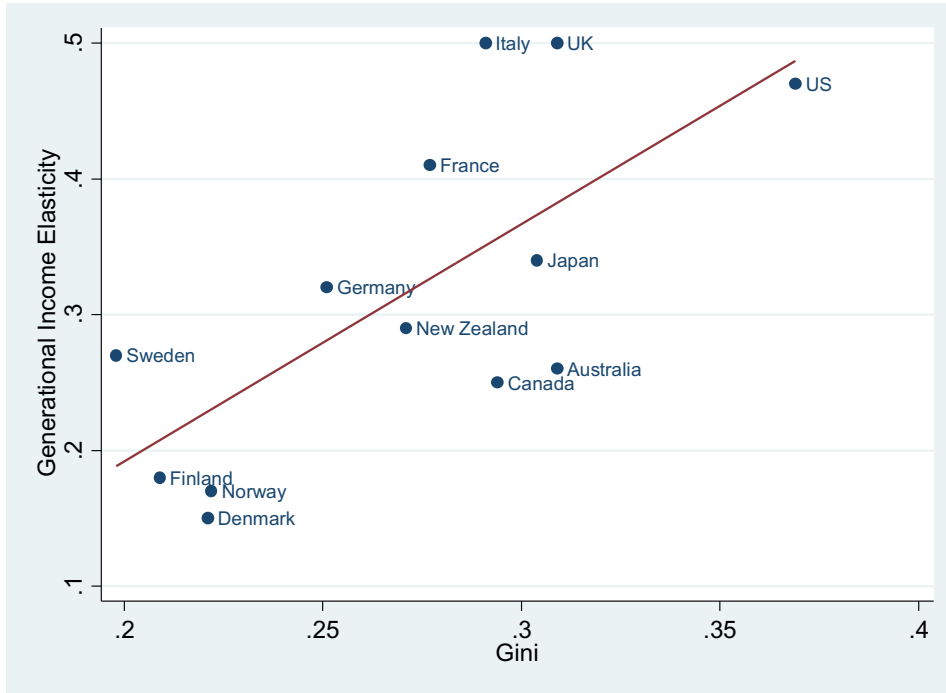
Although the degree of inequality varies across countries, inequality increased prominently in many other countries. Table 1 shows inequality trends based on Gini Coefficient. As shown in the Table 2, inequality level increased after 1980's even in the countries that have moderate inequality level such as Sweden, Finland or France.

Table 1. Countries Inequality Trends (Gini Coefficient)

Year	Canada[1]	Finland[2]	France[3]	Germany[3]	Italy[4]	Japan[3]	Netherl.[3]	New Zeland[3]	Sweden[3]	US[5]
1980	0.29	0.21	0.30	0.24	0.32	0.23	0.26	0.27	0.22	0.38
1985	0.29	0.20	0.30	0.24	0.32	0.23	0.26	0.27	0.23	0.41
1990	0.29	0.21	0.28	0.25	0.29	0.24	0.28	0.30	0.24	0.42
1995	0.29	0.21	0.28	0.25	0.33	0.24	0.28	0.34	0.24	0.43
2000	0.32	0.25	0.29	0.25	0.33	0.25	0.28	0.33	0.31	0.44
2005	0.32	0.26	0.29	0.29	0.34	0.26	0.28	0.33	0.30	0.45
2010	0.31	0.26	0.30	0.28	0.35	-	0.28	0.32	0.32	0.46
2015	0.31	0.25	0.29	-	-	-	0.29	0.35	-	0.45

[1] Equivalised after-tax family income; [2] Equivalised disposable household cash income; [3] Equivalised disposable household income; [4] Per capita income; [5] Equivalised gross household income, **Source:** The Chartbook of Economic Inequality, https://www.chartbookofeconomicinequality.com.

The most commonly measure of "overall inequality" is the Gini coefficient. But the same time top shares could affect "overall inequality" measured by Gini. If the measured Gini coefficient is 40%, a rise of %14 in the top one share, causes a rise of %8,4 in the Gini for overall inequality (Atkinson, Piketty & Saez, 2009, pp. 2-4). "The Great Gatsby Curve" which means more inequality is associated with less mobility across the generations is created with top income share data from world inequality database. There is a relationship similar to the previous one (with Gini) shows that as inequality has increased, generation-to-generation economic mobility has decreased.

Graph 2. The Great Gatsby Curve based on Top 10 Share
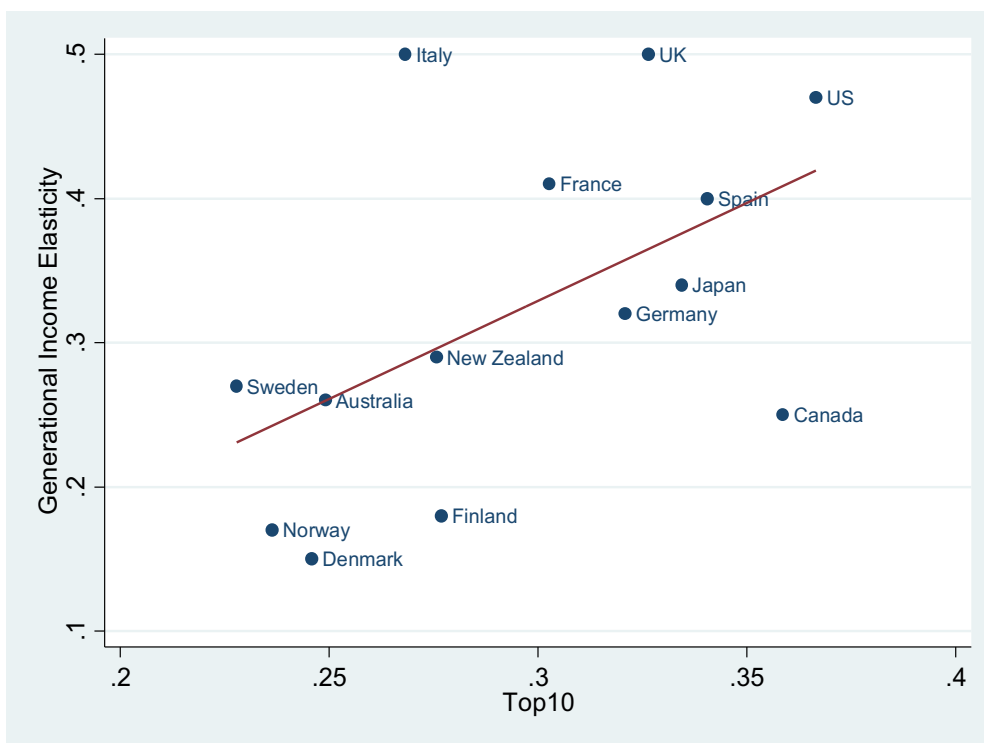
Source: *Corak, M. (2013); World Inequality Database (WID)*

The share of total income going to top income decile has increased significantly in all the western countries or China, Japan and even in even in Scandinavian countries but US leading the way in terms of magnitude of the increase (Atkinson, Piketty & Saez, 2009, pp. 2-4). Table 2 indicates inequality trends by showing top 10 income share from world inequality database. As shown in the Table 2, inequality based on TOP 10 share is on the rise in almost all countries.

Table 2. Countries Inequality Trends (Top 10 Income Share)

Year	Canada	China	Denmark	France	Germany	Italy	Japan	Sweden	UK	US
1980	0.37	0.27	0.24	0.31	0.28	0.23	0.33	0.22	-	0.34
1985	0.36	0.29	0.26	0.30	0.28	0.23	0.33	0.23	0.30	0.37
1990	0.36	0.30	0.25	0.32	0.31	0.26	0.39	0.22	0.31	0.39
1995	0.38	0.33	0.26	0.32	0.29	0.28	0.35	0.26	0.32	0.41
2000	0.42	0.35	0.28	0.33	0.31	0.29	0.38	0.26	0.33	0.44
2005	0.42	0.42	0.27	0.33	0.34	0.29	0.42	0.27	0.35	0.45
2010	0.41	0.43	0.28	0.33	0.35	0.29	0.41	0.27	0.32	0.46
2015	-	0.41	0.30	-	0.35	0.28	-	0.28	0.35	-

Source: *World Inequality Database, https://wid.world/data/*

4. Family Background, Educational Opportunities and Intergenerational Income Mobility

Parents' socio-economic wellbeing affects one's health and aptitudes in early childhood and these in turn affects cognitive skills and social development. Expenditure on child is driven by the parental income, parental preferences, number of children or some other factors. And the child welfare is driven by these expenditures, family's contact and genetic inheritance or skill acquisition through family culture. Parents' financial resources and also their good connections affect access to higher quality schools and jobs. These overall process shapes adulthood socio-economic status. Surely, some families have more financial resources than others to invest in their children (Becker, 1993, p. 179; Corak, 2013, p.89).

Parents investment is a determinant factor for children lifetime success and so inequality of investment in children make large differences between children for their future. Blau & Duncan (1967) put educational opportunities in the center of socioeconomic well-being in their influential study[2]. In their model, individual's background like his or her father's education and occupation, race, and family structure determines individual's educational achievements and all of these factors affect the quality of occupation and earnings (as cited in Hout & Janus, 2011, p. 168). As stated in their study, the socioeconomic or educational status of an individual's parents are one of the strongest predictors of the child's academic achievement and so earning level. So, children from affluent or successful families are more likely to be affluent or successful.

Affluent families have more financial resources than poor families to invest in their children and they invest more in children to enrich their lives. Rising income inequalities increase the gap between rich and poor families' resources that they can invest in their children. Thus, rising disparities in parental investments may also widen inequalities in children's skill acquisition. All in all, rising inequalities can create a vicious circle: increasing returns to education increase social and economic inequalities; these in turn increase educational inequality and limit educational achievement among more disadvantaged populations. Thus, social and economic inequalities become more permanent and limit social mobility (Duncan & Murnane, 2011, pp. 7-8).

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2   "The American Occupational Structure"

Parent–child correlations of economic and social status are fundamental parameter of the extent of economic mobility across families. Table 3 shows expected number of generations to reach the mean income for children from low income family. Intergenerational income mobility varies across countries. In Scandinavian Countries it would take two or three generations to reach at least mean income. In the countries that have high inequality level such as UK, US or in the emerging countries such as Brazil and China, expected number of generations is five or nine. So, in these countries all children, irrespective of their parents' socioeconomic status, have not the same chances of reaching high income level. Because family background design their lifetime socio-economic status.

Table 3. Income Mobility Across Generations

Country	Number of Generations	Country	Number of Generations
Denmark	2	Portugal	5
Norway	3	Ireland	5
Finland	3	Korea	5
Sweden	3	US	5
Spain	4	UK	5
New Zealand	4	Italy	5
Canada	4	Switzerland	5
Greece	4	Austria	5
Belgium	4	France	6
Australia	4	Germany	6
Japan	4	India	7
Netherlands	4	China	7
OECD	4,5	Brazil	9

Source: *OECD. (2018). A Broken Social Elevator? How to Promote Social Mobility. OECD Publishing. Paris, p. 27.*

More accessible education opportunities support mobility by increasing the number and variety of positions in educational institutions. These support young person's chances of educational advancement by increasing the capacity of educational institutions themselves. And also, accessible education supports mobility by removing some of the barriers in the way of young people whose parents lack education (Hout & Janus, 2011, p. 166).

5. Theoretical Framework of Income Mobility and Related Literature

The effect of the parental income on the income of their children will attain in adulthood can measure with the correlation between the incomes of children and those of parents or grandparents (Becker, 1993: p.209). There is a simple empirical model in the literature to measure generational income mobility refers to parent–child correlations of economic and social status. To measure the intergenerational elasticity a common approach can be used with the loglinear regressions of children's economic status on their parents' economic status. The equation for children and parents in family i is (Blanden, Goodman, Gregg, & Mac., 2004, p. 124; Corak, 2004, pp. 10-11);

$$\ln Y_i^{child} = \alpha + \beta \ln Y_i^{parents} + \varepsilon_i \qquad (1)$$

In this equation Y is economic status of an individual in family i; $\ln Y_i^{child}$, log income of family i's child will attain in adulthood. ε is a stochastic error term; and the coefficient β is the intergenerational elasticity that represents the degree of economic status of children associated with parental economic status. The equation basically represents the idea that one's income is associated to his or her parents' income. The intergenerational elasticity i.e. coefficient β (lies between the values of zero and one), represent the degree of generational income mobility and represent represents the ratio of average transmitted income across the generations. If child and parental Y are uncorrelated (β of zero), we can say there is a complete intergenerational mobility and if the child's income is fully determined by parental income (β of unity), so we can easily say that there is a complete immobility. If value of β is less than 1 and higher than zero ($1 > \beta > 0$); there is (limited) generational mobility of income, and parents with high income (low) would have children who grow up to have incomes high (low). A lower coefficient β is evaluate as being feature of an ideal society.

There are many studies about intergenerational income mobility in the related literature. The early study of measuring intergenerational mobility presented by *Becker & Tomes (1986)*, confirm that the US as extremely mobile. They estimated the father son income correlation as less than 0.2 (Mazumder, 2005, p. 235). After Becker & Tomes (1986) using better quality of data, Solon (1992) re-estimated this elasticity. *Solon (1992)*, stated that earlier estimates (0.2) of intergenerational income elasticity had included error-ridden data. Solon estimated the intergenerational correlation in long-run income as at least 0.4 with the intergenerational data from the PSID. *Zimmerman (1992)*, estimated the correlation in lifetime earnings between fathers and sons with the intergenerational data from the NLS. Zimmerman estimated the intergenerational correlation in income as around 0.4 suggests that pretty less intergenerational mobility than previous estimations. *Mayer & Lopoo (2005)*, in their study using PSID data they showed that a nonlinear trend in the elasticity increased for sons between 1949 and 1953, and then declined for sons born after that. This and some other factors help explain the difference in mobility. Unlike previous studies *Mazumder (2005)*, using administrative data containing the earnings histories of parents and children, estimated generational income elasticity as around 0.6. This value indicated that the US is pretty less mobile than previous estimations. *Aydemir, Chen & Corak (2009)*, examined the generational earning mobility for Canadians born to immigrant. Their analysis showed that the degree of intergenerational persistence is about the same for immigrants as for the whole population and also there is more intergenerational mobility between immigrants in Canada than in the US. *Lee & Solon (2009)*, generated estimates of the time series variation (1977 to 2000) in intergenerational mobility. Their results showed that income elasticities in the US had not changed markedly from 1977 to 2000. *Bloome (2015)*, estimated the relationship among inequality and generational mobility through employing state and cohort variation. Results of this study provide a weak evidence for the argument that "inequality shapes mobility in the US". Unlike the existing theory the results offer that the intergenerational transmission of income status couldn't be strong sensitive to changes in inequality for US. *Bratberg et al., (2017)*, evaluated the differences of intergenerational income mobility between Germany, Norway, Sweden and the US. They found that the US is less mobile than these European countries and the same time the highest mobile region of the US is less mobile than the least mobile regions of Norway and Sweden.

6. Conclusions

Income inequality increased in many countries after 1980's. Although these countries' inequality trends have different trajectory, it remains a big concern for all over the world. Inequality matters for all every single person or

whole society. But it also matters over time, current socio - economic inequalities could impact next generation's inequalities and it determine not only the opportunities of the present generation but also the access of the next generation to opportunities. This is not just income or wealth inequality; this is also the issue of equal opportunity and social mobility. The degree of transmitted income status from one generation to the next is informative about intergenerational income mobility about in a society. The intergenerational income mobility that refers to parent–child correlations of economic and social status is a measurement tool to whether a society gives equal opportunity to all its members. On the other hand, intergenerational income mobility is considered as an ideal indicator of the degree to which a society gives equal opportunities to all members. Income inequality is a highly dynamic phenomenon that means today's large income differences of families could generate large income differences between future incomes of children. Because wealthy families' affluent investment in their own children could influence their future income and social status positively. Kruger (2012) pointed out that as inequality has increased, economic mobility has decreased over time. This relation is described in the Great Gatsby Curve. So, it can be concluded that the degree of generational mobility is the scenery of income inequalities in a society.

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3

DOES OPENNESS HELP TO OVERCOME GENDER EMPLOYMENT GAP IN MANUFACTURING SECTOR?

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Abstract

This paper analyzes the effect of openness on gender employment gap in manufacturing sector for a group of European countries. It also takes into account how this impact varies by different technology intensity sectors. Thus, this study examines whether women are disproportionally affected by international trade and embodied technology transferred or not. The results show that international trade and high- and medium-high technology export in manufacturing sector have a reducing impact on gender employment gap. The empirical evidence also indicates that the effect of foreign direct investment on gender employment gap differs depending on the model and technology intensity groups. While the increase in foreign direct investment enlarges the gender employment gap in high- and medium-high manufacturing sectors, it has an insignificant impact on low- and medium-low technology manufacturing sectors. In addition, the Lilien index, calculated for four groups of technology intensities in manufacturing sector, shows that sectoral reallocation of employment between technology intensity groups is relatively higher for females.

Keywords: gender employment gap, international trade, foreign direct investment, openness

1. Does Openness Help to Overcome Gender Employment Gap in Manufacturing Sector?

Technological progress and human capital are widely considered as major forces in economic growth. There is a large body of literature on economic growth and employment effects of embodied knowledge and technology transferred via international trade. It is the fact that employment effects of trade differ significantly across countries because of different country specific factors such as policies, labor market structures, and demographic features.

Trade openness may create new opportunities for the labor market but it can also enlarge the gender-based inequalities. Indeed, many countries have gender-based inequality problems in their labor markets. Since gender inequalities reflect how efficiently the labor market is functioning for a sustainable and inclusive economic environment, high gender employment gap is a significant global economic problem. Actually, gender equality in employment is one of the key elements for a healthy social and institutional change which is necessary for sustainable development. Unfortunately, employment rates of women are lower than those for men with big variations across countries.

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While gender inequality issues like gender gaps in wage, unemployment, and employment are the hot topics for the researchers, equal representation of women in different sectors is another issue to be focused on. In fact, sectoral employment gaps are gender biased; manufacturing sector predominantly employs males while women are more represented in service sector. According to International Labor Organization's database, gender employment gap is 22.5% in industry, -24.4% in service and 19.5% in agriculture on average for the period 2008-2017 in selected European Countries. Employment share gap in manufacturing sector which is defined in this study as the difference between the percentage shares of male employment and female employment varies significantly across manufacturing sectors with different level of technology intensities. While the employment share gap is 43.7% for overall manufacturing sector, it is 20.06%, 54.2%, 65.4% and 24.5% in high, medium-high, medium-low, and low technology manufacturing sectors, respectively.

Even the results of the existing empirical studies do not suggest clear positive impact of openness on employment, it should be noted that trade activities and foreign direct investment provide technology transfer which is an important factor leading economic growth and new employment opportunities as positive outcomes of openness. Besides the employment level effect of openness, it has an allocation effect in the labor market which leads to a change in gender distribution of employment across sectors. Thus, it is worth asking whether women are disproportionally affected by international trade and embodied technology transferred.

Theoretically, the link between openness and gender gap can be explained by two main channels. Firstly, as it is mentioned in the trade theories, gendered comparative advantages resulting from lower or higher female cost, productivity differences and abundance of gendered labor force may have a disproportional impact on female employment. Secondly, skilled biased technological change transmitted by openness may lead gendered employment effect as is discussed in human capital theories.

This study concentrates on international trade and gender employment gap in manufacturing sector for a group of European countries. The analysis considers the technology intensities of manufacturing sector and trade. The aim of the study is to investigate whether international trade transferring foreign technology and knowledge stock helps to overcome gender employment gap in manufacturing sector. Therefore, it contributes to the literature with the analysis of gender employment gap and openness by providing the disproportional gender employment effect of international trade in manufacturing sector considering different technology intensity groups.

The rest of the paper is organized as follows: Section 2 includes literature review and thereoretical background, Section 3 provides some descriptive evidence on gender employment gap in manufacturing sector, Section 4 delineates methodology and empirical findings, and Section 5 concludes.

2. Literature Review and Theoretical Background

Openness is widely considered to be an important driving force to stimulate economic growth and provide new employment opportunities in the economy. Considering both theoretical and empirical literature, employment effect of international trade differs depending on country specific factors such as structures of institutions and markets, macroeconomic environment, social and demographic properties. Thus different methodology, sample and period used in the analysis give different empirical estimation results for employment effect of openness.

The impact of international trade on employment can be explained by two main channels. First, the increase in export may increase total output in manufacturing sector, while the increase in import may depress output. Both productivity changes and substitution between import and export products resulting from international trade determine scale effect. Thus the change in labor demand, therefore the employment in manufacturing sector depends on this scale effect created by international trade. Second, factor endowment which determines the comparative advantage, is an important determinant of manufacturing output and employment levels. As Hecksher-Ohlin trade theory implies, international trade increases demand for abundant factors of production, thus it may create both level and distributional effects for different sectors. Both factor endowments and ability to use the existing technology describe whether the sector is more labor intensive or not. Moreover, it determines whether the international trade expands high technology sectors, thereby increasing the demand for high skilled labor or not.

Not surprisingly, those channels explained above determine not only the resulting level effect of trade for employment, but also determine the female intensity reflected by share of female employment. Trade theories imply that if the countries have gendered competitive advantage, international trade has a disproportional employment effect for females. For instance, international trade expands labor intensive sectors having comparative advantage in cheap labor. For developing countries endowed with abundant unskilled female labor, international trade increases the relative demand for females more than the demand for males (Standing, 1989). Thus, it would lead to a decrease in gender employment gap for low skill sectors. Wage discrimination leading lower female cost, productivity differences and skilled biased female labor force are the main factors generating gendered comparative advantage.

Also, technology transferred via international trade may lead to sectoral reallocation from male intensive to female intensive industries. As it is mentioned in human capital theories, if females are skilled enough to use technology embodied in trade, technological progress increasing productivity and output helps to narrow gender employment gap. Therefore, skill biased technological change may affect female employment disproportionally, if women and men do not have the same level of education and training (Wood, 1995; Acemoglu, 2003, Juhn et al., 2014). Finally, international trade increases competition which reduces the extent of taste based discrimination introduced by Becker (1957) as an important source of gender inequality.

There is a growing body of literature that examines the impact of international trade on employment gap. Some of them find a positive relationship between export and female intensity in manufacturing sector (Ozler, 2000; Ozler 2007; Seguino, 2000; Wood, 1991). Some of studies provide evidence that technology upgrading raising capital intensity decreases female employment share in manufacturing (Acevedo, 1990; Joekes 1995). AlAzzawi (2014) shows that degree of industry concentration and the nature of international trade competition are important factors affecting female employment and wage gap. Expansion in trade increases the competition and leads to a reduction in discrimination, hence it raises female share of employment (Black and Brainerd, 2004).

Bussmann (2009) also identified that trade openness expands women's employment in the service sectors in developed countries whereas it raises the share of women employment in industrial and agricultural sectors in developing countries. Considering the literature including cross country analysis, it should be pointed out that developed and developing countries have different gendered effect of trade liberalization (Oostendorp, 2009; Wood, 1991; Tejani and Milberg, 2010). Also, it is worth noting to say that trade partners may change the way of gendered employment effect. Kucera (2001) shows that foreign trade expansion affects women's manufacturing employment negatively in Japan but not in Germany which has a more intense trade with non-OECD countries than Japan has.

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Foreign direct investment (FDI) is another factor to be considered for open economies. FDI affects labor market through technological spillover, economic growth, and increased demand for factors. FDI, like international trade, has some impacts on employment. It is possible to explain employment effects of FDI by using the same channels that link trade and employment. As Aguayo-Tellez (2012) mentions, foreign direct investment (FDI) affect the labor market by changing the relative price of factors and demand for factors in different sectors. It may also have some impacts on the international competition and technology intensity. If FDI leads to a shift from low skill intensive technology to high skill intensive technology which may be more complementary with female labor, it may narrow the gender employment gap. In the literature, as in the case with trade, there is no consensus regarding the impact of FDI on relative demand for female labor. Aguayo-Tellez (2012) presents a detailed literature review assessing the impact of trade liberalization policies and FDI on gender inequality.

Consequently, the literature provides numerous studies for investigating openness and employment linkage. Some of those studies focus on gendered employment effect, particularly in manufacturing sector. They are trying to answer the question of how employment effects of openness are being evolved in terms of gender. This paper differs from the literature examining gendered effects of openness in three important respects. First, we provide evidence for sectoral reallocation of employment between technology intensity groups for both males and females. Second, we consider not only the manufacturing employment, but also on manufacturing employment by different technology intensities. Third, by analyzing the effect of high technology export, we illustrate how technology intensity of trade helps to overcome gender employment gap.

3. Descriptive Evidence

To gather a preliminary idea about the gender employment gap in manufacturing sector, some descriptive analyses are reported for a group of European countries. Gender employment gap is defined as the difference between the percentage share of male employment and percentage share of female employment in that manufacturing industry. Table 1 shows average gender employment gap in four technology intensity groups in 18 European countries for the period between 2008 and 2018. According to Eurostat Technology Classification in NACE Rev.2, four broad groups of manufacturing industries are high, medium-high, medium-low and low technology (Table 2). The highest level of gender employment gap arises in medium-low technology industries. The gap is low in both high and low technology manufacturing industries. Particularly, most of the countries have the lowest gender gap in high technology industries. For Austria, Finland, France, Germany, Italy, Netherlands and Norway, the lowest rates appear in low technology industries (Table 1).

In Figure 1, manufacturing employment is classified into two groups based on technology intensity; high- and medium-high and low- and medium-low technology groups. It shows how gender employment gaps in those two different technology intensity groups are being evolved over the last decade. Some countries, like Spain, Poland, Sweden and Switzerland have approximately the same level of gender employment gap in two technology intensity groups. The difference in gender employment gaps in high- and medium-high and low- and medium-low technology industries has narrowed in Czechia, Greece, Hungary, Portugal, and United Kingdom, but it has remained relatively stable in Germany, Italy and Netherlands over the period of 2008-2018. Among the 18 European countries, while Belgium, Germany, Italy and Netherlands have the highest gender employment gap in high- and medium-high technology sectors, Portugal has the lowest gap in both high- and medium-high and low-and medium-low technology groups. Almost 8 countries out of 18 have relatively higher rates of gender employment

gap in high- and medium-high technology industries, while only one country, Czechia, has relatively higher rates in low- and medium-low industries over the last decade.

Figure 2 shows the scatter plot of average manufacturing employment rate calculated as a percentage of total employment in the economy against openness. Openness is measured by total export and import as a percentage of gross domestic product (GDP) over the period 2008-2018. Remarkably, the fitted line has upward sloping which may be viewed as a supporting evidence for positive employment effect of openness which is mentioned in the literature. In other words, higher share of international trade in total GDP leads to higher levels of manufacturing employment rate for the countries considered in this paper. Needless to say that this positive effect may not create equal employment opportunities for both male and female labor force. In the following parts of the paper, the analysis focuses on the existence of such disproportional effect.

Figure 3 demonstrates Lilien index for males and females in manufacturing sectors of the economies. Lilien index measures sectoral reallocation (sectoral shifts) (Lilien 1982). Higher index number indicates that the sectoral reallocation is higher.

Lilien index $\hat{\sigma}$ is calculated as the standard deviation of the sectoral growth rates of employment from one period to another. Sectoral employment share in total employment is used as the weight. The Lilien (1982) measures the sectoral shifts as follows:

$$\hat{\sigma} = \sqrt{\sum_{i=1}^{N}(\frac{e_{it}}{E_t})\left[In(\frac{e_{it}}{e_{i,t-1}}) - In(\frac{E_t}{E_{t-1}}) \right]^2} \tag{1}$$

where e_{it} is employment in sector i in period t and $E_t = \sum_{i=1}^{N} e_{it}$ is total employment in period t.

In our analysis, i represents the category of technology intensity in manufacturing.

Lilien index in Figure 3 shows the employment reallocation between technology intensity groups in manufacturing sector. The index is used as a measure of structural change in the employment composition (Ansari et.al, 2014). As is seen in Figure 3, sectoral reallocation of employment between technology intensity groups show fluctuations for both males and females. However, Lilien index is relatively higher for females in many countries. In other words, sectoral reallocation between these four groups of technology intensities, therefore structural change, is higher for females.

4. Methodology and Empirical Findings

The study uses annual panel data for the period 2008-2018 for a group of European countries. The countries included are Austria, Belgium, Czechia, Denmark, France, Finland, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and United Kingdom. The countries are selected considering data availability limitations.

The following definitions and data sources are used for the empirical analyses: *Gendergap* is reflecting gender gap in employment share calculated as the difference between percentage share of male employment in manufacturing industry i and percentage share of female employment in manufacturing industry i. *Openness* is the sum of exports and imports of goods and services measured as the share of gross domestic product. *High_mediumhigh_ex*

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is high- and medium-high technology exports calculated as a percentage of manufactured exports. *Gap_LFP* is reflecting labor force participation gap computed as the difference between labor force participation rates for male and female. *Schooling* shows percentage share of population, ages from 15 to 64 years, by educational attainment level. *Fdi* indicates foreign direct investment, net inflows as a percentage of GDP.

Data for *gendergap* and *schooling* are obtained from Eurostat. Data for *openness*, *fdi*, and *hightech _ex* are obtained from World Development Indicators. Data for *high_mediumhigh_ex* is obtained from UNIDO, Industrial Demand- Supply Balanced Database IDSB (2019), ISIC Rev.3. Data for *gap_LFP* is obtained from ILO.

In order to assess the impact of international trade on gender gap in employment share in manufacturing industries, different models considering technology intensity of trade and employment are estimated by using unbalanced panel data. Manufacturing employment is classified based on technology intensity as high- and medium-high, and low- and medium-low technology groups. The general model used in the analyses is as follows:

gendergap = f [(openness/ high_mediumhigh_ex), (gap_LFP), (schooling), (fdi)]   (2)

The estimation results are portrayed in Table 2. The models are estimated by using Newey-West standard errors. The lag legth is 1. All models in Table 2 are tested for the existence of autocorrelation, heteroskedasticity, and cross-sectional dependence. Wooldridge (2002) test is used to check for first order autocorrelation. To test for the existence of heteroscedasticity, Modified Wald test (see Greene, 2003), and to check for cross-sectional dependency, Pesaran (2004) CD test are performed. The results of the tests indicate the existence of autocorrelation and heteroscedasticity in the models. In addition, Pesaran (2004) CD test indicates the existence of cross-sectional dependence in Models 1, 3, and 5. In those models, Common Correlated Effects are removed by using means of variables in the estimation.

The analyses are performed for low-and medium-low, high- and medium-high technology intensity sectors and overall manufacturing in the countries. Models 1, 3, and 5 include *openness*, while models 2, 4, and 6 include *high_mediumhigh_ex as* an explanatory variable. Both variables are supposed to contain embodied technology. For the models 1, 3, and 5 including *openness* (international trade as a percentage of GDP*), the* results indicate that the estimated coefficients of *openness* is negative and significantly different from zero. In other words, as *openness* rises, *gendergap* declines. *Openness* includes both high and low technology products (both import and export) by definition. In order to explore the effect of technology intensity of trade reflecting technology stock of a country on gender gap, high-and medium-high technology exports (% of manufactured exports) (*high_mediumhigh_ex)* is used as an explanatory variable in Models (2), (4), and (6). Hence, the investigation reveals the negative significant effects of both *openness* and *high_mediumhigh_ex* on *gendergap,* therefore in favor of females in all technology intensity groups.

gap_LFP varies based on the relative changes of female labor force and male labor force. If, for instance, relative rise in female labor force is higher than decline in male labor force, gap_*LFP* goes down. The empirical evidence shows that this decline in gap_*LFP* has a significant positive impact on *gendergap* in low- and medium-low technology intensity sectors and in overall manufacturing. This positive effect means that there is a disproportionate unfavorable effect on female employment share. Considering that manufacturing sector predominantly employs males, the relative decline in male employment is expected to be higher than the increase in female employment

in manufacturing sector. In this case, the estimated negative coefficient of gap_*LFP* can make sense. On the other hand, there is no clear evidence in high- and medium high intensity sectors.

The estimation results also show that gender employment gap in low- and medium-low manufacturing sector has a positive link with schooling at 1 percent significance level whereas no significant effect is observed in high- and medium-high technology intensity sectors. For overall manufacturing sector, without considering technology intensity, this relationship is still positive and significant. Therefore, the results are indicating that educational attainment has a positive effect on gender employment gap in manufacturing except in high- and medium-high sectors, in favor of males.

Fdi is another variable to be considered in the open economy models. In Model 3 and 5, as *fdi* increases, *gendergap* increases. This favoring evidence for males is observed in high- and medium-high intensity sectors and in overall manufacturing. Hence, as indicated in the literature gendered effect of FDI depends on the model used in the analysis.

5. Concluding Remarks

This study investigates whether female workers are disproportionally affected by international trade and embodied technology transferred. The study presents models estimated with Newey-West standard errors to show the relationship between gender manufacturing employment gap and openness. Considering not only the manufacturing employment but also manufacturing employment by different technology intensities, the analysis presents some evidence for gendered employment effect of openness within manufacturing sector. It also illustrates whether technology intensity of trade helps to overcome gender employment gap.

The results of the analysis indicate that openness and high- and medium-high technology export share in manufacturing have reducing impact on gender employment gap. Hence, it indicates that international trade and technology intensity of export have a disproportional gendered employment effect in manufacturing sector, in favor of females. Also, the results show that the gendered employment effect of foreign direct investment differs depending on the model and technology intensity groups. Except low- and medium-low group, the increase in FDI enlarges the gender employment gap. Furthermore, the empirical evidence reveals a sectoral reallocation of employment between four groups of technology intensities. The reallocation is higher for females than males. In other words, there exists a greater structural change on female employment side over the period 2008-2018.

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Tables

Table1
Gender Employment Gap in Manufacturing Sectors by Technology Intensity

	Gender employment gap in high tech manufacturing	Gender employment gap in medium high tech manufacturing	Gender employment gap in medium low tech manufacturing	Gender employment gap in low tech manufacturing
Austria	27.3	57.4	61.5	26.1
Belgium	21.4	63.9	71.9	35.9
Czech	-1.8	34.9	52.7	7.6
Denmark	8.5	52.6	61.6	25.3
Finland	33.0	58.2	68.6	30.0
France	22.5	52.4	61.9	20.5
Germany	29.2	60.7	60.9	12.3
Greece	17.0	64.1	75.5	31.1
Hungary	2.0	33.5	56.3	7.4
Italy	30.5	56.8	66.7	22.8
Netherlands	44.2	70.9	75.2	38.6
Norway	34.9	64.2	73.8	32.4
Poland	-0.8	42.5	64.3	15.5
Portugal	-8.5	32.6	61.4	-3.6
Spain	14.9	56.1	72.0	32.5
Sweden	28.7	54.9	65.5	40.2
Switzerland	26.1	58.5	61.1	31.8
United Kingdom	31.8	60.9	66.8	34.4
Average	20.5	54.2	65.4	24.5

Notes. Gender employment gaps are on average for the period 2008-2018. Data source is Eurostat.

DOES OPENNESS HELP TO OVERCOME GENDER EMPLOYMENT GAP IN MANUFACTURING SECTOR?

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Table 2

Manufacturing Industries by Technology Intensities (NACE Rev.2, 2-digit level)

High	Manufacture of basic pharmaceutical products and pharmaceutical preparations
	Manufacture of computer, electronic and optical products
Medium-High tTTechnology	Manufacture of chemicals and chemical products
	Manufacture of electrical equipment
	products and pharmaceutical preparations
	Manufacture of computer, electronic and optical products
	Manufacture of machinery and equipment n.e.c
	Manufacture of motor vehicles, trailers and semi-trailers
	Manufacture of other transport equipment
Medium-Low	Manufacture of coke and refined petroleum products
	Manufacture of chemicals and chemical products
	Manufacture of rubber and plastic products
	products and pharmaceutical preparations
	Manufacture of computer, electronic and optical products
	Manufacture of other non-metallic mineral products
	Manufacture of basic metals
	Manufacture of fabricated metal products, except machinery and equipment
	Repair and installation of machinery and equipment
Low	Manufacture of food products
	Manufacture of chemicals and chemical products
	Manufacture of beverages
	Manufacture of tobacco products
	Manufacture of textiles
	Manufacture of wearing apparel
	Manufacture of leather and related products
	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
	Manufacture of paper and paper products
	Printing and reproduction of recorded media
	Manufacture of furniture
	Other manufacturing
	Manufacture of fabricated metal products, except machinery and equipment

Notes. Data source is Eurostat (2019).

Table 3

	Low&MediumLow		High&MediumHigh		Overall Manufacturing	
	Dependent Variable: gendergap

Estimation Results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
openness	-0.0785**		-0.141***		-0.106***	
	(0.037)		(0.044)		(0.039)	
gap_LFP	-0.295*	-0.287	-0.318	-0.345	-0.308*	-0.32
	(0.178)	(0.198)	(0.205)	(0.248)	(0.186)	(0.216)
schooling	0.278*	0.273*	0.225	0.165	0.301**	0.258*
	(0.147)	(0.145)	(0.14)	(0.145)	(0.145)	(0.147)
fdi	0.207	-0.04	0.381**	0.112	0.262*	0.046
	(0.127)	(0.117)	(0.191)	(0.190)	(0.148)	(0.138)
high_mediumhigh_ex		-0.145**		-0.176**		-0.132*
		(0.066)		(0.082)		(0.069)
Observations	180	158	180	158	180	180

Notes. Standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

DOES OPENNESS HELP TO OVERCOME GENDER EMPLOYMENT GAP IN MANUFACTURING SECTOR?

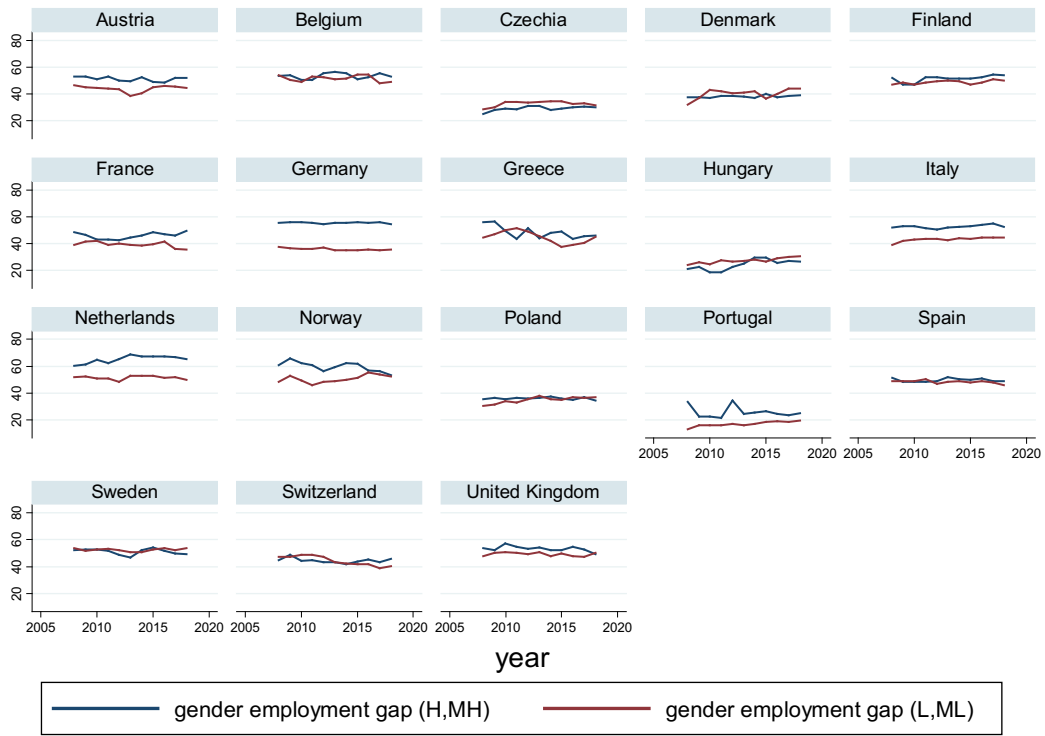*Fatma Didin Sönmez, Yasemin Özerkek*

Figures

Figure 1. Gender Employment Gap in High- and medium-high and Low- and medium-low Manufacturing Sectors for the period 2008-2018.
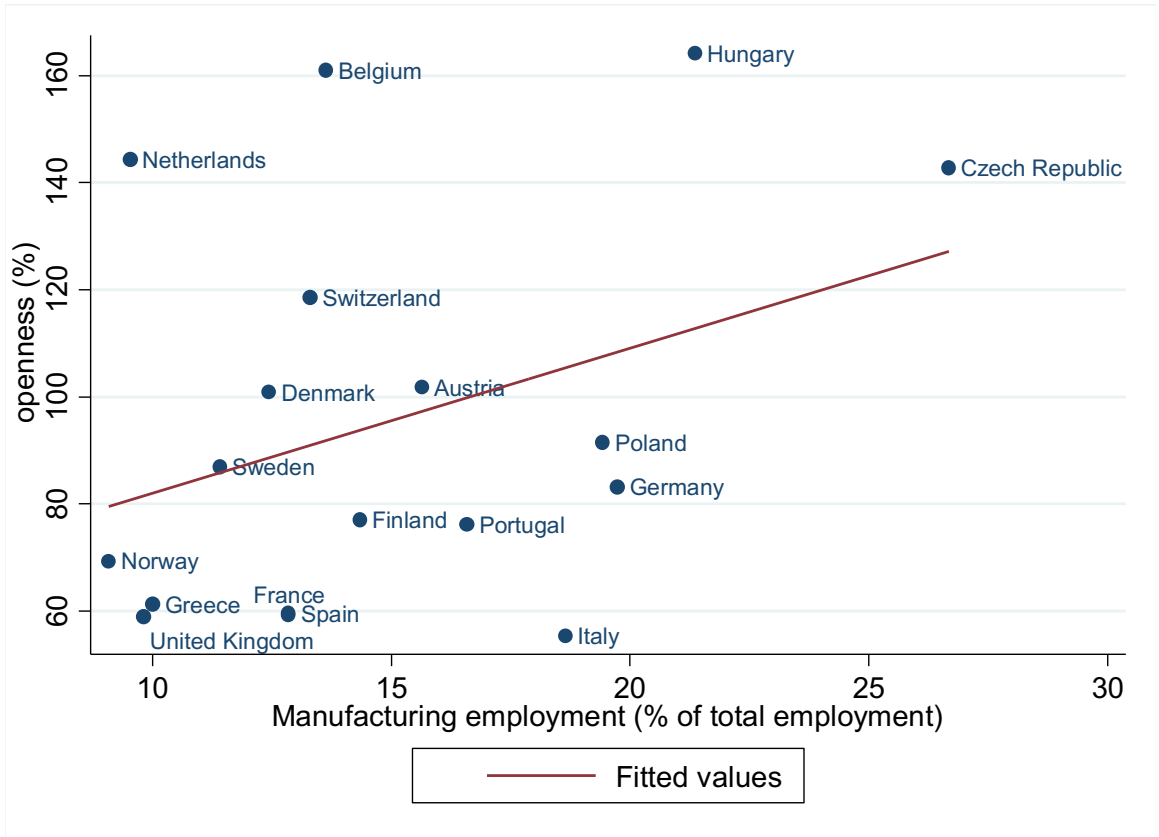
Figure 2. Openness and Manufacturing employment

DOES OPENNESS HELP TO OVERCOME GENDER EMPLOYMENT GAP IN MANUFACTURING SECTOR?

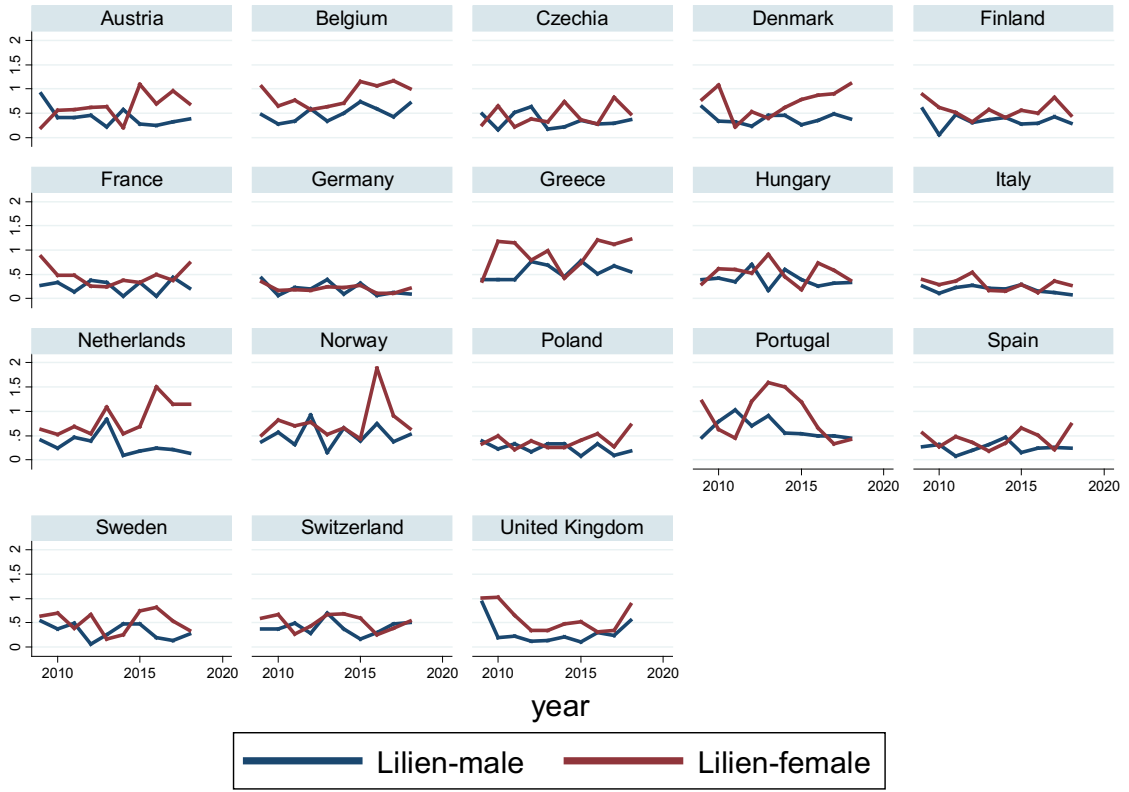*Fatma Didin Sönmez, Yasemin Özerkek*

Figure 3. A Measure of Sectoral Reallocation: Lilien Index

4

COGNITIVE CAPABILITY AND COOPERATION IN PUBLIC GOODS EXPERIMENT

Abdul-Razak Bawa Yussif[1] , Savaş Çevik[2]

Abstract

The study examines the link between cognitive capability and the cooperation levelsin public goods experiment. We employed a three-question Cognitive Reflection Test (CRT) as a measure of cognitive capability and assessed how it relates to contributions in a public good experiment. The study investigates (i) the association of CRT-scores and contributions in a multiple-round public good game (PGG); (ii) the association of Risk Preference and contribution of participants (iii) whether cooperation is enhanced within a PGG with punishment compared with when there is no punishment opportunity, and (iv) the link between cognitive capabilities and risk preference of participants of a PPG. The findings suggest that there is a negative link between CRT-scores and contributions in PGG. Hence, the existence of strong cognitive capabilities motivates selfishness PGG. Moreover, the existence of punishment enhances cooperation among participants than in PGG without punishment. Finally, the link between smartness and risk tolerance of participants suggests that, being smart tends to make men take more risk and makes women patient.

KEYWORDS: Cognitive Reflection; Public Goods Game; Cooperation; Experimental economics.

I. INTRODUCTION

In recent times, the Pubic Goods experiment has become a fashionable tool for carrying out studies on collective group decisions in which participants decide the proportion of their endowment to contribute to a common course. Economic theory predicts non-significant levels of cooperation assuming that individuals are rational and selfish, in public good experiments however, this prediction is observed to be much higher. This is due to the assumption that people are "conditional cooperators" (Fischbacher et al., 2001). Thus, peoples' willingness to contribute to a public good increases if others contribute more to that good, and willingness to contribute drops if the contributions of others are low. Peoples' fairness preferences through 'altruism', 'inequity aversion', 'reciprocity' or 'warm-glow' are deeply discussed in the literature as a likely consequence of conditional cooperation.

On the contrary, people who cooperate in the contribution to a public good are ready to punish free-riders even if it comes at a cost and does not come with any benefit. Fehr and Gachter (2000) find that free riders are heavily punished the further they deviate from cooperation levels of the cooperators. In a game without punishment opportunity, the dominant strategy is full free riding. In a game with punishment opportunity, the decision to punish comes at a cost to the punisher. This seeks to imply that purely selfish participants will never punish in a one-shot game. If this is true as it is commonly assumed in economics that only selfish participants exist, these two

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treatments- without punishment and with punishment should yield the same contribution pattern. Thus, the inclusion or exclusion of punishment is irrelevant to the contribution behavior of individuals. However, our results provide sharply contrasting evidence to the above. Participants' contributions are relatively and generally higher in the with punishment treatment compared to low average contribution rates between 20 and 35 percent of endowments in the without punishment condition. Granting punishment opportunities in a public goods experiment will bring to low the levels of free riding even though it might be the dominant strategy.

One potential determinant of economic behavior is the cognitive capabilities of the individual in question (Rustichini, 2015). Other factors such as risk preferences of individuals can also influence economic decisions. In experimental economics, the application and investigation of the connections between cognitive capabilities, risk preferences and the behavior of the individual will go a long way to throw more light on the heterogeneity in the behavior of people (Fredrick, 2005; and Deck & Jahedi, 2015). People with high cognitive capabilities shows low levels of small-stakes risk aversion (Dohmen et al., 2010) and they do not get affected by biases when making financial decisions (Hoppe & Kusterer, 2011; Kiss et al., 2016). This paper's contribution to the growing literature is by examining experimentally the link between cognitive capabilities measured using the Cognitive Reflection Test (CRT) score (Frederick, 2005) and contributions in public goods experiment. What makes the CRT especially useful as a measure of cognitive capability is that, it is designed to detect the inclination to overrule a first and instinctive answer that pops up in the mind with a more cognitively intuitive answer. This paper also tries to see whether there is a relationship between cognitive reflection and risk preference of participants as well as between risk preference and contributions towards public goods.

BACKGROUND AND REVIEW OF PREVIOUS STUDIES

The background and review of previous experimental studies is discussed below. This sets the foundation on which our experiment is built.

Recently, there has been a growing focus of researchers in exploring the influence of cognitive capabilities as a potentially important determining factor of economic behaviour (Rustichini, 2015). The difference in individuals' cognitive capabilities has necessitated the need to better understand the link between cognition, preferences and behaviour of individuals and how this link could help understand behavorial heterogeneity in economic experiments (Benjamin et al., 2013).

İn non-strategic choices, individuals with higher cognitive reflection discounted future payments at lesser rates (Frederick, 2005; and Benjamin et al., 2013), had the least effects from biasis in financial decision making (Hoppe and Kusterer, 2011; and Kiss et al., 2015), and dispalyed lesser levels of small-stakes risk aversion (Dohmen et al., 2010). In contrast to all these studies very little is known about how the cognition and strategic choices relates.

According to Kanazawa and Fontaine (2013), in a single-round Prisoner's Dilemma involving individuals with higher cognitive capabilites, the study concluded with an observation of more free-riding by subjects. In a similar study by Nielsen et al., (2014), it finds that subjects who are strict free riders showed considerably higher Cognitive Reflection Test scores than conditonal or unconditional cooperators. There are more experimental proofs suggesting a positive link between cognitions and social preference. Jones (2008), in a meta-study by finds that the SAT and ACT entry score of students from schools with high scores are expressively more likely to cooperate in repetitive Prisoner's Dilemma game. Other studies that postulates a positive relationship between cognitive

capabilities and cooperation in repetitive or successive tasks include (Segal and Hershberger, 1999; Cappelletti et al., 2011; Jones, 2014; and Al-Ubaydli et al., 2016).

According to Keser and Winden, (2010), a positive relationship between cognition and contributions could be attributted to long-term premeditated concerns rather than social preferences. This is supported by Duffy and Smith (2014), who finds that the imposition of cognitive load on subjects through a memory task reduces subjects' ability to base their strategies on earlier rounds in repetitive Prisoner's Dilemmas.

Finally, Rand et al., (2014) suggests that choices in public goods game might depend on resources at the disposal of an individual at the time of the decision-making. This points to the effects of time pressure on decision making of subjects rather than the individual's cognitive capabilities. Such effects however, possibly exist either due to the fact that higher CRT-scores subjects are more able to handle having to make a decision within a limited time or due to their better reasoning capabilities, they are less valuable when they have to make decisions quickly (Jones, 2014; Lohse, 2016). This paper's contribution to the growing literature is by examining experimentally the link between cognitive capabilities as well as individual's risk perference and contributions in public goods experiment. Additionally, the paper takes a further step to establish relationship between cognition and risk tolerance of individuals.

The rest of the paper is organized in the following ways: Experimental Design and general procedure is in section II, the empirical results is discussed in section III, and the conclusion and discussion is in section IV.

II. EXPERIMENTAL DESIGN
a. Measuring cognitive capability

The Cognitive Reflection Test (CRT) (Frederick, 2005) was used to assess the cognitive capabilities of participants. This test is suitable because it evaluates participants' predisposition to make their decisions based on a well thought through the cognitive process rather than using instincts and intuitions. The CRT questions are as follows:

1. A tennis racket and a ball cost TL 1.10 in total. The bat costs TL 1.00 more than the ball. How much does the ball cost?

2. If it takes 5 machines 5 minutes to make 5 widgets, how long will it take 100 machines to make 100 widgets?

3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

For every question, there is an intuitive but incorrect answer (10Kurus, 100 minutes, 24 days). However, in order to find the correct answer (5Kurus, 5 minutes, 47 days), the participant needs sufficient reflection on each question. The correct solution is "easily understood when explained" (Frederick, 2005, p.27). In accordance with Frederick (2005), participants with an overall CRT-score of 0 correct answers are considered as lowest cognitive reflection capabilities and those with all 3 correct answers as highest cognitive reflection capabilities.

Undoubtedly, a person's cognitive reflections is not a general intelligence measure, however, it provides one explicit subsection of cognitive capabilities that could affect economic decisions (Lohse, 2016). Moreover, despite the CRT simple design, there is a higher correlation between CRT-scores and more general as well as other sophisticated measures of cognitive capabilities like SAT, the Wanderlic Personnel Test, the Wechsler Matrix Test and

other numerical ability tests (Frederick, 2005). Participants could earn extra points for each correct answer given for the test. This is to increase the exactness of measured CRT-scores and to circumvent the possible issue of inherent motivation to reach a good test result. This could show discrepancies across participants (Chen et al., 2013).

b. Measuring cooperation

A standard linear public good game was used in the experiment (see Ledyard (1995)). The experiment consisted of 12 rounds, with the first 6 rounds offering the choice to punish the lowest contributor in the group and the second 6 rounds without punishment opportunities. The study consisted of 8 groups with each group made up 4 members. The group composition changed randomly after every round.

Each of the four members in the group is given an initial endowment of 20 tokens. The individual decides how much to contribute to the so-called 'group project'. The payoff for each group member that was explained to the participants is given by the function below:

$$\pi_i = 20 - g_i + 0.4 \sum_{j=1}^{4} g_j$$

The size of the 'group project', that is, the public good is the sum of all contributions g_j to the project. The marginal payoff from contributing one additional token to the public good is 0.4 and π_i is the individual's payoff for the i'th period.

The public good problem above was explained to the participants before the start of the game. This was followed by eight control questions to test participants understanding of the public good game they are about to partake in. All control questions must be correctly answered to be able to proceed to the game screen. All subjects answered all the control questions correctly, which implied that they understood the implications and mechanics of the above payoff function.

The next step was for subjects to delve into the actual decision-making. More specifically, subjects had two types of decisions to make in the first half of the experiment. Thus, firstly how much of their token to contribute to the group project and secondly, if the least contributor should be punished. These two decisions were to be made without knowing the identity of the other group members.

In the first 6 rounds of the experiment (PGG with punishment opportunity), participants had to first decide how much of their 20 tokens to contribute to the public good, then after each group member's contribution the second decision was to choose to punish or not to punish the group member with the least contribution at a cost. The more severe the level of punishment that a participant chooses to give to the least contributor, the higher the price s/he has to pay. Table 1 gives the distribution of the punishment levels and their corresponding costs to the punisher. This was done to ensure that the group members' incentive to free ride was either killed or at least minimized. Subsequently, this would help measure the overall impact of punishment conditions of the individuals' contribution to public goods.

As a way to ensure that, subjects take these decisions seriously as well as make sure that the decisions reflect contributions of private individuals to a public good, the following incentive mechanism was used. Subjects were

told that at the end of the game all tokens that were kept and/or collected from the entire experiment would be convertible to actual academic grade points for each person. This will potentially motivate participants to ensure they maximize the tokens to keep or collect either individually from being a free rider or through benefits from the so-called group project.

In the second half of the experiment (PGG without punishment), the participants had to only decide how much to invest in the group project without any punishment threat whatsoever their level of contribution.

Cost to punisher	0	1	2	3	4	5	6	7	8	9	10
Punishment level	0	2	4	6	8	10	12	14	16	18	20

Table 1: Punishment Levels and Corresponding Costs

c. Measuring Risk Preference

The risk preference of participants is assessed using hypothetical decision-making between a certain gain and some probability of a large gain. After the experiment, we included in a framing effect question to help measure the risk preference level of participants. Participants were asked to make a choice between

A. An immediate and certain gain of 1000 Turkish Lira

B. A likelihood of 80% to gain 1400 Turkish Lira

It is obvious that option A has no risk of not gaining the money and option B has a likelihood of 20% of not gaining the money. However, choosing option B gives the higher expected value than option A. We classified participants who selected the riskless option (Option A) as being Risk Averse (RA) and participants who selected option B as Risk Loving (RL). There were only 12 participants that selected the riskless option (Option A) and the remaining 20 participants opted for the Option B. Table 3 gives the summary of the results from the risk preference test.

GENERAL EXPERIMENTAL PROCEDURES

The experiment was conducted at Seljuk University, Konya on May 16, 2019. All 32 participants were recruited from the Faculty of Economics and Administrative Sciences at Seljuk University. An announcement to students of Public Finance lessons in various levels at the economics department was made for voluntary participation. All participants were from the Economics discipline. The gender ratio was a balance of 50% apiece for Males and Females.

Upon arrival, all participants were randomly given a unique participants code. This code was necessary to get each participant a unique credential to take part in the experiment anonymously. A general link was displayed to all participants and upon following this link, the unique participant code was required in order to join the experiment. The experiment starts with a display of the instructions for the experiment to be read by each participant followed by the 8 control questions to assess participants' understanding of the experiment. After all the control questions were correctly answered, this implied that subjects fully understood the rules of engagement for the experiment. The next screen they see was the first contribution decision of round one of the experiment where subjects had to make their contribution decision.

At the end of the contribution decision of round twelve, the Cognitive Reflection Test question were next to be answered. This was to ascertain the smartness level of subjects. Subjects need to take a much more reflective approach in answering these questions rather than an intuitive and a knee jerk reaction. The questions on measuring the risk preference of participants was next for subjects to select from two hypothetical choices. This was to help classify subjects as either being open to taking risks or closed to them. The CRT and risk preference data were collected after the PGG (with punishment and without punishment). Lastly, a questionnaire to collect some demographics on gender, age, perception of the quality of life and academic grade point average was displayed and filled by participants at the end of the experiment.

All instructions of the experiment, tasks, and post-survey questionnaires were fully computerized using oTree (Chen et al., 2016). At the end of the whole experiment, participants' payoffs from the entire experiment were converted to academic points (points) at a conversion rate of 1 token to 0.05 points. All sessions lasted approximately 70 minutes and participants earned an average of 14 points (Minimum: 12 points; Maximum 17 points).

III. RESULTS

i. Summary Statistics

Table 2 gives the summary of the key findings of the Cognitive Reflection Test.

	Male N = 16	Female N = 16	Overall N = 32	Lohse (2016) N = 284	Branas-Garza et al., (2015) N = 41,825
CRT1	0.313	0.188	0.250	0.51	0.32
CRT2	0.563	0.313	0.438	0.62	0.40
CRT3	0.438	0.313	0.375	0.68	0.48
Highest CRT-score _CRT(3)	0.125	0.063	0.094	0.349	
Higher CRT-score _CRT(2)	0.375	0.188	0.281	0.285	
Lower CRT-score _CRT(1)	0.188	0.250	0.219	0.201	
Lowest CRT-score _CRT(0)	0.313	0.500	0.406	0.165	

Table 2: Summary of Cognitive Reflection Test Results

According to the results in table 2, the first question (CRT1) of the test has the lowest frequency of accurate answers. Thus only 25 percent of all subjects (31 percent of male subjects and 19 percent of female subjects). This is a common phenomenon in CRT. The distribution of CRT-scores for the different cognitive reflection levels are as follows: 9.4 percent of subjects fall in the 'Highest Cognitive Reflection' category, thus they correctly answered all three CRT questions; 28.1 percent of subjects answered two questions correctly (Higher Cognitive Reflection); 21.9 percent answered one correctly (Lower Cognitive Reflection); and a whopping 40.6 percent of subjects had none correct (Lowest Cognitive Reflection). The last two columns on the right of Table 2 provide reference results from two studies. Lohse (2016) employed a pool of subjects comparable to this study. He conducted the CRT to students at the University of Heidelberg. The percentages observed in this study is slightly below that of his averages. The second reference study, Branas-Garza et al. (2015), uses data from a comprehensive

a meta-analysis covering a total of 41,824, which consisted of 41 percent students and 59 percent non-student. The results of subjects in our experiment vary slightly from that of the participants in Branas-Garza et al., (2015).

Table 3 shows the summary results of the risk preference test.

	Male N = 16	Female N = 16	Overall N = 32
Risk Averse (RA)	0.3125	0.4375	0.375
Risk Loving (RL)	0.6875	0.5625	0.625

Table 3: Summary of Risk Preference Test

From Table 3, we observe 37.5 percent of all participants are risk-averse, whiles 62.5 percent showed that they preferred the higher gain with some probability. When we take a look at the gender breakdown, more females are risk-averse than there are males who are risk-averse, thus about 44 percent and 31 percent of female and male participants respectively prefer the riskless option to the certain and immediate gain. On the contrary, the results for the Risk Loving (RL) shows a higher percentage of males, 69 percent selecting the Risky option with higher expected gains than females. This result suggests that more males in this experiment are risk-loving compared to 56 percent of female participants who are risk-loving, even though females dominate the risk-averse category.

Figures 1: Endowment Contributed by Punishment Opportunity
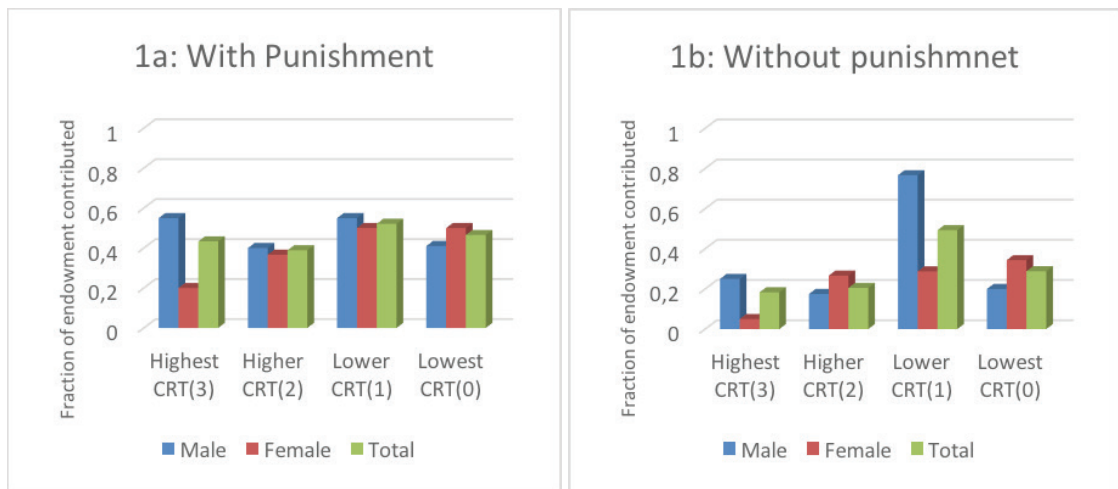
ii. Relationship between CRT-scores and Contributions.

Figures 1a and 1b displays the relations existing between the number of correct answers in the CRT and the fraction of endowment contributed for the provision of the public good with punishment condition and without punishment condition respectively.

With Punishment Condition

In this treatment, participants with high CRT-score (2 and 3 correct answers) averagely contributed lesser fractions, 40% of their endowment to the group project than those with low CRT-score (1 and 0 correct answers) contributing an average of half of their endowment to the same course (ANOVA: F = 0.32, p = 0.81). This suggests that there exist a non-significant negative association between CRT-scores and contributions (Spearman's Rho = -0.035, p = 0.847). However, taking a closer look at the gender breakdown of these results, females with high CRT-score are more selfish in their contribution to the group project compared to their male counterparts with similarly high CRT-scores. Additionally, contributions by females with low CRT-scores (0-1) turns to be approximately half of the 50% average for females with high CRT-scores (2-3). Males, on the other hand, do not show any clear pattern as to whether selfishness and smartness could be explained by these results from the experiment with punishment condition.

Without Punishment

İn this treatment, the fraction of endowment contributed by participants sees a massive drop and thus the negative association between CRT-scores and contributions is enhanced (Spearman's Rho = -0.230, p = 0.205). Even more highlighting is the drop in the fraction of endowment contributed by females with high CRT-scores to a low of 15% when compared to an average of about 20% for their male counterpart. This can be explained by the fact that, in the absence of social norms and punishment for breaking such norms, individuals would generally be more reluctant to participate in the provision of a public good. Thus, the fear of punishment suppresses selfishness regardless of the level smartness. Moreover, the results from the without punishment condition rehashes the findings from the with punishment condition, that smarter people (measured here by 3 and 2 CRT correct answers) contribute lesser fractions of their endowments to a public good (ANOVA: F = 1.48, p = 0.24), and that it is even more significant if the person is a female as shown in figure 1b.

Figure 2: Endowment Contributed and Risk Preference
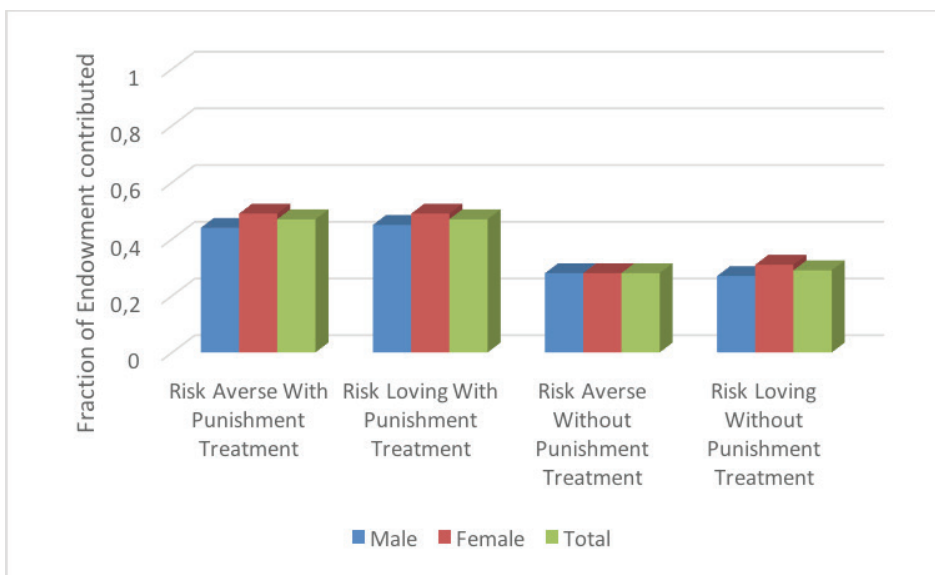
iii. Relationship between Risk Preference and Contributions

Figure 2 shows the relation that exists between the risk preference of participants and the fraction of their endowment that they contributed towards the provision of the public good. The figure combines the results for both With Punishment (on the left) and Without Punishment (on the right) treatments.

We observe that under the with punishment treatment condition, the risk-averse and the risk-loving categories contributed approximately 50 percent of their endowment to the public good. Interestingly, the sub-gender grouping in each of the risk preference classifications contributed approximately equal fractions of their endowment to the public good. This result implies that participants' levels of contribution are not different for the Risk Averse group and the Risk Loving group.

In the Without Punishment treatment, we see relatively lesser fractions of endowments contributed to the public good as expected. This, however, does not change the impact of the trend shown by the with-punishment treatment condition. Thus, there is no evidence of any strong difference existing between participants who are risk-averse and those who are risk-loving with regards to the fraction of their endowment contributed towards the provision of the public good. The ANOVA result in table 4 gives the evidence to confirm this. After various variations in the categories of Risk Preference across the two different treatment conditions, we have statistically strong evidence to conclude that, the risk preference of participants does not have any significant impact on the fraction of endowments contributed towards the provision of the public good.

Table 4 gives the summary of the ANOVA tests on contributions of different risk preference categorizations.

Treatment	Source of Variation (Categories)	F- statistic	P-value
With Punishment Treatment	RA and RL for Total participants	0.00	0.96
	RA and RL for Males only	0.01	0.94
	RA and RL for Females only	0.00	0.97
	RA Males, RA Females, RL Males and RL Females	0.16	0.92
Without Punishment Treatment	RA and RL for Total participants	0.02	0.88
	RA and RL for Males only	0.00	0.98
	RA and RL for Females only	0.07	0.80
	RA Males, RA Females, RL Males and RL Females	0.05	0.99

Table 4. ANOVA Results for Risk Preference and Contribution

Figure 2: Average Contributions across the Two Treatment Conditions
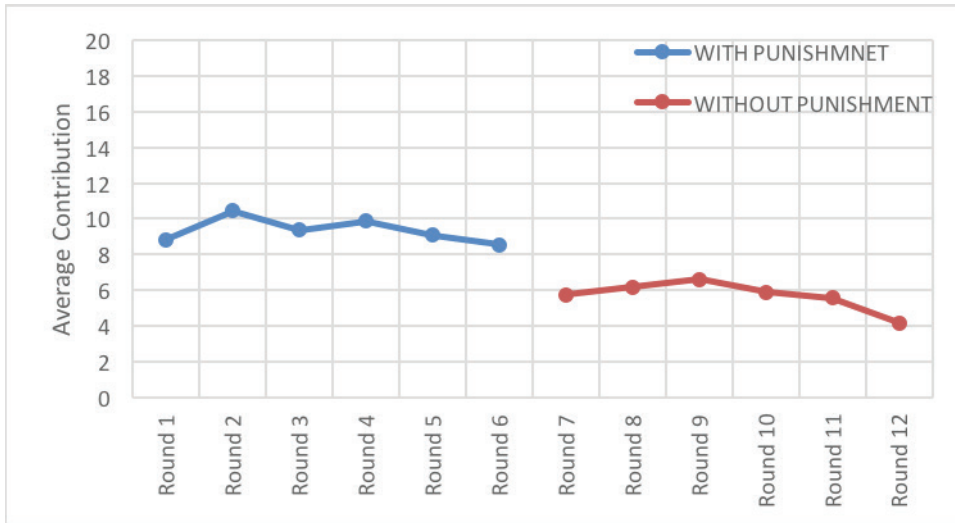
iv. The impact of punishment opportunity on cooperation

The availability of punishment opportunity impacts decisively on cooperation behavior of participants. Despite the fact that identities of participants are kept anonymous, cooperation among group members is higher in PGG with punishment opportunities than it is in the absence of punishment opportunity. The first six rounds of the experiment had punishment opportunities for participants to punish the lowest contributor in the group at the end of each contribution decision. A large increase in cooperation level is achieved after the first round in the punishment treatment. This result is robust even when the order of the treatment conditions is reversed (Fehr and Gachter, 2000). As seen from figure 2, cooperation flourishes at the first introduction punishment opportunities, this however sharply drops or breaks when such opportunities are removed in last six rounds (7 – 11 rounds) of the public goods experiment.

The first likely explanation for the significant positive impact of the punishment opportunity on levels of cooperation is that majority of the participants are ready to punish selfishness; thus people with the least contribution to the group project. This credible treat disciplines selfish participants there by improving their cooperation levels in subsequent rounds. Because selfish participants can be disciplined, there is a certainty for the norm-abiding participants that other group members will cooperate at high levels. Thus, punishment opportunities create the belief that there will be high levels of cooperation by other group members, and this belief induces high voluntary cooperation levels from conditional cooperators (Fehr and Fischbacher, 2004).

v. Risk tolerance and Cognitive reflection

In an effort to further understand whether participants' risk preference has a link with their cognitive reflection, we examine two framing effect options: immediate gain with certainty vs. higher expected value gamble; and two different expected value gambles. Table 3 gives the breakdown of the interaction between CRT-scores and the choice of the riskiness of participants.

Framing effect 1: *Certain gains vs. Higher expected value gambles*						
Options 1	1000 TL for certain immediately			1400TL with a probability of 80%		
CRT level	**High CRT**	**Low CRT**	**Total**	**High CRT**	**Low CRT**	**Total**
Male	4	1	**5**	4	7	11
Female	1	6	**7**	3	6	**9**
Total	**5**	**7**	**12**	**7**	**13**	**20**

Framing effect 2: *Two different expected values gambles*						
Options 2	100 TL with a probability of 20%			140 TL with a probability of 25%		
CRT level	**High CRT**	**Low CRT**	**Total**	**High CRT**	**Low CRT**	**Total**
Male	1	0	**1**	7	8	15
Female	1	2	**3**	3	10	**13**
Total	**2**	**2**	**4**	**10**	**18**	**28**

Table 3: Risk tolerance vs Cognitive reflection level

From the framing effect options 1: certain gains vs. higher expected value gamble; 11 male chose the higher expected value (1120TL) gamble over an immediate gain of 1000TL. More closely, 12.5% of participants, representing males with high CRT-score preferred the gamble with higher expected values to the riskless choice, whereas only 9% of participants, representing female with higher CRT-scores opted for the higher expected value gamble over the certain gains of 1000TL. Generally, there are more males (11 in total) choosing the uncertain higher expected value gamble over the certain gains than there are females (9 in total) regardless of the CRT level. The lesser number of males (5 in total) in choosing the riskless certain gains of 1000TL over the higher expected value gamble than there are females (7 in total) confirms that men generally prefer higher expected value gamble to low riskless gains. This goes to suggest that, being smart tends to make men take more risk and makes women patient.

From the framing effect option number 2: two different expected value gambles; it is not surprising that 28 of the participants, representing 87.5% chose the option with the higher expected value 35TL(140TL with a probability of 25%). The remaining 12.5% who opted for the lesser of the two expected values gambles shows the same number for high CRT-score and low CRT-score.

IV. CONCLUSION

This paper highlight the role of cognitive reflection capabilities in behavioral economics decision-making in a public good experiment. The findings indicate that, in a multi-round PGG, a negative relationship exists between CRT-scores and contributions to a public good. Secondly, the risk preference of individuals does not significantly affect their contribution levels towards the provision of a public good. Thirdly, the availability of punishment opportunities affects cooperation levels among group member in subsequent rounds in a non-one shot PGG. The punishment opportunity provides a credible threat to selfish individuals who might wish to contribute less. This threat disciplines such selfish individuals, and thus making high levels of cooperation to flourish. Finally, the link between smartness and risk tolerance of participants provides evidence to conclude that, being

smart tends to make men take more risk and makes women patient. For all correlational evidence from this study, interpretations should be cautiously done due to some unnoticed individual traits that could potentially influence parts of the reported link, instead studies that applied methods such as time pressure (Rand et al., 2014) or cognitive load (Duffy and Smith, 2014) seeking to limit the subject's ability to use existing cognitive capabilities in cooperation problems could be interpreted flexibly. However, as postulated in (Carpenter et al., 2013; Lohse, 2016) these methods seeking to restrict the use of existing cognitive capabilities could indeed have heterogeneous effects on subjects who have lower or higher existing cognitive capabilities. Thus, when comparing treatment effects across studies that applied these methods and/or the samples are collected from a population that is likely to assume that the unnoticed dispersal of cognitive capabilities is not the same. From a theoretical perspective, unlike one-shot games that lack a shadow of future interactions, which could punishment free riders, the findings of this study confirms that cooperation is a gainful and lucid long-term plan (Axelrod and Hamilton, 1981).

One key limitation of this study is the limited number of participants and the variance level of their cognitive capabilities, this is due to the fact that, in our experiment we used a student population and much so only students from the same study field -economics. Yet despite these limitation, it is intriguing to find out that participants' behaviors are consistent and reflects subjects' choices in public goods game experiments.

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5

DOES FINANCIAL INCLUSION AFFECT POVERTY AND INCOME INEQUALITY? EVIDENCE FROM EMERGING AND DEVELOPING COUNTRIES

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Abstract

Although poverty rate worldwide has been on the decline since 1990, the high levels of inequality and extreme poverty have remained perceptible in many countries. In this endeavor, policy makers worldwide focus their attention on searching ways for struggling with these long-term formidable challenges. Within these efforts, increasing financial inclusion has been seen as of primary interest. However, the link between financial inclusion, poverty and inequality is a relatively under-researched area. Accordingly, this paper investigates the impact of the accessibility and usage dimension of financial inclusion on poverty and income inequality for a panel of emerging and developing countries over the period 2004-2016 by employing dynamic panel data approaches. The results reveal that financial inclusion proxied by branch density in demographic terms significantly decreases poverty and income inequality, whereas usage indicator has no impact on both. Empirical findings further demonstrate that inflation and education appear to reduce, but higher age dependency tends to increase poverty and inequality.

Key words: Financial inclusion; poverty; income inequality; developing countries

1. Introduction

The world has seen a marked decline in extreme poverty over the past quarter century during which more than a billion people have escaped poverty. Specifically, the number of people living in extreme poverty declined from approximately 2 billion in 1990 to 736 million in 2015. In other words, global poverty rates dropped to 10 percent in 2015, down from 36 percent in 1990. To a large extent, this decline over the past 25 years can be attributed to the strong growth and increasing wealth experienced by many developing countries of East Asia and the Pacific, and more recently of South Asia. Nonetheless, this considerable progress is uneven across regions, Sub-Saharan African countries have struggled with increasingly higher extreme poverty rates (World Bank, 2018a). Yet, this unprecedented decline in poverty co-exists with more unequal income distribution or persistent high levels of income inequality. Specifically, international statistics reveal that income inequality has increased globally, while there have been remarkable differences in inequality patterns across countries, depending on their political and institutional structure (World Bank, 2018b). Thereby poverty and income inequality remain pressing challenges in many parts of the world and have been on the front burner of public policy discussions. Towards this end, the onus of policy makers is to combat poverty and ensure a more equal income distribution, while financial inclusion has gained attention worldwide as a potential key to such policy goals.

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Over the past decades, financial inclusion is underscored as a key global priority in pursuing sustainable develop-ment goals. Policy makers, in both developing and developed countries, have undertaken initiatives to extend fi-nancial access to the entire populace. The ease of accessibility and availability of the formal financial services for large segments of the population is of significant concern as it could increase the efficiency of resource alloca-tion in the economy and ultimately generate considerable impacts on welfare and promote shared prosperity. En-hancing access of the households to financial services is likely to reduce poverty and alleviate inequality by draw-ing the poor unbanked adults into the formal financial system, which would allow them to build up assets that could generate income in the future and improve their economic opportunities, enabling them to escape pov-erty. In that respect, a high level of inclusivity in the financial society of the country fosters inclusive growth by reducing income inequalities.

Several studies (Beck, Demirguc-Kunt, & Levine, 2007a; Demirguc-Kunt & Klapper, 2012; Honohan, 2004; Kim, Yu, & Hassan, 2018; Naceur & Samir, 2007; Pradhan, Arvin, Norvan, Nair, & Hall, 2016; Sarma & Pais, 2011) have attempted to explore the nexus between financial inclusion[2] and economic development/growth, where most of them show that access to financial services raises the per capita GDP growth, which may be interpreted as evidence of an increase in the standard of living of the hitherto 'unbanked' population. However, such evidence does not necessarily imply that financial inclusion disproportionately boosts those with lower income and leads to an improvement in income distribution. In other words, financial inclusion may foster economic growth by only increasing the income of the rich without improving the well-being of poor households. Therefore, the reach of benefits associated with enhanced financial inclusion may be limited as the rich benefit more from access to fi-nance, leaving lower income groups financially excluded, which could result in severe constraint on poverty and inequality reduction. In this regard, a profound understanding of the nexus between financial inclusion, poverty and income inequality is of particular importance.

Against this backdrop, the aim of the paper is to examine the empirical relationship between financial inclusion, poverty and income inequality in the particular context of emerging and developing countries. This analysis is particularly relevant for emerging markets and developing countries, where financial deepening is associated with an increase in income inequality (Dabla- Norris, Kochhar, Suphaphiphat, Ricka, & Tsounta, 2015). This sug-gests a scope for policies aiming to promote higher access to banking services by large segments of the population and especially the underprivileged ones like people with low levels of income, which could tackle deteriorating inequality and contribute to poverty reduction. In this respect, making finance more inclusive for all households and firms in emerging markets and developing economies takes on policy significance. Towards this end, this paper empirically investigates the impact of financial inclusion on poverty and income inequality for a panel of emerging and developing countries spanning the period of 2004-2016 by employing alternative financial inclu-sion measures and using GMM econometric techniques. As the empirical literature on the interplay between fi-nancial inclusion, poverty and inequality is relatively sparse, this paper contributes to that literature by providing evidence from a more diverse group of countries, i.e. emerging and developing countries from different regions.

The remainder of the paper is organized as follows: Section 2 reviews the existing literature on the relationship between financial inclusion, poverty and inequality. Section 3 presents the data and the econometric model. Sec-tion 4 provides the main empirical evidence. The last section concludes.

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2   Indeed, some of these studies also focus on the impact of financial development on economic growth and development as well.

2. Literature Review

Although research on financial inclusion has received considerable attention recently, only a limited number of studies have investigated its impact on poverty and income inequality. The relatively scant literature analyzing this relationship can be broadly classified in two categories: studies that focus on single-country and studies that utilize cross-country data. A vast majority of the studies fall into the second category as there are very few studies that focus on financial inclusion, poverty and inequality nexus within a single country context, possibly due to data limitations.

As an example of the first group of studies, Burgess and Pande (2005) examine the impact of state-led expansion of bank branches into rural unbanked locations on poverty in India. The findings display that rural branch expansion significantly reduces rural poverty. Allen, Carletti, Cull, Qian, Senbet, & Valenzuela (2013) focus on Kenya and explore the effect of Equity bank, which provides financial access particularly for underprivileged households, along with traditional commercial banks, on financial inclusion at the household level. The evidence suggests that commercial banks can improve underprivileged households' access to financial services by serving poorer segments of the population. Swamy (2014), focusing on the gender dimension of financial inclusion, examines the effect of financial inclusion programs on the economic up-liftment of poor households in different regions of India. The findings of the study indicate that participating financial inclusion programs significantly affects the income of the poor, while this impact turns out to be stronger for women. Recently, Ageme, Anisiuba, Alio, Ezeaku, & Onwumere (2018) provide an empirical analysis of the nexus between financial inclusion and poverty for the Nigerian case covering the period 2009-2014. The study deviates from the literature by considering financial inclusion channels via financial technological innovation and financial access to banking services by rural populace. The results of the study show that internet banking channel and microfinance credit have a negative impact on poverty reduction, which is contrary to the positive impact of automated teller machines usage and credit to the rural population. For China, Zhang and Posso (2019) construct a multidimensional financial inclusion indicator using household finance survey data and investigate its impact on household income, while the results point out a positive association between financial inclusion and income inequality reduction.

Among the studies in the second category, Honohan (2008) proposes a composite cross-country financial access indicator using information from banks and microfinance institutions, while he tests the influence of this indicator on reducing poverty and income inequality. His findings provide evidence that higher financial access lowers inequality as measured by the Gini coefficient. In a cross-country study, Mookerje and Kalipioni (2010) examine the impact of banking sector outreach, proxied by the number of bank branches per 100,000 populations, on income inequality, while an inverse relationship between access to bank branches and inequality is documented for the sample of developed and developing countries under investigation. Later on, Garcia-Herrero and Turegano (2015) examine the interplay between income inequality and financial inclusion by using various indexes including that of Honohan (2008) and Sarma (2012) for both developed and developing countries. The findings of the study display a significant negative relationship between income inequality and financial inclusion, whereas the size of the financial sector turns out to exert no impact on inequality. Focusing on Sub-Saharan Africa, Tita and Aziakpono (2017) explore the financial inclusion-income inequality nexus by using disaggregated data and adopting the cross-sectional regression technique. The purpose is to determine which aspects of financial access exert the largest impact on inequality. They find formal account use for business, electronic payments and formal savings to have a positive link with income inequality. More recently, Neaime and Gaysset (2018) investigate

whether financial inclusion contributes to poverty and income inequality reduction for a sample of eight MENA countries during the period 2002-2015. The results of the study indicate a positive influence of financial access on income distribution, while no statistically significant effect is reported for poverty measures. Park and Mercado (2018) construct a new financial inclusion indicator to explore the main determinants of financial inclusion both for a huge sample of advanced, emerging, and developing countries and a sample of developing Asian economies in an attempt to elucidate whether significant factors differ exclusively for developing Asia. The authors further test for the significance of financial access on poverty and inequality. The empirical results of the study show that while financial inclusion significantly lowers poverty for both samples, a statistically significant impact on income inequality is found only for the world sample, not for developing Asia. Following this line of research, Agyemang-Badu, Agyei, and Duah (2018) create their own measure of financial inclusion index to analyze the macroeconomic determinants of financial inclusion and assess its impact on poverty and income inequality for Africa. The findings of the study indicate that increasing financial access is associated with lower poverty and inequality for the African case.

As literature review above suggests, most research to date provide evidence from different regions of the world and reveal a significant impact of financial inclusion on improving income inequality and poverty, however the findings are mixed. Hence, the existing literature lack to provide empirical evidence on a sample of developing countries from different regions of the world, while this paper aims to fill this gap and contribute to cross-country studies.

3. Data and Econometric Model

To analyze the interplay between financial inclusion, poverty and income inequality, the following empirical model is set up:

$$Y_{i,t} = \propto_i + \beta Y_{i,t-1} + \gamma FI_{i,t} + \varsigma Z_{i,t} + \varepsilon_{i,t} \qquad (1)$$

In equation (1), i and t stands for the country and time period respectively, $\propto_i$ is the unobserved time-variant fixed effect and $\varepsilon_{i,t}$ are independently and identically distributed error terms with constant variance.

$Y_{i,t}$ indicates the dependent variable, which stands for both a measure of poverty and an indicator of income inequality[3]. Here, the poverty headcount ratio at 1.90 dollars a day as the percent of total population is employed for poverty rates *(POV)*. As a measure of income inequality the Gini index is used *(GINI)*, which is one of the widely used indicator of the extent of income distribution. It is derived from the Lorenz curve and can have a minimum value of 0 and a maximum value of 1, reflecting perfect equality and total inequality respectively.

FI_{jit} refers to the financial inclusion indicators which capture the accessibility and usage dimension of financial inclusion. Specifically, financial inclusion can be defined in terms of financial exclusion. In this regard, financial exclusion is classified into two categories; the first category being voluntary exclusion and the second being involuntary exclusion. This in effect emphasizes the necessity to make a differentiation between two concepts of financial inclusion: access to financial services, which provide the enabling environment to use financial services and

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3 Although issues of poverty and income inequality are broadly analyzed separately, they may be significantly interrelated (Kanbur, 2001). Inequality hampers poverty reduction via its impact on the pace of growth as put forward by Ravallion (2004). Along these lines, future research could focus on the interplay between financial inclusion, poverty and inequality by considering the interaction effects of Gini coefficient with poverty indicator.

the actual use of financial services (World Bank, 2014). In terms of extent, previous literature (Amidzic, Massara, & Mialou, 2014; Beck, Demirguc-Kunt, & Martinez- Peria, 2007b) have distinguished the concept of financial inclusion from two broad dimensions. The first dimension involves the outreach or access to financial services, while the second has to do with the use of financial services. The outreach dimension is related to the physical ability to reach a point of service quite easily. According to literature, some proxies are available that effectively capture the outreach dimension of financial inclusion. The first of these proxies include automated teller machines, scaled either demographically or geographically, while the second of these proxies include the number of bank branches that are scaled in a similar manner. In demographic and geographic terms, the literature considers higher branch and ATM intensity as indicators of greater access to financial services by households and enterprises. The second dimension involves the usage dimension of financial inclusion, while the number of loan accounts per capita and deposit accounts per capita are the variables that are addressed the most in the literature as effective proxies reflecting the usage dimension. Following this line of thought, three different measures of financial inclusion are adopted in the empirical analysis. Accordingly, the financial inclusion indicator is measured either by bank accounts per 1,000 adults *(ACCOUNT)* to capture the usage aspect, or by the number of automated teller machines per 100,000 adults *(ATM)* and the number of commercial bank branches per 100,000 adults *(BRANCH)* to appeal the outreach dimension.

Finally, the vector Z_{kit} in Equation (1) includes several control variables that have been commonly used in the similar literature. Among the macroeconomic explanatory variables, the growth of GDP per capita *(GDPPC)* is incorporated to account for economic growth[4] and trade openness *(TRADE),* measured by the sum of exports and imports of goods and services as a share of GDP, is included to capture the relative importance of international trade in the economy. The potential importance of economic growth on poverty and income inequality has been documented by several studies in theoretical and empirical economics literature (Barro, 2000; Dollar & Kraay, 2002; Durlauf, Johnson, & Temple, 2005; Kuznetz, 1955; Ravallion, 1995; Rubin & Segal, 2015), yet the existing empirical evidence provide mixed results with regards to the impact of economic growth on poverty/inequality. Along these lines, the sign of the *GDPC* variable could be either positive or negative in empirical specifications. Since trade is considered to increase welfare, it is reasonable to presume that trade openness contributes negatively to poverty and income inequality. However, earlier studies on trade and poverty display mixed results, while some of them indicate that trade openness decrease poverty (Dollar & Kraay, 2004; Krishna, Mitra, & Sundaram, 2010; Le Goff & Singh, 2014; Maertens & Swinnen, 2009), others demonstrate that more trade is associated with an increase in poverty (Jeanneney & Kpodar, 2011; Topalova, 2007; Wade, 2004). Regarding its impact on income inequality, it is claimed that increased trade flows between countries possibly deteriorate income distribution, yet the net impact depends on differences in terms of relative factor abundance and productivity across economies. Especially for the case of emerging markets and developing countries, however, high trade flows may improve income inequality by raising demand and wages of abundant lower-skilled labor (Dabla- Norris et al., 2015). Therefore, the expected sign of the coefficient of *TRADE* variable in specifications is ambiguous. As another macroeconomic control variable and a significant determinant of poverty (Cardoso, 2002; Dollar & Kray, 2002; Easterly & Fischer, 2001; Ravallion & Datt, 1999; Singh & Huang, 2015), inflation *(INF)* measured by

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4 A considerable number of empirical studies reveal a Kuznets' inverted U-relationship between income per capita and income inequality. Accordingly, to check robustness of the results, the empirical model is extended to include GDP and GDP squared as control variables. The results do not vary drastically and are not reported for brevity.

the average consumer price index in constant 2010 prices, is included since higher rates of inflation may lead to higher rates of poverty by decreasing the purchasing power and real income of households. Moreover, regarding the impacts on inequality, higher rates of inflation may reduce income inequality among the heavily indebted poor by redistributing wealth between the creditor and debtor in favor of the latter or, on the contrary, by fostering economic growth, it may widen the inequality gap if rich households benefit more from income generated through growth. Hence, the estimated value of the *INFL* variable coefficient could be either positive or negative. Moreover, as salient features of most developing countries, high population and high dependency ratio could be potential drivers of poverty and inequality, therefore they are incorporated into the econometric model. More specifically, age dependency ratio *(AGED),* measured by the percentage of people younger than 15 or older than 64 to working age population, is included since a large segment of population do not earn income in countries with a high dependency ratio as they are either too young or above the retirement age. This would eventually lead to lower labor productivity and higher poverty. In a similar vein, population size *(POP)* is introduced into specifications, as growth in population afflicts poverty and tends to widen the gap between the poor and the rich. That is, the variables *AGED* and *POP* are expected to have positive signs. As an indicator for human capital accumulation, secondary school enrollment rate *(EDUC)* is included into the specification since education can play an important role in reducing poverty and income inequality, whereas a vast number of empirical research (Awan, Malik, Sarwar, & Waqas, 2011; Gounder & Zing, 2012; Gregorio & Lee, 2002; Kappel, 2010) also confirmed this significant relationship between education, as being the most important human capital investment, and poverty/inequality. One can expect higher levels of educational attainment to boost the economic status of the poor and hence, contribute to poverty alleviation. Moreover, the rising level of average schooling is also expected to reduce income dispersal, yet the impact depends on skill premium. Finally, the rule of law is included as a control variable following Park and Mercado (2018), Agyemang-Badu et al. (2018), as capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, this indicator may also have an impact on poverty and inequality as well.

The data set covers selected emerging and developing countries[5] based on data availability and spans the period 2004-2016. The data on financial inclusion indicators are extracted from the International Monetary Fund's Financial Access Survey, while inequality and poverty measures are obtained from the World Bank's Povcal database. Other country specific control variables, namely GDP per capita, population, trade openness, age dependency and education are retrieved from the World Development Indicators. Lastly, data specific to rule of law is gleaned from the World Bank Governance Indicators. Table 1 presents the description of the variables used in the empirical analysis, while Table 2 provides the summary statistics.

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5   The countries under investigation are: Armenia, Belarus, Brazil, Bolivia, Bulgaria, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Georgia, Honduras, Indonesia, Iran, Kazakhstan, Kyrgyz Republic, Malaysia, Mexico, Moldova, Mongolia, Montenegro, Pakistan, Paraguay, Peru, Philippines, Russian Federation, Rwanda, Serbia, Sri Lanka, Thailand, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Zambia.

Table 1. Description of Variables

Variable	Notation	Description
Poverty	POV	Poverty headcount ratio at 1.90 dollars a day (% of population)
Inequality	GINI	Gini index
Financial inclusion	BRANCH	Number of bank branches per 100,000 adults
Formal borrowing	ATM	Number of automated teller machines per 100,000 adults
Female	ACCOUNT	Number of bank accounts per 1,000 adults
GDP per capita growth	GDPPC	Growth rate of GDP per capita (constant 2005 $)
Inflation	INF	Average consumer price index (2010=100)
Trade openness	TRADE	Trade (% of GDP)
Population	POP	Logarithm of population (millions)
Age dependency ratio	AGED	Dependents (% of working-age population)
Education completion	EDUC	Secondary school enrollment (% gross)
Rule of law	LAW	Governance indicator, [-2.5,2.5], rule of law is weakest and strongest

Table 2. Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min.	Max.
POV	383	6.3825	10.5787	0.4000	68.3000
GINI	383	40.4934	8.8028	0.2400	59.5000
BRANCH	483	18.8276	25.7316	0.3918	257.696
ATM	474	37.6259	31.2750	0.0391	185.324
ACCOUNT	285	687.2181	599.3138	6.4789	3379.81
GDPPC	466	0.0350	0.0374	-0.1442	0.1521
INF	507	110.6506	127.293	29.8742	2740.27
TRADE	505	77.7962	36.0753	22.1058	210.3738
POP	507	16.868	1.5577	13.3267	21.05974
AGED	507	54.8067	14.5512	34.5215	109.5111
EDUC	407	84.2727	18.6804	14.8632	126.054
LAW	507	-0.4723	0.4799	-2.2410	0.7385

4. Results

Following the earlier literature (Beck et al. 2007a, 2007b; Neaime & Gaysset, 2018; Rioja & Valey, 2004), a dynamic specification is opted to account for persistency in poverty and inequality. Toward this end, equation (1), which is a widely employed specification by the finance literature, is estimated using Arellano and Bond's (1991) dynamic generalized methods of moments technique in order to determine the impact of financial inclusion on poverty and income distribution for a large panel of emerging developing economies. This procedure allows controlling for reverse causality between financial inclusion, poverty and inequality as poverty and inequality reduction may also lead to an increase in the demand for formal financial services

or may result in more political pressure for inclusive finance as well. Furthermore, these potential endogeneity problems could yield inconsistencies and biases in estimated coefficients. In this respect, dynamic panel estimator developed by Arellano and Bond (1991) provides efficient and consistent estimates by addressing to this potential biases, overcoming the endogeneity problem and accounting for the dynamic processes in the dependent variables.

Table 3 and 4 present the estimation results with the poverty and Gini coefficient respectively as the dependent variable, where models 1 through 3 report the results associated with different measures of financial inclusion.

Table 3. Estimation Results of Financial Inclusion on Poverty

	Model 1 (branch)	Model 2 (atm)	Model 3 (account)
POV (-1)	0.6822***	0.6007***	0.5653***
	(0.0382)	(0.0295)	(0.1726)
BRANCH	-0.0014**		
	(0.0007)		
ATM		-0.0015	
		(0.0013)	
ACCOUNT			-0.0007
			(0.0009)
GDPPC	-0.0003	-0.0002	-0.0005
	(0.0002)	(0.0002)	(0.0003)
INF	-0.0047**	-0.0030*	-0.0272
	(0.0020)	(0.0018)	(0.0295)
TRADE	-0.0056*	-0.0027	-0.0307
	(0.0030)	(0.0031)	(0.0218)
POP	1.3507	-2.7233	-0.1505
	(1.7443)	(0.9197)	(0.4460)
AGED	0.1619***	0.1619***	0.2635***
	(0.0294)	(0.0269)	(0.0875)
EDUC	-0.0772***	-0.0673***	-0.2269***
	(0.0161)	(0.0102)	(0.0428)
LAW	2.0448	1.9678	1.0584
	(0.2899)	(0.2778)	(1.1612)
No of obs.	208	205	130
Sargan	0.3884	0.6929	0.3551
AR(2)	0.1532	0.1448	0.4090

Notes: The values in parenthesis are robust standard errors clustered for countries.
***,**,* denote statistical significance at 1%, 5% and 10% levels, respectively.

As seen in Table 3, the empirical results indicate a negative and significant relationship between poverty and financial inclusion measured by the number of commercial banks branches per 100,000 inhabitants at the 5% level of significance. Other financial inclusion variables, namely *ATM* and *ACCOUNT,* enter into the models with the expected signs but are significant at standard levels. For the case of model using bank accounts per 1,000 inhabitants as the financial inclusion indicator, this result may also be partly reflecting the small size of the sample. According to these findings, poverty seems to be sensitive only to financial inclusion measured by the extent of bank branches, that is to say, a higher number of banks facilitate poor households' access to financial services, which contributes to poverty alleviation in the emerging and developing countries under investigation.

Among the control variables, the coefficient estimates of *AGED* are significant with positive sign in all specifications. Therefore, the effect of the proportion of the population below 15 and above 65 years of age is negative for alleviating poverty, which confirms priors as a higher dependency to working age population is likely to cause many more individuals to fall below the poverty threshold. Notably, education (*EDUC*) reveals a significantly negative relationship with poverty, confirming apriori expectations. That is to say, there is a positive association between educational attainment and poverty reduction for the case of emerging and developing countries. This result is consistent with the findings of Neaime and Gaysset (2018) for MENA region. The coefficient estimate of *INF* is found to be negatively significant for models using outreach measures of financial inclusion, however it turns out be statistically insignificant, for model 3 which employs the usage measures. This result implies that during periods of high inflation, many more households lose their purchasing power and thereby are more likely to fall into poverty for the sample of emerging and developing countries in question. Furthermore, the coefficient of degree of trade openness, which accounts for the influence of external developments on poverty, is found to be negatively significant for the first model, yet it turns out to be statistically insignificant for the other two. On the other hand, population size and GDP per capita, which are established to have some explanatory power in the related literature, do not yield a statistically significant impact on poverty. Finally, regarding the *LAW* variable, findings point out that rule of law has no significant role in poverty reduction.

Table 4. Estimation Results of Financial Inclusion on Inequality

	Model 1 (branch)	Model 2 (atm)	Model 3 (account)
GINI (-1)	0.2440**	0.2966**	0.2100*
	(0.0959)	(0.1209)	(0.1213)
BRANCH	-0.0033*		
	(0.0020)		
ATM		-0.0008	
		(0.0078)	
ACCOUNT			-0.0007
			(0.0008)
GDPPC	-0.0006**	-0.0074***	-0.0005*
	(0.0003)	(0.0026)	(0.0003)
INF	-0.0110***	-0.0074**	-0.0382**
	(0.0028)	(0.0026)	(0.0148)
TRADE	-0.0032	0.0108	-0.0061
	(0.0110)	(0.0120)	(0.0212)
POP	-1.8407	-0.1340	-0.2519
	(2.7024)	(4.8835)	(5.9999)
AGED	0.3221***	0.1980*	0.2143*
	(0.0845)	(0.1175)	(0.1267)
EDUC	-0.0320**	-0.0108	-0.0293
	(0.0123)	(0.0117)	(0.0190)
LAW	-0.3578	0.1574	0.8851
	(1.0970)	(1.5598)	(1.3448)
No of obs.	208	205	130
Sargan	0.3442	0.4997	0.3551
AR(2)	0.5478	0.3320	0.4090

Notes: The values in parenthesis are robust standard errors clustered for countries.
***,**,* denote statistical significance at 1%, 5% and 10% levels, respectively.

As Table 4 displays, only branch penetration per capita is found to significantly affect income inequality among financial inclusion indicators. Specifically, income inequality is found to decrease with financial access proxied by the number of commercial bank branches per 100,000 adults at significance level of 10%. This suggests that banking sector outreach measured by branch intensity affects the poorer segments of the population in a positive way, which subsequently narrows the income gap between the rich and the poor. Similar to the estimation results of the specifications with poverty as the dependent variable, there is no statistically significant impact of the other two financial inclusion indicators, i.e. *ATM* and *ACCOUNT*, on income inequality.

Through all specifications, the coefficient for the *GDPC* variable is statistically significant with a negative sign. Hence, positive changes in growth are associated with reductions in income inequality. This finding suggests that economic growth, which in turn, raise average living standards, do have an impact on income distribution and

narrow the income gap. Likewise, the coefficient estimates attached to *INF* variable is negative and statistically significant for all models, which implies that higher rates of inflation contributes to a more equal income distribution possibly through redistributing wealth in favor of the poor. This finding is in line with that of Park and Mercado (2018) for developing Asia. Further, the significantly positive coefficient estimates for the *AGED* variable demonstrate that economies with higher percentage of dependents to working-age population tend to have higher income inequality, confirming the anticipations. The *EDUC* variable is significantly negative for the first model, whereas it is insignificant albeit with a negative sign for models 2 and 3. Lastly, coefficient estimates for trade openness, population size and rule of law are found to be statistically insignificant among the control variables through all specifications.

Overall, findings of the study reveal that financial inclusion measured by bank branches per 100,000 adults have a significant negative impact on poverty and income inequality for the panel of emerging and developing countries under investigation. That is to say, higher number of banks facilitate and enhance financial access of poor households and subsequently improves income distribution. The insignificant affect arising from the usage dimension of financial inclusion might be reflecting the smaller size of the sample and should be taken with a grain of salt. Nonetheless, it may still be the case that the banking systems in these countries are not developed enough to facilitate and broaden the usage of bank accounts for the poor segments of the society and consequently remain ineffective in poverty and income inequality alleviation. Among the control variables, inflation, gross secondary school enrollment rate and age dependency ratio can be listed among the most important factors that affect poverty and income inequality. In particular, inflation rate and education appear to contribute positively to poverty and inequality reduction, whereas higher age dependency is found to increase both. Notably, trade openness seems to decrease poverty and economic growth contributes income inequality.

5. Conclusion

Although poverty rate worldwide has been on the decline since 1990, the high levels of inequality and extreme poverty have remained perceptible in many countries, thus inequality and poverty alleviation have once again come to the forefront in economic discourses. In this endeavor, policy makers worldwide focus their attention on searching ways for struggling with these long-term formidable challenges. Within these efforts, increasing financial inclusion has emerged as a possible remedy and been seen as of primary interest. Consequently governments in developing countries worldwide have recognized the importance of an inclusive financial system as a significant driving force of economic growth, poverty alleviation and income inequality reduction over the past years.

Along these lines, financial inclusion has been addressed in several empirical research, but only a limited number of studies have explored the nexus between financial inclusion, poverty and income inequality. In this respect, this paper aims to advance the existing literature by empirically testing the effect of accessibility and usage dimension of financial inclusion on poverty and income inequality in a panel framework for 39 emerging and developing countries from 2004 to 2016. Exploiting dynamic panel data approaches, the impact of financial inclusion on poverty/income inequality is estimated by adopting economic size, inflation, trade openness, population, age dependency, education, and the rule of law as explanatory variables.

The overall results of the study reveal that greater access to financial services is positively contributing to poverty and income inequality alleviation for the emerging and developing countries. More specifically, financial inclusion proxied by the number of bank branches per 100,000 adults significantly reduces poverty and inequality,

but the measure capturing usage dimension turns out to have no significant impact, partly reflecting smaller sample size. Among control variables, inflation and secondary school enrollment rate contribute positively to poverty and inequality reduction, whereas higher age dependency is found to increase both. The estimation results further demonstrate that trade openness decrease poverty.

Through careful policy implementation, financial inclusion enables greater participation and equal access to the formal financial system by different segments of the society, which may narrow the bridge between the poor and rich and contribute to poverty and inequality reduction. The policy implication of this result is that the governments can utilize financial inclusion as an effective tool to achieve sustainable development goals. Thus, emerging and developing countries should reinforce efforts to expand access to the formal financial system and furthermore, mitigate randomness in delivering financial services through implementing targeted policies. In this respect, the main policy concern is to enhance the access of most vulnerable households to basic financial services in fighting poverty and income inequality. Moreover, other modes of financial inclusion, such as increasing stream of credit to small and medium sized enterprises or small-scale farmers, should be considered. Notably, in order to achieve the challenging goals of reducing poverty and narrowing the income gap, developing countries should focus on policies to increase school enrollment rates and massively spread education in addition to creating job opportunities for the young population.

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6

CRYPTOCURRENCIES AND BLOCKCHAIN IN 4TH INDUSTRIAL REVOLUTION PROCESS: SOME PUBLIC POLICY RECOMMENDATIONS

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ABSTRACT

Last revolution of industry history is known as "Industry 4.0" or also known as 4th Industrial Revolution that forms the basis of increasing technology network has emerged as digital technology-based digital revolution. Digitalisation in 4th Industrial Revolution reflected to currency and cryptocurrencies has become a part of today's world. Blockchain technology as the basis of virtual currency is one of the leading technologies under 4th Industrial Revolution and gradually increases impact range. Bitcoin as a cryptocurrency that introduced blockchain technology to the world can be characterised as the most important financial technology (fintech) innovation of digital age. Income from bitcoin as cryptocurrency are at significant level and risks of using bitcoin in money laundering and financing illegal activities have led countries to apply regulations for cryptocurrencies. This study aims to analyse regulations for cryptocurrencies that gradually increases market cap under 4th Industrial Revolution process.

Key Words: Cryptocurrencies, Bitcoin, Regulation

INTRODUCTION

Revolution terms refers to instant and radical change. Instant emergence of these changes can take years (Schwab, 2016, p.11). Revolutionary manufacturing process started as mechanical manufacturing tools are used at the end of 18th century. This first industrial revolution is followed by second in the beginning of 20th century. This revolution that started in 1970 and lasted until today is ended with third industrial revolution. In third revolution, electronic and information technologies (IT) are used to increase automation in manufacturing processes. In this period, machines were not only used for heavy work. Machines also undertook some of the brain work (Kagermann, Wolfgang & Helbig, 2013, p.13). Today, we are the beginning of fourth industrial revolution. In this process, while there are rapid changes in certain fields, there are evolutionary and stable changes rather than revolutionary changes in other fields. In both cases, it is possible to say that these changes are inevitable. In this new era, an integration is formed between physical objects and information network and internet connects smart machine systems. As a result, real world transforms into a massive information system. This period emphasise digitalisation of all productive units within an economy and connecting these units (Dujin, Geissler & Horstkötter, 2014, p.7)

"4th Industrial Revolution" that started in Germany and spread to Europe, US and other developed countries is included in global agenda. Industry 4.0 is expressed with similar words such as Digital Transformation and Digitalised Industry and it has reached a position to impact all sectors and different scales (Fırat & Fırat, 2017,

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pp.10-11). One of the technologies introduced with 4th Industrial Revolution has been blockchain technology. Various applications of blockchain technology helps 4th Industrial Revolution. This technology that answers requirements of digital age is introduced with cryptocurrency.

Cryptocurrency are the largest innovation in fintech. Fintech that emerged as connection of financial services with technology is the first application area of blockchain system. Fintech concept is used for defining various innovative business models and technologies that has the potential to transform financial services sector (IOSCO, 2017, p.4). Cryptocurrencies that has blockchain technology have created safe and uninterrupted service that runs for 24 hour. Cryptocurrencies are introduced to our life with a cryptocurrency called bitcoin. Cryptography based system of bitcoin enables sending payment directly to other party without payments going through financial institutions (Chuen, 2017).

New technologies lead to transformational changes in global economy. An important development in this transformation process is emergence of cryptocurrencies. Bitcoin that is first cryptocurrency caused a global change just like internet. *E-mail for internet in 1992 is the same as bitcoin for blockchain (*Rabah, 2016a, p.127). In the long run, these technologies will offer safe and low cost payment options and has the potential to increase financial participation. However, these technologies also create risk. Cryptocurrencies can be used as tools in money laundering, financing terrorism, tax evasion and other illegal activities (IMF, 2016, p.6). Since cryptocurrency bitcoin has these risks and increase market cap and as cryptocurrencies have permanent position in current world, it is necessary to make certain regulations about these cryptocurrencies.

In this context, the aim of this study is to question the role of government policies in the face of the risks of cryptocurrencies arising from today's technological developments. This study assesses how should cryptocurrencies that are essential factors in the 4th industrial revolution regulate and it explores the impact of regulatory financial policies for cryptocurrencies. Accordingly, overregulation should be avoided and global standards must be met while implementing the regulations, taking into account the requirements of the digital age.

1. 4th Industrial Revolution: Digital Age

Water and steam power was used for the first industrial revolution to mechanize and increase production. In second industrial revolution, electric power was used for serial production. In third industrial revolution, electronic and information technologies were used for automatization. Current fourth industrial revolution is built on third industrial revolution. This revolution is a digital revolution that exists since the middle of past century (Schwab, 2015). Current 4th industrial revolution under digital era is faster than other industrial revolutions. It almost took 120 years for spinning machine which is the symbol of first industrial revolution to spread across Europe. However, it took less than 10 years for internet to spread around the world (Schwab, 2016, p.13). In this sense, this industrial revolution based on internet infrastructure is rapid and at global dimension. Figure below shows industrial revolutions from Industry 1.0 to 4.0.

Figure 1: Industrial Revolutions
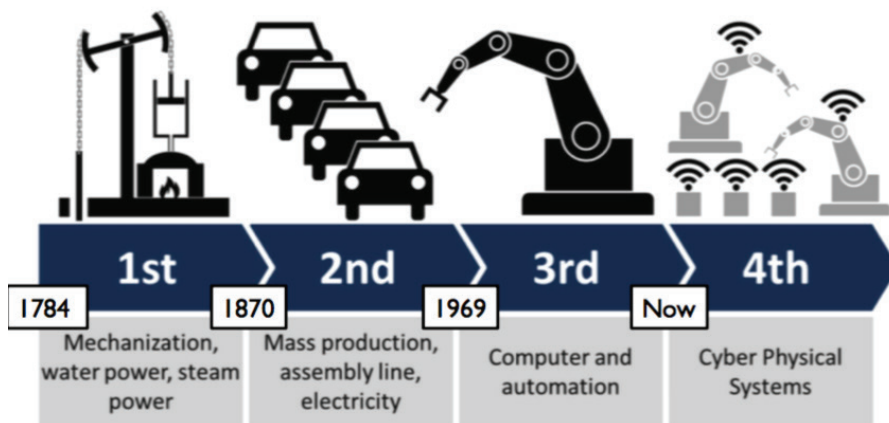
Source: *Roser (n.d)*

4th industrial revolution is characterised by combining technologies that blur the lines between physical, digital and biological fields (Schwab, 2015). In this sense, today's world is in new economic and technological development phase. This new digital economy brings new ideas as well. Digitalisation, Disintermediation, Democratisation and Decentralisation are phenomenon associated with new digital economy. (Chuen, 2017, p.2). There are new technology based main pillars of this global transformation called Industrial Revolution. These developments that can be regarded as driving force of industrial revolution is listed as "Quantum Computers", "Artificial Intelligence", "Internet of Thing", "Cybersecurity", "5G", "Blockchain Technology" (Canos, 2018, p.4). Since blockchain technology facilitates financial operation process and contributes to cybersecurity related processes, this technology has been widely used today (Abdullah & Abdullah, 2018, p.9). Blockchain technology can be seen as a technology that both meets the needs of digital age and acts as an engine for industrial revolution in this age.

2. Overview to Blockchain Technology As a Driver Force of 4th Industrial Revolution

Blockchain is a dispersed databased linked by connecting record keeping blocks with cryptography. Blockchain technology that forms a digital basis for virtual money has been introduced to world with bitcoin. Focus point of blockchain technology has been financial applications. In this sense, it can be stated that blockchain technology is first used in fintech field. Fintech defines as a new financial industry that applies technology to improve financial activities. It inculudes financial services delivered by technology (Schueffel, 2017; Swan, 2017). Fintech aims to make financial services faster, easier and more efficient. For this purpose, cryptocurrencies are traded on the market with blockchain technology. Although block chain technology was used for the first time in fintech, this application has potential in manufacturing, agriculture, health, supply chain, logistic and energy fields (Abdullah & Abdullah 2018). With blockchain technology, main objective is to enable new business models, innovative organisation styles and business process to increase system efficiency. Smart contracts[4] under this technology enable automatizing work orders by organising business flow. All processes including data reporting, monitoring,

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4 Blockchain smart contracts represent agreements between individuals by using computer programs. Smart contracts are programmed under certain rules and conditions and autonomous without any intervention (Udokwu et. al., 2017, p.1). These rules are executed with automatized codes and triggered automatically (Hans, Zuber, Rizk & Steinmetz, 2017, p.2).

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controlling and approving will be easier than ever. High potential application fields of blockchain technology can be seen in all segments of society and industry. For example, blockchain in finance sector can simplify business processes by creating secure agreement and transaction records (Subic, Xiang, Pai & Serve, 2018). In this sense, applications of blockchain in different sectors and fields help industrial revolution (Abdullah & Abdullah 2018; Subic et al. 2018).

Blockchain eliminates intermediaries such as broker and bankers. Individuals, institutions and machines can communicate in smooth and autonomous manner and complete transactions independently. During these transactions, secure interaction is enabled (Subic et al., 2018). Industry 4.0 technologies such as blockchain cyber and physical systems, Internet of Things (IoT), 3D Printing, Augmented Reality and Smart Sensors are integrated with technology platforms for more effective use. By using blockchain technology, industrial business models are designed in entirely connected format and providing end-to-end secure services. Blockchain technology started to gain importance to ensure trust, transfer value and store data (Subic et al., 2018).

2.1 Key Benefits and Challenges of Blockchain Technology

Blockchain technology is a decentralised system. It is not based on a database approved by central authority. This is an immutable platform that protects rights of parties and ensure security between parties. This is a technology based on secure database collectively stored with decentralised and reliable methods. This means that the system operates without intermediaries and all blockchain participants make decisions. Each action is recorded on blockchain, recorded data are presented to all participants of blockchain and these records cannot be altered or deleted. Results of this record represents transparency, immutability and reliability of blockchain (Bahga & Madisetti, 2016, p.534).Blockchain is designed to show any problem and fix this problem if necessary. This advantages enables traceability in blockchain technology. High reliability of blockchain technology is obtained when entering the network at individual level. Because every individual in blockchain will provide a different identity linked to account and all transactions are conducted on this identity. Last advantage is faster transactions with blockchain (Dataflair team, 2018).

System being new creates challenges in using this system. One of the greatest disadvantage of blockchain is high energy consumption. Keeping a real-time record requires high energy consumption. Data stored on blockchain is immutable forever and sensor-proof structure consumes high amount of energy and time. These repeated transactions are waste (Fauvel, 2017). Signature verification is another challenge of blockchain. Because since signature is required for cryptography in every transaction, high calculation power is needed for these transactions. This is one of the reasons for high energy consumption (Blockchaintechnology, 2016). These high costs are the biggest disadvantage of blockchain. Average cost of a transaction is between $75-160 and energy consumption corresponds to majority of these costs (Dataflair team, 2018). Another reason is high initial capital cost of blockchain (Fauvel, 2017)

3. Last Chain of Money Evolution - Cryptocurrencies: Bitcoin

In 4th industrial revolution process, one of the leading innovations in e-commerce is cryptocurrency. Cryptocurrency with blockchain technology is based on cryptography system. Current developments in cryptography are important elements to develop and protect the society. While internet brought uninterrupted decentralised

communication around the world, cryptography enabled free and private communication on this network. In 1976, Whitfield Diffie and Martin Hellman published a paper called "New Directions in Cryptography". Public key cryptography concept is expressed in this paper. They had no idea back than but this was the foundation of cryptocurrency (Wunderlich, 2018).

The number of cryptocurrency in use since 2009 is more than 2000. The total market cap of cryptocurrency in circulation today is $268.293.905.111 (www.coinmarketcap, 2019). These cryptocurrencies are traded at global cryptocurrency exchanges as Binance, Coineal, Bitforex, RightBTC et. al. The following table shows the Top 10 Cryptocurrencies by Market Capitalization

Table 1: Top 10 Cryptocurrencies by Market Capitalization

Name	Market Cap*
Bitcoin	$186.938.991.371
Ethereum	$19.769.512.709
Ripple (XRP)	$11.307.372.156
Bitcoin Cash	$5.561.588.174
Litecoin	$4.463.060.446
Tether	$4.086.723.860
EOS	$3.590.450.603
Binance Coin	$3.496.838.067
Bitcoin SV	$2.391.441.507
Monero	$1.326.247.411

* It should be remarked that this data is very volatile, like the cryptocurrency market itself.
Source: https://coinmarketcap.com (Last updated: Sep 09, 2019)

Although there are different cryptocurrencies like Ripple, Ethereum and Litecoin, most common, most recognised and highest transaction market cap to bitcoin. Bitcoin is defined on its website as "*a consensus network that enables a new payment system and a completely digital money*". This cryptocurrency does not have an owner or centralised authority. This is the first decentralized peer-to-peer payment network without government support and empowered by users (Bitcoin.org, 2019).

Bitcoin was first suggested by Wei Dai in 1998 as a money created and circulated by using cryptography instead of centralised system (Bitcoin.org, 2019).The first bitcoin specification and proof of concept was published in 2009 by Satoshi Nakamoto. Satoshi Nakamoto published an online article called "Bitcoin: A Peer-to-Peer Electronic Cash System" and explained theoretical basis and operation of bitcoin Nakamoto, 2008). It is stated that bitcoin caused a global change just like internet (Chuen, 2017, p.1). Previously, none of the businesses, organisations or individuals who tried to establish a new currency system like this succeeded. This success of bitcoin depends on properties that came with blockchain technology.

3.1. Benefits and Risks of Bitcoin

With various benefits provided by bitcoin to users, market cap is increasing every day. Decentralised filing system and peer-to-peer network of bitcoin enables users to use from anywhere and simultaneously. Internet is enough for bitcoin exchange (Dutra, Lupo & Anilkumar, 2018, p.15).

Another benefit of bitcoin is not having intermediaries. There is no need for intermediary, third party or efficiency to verify transactions or records (Dutra et al., 2018, p.15). Bitcoin is based on fast transfer with low cost framework and enables freedom of payment to users. Payments with bitcoin can have little or no fees. Since this system does not have any intermediaries, there is low transaction cost. Doing bitcoin exchange anywhere and anytime is an indicator of freedom of payments (Chuen, 2017, pp.22-23).

Another contribution of bitcoin is related with identities. With this technology of bitcoin, it enables to remove known identities. Decentralised structure of bitcoin enables users to complete transactions by using cryptography and their unique private keys that are stored in a bitcoin wallet. This property shows that bitcoin enables privacy in trade. Bitcoin plays a key role in data democratisation[5] by enabling privacy in trade (Dutra et al., 2018, p.15).

User control of bitcoin can be considered as a benefit. Each bitcoin transaction can only be completed with private key of a user. However, if user loses private key, that user can no longer access his/her bitcoins. Additionally, poor wallet protection property of bitcoin raises certain risks against malware designed to steal bitcoin. In this sense, as in other financial activities, users must have security awareness in bitcoin related financial activities (Chuen, 2015, p.23).

One of the most important benefits of bitcoin is anonymity. With cryptography based method of bitcoin, commercial activities cannot be traced back to individual users. Although each transaction of the network is open to public and has open record, blockchain users cannot keep detailed record of their individual balance (Rabah, 2016a, p.127)

Another advantage of bitcoin is merchant benefits. Using bitcoin as a means of payment can be more economic for merchants compared to alternative payment methods. For example, while using credit card is expensive for merchants, using bitcoin can have no cost. Additionally, bitcoin is a more reliable payment method compared to credit card (Chuen, 2015, p.23). Bitcoin has low correlation with stock, security and real-estate. Bitcoin and other cryptocurrencies can be considered as assets with high potential to self-sustain. This low correlation shows decentralised structure of this asset class (Wunderlich, 2018).

Bitcoin forms platform for further innovation. Fundamentally, bitcoin can be considered as payment network. However, it has a potential to bring more innovation. It has the potential to present another service with decentralised structure. Bitcoin may be adapted futures contracts, sports betting, stocks et cetera. Smart property and assurance contracts can be realised based on bitcoin technology (Chuen, 2015, p.24; Brito & Castillo, 2013).

Leading criticism to bitcoin is about enabling illegal activities. Especially in the beginning and for some groups, bitcoin was considered a platform to use illegal gains such as money laundering, tax evasion, financing terrorism and drug trafficking. However, market cap of bitcoin increased gradually and this perception has been changed. Anonymous structure of bitcoin and enabling privacy in trade prevents us to know what current users do and trade in bitcoin markets with their gains from unknown sources. Additionally, various bitcoin markets started to

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5   "Data democratisation" can be defined as an initiative to distribute data obtained with suitable analysis methods equally without damaging data integrity (within an organisation) (Dutra et al., 2018, p.13).

record customers to reduce attractiveness of bitcoin among criminals. Additionally, immutable structure of bitcoin contributes to solve double spending problem (Chuen, 2015, pp.24-25). Main reason bitcoin is considered as a risky investment tool in terms of economy is internal change and volatility properties of bitcoin. Today, there are still bitcoin price fluctuations. This creates risk for users (Chuen, 2015, p.24).

Bitcoin as the most famous and most funded cryptocurrency brings together various benefits and risks as mentioned above. Cryptocurrencies based on the driving force of 4th industrial revolution has permanent position in today's world. Today, there are couple of billion dollar companies such as Microsoft and Dell that accept bitcoin as payment option (Rabah, 2016b).

4. Cryptocurrencies and Financial Policies

4.1. Cryptocurrency and Regulation: Requirements, Challenges and Problematic Areas

Cryptocurrency has been widely included in finance, technology, international law since 2009. Cryptocurrency that has been frequently used in the press has developed for long years and there are still question marks about its position against finance and monetary system (Walton, 2014, p.2). In this regard, there are applications differences between financial policies of governments as main policy tools for cryptocurrencies. Cryptocurrencies have multidirectional structure. A currency can be used to purchase a good or service, kept for long time investments as a commodity or earned from a service like transaction verification (Elliott, Lima & Singel, 2018, p.20). For example, Japan considered bitcoin as legal payment tool and Canada evaluated bitcoin as commodity (Şeren Kurular & Akbaş Akdoğan, 2018, p.938). Roadmap on how governments position virtual money is important to do regulations. However, realising regulations is not easy due to properties of cryptocurrencies (anonymous, decentralised, cross-border, advanced technology). However, financing terrorism, tax evasion, money laundering activities indicate challenges and necessity of regulations for cryptocurrencies (Houben & Snyers, 2018, pp.53-56). For example, cross-border properties for governments and central banks cause significant challenges for regulations and prosecutions (Srivastava & Qureshi, 2018, p.50). Additionally, when cryptocurrency is accepted as national currency, seigniorage income of states will be under risk. For example, seigniorage income in US changed between $30-90 billion per year and these numbers correspond to 1 or 2% of the federal budget. Besides cryptocurrencies can facilitate tax evasion by effecting tax bill (Elliott et al., 2018, p.20). In this sense, cryptocurrency regulations aims for the following (Auer & Claessens, 2018, p.53):

➢ Financial stability by ensuring market and payment system integrity
➢ Preventing/fighting fund use for illegal activities
➢ Protecting both consumer and investor from fraud

Following basic topics should be considered how public policies can regulate crypto assets (Demertzis & Wolf, 2018, pp.10-11):

➢ *How to apply taxing:* One of the important points in regulations is related with how to tax income from crypto assets.
➢ *Financial stability problem:* High price volatility on the market can cause financial stability problems.
➢ *Approach to innovative financing sources:* Permitted blockchain solutions can decrease transaction cost of financial intermediary and expand financing access of small businesses. Although it is still early to emphasise importance of benefits of this technology, public authorities should not prevent innovation.

➤ *Using in illegal activities:* Anonymous transactions with cryptocurrencies enable using this channel in illegal activities. For example, market reaction after closing Silk Road (illegal online marketplace for drugs) indicated that cryptocurrency in fact play an important role in this sector.

➤ *Protection of investor and consumer:* Awareness should be raised across investors and consumers for fraud.

It is clear that regulations are necessary under these conditions. However, excessive regulations should be avoided. Important thing here is about finding the right balance. In this sense, target of a blockchain regulation is good administration by providing standards to protect end-user, protecting individuals from criminals and protecting investor/end user from fraud. Governments must provide complete and healthy informing for all transactions. At this point, investors are aware of risks (Borg & Schembri, 2019, pp.188-189)

4.2. Cryptocurrency Regulation Forms and Examples

In this world where technology advances every day, demand and interest to digital currencies increase as well. Therefore, this is a new field in public policies and technological development sensitive structure of these policies indicate necessary steps. While governments fight this situation with regulations, there will be discussions about forms of public policies in the following years (Duros, 2018, p.18). Accordingly, states can provide various financial regulations for cryptocurrencies. This could be realised in following fields (Elliott et al., 2018, p.27):

➤ *Financial stability and prudential regulation*

➤ *Market integrity and investor protection*

➤ *Limitation to illegal activities*

➤ *Consumer protection*

Accordingly, in such market, illegal use can be prevented, cryptocurrency links of financial institutions can be prohibited, activities can be limited or standardised, access can be restricted and price regulations can be applied (Elliott, et al., 2018, p. 27). As it can be seen, steps by governments can occur in multiple channels. Here, holistic approach for regulations are required. If these policy fields are considered as legs of table, holistic approach will prevent any setback.

Table 2: Cryptocurrencies Regulation Examples

Regulation Type	Actions and Country Examples
Special rules for defined asset types can be created	Digital currency manager regulation * Record keeping * Reporting *Anti-Money Laundering and/or Fighting Against Terrorism Financing (Ex: US)
Informing users for possible risks	Publishing researches on this topic and making warnings
Adapting current regulations to cryptocurrencies	Adapting existing regulations to process (Ex: US)

Source: *Almeida &Pedrosa-Garcia, 2018, pp.9-10.*

Some countries prefer restrictions as a solution. Accordingly, authorised institutions can partially or completely ban using cryptocurrencies. Although bans change between countries, basic bans are as follows (Almeida & Garcia, 2018, p.10):

• Banning digital currency
• Banning bitcoin transaction between banks (China and Mexico)
• Banning bitcoin transactions in retail
• Banning accepting digital currency
• Banning financial tools based on digital currency (China and Belgium)

Some countries in the world that banning the use of crypto currencies are Bolivia, the Dominican Republic, Venezuela, India, Iceland, Macedonia, Russia, Egypt, Iraq and Bahrain (Reese, 2019).

When countries defined cryptocurrencies as assets or currencies, it is possible to see taxation as fundamental policy. Countries apply sales taxes, capital gain taxes or transaction taxes based on investment assets, fixed assets and currencies. Majority of tax authorities accepted bitcoin as capital asset and collected capital tax for purchasing and sales. For example, US IRS (Internal Revenue Service) decided in this direction. However, anonymous structure in blockchain technology, increased number of cryptocurrencies and exchange markets and lack of central authority might turn taxation of cryptocurrencies harder. This complex situation challenges tax payers as well. Difficulty to track geographical location requires global coordination and information sharing for tax applications (Elliott et al., 2018, pp. 20-21).

There are approaches that assign important role and responsibilities to central banks and other authorities to turn cryptocurrency mainstream. Accordingly, regulations at cryptocurrency to fiat money exchange can be a solution to overcome this problem. Based on this view, as internet changes how people do their routine work, cryptocurrencies will be stage to similar transformation (Srivastava and Qureshi, 2018, p.51). For example, as Ohio, US accepted bitcoin for tax payments in 2018 is regarded as an important step to integrate current processes to technology. Here, payment is converted by BitPay to dollar as institution account transaction fee is lower (De Silva, 2018).

Regulations should be integrated to technical properties of crypto assets in decentralised systems. Since it is only a software code on the internet, regulation of bitcoin is challenging. However, assets operating with cryptocurrencies can be regulated. Banning mining farms in China can be given as an example. Also, exchanges can be regulated as in the case of Europe (Demertzis & Wolf, 2018, p.12). Main point here is to present new systems that will adapt steps to technological developments as the new reality of the World in the 4th industrial revolution process.

4.3. Global Developments of Cryptocurrency Regulations and General Assessment

When it is considered that virtual currency phenomenon operate based on supply and demand mechanism, as people continue to prefer bitcoin, it is clear that bitcoin global markets will be unaltered (Şeren Kurular & Akbaş Akdoğan, 2018, p.938). Based on this reality, global concerns related with cryptocurrency is mainly related with money laundering and financing terrorism. Based on these reasons, FATF (Financial Action Task Force)[6] pub-

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6   FATF, as intergovernmental organisations established in 1989 is a policy making organ that promoted legal and regulatory precautions to fight against threats like financing terrorism and money laundering. (For detailed information, see also. https://www.fatf-gafi.org/)

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lished a guideline to regulate the market. In G20 summit organised in Osaka, Japan on 28-29 June 2019 (G20, 2019), countries announced to support this guideline.[7] Accordingly, it is possible to list main elements on this topic in G20 Osaka Leaders' Declaration as follows (G20, 2019, pp.4-5):

- Technological innovations can provide benefits to financial systems. At this point, although crypto assets are not threat elements for financial stability, developments should be followed.
- G20 undertakes applying FATF standards to virtual assets.
- FSB and other standards follow works of specification organs.
- There are efforts to increase cyber flexibility.

Governments need time to develop laws that legitimise or restrict cryptocurrencies. In this sense, intergovernmental cooperation should be ensured to integrate international agreements to local conditions (Spithoven, 2019, p.13). Because singular regulation of governments for internationalising industry causes weak foundation. Naturally, regulation requirements change between countries. However, global framework in this process will guide a more effective road to fight against problems (Massad, 2019, p.37). Global coordination should be obtained for main issues when public policy for cryptocurrencies is created. International cooperation plays an important role to solve issues like preventing tax evasion, financing terrorism, money laundering. At this point, G20[8] and Financial Stability Board (FSB)[9] are important institutions to discuss these topics and develop solution recommendations. Global cooperation is necessary to create global standards and to comply with legal systems (Demertzis and Wolf, 2018, p.13). Main issue here is not about regulating crypto assets. Main issue is about presenting these regulations under cohesive framework or as in single action. In second case, since issues such as high costs, risk for financial system, insufficient investor protection are presented, solution is consistent regulations for crypto asses regulation (Massad, 2019, pp.37-38). Policies must be balanced. While these policies try to reduce existing risks, they need to prevent overregulation that will hinder innovation. In this sense, emergency risks such as tax evasion must be central issue for regulations on virtual currencies. Later, less urgent risks such as financial stability or monetary policies should be considered (IMF, 2016, p.7).

5. Conclusion

Current age is under industrial revolution called 4th industrial revolution that is fed by development of digital technologies. Digitalisation process that emerged with Industry 4.0 and accelerated over time led to certain new technologies such as internet of things and big data. In this process, blockchain as a facilitator of 4th industrial revolution emerges as bitcoin application which is cryptocurrency. Cryptocurrencies that gained more importance with digitalisation are evaluated as an output of this change and development process. Bitcoin is a financial asset attracting attention with high market cap and increasing demands. It is hard to predict whether cryptocurrency will be the mainstream currency of the future. Although there are competitors, bitcoin is still dominating cryptocurrency market.

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7 Applying this regulatory guide on cryptocurrencies emphasise factors that actors need to consider in this process (for detailed information, see also. http://www.fatf-gafi.org/)

8 A union including largest developed and developing economies and represents 2/3 of global population, 85% of global GDP and 75% of global trade. (For detailed information and members, see also. http://g20.org.tr/about-g20/g20-members/)

9 International formation that provides recommendations by monitoring global financial systems (For detailed information, see also: https://www.fsb.org/about/)

With increasing market cap and demands of cryptocurrencies especially bitcoin, it is necessary for governments, authorities and/or international institutions to make policies in this field. Basic driving force for these policies might be expressed as putting income from illegal activities to market without any questions. Additionally, issuing money is under the monopoly of governments and money policy is an effective tool. Therefore, these two factors played an important role on preventive policies to use cryptocurrencies. Increased popularity of cryptocurrency bitcoin as a currency belonging to an individual independent of central planner, government control or auditing and significant market cap of bitcion has caused governments to accept that cryptocurrencies are an important part of digitalising world.

It is clear that there's no escaping regulation. Today, these regulations are mandatory rather than necessary. Early policy examples in this area mainly focus on restricting the use of crypto currencies. However, in currency global world with global money and capital mobility, banning a currency might not be sufficient to prevent using that currency. This might lead to underworld currency. In this sense, countries must adapt to digital age and should not oppose this digital transformation. Rather than banning bitcoin, countries should focus on bitcoin regulation. First step in this field is to decide whether bitcoin is a commodity, security or currency and to identify legal status of bitcoin and other virtual currencies. Currently, taxation of bitcoin has been discussed globally. First step in this field should be Correctly positioning cryptocurrencies in legal terms and doing necessary updates in legislations is needed. Certain rules and guidelines must be created to make a regulation in this field. Later, governments must consider taxation of income from bitcoin as this is the most urgent topic. An important topic that needs to be emphasised during cryptocurrencies regulation is to make these regulations without preventing innovation. Governments should avoid overregulation. Certain rules and standards can enable providing guidance in this field. International institutions can play an active role to execute consistent and balanced global policies rather than limiting technologies and innovations that answer to needs to digital age. Holistic approach can be provided by determining global standards. Although there are different views and approaches for cryptocurrencies around the world, global standards can be created for fundamental risks (tax evasion, money laundering etc.) and cooperative and harmonious regulations should be applied. Future of cryptocurrencies will be shaped by regulations applied by countries.

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7

THE SHARE OF THE INVESTMENTS IN THE CENTRAL GOVERNMENT BUDGET IN TURKEY AND THE NECESSITY OF REVIVING INVESTMENTS IN THE CONTEXT OF GLOBAL TRENDS

Meral Fırat[1]

Abstract

After the 2008 global economic crisis, a recession was experienced in the world economy and its impact was also seen in the field of international trade. While the foreign trade volume of many industrialized countries narrowed, the investments had also declined, especially due to the decrease in growth rates, the increase in private sector debts, and some risks in politics and economics of the developing countries. The protectionist policies have been brought to the agenda by many countries regardless of the welfare-enhancing effects of the international aggrements and the free market economy upon the worsening of economic indicators after the crisis and being felt its effects by the economics managers. Trade restrictions starting between the U.S. and China have evolved into a global trade war affecting the entire world economy and also Turkey's economy. The aim of this study is to investigate the general economic effects of trade wars on the global economy, particularly the U.S. and Chinese economy. In this context, it has been examined that how the direct capital flows to developing countries, especially to Turkey changed, and the share allocated for the investment outlays from the central government budget; and it has been put forward what needs to be done to stimulate investments.

Key Words*: International Trade, Investments, Protectionism, Trade Wars*

INTRODUCTION

The trade war, initiated by The U.S. against China, EU, Canada and Mexico on the grounds that it may prohibit the import of goods in case of 'detection of weapons, explosives or a threat from a country' against a country which is a member of World Trade Organization by referring to the Article 21 of General Agreement on Tariffs and Trade (GATT), has expanded to contain the whole World. The U.S. has not only implemented additional customs duty on certain goods, but it has also prohibited exchange of technology from Chinese and EU companies, which increased the tension among G7 countries. The unilateral termination of the nuclear contract with Iran by The U.S. and its threats against EU, China and Turkey along with many other countries on not the purchase oil from Iran indicates the significance of the issue in terms of global economics and politics. (Alkin,2018).

The tension between The U.S. and China that occurred on March 2018 has affected the economies of the two countries as well as the economy of the whole World. The European Union has started to slow down upon the impacts of the global trade wars and the uncertainty of Brexit. The global rate of indebtedness has increased more than 3 times the national income when compared to the global pre-crisis period. The main problem for Turkey under such circumstances is the extent to which the economy will be affected.

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THE SHARE OF THE INVESTMENTS IN THE CENTRAL GOVERNMENT BUDGET IN TURKEY AND THE NECESSITY OF REVIVING INVESTMENTS IN THE CONTEXT OF GLOBAL TRENDS

Meral Fırat

It is stated in the report published by the Organization for Economic Cooperation and Development (OECD) that in the list of countries that will be the most affected by the continuation of the trade wars between The U.S. and China and a prospective implementation of protectionist economic measures, Turkey will be the first, followed by Israel on the second place and South Korea on the third place, due to their economies being more outward-oriented.

The direct capital flow to the developing countries has decreased due to the tight monetary policies and downsizing in the global economy. This has had a negative impact on Turkey and lead to a necessity to revive the investments since it allocates a limited share to the investments from the central government budget and it cannot directly attract foreign capital into the country.

1. Overview of the World Economy

As seen below on Charts 1 and 2, the World Trade that achieved growth below the expectations in 2018 appears to be going to maintain its low rate of growth in 2019 and 2020. The World Trade Organization expects a prospective growth of 2.6 % in the global economy in 2019. The growth rate was 3% in 2018, and it is expected to be 3% again in 2020. However; these numbers will be affected by the tensions faced in the global arena. The growth at 3% rate in 2018 was significantly below the rate of 4.6% achieved in 2017. The growth in export volume in Asian countries has decreased to 3.8% in 2018 from 4.6% achieved in 2017, while the import volume in the same periods has decreased down to 5% from 8.3%. The World Trade Organization had predicted the rate of growth as 3.9%. However; the growth rate accrued below the predictions due to the economic impacts of the trade war between The U.S.-China that occurred on the fourth quarter. The World merchandise totalled a 19.4 trillion dollar export against a 19.8 % trillion import in 2018. This means an increase by 10% compared to 2017. Nevertheless; despite the decline in the volume growth rate, such rise would be attributable to the increase in oil prices in 2018. (Azevedo,2019)

Chart 1: 2011-2020 World Trade Volume and Economic Growth (Annual change%)

Source: *World Trade Organization, www.wto.org,25 April 2019*

Chart: 2 2012-2018 Growth in World Export and Import
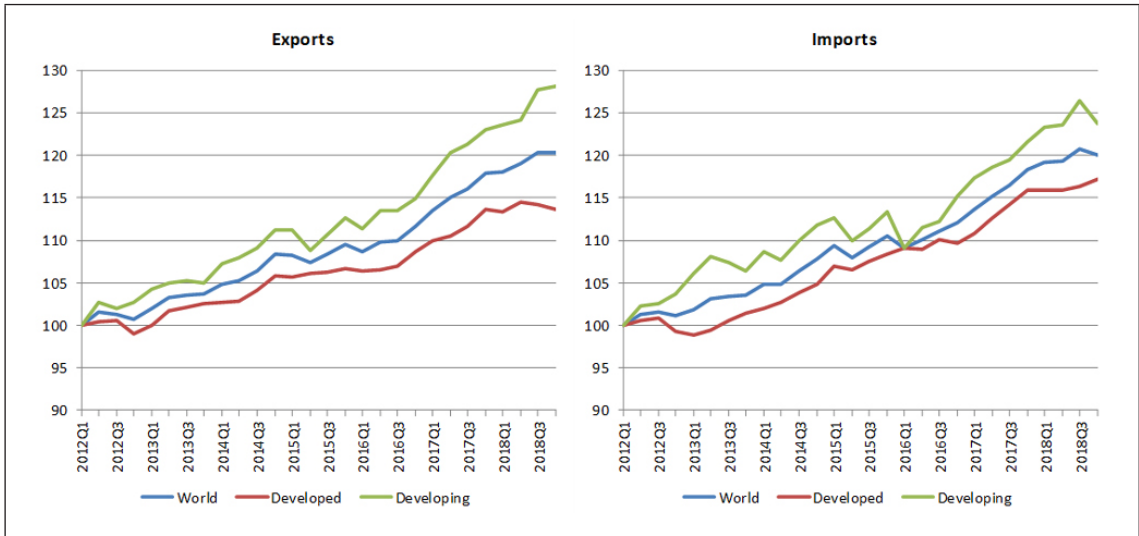
Source: *World Trade Organization, www.wto.org,25 April 2019*

It took a long time for the World Economy to relieve from the recession and for the demand to revive after the 2008 Global economic criss, and the World Economy has not regained its former status of power yet. During 2003-08, emerging market and developing economies investment growth reached historic highs averaging 12 % a year, more than twice the long-term average growth rate. This rise was the result of the increase in commodity prices. (Köse et al., 2017:5)

The international trade has also suffered both the global economic crisis and the global recession, and the foreign trade volume in many industrialized countries narrowed down compared to the preceding year. Many counries sought protectionist and self-reliant maeasues as a solution in the long term regardless of the welfare-enhancing effects of the international aggrements and the free market economy upon the worsening of economic indicators after the crisis and being felt its effects by the economics managers. Thus the protectionist policies have been brought to the agend. (Durusoy, 2013:511).

There has been an investment slowdown in the developing countries after the global economic crisis.The main reasons of which are the decrease in direct investment flow to the developing countries as of 2009, as can be seen in the Chart 3 below, and the narrowing down of the trade volume, as well as increase in the private sector debt, decrease in the growth, political and other economic risks and slowdown in certain activities.(Köse et al., 2017:5)

Chart: 3 Foreign Direct Investment Inflows, Global and by Group of Economies 2005-2017 (Billions of Dollars and Per Cent)
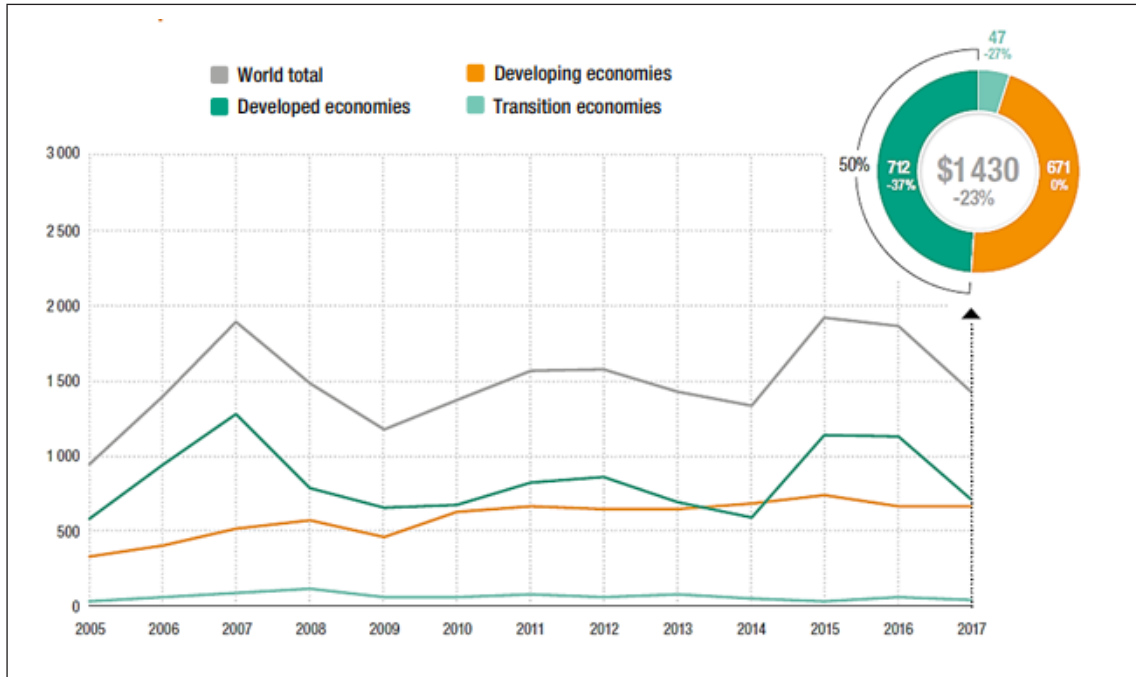
Source: *UNCTAD, Word Invesment Report 2018,p.2*

As shown in the Chart 3 above; foreign direct investment flows fell by 23% in 2017 compared to 2016, down to $1.43 trillion. The decline proves a stark contrast trend compared to fast growth in gross domestic product and trade in 2017. Inward foreign direct investment flows to developed economies fell sharply, by 37%, to $712 billion. Foreign direct investment inflows to developing economies remained at $671 billion. Foreign direct investment flows to transition economies declined by 27% down to $47 billion, which constituted the second lowest level since 2005. (UNTACT, 2018:3-4)

2. Investments in Turkey

According to Turkish Republic of Central Bank findings, Foreing Direct Investment (FDI) inflow to Turkey decreased by 19% in 2017 and amounted 10.8 billion $ compared to the same period last year. In this period, Real Estate purchases had 43% share in the inflow. Nevertheless; the capital inflow has actually in remained at the same level in 2017 compared to 2016. However, there is also an accelerated outflow of around $1.8 billion. Since 2013, the industry sector had 31% share of the total FDI inflow to Turkey. Under Industry sector, Manufacturing and electricity & gas production sub- sectors had shares of 19% and 9%, respectively. While the service sector has been the leading sector with for 36% share of the total FDI inflow to Turkey, the sub-sectors of service sector; finance and insurance activities had share of 17%. In the same period, real estate purchases had also 29 % share of the total FDI inflow.(YASED,2017:18)

Central Bank data also shows that, in 2018 (January-November), foreingn direct investment inflows to Turkey showed a slight decrease (1.6%) compared to the same period of the last year, with amount of 10.3 billion $. The share of real estate properties purchased by foreigners was 43% in the total FDI inflow. (YASED,2018:28)

While one of the reasons of the investment slowdown in Turkey is the decrease in the foreign direct capital inflow, another reason is the significantly low share of investments allocated from the central government budget. According to the Table 1 below that shows the investments in 2019, the share of capital and capital transfer allocated from the central government budget is 6.7%. Public investments serve as an infrastructure for the private sector and are considered to be motivators. The narrowing down of the investments at such rate will lead to decrease in the growth and increase in the unemployment.

Table: 1 2019 Central Government Budget Appropriation Quotes

Types of Expenses	(Thousand TRY)	Per Cent Distribution of Appropriation Quotes
Personnel Costs	247.302.546	25.7
Soc. Sec. Inst. Gov. Premium Costs	43.375.018	4.5
Good and Service Purchase Cost	67.550.825	7.0
Interest Expenses	117.317.000	12.2
Current Transfers	391.337.230	40.7
Capital Expenditures	54.432.026	5.7
Capital Transfers	10.045.697	1.0
Credit	21.749.451	2.3
Substitute Appropriation	7.865.890	0.8
Total	960.975.683	100

Source: *2019 Budget Justification, p:64 www.bümko.gov.tr*

3. Protectionist Policies and Trade Wars

While Turkey and the developing countries are experiencing the abovementioned circumstances in terms of investments, global trends in the World and the trade wars between the U.S. and chine pose a negative impact both on the global economy and Turkish economy. When we look at the details of the trade war between the U.S. and China, we see that the alleged technological espionage and national security have key roles in addition to the tradable goods and services. Not willing to step down from the position of the technological leadership of the World, the U.S. has decided to implement certain sanctions based on some methods and accusations. (Ulusoy,2018:1)

The factor that has affected the liberal international trade approach the most thus far has been implemented by the U.S. President Trump. Trump has implemented a number of trade restriction measures based on the opinion that the U.S. allows China a significant trade deficit. When these measures were not limited to Chine alone

but were targeted on the goods exported from EU, South Korea and Mexico and Turkey, there occurred a World-wide trade war.

Trade wars initiated by the implementation of tariffs by the U.S. on China on 23 March 2018 started to grow in into a global trade war, which eventually jumped onto Turkey. The U.S. President Trump has doubled the tar-iffs on steel and aluminum purchased from Turkey, which Turkey responded with additional tariffs at the rate of more than 50% and 100% on some imported goods of US origin, as declared on the Official Gazette published on 15 August 2018. The U.S. expelled Turkey from the Generalized System of Preferences that offers some ad-vantages in trade taxes in which Turkey was included on 1975 on 17 May 2019 (Aytekin ve Uçan,2018:858).

The economic slowdown observed at a global scale due to the impact of trade wars affected all the countries, in particular, the countries that sell raw material. The oil prices decreased despite the cutbacks by OPEC, which led to difficulties for the countries the economies of which depend on oil and natural gas, such as Saudi Arabia and Russia. Canada that provides a significant amount of raw material to the U.S. and Latin America that is rich in energy and natural resources appears to be going to be the gainers of the trade wars. The main losing parties of these wars, other than the U.S. and China, are East-Asian countries and Australia. These countries play an im-portant role in the global value chain and they provide raw materials and intermediate goods to Chinese econ-omy. Meanwhile, the countries such as South Korea, Vietnam and Malaysia serve as global centers of production of intermediate goods for China. Therefore; a potential decrease in the demand of intermediate goods would af-fect these economies negatively, and these countries shall leave the global recession having been subject to a greater impact. In addition to the above; the countries leading in transport of goods the economies of which depend on trade such as Singapore shall experience the negative impacts of trade wars more since they serve as the transport centers in global supply chain. (Keskin,2019:1)

Chart:4 Estimated impact of an escalation in trade tensions – first-year effects
(GDP response, deviation from baseline levels; percentages)
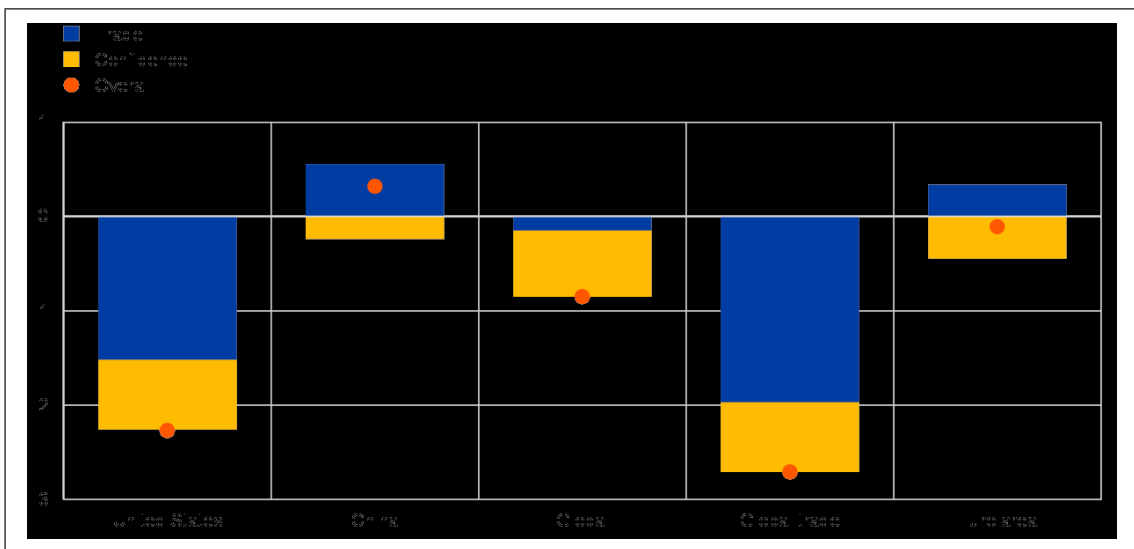
Source: *ECB Calculations*

In the study titled "The Economic Implications of Rising Protectionism: A Euro Area and Global Perspective" by Vanessa Gunnella and Lucia Quaglietti who are economists of European Union Central Bank, a scenario was simulated to research the effects of trade wars in the future where trade and confidence effects were investigated. In the research, the new tariffs between the U.S. and its trading partners indicate a moderate fall in the economic growth rate of Euro Area. It was simulated in the study that the U.S. tariffs with its trading partners by 10%. In such case, the US products would be more expensive in the global market, which would cause more harm to the U.S. economy compared to the Chinese and European economies. The same study indicates that any harm caused by the simulated trade war on thye job security in Europe would be significantly eliminated because of the increase in export to the countries other than the U.S. Based on this, global trade and global activity could fall by more than 2.5% and 1% respectively as a result of the combined negative effects via the trade and the financial channels. The study indicts that the escalation of trade wards would lead European companies to take over the market share of the US companies in China. While it is emphasized that the liberalisation within the framework of multilateral cooperation has been a key factor driving global economic prosperity, it is stated that the increaing protectionism would harm the global trade. (Vanessa and Quaglietti,2019:13-15)

Table 2 below shows the estimated macroeconomic data of some countries in 2019 by IMF. According to the IMF World Economic Outlook 2019, while the current account balance in the US economy is subject to a deficit, China has a surplus. The developing economies that have difficulty in gaining access to foreign investment due to lack of confidence and uncertainty experience economic slowdown. The assumption that the inflation will increase in the U.S. at the end of the year is probably based on the trade wars.

Table:2 IMF Assumptions Regarding Macroeconomic Data of Some Countries in 2019

| 2019	Growth	Inflation (Average)	Inflation (Year-End)	Current Account Balance / GDP (%)	Unemploy. Rate
USA	2,3	2,0	2,7	-2,4	3,8
Euro Area	1,3	1.3	1,4	2,9	8,0
Japan	1,0	1,1	1,7	3,5	2,4
Germany	0,8	1,3	1,6	7,1	3,4
China	6,3	2,3	2,2	0,4	3,8
India	7,3	3,9	4,1	-2,5	-
Brazil	2,1	3,6	3,6	-1,7	11,4
S. Africa	1,2	5	5,3	-3,4	27,5
Turkey	**-2,5**	**17,5**	**15,5**	**0,7**	**12,7**

Source: *IMF, World Economic Outlook 2019*

Chart 5 below shows the indebtedness that have a negative impact on the economy in China. Despite the current account surpluses in Chinese economy shown in Table 2 above, the economy has a high amount of government debt as shown in Chart 5 below.

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Chart : 5 Debt Burden of China (its share in GDP)
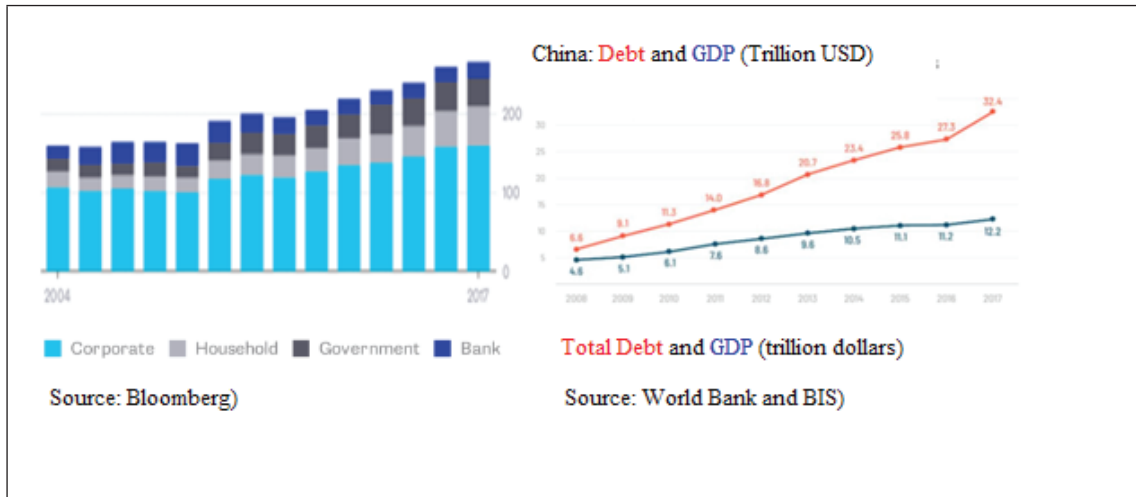
The International Monetary Fund (IMF) (2018) simulates the economic consequences of mounting China-US trade tensions and warns that should these trade threats materialise, the GDP of the US and China will be reduced by 0.9% and 0.6%, respectively, leading to a 0.4% fall in long-term world GDP. A report from the European Commission in July 2018 also downgraded its economic growth forecast for the European Union, suggesting that the effect of the trade disputes is not restricted to China and the US (Chong and Li,2019:2).

Two-way capital flows between the US and China dropped to the lowest six-month value in five years: Combined direct investment and venture capital flows between the US and China totaled $13 billion in 1H 2019, which represents an 18% drop from 2H 2018 and the lowest level since 1H 2014 (Hanemann et al.,2019:1).

China's currency, the renminbi, weakened slightly against the dollar at the started of August. Cheaper renminbi would go a long way toward offsetting the impact of trade tariffs on the prices of Chinese goods in the US. However devaluation would carry significant risks for China. Many of China's biggest enterprises have borrowed heavily in dollars, and a weaker renminbi would greatly increase the cost of servicing this external debt. Worse, the prospect of devaluation could spark massive capital flight from China as anxious companies and individuals seek to protect the value of their assets. That is what happened four years ago when the renminbi was allowed to weaken significantly, and the Chinese authorities subsequently had to spent 1 trillion dorlars in foreign-exchange reserves to prevent the currency from crashing (J. Kohen,2019).

Table:3 Progress of Turkish Foreign Trade 1923-2018
(Million Dollars)

Years	Export	Import	Trade Deficit
1923	51	87	-36
1930	71	70	1
1940	86	53	33
1950	263	286	-22
1960	321	468	-147
1970	589	948	-359
1980	2.910	7.909	-4.999
1990	12.959	22.302	-9.343
2000	30.700	53.100	-22.400
2010	121.000	177.000	-56.000
2017	156.000	233.000	-76.000
2018	167.000	223.000	-55.000

Source: *TUİK,2019*

Table 3 above shows the foreign trade numbers of Turkey between 1923-2018. Turkey implemented protectionist policies from 1930s to 1980s. Within the scope of import substitution policies, as of the second half of 1920s and mainly in 1930s, it increased the tariffs and implemented quota on the import. The extended duration of implementation of protectionism in Turkish economy ceased growth and caused idleness. The import regime depending on high tariffs and quantative restrictions caused production of goods incapable of competition with the World in many industrial fields and higher prices, which decreased the competitive power. After 1980s, Turkey deregulated restrictions and transitioned into an export-oriented industrialization. Thus Turkish Economy was Globalized. As can be seen on Table 3 above, the export was subject to a rapid escalation after transition to export oriented industrialization system (Eğilmez:2018).

As a developing country, Turkey needs to support modern protectionist methods and strategical industries instead of traditional protectionist methods that are not approved by World Trade Organization. Therefore; large scale public procurements must conduct so as to support SMEs and companies possessing growth potential in global markets, and the public supply chain must be designed to provide advantage to the local companies, and R&D and training expenses towards production must be supported (Ünay ve Dilek,2018:26).

As demonstrated by the Turkish example, protectionist policies lead to economic slowdown and fall in world trade volume. Although it is difficult for Turkey and other developing countries to attract foreign investment, it will surely be to their benefit to fulfill certain obligations.

4. Factors Affecting Direct Investments

Multinational corporation executives were asked how important the following characteristics were in their decision to invest in developing countries; political stability and security, legal and regulatory environment, large domestic market size, macroeconomic stability and favorable exchange rate, available talent and skill of labor, good physical infrastructure, low tax rates, low cost of labor and inputs, access to land or real estate, financing in the domestic market; the following are their answers (Gonzales et al.,2017/2018:6).

Table: 3 Factors Affecting Investment Decisions (%)

Importance of country charecteristics	Critically Important	Important	Somewhat Important	Not at all Important	Don't Know
Political stability and security	50	37	9	2	
Legal and Regulatory Environment	40	46	12	2	
Large domestic market size	42	38	14	4	
Macroeconomic stability and favorable exchange rate	34	44	16	5	
Available talent and skill of labor	28	45	22	5	
Good physical infrastructure	25	46	24	5	
Low tax rates	19	39	31	9	
Low cost of labor and inputs	18	35	35	11	
Access to land or real estate	14	31	32	22	
Financing in the domestic market	16	28	31	24	

Source: *Anabel Gonzalez et al., 2018 Global Investment Competitiveness Report, World Bank Group,2018:6*

As can be seen in Table 3 above, reduction in tax rates is not sufficient alone to promote of foreign direct investment. While decrease in tax rates is a crucia criteria, it is not a standard that is considered in the first place. However; the main factors that affect investments are political and macroeconomic stability, a democratic legal system, a well-functioning bureaucratic and administrative structure, qualified workforce and a developed infrastructure.

While some authors stated that reduction in tax rate reinforces foreing direct investments regarding the impact of corporate tax on foreign direct capital investment, Pain ve Young (1996) stated that the fiscal effect and reduction in tax rate does not affect foreign direct investment significantly. Gonder ve Nistor (2012) in studying 6 EU, Bulgaria, Hungary, Latvia, Lithuania, Poland and Romania, concluded that developed EU counrties with tax rates higher than these six countries promote foreign direct investment more and also concluded that foreign direct investment is not only attributed to low tax rates but also predictability, transparency, tax evasion and fraud (Simones,2014:9).

Table: 4 Change in Corporate Tax

Countries	1986	1991	1995	2000	2018
Australia	49	39	33	34	30
Austria	30	30	34	34	25
Belgium	45	39	39	39	29
Canada	36	29	29	28	15
Denmark	50	38	34	32	22
Finland	33	23	25	29	20
France	45	42	33	33	34
Germany	56	50	45	40	16
Greece	49	46	40	40	29
Iceland	51	45	33	30	30
Ireland	50	43	40	24	12
Italy	36	36	36	37	24
Japan	43	38	38	27	23
Korea	30	34	32	28	25
Luxembourg	40	33	33	37	19
Mexico	34	34	34	35	30
Netherlands	42	35	35	35	25
New Zealand	45	33	33	33	28
Norway	28	27	19	28	23
Portugal	47	36	36	32	30
Spain	35	35	35	35	25
Sweden	52	30	28	28	22
Switzerland	10	10	10	8	8
Turkey	46	49	25	33	22
England	35	34	33	30	19
USA	46	34	35	35	21

Source: *The table was manually prepared based on information from OECD Data Historical Table II.1 (1981-1999) ve Table II Statutory Corporate Income Tax Rate.*

As seen on Table 4 above, a significant reduction was imposed on the corporate tax from 1980s to 2000s. Tax competition has a significant share in the reduction as well as other factors. The countries reduced corporate tax in order to increase the production capacity, to attract production factors, capitals in particular, and to transfer technology and increase total savings and to attract direct and short term investments. It will be highly important for Turkey to enforce a slight reduction in corporate tax in the future in order to attract foreign direct investment.

Global competitiveness report is a ranking standard used to determine the investment conditions of the countries and compare these to the other countries. World Economic Forum publishes a yearly global competitiveness report analyzing productivity levels of countries and whether the institutions, policies and factors function well together. The net structure of global competitiveness report published since 2005 helps determining the national competitiveness capacity of the countries as well as its strong and weak characteristics.

Table:5 2017-2018 Global Competitiveness Index Rankings

Countries	2017-2018 (137 Countries)
Switzerland	1
The U.S.	2
Singapore	3
Netherlands	4
Germany	5
Hong Kong	6
Sweden	7
England	8
Japan	9
Finland	10
France	22
Chine	27
Spain	34
Azerbaijan	35
Italy	43
Turkey	53
South Africa	61
Greece	87

Source: *Global Competitiveness Report 2017-2018 p:13*

2017 – 2018 report including 137 countries presented competitiveness capacity of the countries using indicators such as institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation. In the report, Sweden ranks in the first place, followed by USA in the second place, Singapore in the third place, Netherlands in the fourth place and Germany in the fifth place. Looking at the global competitiveness histroy of Turkey, it ranked 43rd in 2012-2013 while it ranked 53 in 2017 – 2018 (Global Competitive Report,2017-2018:24).

The most importent risk for foreing direkt investmet is financial risk. Financial risk is defined as the risk that a country may be unable to fulfill its foreign obligations. Undoubtedly, countries with high financial risk are very likely to experience a financial crisis. In the case of deteriorating financial conditions of the host country, as opposed to other forms of foreign capital (short-term bank loans, portfolio investment), FDIs can not abandon the country easily. Therefore, foreign companies are extremely sensitive to the financial risk level of the host country. Foreign debt and other variables, such as current account balance, net international liquidity. and exchange rate stability are used to measure financial risk, which is an important indicator of the capacity of financial markets and stability of a country (Türedi,2018:155).

Chart: 6 Labor productivity 2016, GDP Per Employee, Total Economy, Current Prices, Current Purchase Power Parity, $
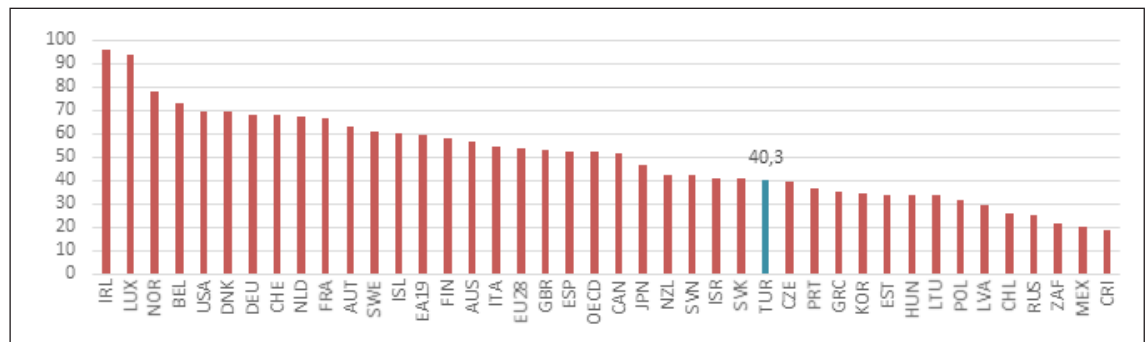
Source*: OECD Compendium of Productivity Indicators 2018,p.41*

Economic growth is achieved by enhancing labor which is among production factors or capital factors or by improving the productivity in use of these factors. As shown in Chart 6 above, the productivity of many countries including Turkey has fallen down. Attracting direct investment shall be achieved by establishing more efficient production. Reforms that will improve productivity in labor and capital must be implemented and the savings making up the source of the capital must be distributed based on strategical priorities.

CONCLUSION

According to the Table 1 that shows the investments in 2019, the share of capital and capital transfer allocated from the central government budget in Turkey is 6.7% in 2019. This rate must be increased to at least 20% in order for it to serve as an infrastructure to public procurement, serve as a motivator and as a solution to the employment problem. Therefore; it will be more beneficial to decrease the 40% allocated for current account transfers

and increase investment expenditures. Therefore, the optimum balance can be established between the public sector and the market.

The growth and employment problems can be resolved by enhancing direct investments in Turkey. However; it will not be easy to attract foreign investment to our country with the protectionism and trade wars in the World as well as the economic and political instability in Turkey. Due to the concerns of a trade war between USA and China, foreign direct investment flows fell by 23% in the World in 2017. The direct investments towards Turkey fell by 16%. The trade wars to be maintained in the future shall not pose a problem in terms of foreign trade since Turkey is not significantly engaged in trade with the U.S. and China. The share of Turkey in World trade is 0.9%. However; if the EU economy faces another economic recession due to the U.S. sanctions, it will affect Turkey's export with EU negatively. The capital inflow to the developing markets will drop if the trade wars continue. It may even cause fund outflow, which may cause the crisis in the finance to affect real economy in the markets. Turkey needs to make use of the trade wars in the World and take some measures in order to attract foreign investments.

Global economy achieved a growth at 3% rate in 2018 below expectations, and it is expected to be around 2.6% in 2019. Direct foreign investment inflow has also decreased with the low rate of growth. The trade deficit of the U.S: against China which totalled 91,1 billion dollars in the first quarter last year, fall to 79,9 billion dollars by 12% in the same periods of 2019. While the share of China in the US import was 20,5% in the first 3 months of 2018, it dropped down to 17,7% in the same period this year. The largest trading partner of the US last year, China, ranked down to the third place in the first quarter. While the trade wars led to rise in the prices in the U.S., it led to decrease in Chinese import, thus leading to a fall in growth rate. The main countries that were significantly affected by these wars are Asian countries and Australia, but in particular, South Korea, Malaysia and Vietnam that sell raw material to China. Russia and Saudi Arabia depending the economies of which depend on oil were also negatively affected by the circumstances. A simulation developed by European Central Bank economists predict that the U.S. will be affected more by the trade wars, and China's conditions will improve after retaliations. This simulation was based on the scenario that the U.S. would impose 10% tariffs on all of its import and its trading partners would impose a retaliation at the same rate, meaning that net export, production hence economic growth and employment of the U.S. will decrease.

Due to the trade wars, the U.S. and China would transfer their import to other countries. Turkey may gain a share by this change of direction. The sanctions imposed by the U.S. on China increase the significance of Turkey. On the other hand; bilateral agreements between the countries and the affairs between the counries due to the trade wars may gain importance. In particular, should Britain exit EU, bilateral trade investment agreements may become an agenda. Moreover; Turkey may strengthen its relationships with Russia and China.

Turkey has been invited to join BRICS titled BRICS plus T. At this point, Turkey may serve the function of the supplier country for African and Asian producers.

Silk Road, aka "One Belt One Road", is important for global economy and Chinese economy in particular, for which Turkey is a key country. "One Belt One Road" project will ensure more foreign direct inflow into the country. However; to attract maximum amount of foreign direct investment, Turkey must ensure economic and political stability. While reducing tax rates is an important criterion in terms of foreign capital incentives, it also depends on a democratic legal system, a well-functioning bureaucratic and administrative structure and qualified workforce and developed infrastructure.

Protectionist policies cause economic slowdown and decrease in trade volume. Therefore; Turkey needs to support strategical industries instead of protectionist policies as well as the industries the raw materials of which are located in Turkey.

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8

THE ADAPTATION OF ECONOMIC POLICIES IMPLEMENTED WITH THE COURSE OF ACTIONS ADOPTED IN THE FRAMEWORK OF IZMIR 1ST ECONOMIC CONGRESS TO TODAY'S TURKEY

Selman Yılmaz, Olcay Bige Aşkun

ABSTRACT

The sophisticated economic policies practiced in Turkish Republic during the period of 1923 and afterwards were initially dominated by apposite decisions taken in Izmir 1st Economic Congress, and then these economic policies were properly implemented in a way of liberal and mixed economy. Thanks to these policies, marvelous achievements are maintained in the sectors of agriculture and industry. Furthermore, public economy and money markets are tremendously enhanced by the help of policies in subject.

In this rigorous study, it is pivotally targeted to suggest a novice economic policy model by meticulously considering economic structure, technological change, and social and cultural shift of today's Turkey in the framework of economic policies implemented in accordance with the decisions taken during Izmir 1st Economic Congress. The research cardinally proposes a novice economic policy model by reviewing the content of successful economic policies practiced in the past and bearing in mind today's economic dynamics of Turkish economy. It is notedly set sight on making sure Turkey to take place among the top 10 economies of world through redesigning the past accomplishments and adaptability of this model in the next ten years.

Key words: *Izmir Economic Congress, Economic Policy, Turkish Economy*

I. INTRODUCTION

Being in need of a sturdy and dynamic economy, Turkish Republic organized Izmir 1st Economic Congress as a first step to finance every kind of urgent expenditures for a newly established state, and to make the necessary changes of a society which failed to realize renovations required in the face of prodigious economic, social and political evolution happened in the world. The aim of this congress was to develop new economic policies proper to a newly established state's progressive ideology.(Kalaycı, İ. 2009, p.160) Having the characteristic of a kind of mixed economy policies implemented in the course of time, the ideology had a modern structure which seriously considered Turkish traditions.(Koç, İ.C. 2000, p. 145-146)

The purpose of economic policies (Boratav, K. 1967 p.54) devised in the congress includes five critical targets (economic growth, price stability, full employment balance, fair income distribution, and foreign trade balance).(Ökçün, G. 1981). It is suggested to accomplish these objectives by adopting statist economy policies as well as increasing the share of private sector in due course. Therefore, monetary, fiscal and foreign trade tools of economic policy are intensively used. (İnan, A. 1982)

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II. THE FIRST IZMIR ECONOMIC CONGRESS

The strategy of new Turkish Republic State was to develop new policies in the economics, science, social and cultural territories for being able to be an economic state. That is why it was decided to organize an economic congress in line with this target and put into practice. The primary scope of this congress was to figure out macroeconomic dilemmas of Turkish economy. (Koçaşlı, İ,O. 2017)

The most important and devastating economic problems of Ottoman Empire were all transferred to the state newly established. Among the most prominent ones were the issues about manufacturing, foreign trade, and external debt. Although the high share of agriculture in the sectoral distribution of economy, unfortunately the production level of this sector was so low because of non-efficient methods used instead of contemporary technologies. The guideline of issues supposed to be figured out by the congress were barely production volume, wastefulness, and high levels of foreign debt as the result of successive wars, and minority controlled trade.

The outlook of economy was largely dependent on agriculture, failed to industrialize, underdeveloped, experiencing fiscal depressions because of the burdens caused by wars in row, come under the domination of international financial power groups because of foreign debts to close the deficits, become an open market for European countries because of free trade agreements in effect, and growing imbalance of income and expenditures because of budget deficit. In conclusion, it was a semi-colonized country with an underdeveloped economic and social structure, and shared by industrialized imperialist states.

The decade-long wars started by Balkan Wars and then continued by Turco-Italian War and I. World War and finalized by Turkish War of independence caused to considerably diminish the population and human capital, and serious demographical alterations. The population of the area belonging today's Turkey borders was only 16.5 million in 1914. It is estimated that the loss of Muslim Turkish population as a result of conflicts or other reasons was about 2 million. Besides, Armenian population was also largely decreased after the deportation of Armenians. About 1.2 million Orthodox Greek left Anatolia after the cartel signed by Turkish and Greek States, and about half million Muslim Turkish people came to Anatolia from Greece and Balkan Peninsula. (Koç,İ,C. 2000)

In the wake of those upheavals, the population of Turkey slumped to 13 million as of 1924. The more of half of the 20% population loss was stemmed from death and the rest was expulsion and immigration. There are few examples of countries whose population was so much affected by wars in the history of 20th century.

The significant part of population was comprised of orphan and widows because of high level of men death. While the share of non-Muslim population was more than 20% in today's Turkey borders in 1912, it fell to 2% as of 1925. (Tamer&Bozbeyoğlu, 2004.p.78)

And consequently, Turkish Republic has become much more homogenous ethnically than the Ottoman population sharing the same geography. Extraordinarily falling Greek and Armenian population had significant consequences on social and economic life. (Hiç;1998, p.3285-3292).

The large part of non-Muslim merchants, moneylenders and craftsmen who played a very important role for Anatolian agriculture to access domestic and foreign markets, and European Trade Centers for centuries were suddenly disappeared. These businessmen used to have a quite significant share in the domestic and foreign trade, industry

and extractive industry of Ottoman Empire. Furthermore, the devastation of equipment, livestock and vegetation has caused negative consequences on every sectors of economy. (Sabır, 2003, p.77-92)

Among them the agriculture sector contained within itself 80% of population and had a 80% share in total export. The agricultural activities were conducted by primitive equipment, no synthetic manures were used in fertilization, and semination and harvest activities were done by hand. Agricultural mechanization and new production techniques were merely seen in some coastal regions and railway lines. The infrastructures for watering agricultural areas like drainage and irrigation were little if any. The production losses seen in agriculture caused serious distress and poverty in foodstuff during last periods of Ottomans.(Pamuk, 2007)

The Ottoman Empire had an economic structure lacking industrialization as a result of many reasons like obstruction of Western countries by means of free trade agreements, absence of customs protection, non-competition, and insufficient resources. However, despite those negative conditions some large and small industrial enterprises were established until the 1st World War. But they failed to satisfy the domestic demand of Turkish people living in the 1923 borders of Turkey. (Meydan;2012:77-92

The mining areas of Ottoman Empire were dictated by the geological surveys conducted by Western firms at different times, and initially some rich coal, gas, chrome, lead and manganese deposits were discovered. These mines were operated by the act of "Maadin Regulation" adopted in 1861. The facilities provided by the regulation largely served to European companies, and in a sense underground treasures were opened to their exploitation. However, the operating franchises of prominent mining deposits were allocated to foreign firms and their local non-Muslims. While the share of foreigner and non-Muslims in the precious metals extracted exceeded 80%, almost all the production of some mines like zinc, lead, iron, manganese, borax and meerschaum were exported during the first years of 1900. An important energy source, coal and lignite production was largely consumed domestically. (Koç.İ.C.2000)

Transportation facilities and other infrastructures were significantly insufficient in the country. While some tracks built in the railroad lines, transportation has many difficulties particularly during winter time. Starting from mid 19th century, several European firms were privileged to build and operate railroad lines by Ottoman Empire. (Koç.İ.C. 2000)

While the rate of literate people was 10% in Turkey, even Russia which was much more underdeveloped than West had a rate of 35%. (Güran, T. 1997)

The sea lift between Turkish harbours was also scanty bay far even though the Turkish peninsula is surrounded by sea on three sides. Among them Istanbul, Izmir and Trabzon Seaports had a prominent place in sea lift, while they all lacked of sufficient port and harbor services, and storage facilities. In 1910s, 90% of all cargo handling in Ottoman seaports was conducted by foreign ships. (Koç.İ.C.2000)

In Ottomans, the banking services were generally carried out by individuals who called themselves Sarraf (Moneychanger) and lived in Galata district. Those "Galata Moneychangers" later called "Galata Bankers" were all non-Muslim, and represented capital market by making foreign exchange transactions and lending out at interest. Later on, new banking entities were emerged to help Ottoman Empire borrow from European financial markets to clear huge fiscal debt because of Crimean War since 1854. The most important and biggest one was "Banki Osmani" which was founded in 1856. The bank whose initial founding purpose was to mediate for Ottoman

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Empire with foreign financial institutions for external borrowing was restructured by partnering on the base of equal shares with a French institution undertaking the national debt in 1862 and belonging to Rothschild family in 1863. The bank which changed its name as "Banki Osmani Şahane"(Autheman,2002) as explained above and preferred Istanbul as headquarters acquired the qualification of Ottoman Empire's official bank as a result of privileges and authorities warranted by Governments. Having the right of coining money as well as mediating for external borrowing, the bank gained the statute of State treasurer with an agreement signed in 1875. (Pamuk, Ş, 2007). The bank with a wide branch network started also commercial banking services since the foundation of Düyunu Umumiye İdaresi (Public Debt Office) in 1881. Following the Liberty War, the bank acquired the statute of Empire bank by conducting treasury operations with an agreement signed on March 24, 1924 in Republic of Turkey until the foundation of TR Central Bank. Changing its name as Ottoman Bank during the republic period, the bank was incorporated by Garanti Bank and abolished in 2001. In addition to these, 16 more foreign banks were established between the period started with first foreign debt borrowed from European financial markets in the mid 19th century and 1st World War. Some of those banks were either transferred to Ottoman Bank or merged, but most of them were liquidated. Besides, 26 more local banks with national identity were founded in that period particularly since 1911. Most of them went out of business in various dates and a few of them were incorporated by TR Agricultural Bank. The foundation of Agricultural Bank which was the first and biggest National Bank was started by Mithat Pasha through the establishment of "Agricultural Credit Fund" in 1863. Later on, these funds were spread country-wide with the help of "Act of Country Funds" enacted in 1867, and the farmers in trouble were able to access loan with lower interest rates. These funds were renamed as Menafi Sandığı (Utilities Funds) as a result of tax regulations in 1883. However, Agricultural Bank was created with a nominal capital of 10 million liras in 1888 as they fail to satisfy. (Pamuk, Ş. 2017)

The First Economic Congress was organized in such an economic environment in Izmir on Feb 7, 1923. Izmir First Economic Congress is a meeting which determines the cornerstones and rules of the system that will ascertain the lifestyle and reconstitute the nation and country (Yücel;1969:63). The studies started with the participation of 1135 delegates comprised of industrialists, merchants, workers and farmers proceeded until March 4, 1923. The basic economic purpose of the congress which will identify the economic policy and economic growth model of a newly established state is "Nationalization of Economy". Within the framework of national economy policies, many issues like foreign capital, national enterprises, foreign trade, capital accumulation, and Turkification of labor force come to the fore (Varlı&Koraltürk;2000:127-142). Within the scope of congress, it is targeted to maintain fair income distribution and equal distribution of the residual income accumulated by increasing national domestic product and employment through nationalization of economy.

The congress also aimed to improve foreign business connections instead of ostracizing this investment group, while the fundamental purpose was to nationalize economy and implement statist economy as well as placing emphasis on foreign economic relations.

While the population of the country was 16.3 million in 1914, it was faltered to 13.6 million in 1927. The educated and qualified labor force showed a falling tendency as a result of casualties during the wars. The sectoral distribution of working population was immensely concentrated in agriculture: 80.9% in agriculture, 10.2% in services, and 8.9% in industry. The foreign capital outflowed the country during the first years of republic. Indirect taxes were predominant among the tax revenues. The ratio of budget expenses to GDP followed a small rise, and the share of tax revenues to GDP stayed constant at 10%. Among the public expenditures, the primary items

were transportation (railway), defense, and domestic and foreign debt. As a result of this economic outlook, more liberal economic policy was implemented but failed to succeed in the period of 1923-1932. Later on, statist economic policies were adopted. It was aimed to increase the production through first five years industrialization plan and second five years industrialization plan (http://www.izto.org.tr/portals/0/iztogenel/dokumanlar/izmir_iktisat_kongresinin_85_yilinda_a_yetim_26.04.2012%2021-23-56.pdf Online 21.08.2019).

The decisions taken during the congress were mainly comprised of two groups. The decisions of both groups primarily tackled with economic growth model. The first group handled "National Economic Pact", while the second one "Rudiments about the Groups of Farmer, Merchant, Industrialist, and Worker."

The decisions of National Economic Pact (https://www.sosyalbilgiler.gen.tr/izmir-iktisat-kongresi-ve-kongrede-alinan-kararlar/ Online 21.08.2019);)

- ✓ The use of domestic goods must be encouraged
- ✓ Technical education must be improved
- ✓ Industrial branches with domestic raw materials must be founded
- ✓ The transition from small scale enterprises to big scale enterprises must be realized
- ✓ A state bank to be established to provide loans to private sector
- ✓ A railway building program must be prepared
- ✓ The monopolies of foreigners should be restrained
- ✓ Economic and social statue of workers should be improved.

Rudiments about the Groups of Farmer, Merchant, Industrialist, and Worker (Koç;2000:145-167);

Industrialist Group;

- ✓ The industry must be protected through a prohibitive system and the inputs of the industry to be imported should be granted exemption
- ✓ The industry and industrialists must be encouraged by incentives
- ✓ Cheap rates should be applied to transportation, and transportation facilities must be improved
- ✓ Credit facilities should be enhanced for industry, and various conveniences must be provided
- ✓ The education institutions and chambers of industry needed to nurture technical staff for industry must be established

Merchant Group;

- ✓ Nationalization of exchange markets
- ✓ Struggling against monopolization
- ✓ Providing mortgage loans to merchants
- ✓ Popularizing the education of economics
- ✓ Let everyone holiday on Friday
- ✓ An establishment of basic commerce bank

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✓ The protection of coal production from external competition

✓ The improvement of communication services and preventing delays

✓ The foundation of a prohibitive system

Farmers Group;

✓ Abolishment of tithe

✓ Liberation of tobacco planting and trading

✓ Abolishment of regie

✓ Regulation of agricultural loans

✓ Spending the revenue of road tax to macadamize

✓ Taking care of forest villages

✓ Accelerating the struggle against animal diseases

✓ Starting aquaculture in lakes

✓ Building repair and maintenance shops

✓ Standardizing agricultural equipment and machinery

✓ Adding practical agricultural lessons to curriculum in schools

✓ Sending the students of university to the villages for a while

Worker Group

✓ Calling them as worker instead of peon

✓ Lowering working hour to eight hours

✓ Forbidding to employ workers younger than 12 years old

✓ Paying double wage for night shift

✓ Determination of the minimum wage by municipalities

✓ Cash payment of wages on time

✓ Payment to the workers who can't work because of illness

✓ Establishment of accident and life insurance system

✓ Application of occupational representation in the elections of parliamentary and municipality

✓ Forbidding to export raw materials without being processed

✓ Free education for the children of workers in boarding schools

✓ Building of public houses

These decisions show that the new Turkish Republic State's economic system is tried to be shaped through a liberal approach. There is aimed to develop a growth model and industrialization strategy, and transform the state into an economic state. Alongside all these economic objectives, the primary purpose was to bring the country in the concept of "Economic Independence". Because the economic entities that are economically independent will eventually achieve every kind of independence (for instance political independence etc.). As the biggest economic entity, essentially the state should be economically independent.

The congress shaped the economic policies, and spearheaded the implementation of them properly during the period in subject. It should not to be forgotten that the world experienced the Great Depression at same time frame. The depression naturally imposed restrictions to the economic policies practiced by Turkey. Despite this tragic atmosphere, it is possible to perceive that the economic policies implemented are successful given the conditions of that period.

Among the decisions made in the congress were reinforcement of the state to make autonomous investments, the investments induced by this way should be done by private entrepreneurs, and constitution of legal and institutional regulations required. At that point, the most critical constraint was the problem of finance.

Table-1. GDP Between 1923-1938

Year	At Nominal Prices (Million ₺)	At 1948 Prices (Million ₺)	GDP Deflator (%)
1923	953	2.929	10,0
1924	1.204	3.364	12,4
1925	1.526	3.793	-8,5
1926	1.651	4.484	2,2
1927	1.471	3.910	0,0
1928	1.633	4.341	4,4
1929	2.073	5.278	-25,4
1930	1.581	5.394	-19,0
1931	1.392	5.866	-5,7
1932	1.171	5.235	-15,9
1933	1.141	6.064	0,5
1934	1.216	6.430	11,1
1935	1.310	6.234	5,0
1936	1.695	7.680	5,0
1937	1.807	7.798	-4,2
1938	1.896	8.538	10,0

Source: TÜİK (http://www.tuik.gov.tr/UstMenu.do?metod=temelist Çevrimiçi 13.09.2019)

Table-1 clearly shows that GDP consistently rises at the price level of 1948. However, GDP deflator becomes negative since 1929 because of devastating effects of Great Depression.

In Table-2, it is observed significant variations in the growth rates of sectors by years. Particularly the agricultural sector becomes more prominent. For instance, tithe tax was abolished, land reform was made, big enterprises were able to access agricultural loans, seed improvement researches were conducted, and agricultural credit cooperatives and state farms were established at that time. Yet the desired targets and objectives could not be achieved and the

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successes were quite limited. Table-2 indicates that the average growth rate of agricultural sector excessively varies by year, and the sector might be shrunk by 30% one year, while grown by 50% in another year.

The most significant regulation brought to the industrial sector was the "Law for the Encouragement of Industry" which granted widespread exemptions and privileges to private industrial companies and mining enterprises. The law aimed to encourage private sector up to have a specific strength for 15 years. Many stimulatory measures such as free land allocation for factory buildings, exemption from tax, and tax privilege were applied to prominent and large industrial firms by means of this law. Eventually, it is envisaged to provide some technical services like loan facilities, and means of education, transportation, and communications by the government so as to stimulate private entrepreneurship in the congress(http://www.izto.org.tr/portals/0/iztogenel/dokumanlar/izmir_iktisat_kongresinin_85_yilinda_a_yetim_26.04.2012%2021-23-56.pdf Online 21.08.2019). In addition to all these, thanks to the implementation of tariff protection policy to protect domestic economy from external economies, the private sector generally achieved high growth rates even though some low level contractions for few years as seen in Table-2. Unfortunately, these levels of growth failed to catch up the levels of world economies and maintain necessary competitiveness. The same autonomous saving mechanism and terrifying debt level inherited from Ottoman Empire caused the successes achieved to come to the break-even point. Among the main reasons of this failure are insufficient capital of private sector, lack of enough human capital, absence of protective economic policies.

However, the services sector achieved growth each year except 1935, and gradually contributed to increase the level of employment per annum.

Table-2. Sectoral Growth Rates Between 1924-1938

Year	Agriculture	Industry	Services
1924	27,2	-7,1	8,4
1925	5,6	17,9	19,7
1926	31,8	14,8	5,7
1927	-30,9	19,4	2,2
1928	19,2	-0,6	7,3
1929	42,6	3,8	6,6
1930	-3,9	12,7	7,2
1931	14,3	14,2	1,4
1932	-28,8	17,8	3,9
1933	22,1	19,0	9,6
1934	2,7	13,8	6,6
1935	-6,1	-0,1	-1,3
1936	54,1	-3,4	6,0
1937	-3,5	10,3	5,1
1938	5,4	15,7	12,1

Source:TÜİK, Ministry of Development TÜİK (http://www.tuik.gov.tr/UstMenu.do?metod=kategorist Çevrimiçi 13.09.2019)

Significant positive changes seen in the areas of railways and maritime that are included in transportation sector created a high multiplier effect on the growth of economy and help the trade enroot within economy. Table-3 explains that the numbers of enterprises and employees in the sub-sectors of economy spread to whole lower base, which clarifies the growth of industrial sector shown in Table-2.

The most important feature of this period is the economic policy called as the project of "Nationalization", "Three White (sugar, flour, and cotton)", and Three Black (coal, iron, and petroleum)". Actually this policy reflects the main strategy of Turkish economy, and provides a basis for the economy. Besides, TR Central Bank was established to help the markets safely operate in 1930.

Table-3. Number of Enterprises and Employees According to 1927 Industrial Statistics

Industrial Group	Number of Enterprises	Number of Employees
Agricultural Industry	28439	110480
Textile Industry	9353	48025
Lumber Products	7896	24264
Paper & Board Industry	348	2792
Mining Industry	14752	33866
Construction Industry	2877	12345
Chemical Industry	697	3107
Miscellaneous Industry	16	455
Extraction Industry	556	18932
Other	311	2589
Total	65245	256855

Source: Haluk CİLLOV; Industrial Statistics in Turkey, İstanbul University, Journal of Economy Faculty, Vol. 13, p.180

When we take a look at the economic activities during this period, we see that the state avoids intervening the economy in general, and waits for the private sector and capital to be effective, so grants various exemptions and privileges. However, despite all those incentives the private sector fails to be successful as much as desired in the economic life. That is why the State leaved that policy and inclined to protective policies after 1929 Great Depression. However, the state adopted the policy of keeping the government budget in balance while practicing these policies. And, it did not allow the budget to be unbalanced via perquisites all the year round. By the way, balanced budget means to equalize the government normal revenues (tax revenues and tax free income) and government ordinary expenditures (expenditures made for the services related with basic activities of government). The budgetary equilibrium was not maintained by the government revenues provided by domestic and foreign debt. The aim here is to keep the economy strong and reliable both in homeland and abroad. However, the taxes must be fair for all economic units while doing that. In this period, all the weighty taxes, levies and charges were abolished, but new taxes adjustable to the income level of economic units were put into force. This kind of a tax policy also relieves basic objective of monetary policy, and helps avoiding of high inflation through maintaining

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a stable equilibrium between state's expenditures and resources. (It is not allowed for state to spend more money than its revenues to be gained by healthy ways for the sake of accelerating the investments. The state did not make investments more than the funds provided by budgetary surplus, surplus revenues of state monopolies and enterprises, and domestic and foreign debt. It was not allowed for state to make investments with the resources coming from TR Central Bank's increased emission (coinage). The data related with the numbers of resources and revenues belonging to this period show that these policies are strictly implemented. At that period, despite of 4-6% of real average annual growth rates, there was no inflation. The non-equilibrium state emerged for various reasons in 1929 was vanished by the measures taken at the end of 1930. The government expenditures were diminished and the revenues were increased and the value of Turkish Lira was prevented to fall down in foreign exchange markets by the stabilization program of 1929 which was the first "Stabilization Program" of Turkey. The main objective of that period's foreign economic relations policy was to prevent the value of Turkish Lira to decrease against foreign currencies, and improve the credibility of Turkish Treasury in the international markets. Therefore, the nation's balance of payments must be established in accordance with tight fiscal and monetary policies, and the payment commitments to foreign countries must be completely done without delay. In the period of 1930-1937, the foreign debt was paid by perpetual foreign trade surplus. Besides, all the economic units were encouraged to consume domestic goods and to save through minimizing the consumption. The economic units motivated to consume domestic goods would help to stimulate and grow the production of domestic goods. At the same time, the national banking system could turn the small savings into big investment capital as much as the policy would rise the savings. The main objective of this period's investment policy was to develop all fields of activity and every region provided that financed by reliable resources. The equities of state enterprises producing consumption goods would have to be offered to public as these businesses flourished, the capital of economic units operating in these fields accumulated, and the management talents running these enterprises improved. The state ruling could be carried out for a while after share selling. However, the state must certainly spend the funds acquired by the share sell to make new investments in underdeveloped fields and regions (Çelebi;2002:17-50).

III. ADAPTATION OF DECISIONS MADE IN IZMIR ECONOMIC CONGRESS TO TODAY'S TURKEY

Nowadays, the domestic economic problems of countries and international economic relations are quite different than that of in the beginning of 20th century. Today it is not just a necessity but also an obligation to exceptionally comprehend the contemporary changes and developments that reshape the international economic relations and implementation of domestic economic policies of countries.

According to our study which adapts the past economic policies to these days, the state will not only take precautions to achieve its targets defined by its own measures and preferences, but also support the private sector by taking sides with it in the game of economy. The state will undertake an active role. The state will show its active role by using its political power and diplomatic skills in the foreign markets. The state will take precautions to achieve its targets defined by its own measures and preferences, but also support the private sector by taking sides with it in the game of economy. The share of state in the economy will be small but efficient.

Also, the private sector has some responsibilities. These responsibilities include collaboration principle in business life, the qualifications of being reconciliatory and true-blue, and tendency to follow the ethical principles.

The importance of quality and price in the industrial production will be brought to the fore, the production of high-end goods and services at proper price levels will be supported, domestic and foreign competition will be built on a solid ground, and a robust production policy will be created. Within the scope of international economic competition, defense and even quittance policies will be practiced by the protective measures against external protectionism. The "Capital Intensive" production will be replaced by "Knowledge Intensive" production in many branches of industrial production.

The state should provide the services of education and training to nurture an expert labor supply. It will be obviously economic and realistic in case of the education and training expenditures of state is less than the aggregate total of direct and indirect advantages created by this labor force. In terms of economic growth, it is crucial to put more emphasis on qualitative increment in labor force than quantitative one, and turn education into a life-long activity. Alongside vocational education, on-the-job training course should be encouraged. Besides, women labor force should be more intensively included in the economic activities. In this way, positive contributions will be added to the solution of problems stemmed from growth and development of countries as the resources will be utilized full blast.

The Education policies should be developed by a long-term not short-term point of view. The healthiest education system will be an education policy based on knowledge which starts from primary school and lasts life-long. This is only achieved by implementing policies oriented to vocational education and employment adjuvant measures.

The public should create funds that encourage scientific and technologic developments. Serious facilities such as tax exemptions and privileges, investment allowances, subsidies and many other resources should be granted to this kind of funds.

The economic policies should create a labor force in line with technology. Instead of substituting labor force and technology as two factors, the policies should transform them into complementary inputs. It will be the healthiest policy to implement these practices by taking into consideration many factors like geography of the country, demographical structure, educational status, and the level of public services with a holistic approach.

The implementation of policies focused on the creation of customer-centric and knowledge-centric innovations will be a crucial factor in the composition of national marketing.

The foreign investment and trade policies that devise technology policies, practice innovative projects, and combine technology with scientific research must be implemented. Also, alternative approaches that take care of ecologic balance, base on minimum use of scarce resources, and has renewable feature must be developed while creating technology policies. The policies of science and technology should be designed by capable organizations and expert labor force which can contribute to the evolution of social life.

Innovative competition policies with competitive advantages and a mind of collaborative research should be developed and implemented.

Regulatory policies that eliminates red tape and institutional rigidity must be found and practiced.

The financial policies and fiscal policies that ease the capital flow to small firms should be applied in a fair and quick way.

THE ADAPTATION OF ECONOMIC POLICIES IMPLEMENTED WITH THE COURSE OF ACTIONS ADOPTED IN
THE FRAMEWORK OF IZMIR 1ST ECONOMIC CONGRESS TO TODAY'S TURKEY

Selman Yılmaz, Olcay Bige Aşkun

There must be policies that could structure management and organizational nature, hierarchic system among the institutions, scientific findings, and various interaction models.

The policies focused on production must be implemented in a sectoral base, and the production of agricultural, industrial, and services sectors must be particularly included in scientific and technologic infrastructure.

IV. CONCLUSION

When we attentively try to adapt economic policies implemented within the framework of acute decisions made during Izmir First Economic Congress to today's Turkey, we surprisingly observe that the most fateful factor is nationalization within global economy. How could it be possible to be nationalized in a globalist environment which also means trade and production without frontiers? Answer to the question is mighty national branding, and global national production. The point is to receive a sober share from the global markets through creating a unique national branding and innovations in conceivably every kind of goods and services which are customer-centric and knowledge-centric in the face of rapidly changing needs of the markets. However, the implementation and feasibility of other policies will help these policies gain acceleration afterwards.

Even though domestic economic issues and international economic relations are quite different than that of the period of Izmir First Economic Congress, it is perceived that the things to be done has not changed basically.

The most important economic unit is still state despite of the long elapsed time. The other economic units have secondary impact after the state. In other words, as a policy maker the state is an independent variable which sets the rules of game or externally intervenes the game.

In this framework, the creation of national branding is going to be realized by public support in both domestic markets and foreign markets. No brand has succeeded to be a global brand without getting government support so far. Even many brands have been the symbols of their own countries.

National branding and national production will inevitably bring about high competitive capacity to the economy. The capacity will be transformed to high income by narrowing the fields of rivals.

The structure of state becomes more of an issue here. The structure of state should be perfect in executive and institutional manner. A regulatory and supervisory structure must be built within the framework of checks and balances. All of these could only be realized in a fair judicial system relevant to the economic order. The share of state in the economy must be as low as possible, but its efficiency should be at a very high level.

Another subject worthy of notice is the tax system. The tax system should be simple, fair and low-rated. The tax rates must be kept low, while tax penalties must be as high as possible, and tax amnesty should never be applied. Under these circumstances, the tax revenues of state will rise to top levels. The implementation of policies for budgetary equilibrium and budgetary surplus will be a safety factor for state in the economy.

Alongside targeting the statist policy, it is also crucial to place emphasis on foreign economic relations. While the real purpose is to nationalize the economy, foreign capital becomes more of an issue for global economy.

The investments should be fixed capital investments with higher technology. These investments should be enabled to create a labor force adaptive to technology. It will be the healthiest policy to practise it holistically by

taking into account many factors such as Turkey's geography, demographical structure, education status, the level of public services, social institutions, and etc. The labor supply with human capital must be nurtured for knowledge-intense production, and then the labor supply should be continuously supported with vocational education for life-long learning.

The most important problem of the investments has always been about the financing. The healthiest supplier of finance is savings. The most significant resource to rise savings is to increase income level and give rise to consumption at degressive rate after a certain point. Such a system could be established by a healthy capital market structure. And, this can be achieved only by an optimal interest rate. The optimal interest rate is only viable in an environment with low inflation. Therefore, all of these policies are feasible provided that implementation of a loose monetary policy. The healthiest method will be to give rise emission volume with respect to growth rate, and to practice a growth policy strategy without inflation.

The economic policies conducted in Turkish Republic during the period of 1923 and after were first influenced by the decisions taken in Izmir First Economic Congress, and then these economic policies were implemented in a way of liberal and mixed economy. The agricultural and industrial sectors were largely benefited from these applications. At the same time, the public economy and monetary market were also highly improved through these policies.

The study sets sight on a new economic policy model suggestion by taking into account Turkey's economic structure, technologic change, social and cultural shift within the framework of decision made during First Izmir Economic Congress. The research targets to propose a new economy policy model by taking into consideration present dynamics of Turkish economy and reviewing the content of recent successful policies. It is lustily aimed to place Turkey among the first ten economies in the world in next ten years through redesigning the adaptability and past success of this model.

Izmir First Economic Congress paved the way for many purposive economic polices practiced in Turkish Republic in the period of 1923 and after. These elaborate policies succeeded in multifarious areas, and today's economic base was laid in those years. The new economic policy suggestions might be feasible provided however that to be renovated on the base of same implementations in a way described above through taking into consideration the economic structure, technologic change, and social and cultural shift of today's Turkey.

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GLOBALISATION & PUBLIC POLICY

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