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AN ANALYSIS INTO THE DECREASING DOMESTIC SAVING RATE AND THE DISTRIBUTION OF THE INVESTMENTS IN TURKEY

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Tez Danışmanı
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“TÜRKİYE’DE AZALAN İÇ TASARRUF ORANI VE YATIRIMLARIN DAĞILIMININ BİR TAHLİLİ”

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ÖZ

Bu çalışma Türkiye’de azalan iç tasarruf haddini ve toplam yatırım harcamalarının farklı sektörler arasındaki dağılımını teorik ve ampirik olarak incelemektedir. Keynezyen düşüncenin temel kavrayışına göre, yatırımları tasarrufların nedeni olarak ele almak daha doğrudur ve bu türden bir akıl yürütme bir dizi koşulun yerine getirilmesi kaydıyla günümüzün iktisadi gerçekleriyle oldukça uyum göstermektedir. Öte yandan, açık ekonomi koşullarında gelişmekte olan ülkelere dönük sermaye girişleri reel döviz kuru kanalıyla bu ülkelerin kalkınmaları üzerine olumsuz etkilere sahip olabilmektedir. Bu tatsız duruma iktisat yazınında “Hollanda Hastalığı” denilmektedir. Türkiye vakasında, büyük sermaye girişlerinin mümkün kıldığı tüketici kredilerindeki yükselme iktisadi büyümenin olumlu etkilerini fazlasıyla dengeleyerek iç tasarrufların azalmasında büyük rol oynamıştır.

Anahtar Kelimeler: İç Tasarruflar, Yatırımlar, Tasarruf Açığı, Ticarete Konu Olmayan Sektör, Reel Döviz Kuru, Hollanda Hastalığı

"AN ANALYSIS INTO THE DECREASING DOMESTIC SAVING RATE AND THE DISTRIBUTION OF THE INVESTMENTS IN TURKEY"

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ABSTRACT

The present study theoretically and empirically examines the declining domestic savings rate and the distribution of aggregate investment expenditures among different economic activities in Turkey. According to the main insights of the Keynesian thought, it is much preferable to speak of investment as being the cause of saving and this line of reasoning fits very well the economic facts today provided that a series of conditions are fulfilled. On the other hand, in open economy conditions capital inflows into emerging countries may have pernicious effects on their economic development through real effective exchange rate channel, an unpleasant situation called as the "Dutch Disease" in economic literature. In the case of Turkey, the surge in consumer credit made possible by the huge capital inflows in the last decade have played a major role in reducing the domestic savings by more than offsetting the positive contributions of economic growth.

Key Words: Domestic Savings, Investments, Saving Gap, Nontradable Sector, Real Effective Exchange Rates, Dutch Disease

PREFACE

To begin with, I would like to mention about some difficulties I have faced when writing the present study. All these difficulties have to do with the data on the subject.

First of all, I may fairly state that one cannot conduct any meaningful study on the Turkish private savings except for with the help of some special survey on the topic because the data on household and corporate savings are not provided by Republic of Turkey Ministry of Development. Unless the data on Turkish private savings are separated into household and corporate savings, one cannot evaluate scientifically the inner dynamics affecting the movements of domestic savings. This crucial deficiency of data gets in the way of a deeper understanding into the evolution and determinants of the saving gap in Turkey.

The second one is about the Household Budget Survey and Income and Living Conditions Survey conducted by TURKSTAT. These surveys depend upon the verbal statements of the respondents, thereby giving rise to a series of inconsistencies in the data set. For example, the survey results prepared according to the verbal statement of the respondents show that average annual income of employers in 2012 is only TL 35,680, that is, less than TL 3,000 a month. This is, at best, an underestimated figure. Apart from this unconvincing figure, it is not possible for researchers to find the consumption shares of the quintiles in household disposable income because while Income and Living Conditions Survey gives the data on the shares of the quintiles in total consumption expenditure, Household Budget Survey gives data on the distribution of household disposable income by quintiles. Therefore, it is almost impossible to work out a reliable profile of Turkish household savings by income quintiles.

The last one is about the Input-Output Tables provided by TURKSTAT. Being these tables prepared in 2002 and having a lot of significant economic changes occurred since then, it would not be wrong to think along these lines that they hardly

survive the validity test. Considering that all national accounts, the most important of which is GDP, have been prepared according to the Input-Output Tables, all of them should be accepted with certain qualifications.

***

I am, as always, grateful to Hediye Yılmaz for her unflagging support to me. She patiently endured being apart from me while I was studying the present master thesis. Without her moral support, I believe firmly that I could not find enough strength to go on studying.

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ABBREVIATIONS

AKP	Justice and Development Party
BRSA	Banking Regulation and Supervision Agency
CBRT	Central Bank of the Republic of Turkey
CEM	Country Economic Memorandum
CMB	Capital Market Boards
CPI	Consumer Price Index
CRA	Central Registry Agency
EBA	External Balance Assessments
FDI	Foreign Direct Investments
FED	Federal Reserve
FX	Foreign Exchange
GDP	Gross Domestic Production
GNP	Gross National Product
IMF	International Monetary Fund
ISE	Istanbul Stock Exchange
ISO	Istanbul Chamber of Industry
NBER	National Bureau of Economic Research
OECD	The Organization for Economic Co-operation and Development

R&D	Research and Development
REER	Real Effective Exchange Rate
SI	Saving-Investment
SME	Small and Medium Enterprise
TL	Turkish Lira
TURKSTAT	Turkish Statistical Institute
USD	United States Dollar
WB	World Bank

INTRODUCTION

The most heated debate among the Turkish economic policy-makers during the last decade has been, and still is, the deficient domestic savings. In the last decade, the domestic saving rate in Turkey has sharply declined while investments, although decreased somewhat after the 2001 crisis, followed a flat course, in which case Turkey's saving gap climbed to the record levels. The saving gap and current account deficit, which are the two sides of the same coin, have been financed through the finance account, most of which consisted in portfolio investment. Considering the announcement made by FED about the "tapering" in May 2013, it becomes clear that the effective policies aimed at boosting the domestic savings should be immediately formulated and implemented in order to prevent the Turkish economy from collapsing into another crisis, or else the future of the investments in the years to come looks bleak.

By the same token, the investments made in the period mentioned above mostly flowed to the non-tradable sectors such as banking, construction, insurance, real estate etc. One aspect of the non-tradable sectors is their inability to bring foreign currency into the economy. Given these facts, it is self-evident that the (mal)distribution of the investments in Turkey has deteriorated its current account deficit and thus made the economy more vulnerable to the external capital outflows.

In this study, our aim is to investigate the causes and effects of the decreasing domestic saving rate in light of the extant stock of theoretical knowledge about the question at hand and to analyze the effects of the investments in the tradable and non-tradable sectors on the saving gap in Turkey.

In the first section, we shall tackle the nexus between saving and investment in a closed economy so as to shed better light on the theoretical dispute among the economists during the twentieth century. The differences of opinion boils down to

the question of "which comes first, saving or investment" on the theoretical plane. While the defenders of the Loanable Fund Theory uphold the priority of saving over investment when it comes to identifying the causation determination between them, the economists following the Keynesian tradition insist that investment always takes precedence over saving. In addition to this well-known exposition of the debate, we shall also mention about a little known article written by John Maynard Keynes immediately after the publication of General Theory, in which he discussed the role of banking sector in financing the autonomous rise in investment activities. We think it extremely important to bear in mind the arguments put forward by Keynes himself in this article when thinking about the relationship between his views on the saving-investment causation and his liquidity-preference theory.

In the second section, we shall take the theoretical handling of the saving-investment causation problem a step further by introducing the international capital flows into our investigation. In other words, we discuss the same question in open economy conditions. Of course, the initial saving-investment causation problem undergoes some metamorphosis, namely, it turns into the question of whether the foreign saving and domestic saving are complementary in financing the gross capital formation or not. The main instrument at the disposal of the neoclassical economics is the analysis of the intertemporal trade. After wrestling with some theoretical and empirical paradoxes and puzzles pertaining to the neoclassical economics, which show exactly that the neoclassical theoretical apparatus proves to be almost wholly ineffective in explaining the main tendencies occurring in the world economy, we shall come up with a critique of it recently raised by some eminent economists who are strongly skeptical of the plausibility of the neoclassical assumptions. As an alternative approach to the neoclassical economics on the question of the relationship between foreign and domestic saving, we are going to present their case for the Dutch Disease in underdeveloped countries which suffer a lot from the colossal amount of capital inflows into their feeble economies.

At last, we shall handle the saving-investment gap in Turkey in the third section. Having evaluated the Turkey's growth performance during the last decade in the light of its saving gap problem, we shall give some hard facts about how

aggregate investments in Turkey, including foreign direct investments, have been distributed among tradable and non-tradable sectors over the course of time. Moreover, we shall present some empirical data on the size of Turkish manufactural firms, indicating that independent of the level and volume of the aggregate investment in the economy, the bulk of the Turkish manufacturers operate at sub-optimal scale and this is an extremely important factor which depresses the process of creating value-added in the Turkish manufacture industry. Then we shall proceed to analyze total domestic savings by dividing them into three separate categories; namely, corporate, household, and public savings. In this sub-section we shall thoroughly examine the current data on this issue in theoretical and historical perspectives.

In the fourth section, we shall test our econometric model based on regression analysis, which tries to explain the factors determining the declining total domestic savings.

In the Conclusion section, we shall summarize up the main results we have reached throughout our examination.

FIRST SECTION

THE SAVING-INVESTMENT CAUSATION

It would not be an exaggeration to claim that the debate over the direction of causation between saving and investment was one of the most important questions among macroeconomists during the twentieth century. The question of whether investment creates savings in an economy or it is the other way around has split economists across the world into two main camps, namely, Keynesians and non-Keynesians. "The whole dispute between Keynesian and non-Keynesian theories is whether investment determines savings, or vice versa."[1] Before going into details, we should briefly mention about the main stance of the two opposing approaches. Whereas one economic tradition which dates back to the Physiocrats and ranges from the main representatives of classical political economy to the neoclassical economists defends the view that investments can be funded only by savings, the Keynesian school rejects the conventional wisdom and puts forward in its place the argument that investments have the power to create its own savings.

In this section we analyze both approaches to the causality question between saving and investment and try to offer some insights into the solution of it. But it should be noted, in passing, that even if these two main economic traditions differ on the direction of causation, they concur with each other that savings and investments must be equal in any economy. In other words, these two schools rule out the possibility of any discrepancy between saving and investment. As we shall see later, the whole dispute among them revolves around the nature of the equilibrium. That is, when an economy comes into equilibrium by making savings and investments equal

[1] Nicholas Kaldor, "Marginal Productivity and Macroeconomic Theories of Distribution," **Review of Economic Studies 33**, 1966, p.p. 309-19; reprinted in G. C. Harcourt and N. F. Laing (eds.), **Capital and Growth**, Baltimore, Md., 1971, pp. 295-313.

to each other through some economic transmission mechanisms, the question arises about whether the economy is at full employment equilibrium or under-employment equilibrium.

When we ask ourselves why the dispute over saving-investment causation had grave importance in the history of economic thought and has still today, we come across the policy implications of the debate. We can safely assert that the problem we are dealing with derives its importance from the policy recommendations about economic growth. "Whereas the theory of the natural rate of unemployment has been the central theoretical question for monetary policy, the issue of saving-investment causation is the decisive question for fiscal policy."[2] Therefore any study which aims at analyzing the economic dynamics affecting the decline in domestic savings should first tackle the issues concerning the saving-investment nexus due to its significance with respect to economic growth.

In order to better understand this point, we should briefly clarify the implicit or explicit policy prescriptions derived from these theories.

Just as the natural rate hypothesis justifies the rules-rather-than-discretion principle on the part of monetary authorities, so does the classical approach to the saving-investment question austerity measures on the part of fiscal policy-makers. If one takes it for granted that investments could be financed by the pool of total savings, he or she comes easily to the conclusion that contractionary fiscal policies help improving the prospects of higher growth by expanding total savings via a rise in public savings and thus putting additional money into the total saving pool. In the case of deficit-financing, reasons a classical or neo-classical economist, expansionary fiscal policies have detrimental effect to the gross capital formation since it reduces the resources available to private sector investments, thereby making the chances of higher economic growth less likely.

Moreover since government squanders the money otherwise destined for private investments through budget deficits, the supply of loanable funds in the

[2] Thomas I. Palley, "The Saving-Investment Nexus: Why It Matters and How It Works", **Center for Economic Policy Analysis**, Working Paper Series II, Working Paper No. I, 1996 (revised), p.1.

capital market dries up and the rate of interest for the remaining funds tends to increase, thereby discouraging private investments further and making the crowding-out effect happen. The point made by all kinds of economists who supported the classical doctrine sketched above is that public authorities should under no circumstances run a budget deficit with a view to speeding the economy up. In terms of economic growth, government better serves the purpose through a higher level of public savings.

On the other hand, there are only two ways to raise public savings, either by making the tax-burden on private sector heavier or by cutting the public expenditures. Given the fact that any rise in the burden of taxation on private sector would tend to diminish disposable income, and thus private savings, public sector should lessen its expenditures rather than raise taxes to reduce budget deficit or create budget surplus. Only in this way it becomes possible to lift a significant amount of tax burden from private sector. But there remains still the possibility that the efforts made by public authorities might fall short of the level needed to induce private sector. "Moreover, to the extent that the propensity to save is positively related to income, upper level of income should be cut firstly."[3] It contains implicitly the proposition that the most efficient way to attain higher level of investment could be at the expense of a fairer income distribution.

Even some neo-classical economists proposed to dismantle social security and state funded pension schemes which they supposed would reduce the private savings and replace them with privatized pension system. Behind this proposition lurks the assumption that any cushion which protects people from unpleasant situations in the future would tend to lower precautionary savings.[4]

[3] ibid., p. 2.
[4] Martin Feldstein, "The Missing Piece in Policy Analysis: Social Security Reform", **NBER Working Paper No. 5413** (also reprint no. r2140), July 1997, p. 13.

According to the Keynesian school of thought, the doctrine upheld by (neo)classical economists puts the cart before the horse. Because, as we paraphrase James Meade, a dog called investment wags its tail labeled saving.[5]

In view of the fact that by the time Keynes wrote his magnum opus, it had been an accepted fact in the then mainstream economics except for some exceptions that savings always precede investment, we can expound that what Keynes made in the middle of the thirties was a Copernican Revolution in economics to the effect that he uprooted the traditional postulates and reversed them. With Keynes, saving can be made out of current income and current income is in turn determined by current investments. In other words, the direction of causation runs from investments to income and savings.

The Keynesian tradition promotes the idea that gross capital formation is an exogenously determined economic phenomenon. In the Keynesian theoretical framework total savings are *ex post* adapted to the needs of capital accumulation. Any incremental in investment expands total output by an amount larger than the initial spending thanks to the multiplier effect, and thus a higher level of output gives rise to a higher level of saving, a process in which a rise in investment expenditure is equal to an increase in savings.

Keynesian economists, in contrast to the policy suggestions derived from the (neo)classical theory, conclude that austerity measures implemented by public authorities to boost growth would be condemned to failure. Instead, public authorities should follow expansionary fiscal policies in order to combat against economic stagnation. When an economy undergoes a depression period owing to the deficiency of effective demand, government can and should prime the pump in an attempt to make up for low animal spirits on the part of private investors by running budget deficit.

In sum, according to the Keynesian economic thought, capital accumulation is autonomous and has the ability to meet its financing needs. Rather than raising the

[5] James Meade, "The Keynesian Revolution", in M. Keynes (ed.), **Essays on John Maynard Keynes**, Cambridge: Cambridge University Press, 1975, p. 82.

resources available to private investments, the tight fiscal policies would end up limiting the effective demand and thus cause an economy to enter into recession. In the case of (neo)classical theoretical framework, the cure can be worse than the disease from the point of view of the Keynesian school. On the other hand, the unwillingness to spend in private sector could be overcome with the aid of deficit-financing policies.

Now we shall look closer at these two diametrically opposed schools of economic thought.

1.1. THE LOANABLE FUND THEORY AND ITS HISTORICAL ORIGINS

The reason why saving determines investment and not vice versa can be found in the famous Say's law and the classical theory of interest rate determination. According to Jean Baptist Say, a classical economist, whatever the level of total production, there always exists an adequate level of demand for commodities because products can only be bought with products, a condition which is valid only in a barter economy. The production of goods generates purchasing power of a value that fully realizes the goods produced and hence money has no any other function but the medium of exchange. To put it simply, every producer brings his client to market with him. David Ricardo summarizes the law of markets as follows:

> "No man produces, but with a view to consume or sell, and he never sells, but with an intention to purchase some other commodity, which may be immediately useful to him, or which may contribute to future production. By producing, then, he necessarily becomes either the consumer of his own goods, or the purchaser and consumer of the goods of some other person. … Productions are always bought by productions, or by services; money is only the medium by which the exchange is effected. Too much of a particular commodity may be produced, of which there may be such a glut in the market, as not to repay the capital expended on it; but this cannot be the case with respect to all commodities…[6]

[6] David Ricardo, **On the Principles of Political Economy and Taxation**, Batoche Books, 2001, p. 209-210.

It should be noticed that here Ricardo does not expound a relative overproduction of commodities is impossible. He admits that it could be the case. But he rejects the idea that a general glut of the market is possible.

On the other hand, neither Ricardo nor Say explained anywhere why a person has to purchase a commodity because another person just sells it.[7] Only under the circumstances of a barter economy, a producer sells his products in order to have some other products he is in need. But under a monetary economy, a situation could arise where a producer sells his products without purchasing other products in his turn, which is known to be the case in money hoarding.

After the possibility of a general overproduction crisis has been ruled out, it does not take so much effort to show how any abstinence from buying a product can be transformed into the supply of funds bound for investment via the interest rate mechanism which classical economists argue exists in any economy based on perfect competition. Any decision not to buy consumption goods automatically provides capital market with the funds thus released at the prevailing rate of interest due to the fact that the demand for both consumption and investment goods is a function of interest rate.[8]

In the classical model, whereas an act of saving is regarded to be a supply of loanable funds, the demand for them consists of investment expenditures. Interest rate is the equilibrating factor which brings the demand for loanable funds at the current interest rate into equality with the willingness to abstain from present consumption at the current rate of reward for waiting. When a frugal person performs an act of saving, this incremental in savings results in an increase in the supply of funds available to entrepreneurs, thereby bringing down the price any investor has to pay when he embarks upon a new enterprise. This fall in the interest rate stimulates the production of investment goods to an extent which is equal to the increase in savings. The crucial point here is that an increase in interest rate can stimulate a

[7] Karl Marx, **Capital**, Trans. by Ben Fowkes, vol. I, reprinted in Penguin Classics 1990, London, p. 208-209.
[8] Brian Snowdon, Howard R. Vane, **Modern Macroeconomics: Its Origins, Development and Current State**, Massachusetts, Edward Elgar Publishing Limited, 2005, p. 47.

decision to replace the present consumption with the future consumption on the side of households only if the level of total output is assumed to be constant.[9]

In his *Principles of Economics*, Alfred Marshall explains the building blocks of loanable fund theory as follows:

> "Interest, being the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market, at that rate of interest, is equal to the aggregate stock forthcoming there at that rate…. An extensive increase in the demand for capital in general will therefore be met for a time not so much by an increase of supply, as by a rise in the rate of interest; which will cause capital to withdraw itself partially from those uses in which its marginal utility is lowest. In is only slowly and gradually that the rise in the rate of interest will increase the total stock of capital."[10]

When Arthur C. Pigou states in his *Economics of Welfare* that "'[w]aiting' simply means postponing consumption which a person has power to enjoy immediately, thus allowing resources, which might have been destroyed, to assume the form of production instruments,"[11] he seems to have totally agreed with Nassau W. Senior who formulated the abstinence theory. When developing his theory of interest based on a theoretical ground other than that of labor theory of value, Prof. Senior went too far as to say that "I substitute for the word capital, considered as an instrument of production, the word abstinence."[12]

In attempting to refute the explanation of the interest rate as a fruit of exploitation, Senior came up with the idea that if the only way to build up capital stock is the postponement of the current consumption, this is obviously a sacrifice made by prudent people because they refrain from spending their cash balances on the enjoyments of life. Just as workers who toil away at factories, mines and fields deserve remuneration in the shape of wage, so should the people who save out of their income be compensated in the form of interest in return for their renunciation of

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[9] John Maynard Keynes, **The General Theory of Employment, Interest and Money**, first Harbinger edition, USA, A Harvest/HBJ Book, 1964, p. 178 and 111.
[10] ibid., p. 186-187,
[11] ibid., p. 188.
[12] Karl Marx, op. cit., p. 744.

pleasure.[13] According to Senior, capitalist class should be rewarded for not carelessly wasting their money on expensive luxury goods.

However much he distanced himself from the abstinence theory of interest as it had been in Senior's work, Schumpeter, too, seems to have shared the theoretical outcomes of that theory in a different and refined way. While he conceded that capitalists make no sacrifice other than investing their resources in some business undertakings, and therefore there is nothing to be remunerated for abstaining from squandering their money on luxuries, Schumpeter still regarded capital as an independent factor of production to be rewarded in the same way as other factors of production are.

> "The capitalist… exchanges a fund against a flow. The 'abstinence' for which, according to the theory under discussion [the abstinence theory of interest – SÇ], he is being paid enters into the accumulation of the fund. There is no additional payment for refraining from consuming it even in the cases in which this would be physically possible."[14]

In other words, Schumpeter thinks that capitalist class should be rewarded for its contribution to the capital accumulation.

In the neo-classical growth model, called as "Solow model"[15], any year's capital stock per worker wholly depends upon the amount of last year's capital stock not worn out, plus the extra capital stock added through investment. Investment is a function of total output with a slope of propensity to save. It is clear to see that here Solow held the classical doctrine that savings precede investment.

Leaving aside the population growth which is a drag on the capital stock per capita, it is estimated that any economy will eventually reach a steady state where the amount of new capital accumulated in a year is just enough to keep the capital stock

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[13] Eduard Heimann, **History of Economic Doctrines: An Introduction to Economic Theory,** New York, Oxford University Press, 1964, p.117.
[14] Joseph A. Schumpeter, **History of Economic Analysis**, ed. by Elizabeth Boody Schumpeter, vol. I, 2th printing, 1955, London, George Allen & Unwin Ltd, p. 661.
[15] For an exposition of Solow Model, vide: Türkan Turan, **İktisadi Büyüme Teorisine Giriş**, Yalın Yayıncılık, İstanbul, Kasım 2008, pp. 45-78.

per worker constant after the depreciation on capital stock is factored in. The economic meaning of the steady state is that the law of diminishing returns to factor of production kicks in to an extent that income per capita cannot be increased by simply adding more capital into the production process.

In other words, an economy is said to be at the steady state level when it reaches a maximum point beyond which any rise in capital stock will diminish output per worker. The reason why it is so can be found in the concept of depreciation. Inasmuch as the rate at which capital stock depreciates annually is modeled as being fixed, the more capital stock an economy has, the more depreciation it will get and therefore the more investment it will need just to maintain the amount of capital it already had last year.

As more capital is being added through investments, the marginal productivity of capital will diminish more and more. On the other hand, the economy has more capital to sustain, thus requiring a lot more of investment just to replace the worn out old capital stock. Once an economy reaches the steady state level, the income per capita, and the living standard of its population, ceases to increase without technological process which is an exogenous factor in that model. "The neoclassical growth (Solow) model asserts that capital accumulation affects growth only during the transition to the steady state; long-term growth is determined only by the rate of technological change, which is assumed to be exogenous."[16]

At this point it should be noted that the neoclassical model attracted a sharp criticism from Nicholas Kaldor, a famous Keynesian economist, for assuming the technological progress to be an exogenous factor. Instead of taking it for granted that an increase in labor productivity at some given rate is attributable to the technological process taking place outside the capital accumulation, Kaldor relates the genesis of technological progress to the growth in capital stock per worker. According to Kaldor, technology is embodied in machinery and equipment, so that "[t]he use of more capital per worker (whether measured in terms of the value of

[16] Klaus Schmidt-Hebbel, Luis Serven, Andres Solimano, "Saving and Investment: Paradigms, Puzzles, Policies", **The World Bank Research Observer**, vol. 11, no. 1 (February 1996), p. 93.

capital at constant prices, in terms of tons of weight of the equipment, mechanical power, etc.) inevitable entails the introduction of superior techniques which require 'inventiveness' of some kind, though these need not necessarily represent the application of basically new principles or ideas".[17]

After it has been demonstrated that the level of savings in an economy is the base upon which the gross capital formation can be built in the classical doctrine, it still remains to be seen where the principle about the saving-investment nexus originates from.

It has been generally overlooked the fact that old classical economists approached the question of saving as a precursor to the capital accumulation on the basis of the old distinction between productive labor and non-productive labor. After he specified plainly that "[p]arsimony, and not industry, is the immediate cause of the increase of capital," [18] and remarked that the role of industry is limited only to furnishing the material which saving accumulates, Adam Smith went on saying that: "Parsimony, by increasing the fund which is destined for the maintenance of productive hands, tends to increase the number of hands whose labor adds to the value of the subject upon which it is bestowed."[19] Here productive labor is defined as the labor which produces exchange value.

Therefore, while a decision to save is identical with employing productive labor, it would not be correct to claim that a decision to consume one's income in an unproductive manner does not provide jobs. In determining which kind of labor is productive and which kind of labor is not, classical economists do not accept it as a useful criterion whether it is to be employed in general or not at all. It should not be mistaken the unproductive labor for the unemployed part of the labor-force. Therefore we find it appropriate to underline the fact that not every kind of labor employed was deemed to be productive by old classical political economists.

[17] Nicholas Kaldor, "A Model of Economic Growth", **The Economic Journal**, vol. 67, No. 268 (Dec. 1957), p. 595.
[18] Adam Smith, **An Inquiry into the Nature and Causes of The Wealth of Nations**, ed. by Jonathan B. Wight, 2007, Hampshire, Harriman House Ltd, p. 217.
[19] Loc.cit.

A capital-owner, so far as he employs a productive labor through the funds he possesses, contributes to the creation of exchange-value. On the other hand, in case a capitalist spends his money by hiring unproductive labor such as menials, servants, gardeners etc., he does not only encroach upon his wealth, but diminishes the annual produce of whole country.

Thinking the concept of saving in terms of the part of income destined for employing productive labor, it would be wrong to say that capital could grow through non-consumption. Indeed all the savings in an economy defined as above is consumed by productive laborers. At this point, Ricardo was very clear:

> "It must be understood that all the productions of a country are consumed; but it makes the greatest difference imaginable whether they are consumed by those who reproduce, or by those who do not reproduce another value. When we say that revenue is saved, and added to capital, what we mean is, that the portion of revenue, so said to be added to capital, is consumed by productive instead of unproductive capital."[20]

The conception held by old classical economists that capital accumulation can be possible only if capitalist class does not consume its whole income, and thus saves out of its profits to accumulate capital, has traced back to the Physiocracy that emerged out as an intellectual opposition against the mercantilism in the second half of the eighteenth century.

According to the Physiocracy, the labor-power applied to the manufacture and commerce yields no *produit net*, that is, the net product and therefore is considered to be sterile in this sense. However useful they are, the value of the commodities produced in manufacture sector covers only the cost of their production which is equal to the payments to the factors of production. The value added by the labor of artisans and manufacturers can add nothing to the value of output but the value of the wages and profits which accrues to them. And wages and profits, in turn, are the equivalent of what these classes have the right to consume. Only the labor-

[20] Ricardo, op.cit, p. 319.

power applied to the agriculture can create a surplus over and above the cost of production by means of the productivity of soil, which is a gift of nature.

Since it is impossible to produce any surplus in manufacture sector, the only way to enrich total output in this sector is through savings on consumption. Unless manufacturers curtail a part of their income to which they have the right to spend at their will, there is no way to extend the production capacity of manufacture industry. Since the raw materials used in manufactural production and the food stuffs consumed in that sector were presumed to be procured by the landlords in return for luxuries, a picture typical of the mercantilist age, Physiocrats regarded the profit, including interest, which accrues to capitalist class, as a mere income to be paid out of rents. In this sense, a whole capitalist class seems to be employees of the landlord class from the point of view of Physiocrats.

After Marx states that "[t]he view of Adam Smith and his followers that the accumulation of capital is due to personal stinting and saving and self-denial of the capitalists also originates from the view of the Physiocrats that profit (including interest) is merely revenue for the consumption of capitalist,"[21] he goes on quoting German Garnier, the translator of Adam Smith and himself a Physiocrat as saying that "… it is correct to say that the agents of manufacture and commerce can *only add to the total quantity of wealth existing in society by their privations alone* [emphasis added by author–SÇ]".[22]

So far we have examined how the saving-investment causation runs in the classical theory. Now we turn to analyze it within the Keynesian theoretical framework.

[21] Karl Marx, Frederick Engels, Trans. by Ben Fowkes, **Collected Works**, vol. 30, Lawrence & Wishart, London, p. 369.
[22] ibid., p. 371.

1.2. THE KEYNESIAN APPROACH TO THE SAVING-INVESTMENT RELATION

In this sub-section, we are going to deal with the role of investments in determining the level of national output and employment, since saving is considered to be a function of national income in the Keynesian tradition. As we have mentioned above, Keynes reversed the conclusions of the then mainstream economics by putting the emphasis on investment rather than saving in regard to the working of injections and leakages in a market-based economy.

1.2.1. THE PARADOX OF THRIFT AND THE REJECTION OF THE SAY'S LAW BY KEYNES

Among the many merits of John M. Keynes, the introduction of the principle of effective demand into the mainstream economics stands out particularly for the reasons we shall explain below. By inventing an analytical device with which to understand the nature of recurrent economic crisis, Keynes made it possible a rupture with the classical theoretical framework within which the possibility of the emergence of an over-production crisis is totally ignored.

The effective demand is comprised of two distinct kinds of economic activities, namely, consumption and investment. Owing to the psychological laws concerning the consumption of a community, any increase in aggregate real income through a rise in the level of employment causes aggregate consumption to go up, but not by so much as income. The reason is that aggregate consumption consists of two separate parts; firstly, autonomous consumption, which is independent of income, and secondly, the part of aggregate consumption which is sensitive to the changes in income. Aggregate consumption responds to the changes in income by a fraction called as the marginal propensity to consume.

Therefore, in order to fully realize the total output produced in that economy, there must be an amount of new investment sufficient to fill the gap between current income and aggregate consumption. As the wealth of a society becomes abundant, the marginal propensity to consume will decline accordingly due to the fact that a greater part of the national income is being saved. It should be noticed that the greater amount of savings is not the reason, but the result, of opulence in Keynes' thought.

But here arise the difficulties. The wealthier a society is, the wider the gap between income and consumption will be and thus the higher the need to fill the gap through new investments will be.[23] Keynes points out that this problem unceasingly looms over capitalist economy. "Each time we secure to-day's equilibrium by an increased investment we are aggravating the difficulty of securing equilibrium to-morrow".[24] The only remedy to avoid an outbreak of a recession at present makes the capitalist economy more vulnerable to new crises at future.

While a poor society tends to spend on consumption goods by far the greater part of its income, thus reducing the need for new investments in absorbing the excess of total output over what the society decides to consume, a wealthier society has to find much more investment outlets, which must also be profitable enough to attract investors, in order to prevent the economy from going into the crisis caused by a deficiency of effective demand.

On the other hand, the yield of new investments becomes less and less in proportion to the growth of the capital stock in an economy, an unpleasant situation which would be cured temporally only if an increase in the quantity of money were to reduce the rate of interest, in whatever degree would have been necessary to render the yield of additional investments attractive again to investors. The problem of how to fill the discrepancy between net income and consumption is exacerbated by the lack of adequate profitable investment opportunities proceeding from the over-accumulation of capital.

[23] John. M. Keynes, op.cit., p. 31.
[24] ibid., p.105.

Keynes seems to have held what may be called the scarcity theory of capital according to which as capital goods become less scarce or more abundant, the marginal efficiency of capital dwindles away. Therefore, Keynes finds it much preferable to speak of capital as having a surplus over its original cost during its life than as being productive.[25]

Keynes could not help invoking the theme discussed in a taboo-breaking manner in the "Fable of the Bees" by Bernard Mandeville, a book convicted as a nuisance by the grand jury of Middlesex in the year of 1723. In this book, Mandeville tackled the issue of "private vices versus public benefit"[26], arguing that once the production of luxuries comes to an end, the workers employed for producing them would end up being unemployed. The most certain method to increase wealth in private families, which economists call "saving", would be disastrous at the national level if everyone decided to be a frugal person at the same time.

This idea is the core of the paradox of thrift. A high propensity to save does harm, rather than favor, an economy suffering from an insufficiency of effective demand. If new investments fall short of the level needed to realize current total output, there occurs a large amount of unintended inventory investment comprised of the commodities unsold. And as commodities are piling up in warehouses unsold, the prospects of a higher rate of return on future investments seem less probable, and the risk of incurring a loss from new investments increases significantly, causing a sudden collapse in the marginal efficiency of capital.

Thinking the myth surrounding the saving in the classical political economy, the collapse of the conception of saving as a source of capital accumulation has many grave consequences for economic thought. Replying the question of what the Keynesian Revolution amounts to, Schumpeter wrote these lines:

[25] ibid., p. 213.
[26] ibid., p. 360.

"… saving had come to be regarded as the last pillar of the bourgeois argument. In fact, old Adam Smith had already disposed pretty much of every other: if we analyze his argument closely – I am speaking, of course, only of the ideological aspects of his system – it amounts to all-around vituperation directed against 'slothful' landlords and grasping merchants or 'masters' plus the famous eulogy of parsimony."[27]

Keynes seems to have been aware of this conclusion resulting directly from the *General Theory*:

"Thus our argument leads towards the conclusion that in our contemporary conditions the growth of wealth, so far from being dependent on the abstinence of the rich, as is commonly supposed, is more likely to be impeded by it. One of the chief social justifications of great inequality of wealth is, therefore, removed"[28].

By formulating "a doctrine that may not actually say but can easily be made to say both that 'who tries to save destroys real capital' and that, via saving, 'the unequal distribution of income is the ultimate cause of unemployment,"[29] Keynes smashed the last pillar of the case for the justification of the income the capitalist class earns in the shape of interest into dust.

At this point, it should be asked how Keynes defined the concept of saving. "An act of individual saving means –so to speak– a decision not to have dinner to-day".[30] But abstinence from having dinner at present cannot be said to be identical with a decision to have dinner or to buy any other commodity at some future date. Instead of being a substitution of future consumption-demand for present consumption-demand, an individual decision to save results in a net diminution of effective demand. Neither it places any specific forward order for consumption of any specified thing, nor is it a postponement of current consumption with a view to having a greater command over future consumption goods. It is simply the cancellation of a present demand for consumption, thereby depressing the business of

[27] Joseph A. Schumpeter, **Ten Great Economists: From Marx to Keynes**, Rotledge, London, (this edition published in the Taylor & Francis e-Library, 2003), p. 289.
[28] Keynes, op.cit., p. 373.
[29] ibid., p. 290.
[30] Keynes, op.cit., p. 210.

producing consumption goods at present without inducing the business to prepare for some future act of consumption.

A decision not to consume does not only discourage the production of consumption goods, but also depress the level of employment because "the expectation of consumption is the only *raison d'être* of employment".[31] It is only a matter of time before the contraction of consumption goods industry gives rise to a host of cancellations of previous orders for capital goods, which have, in turn, a depressing effect on the production of means of production.

When an individual determines how much of his income he will consume and how much he will save, there are a number of factors at play, the most important of which is the propensity to consume. But this is not end of story. This decision having been made, there is an another quite important decision which awaits him, that is to say, in what form he will keep the money he saves out of his current income. The answer of this question lies in the concept of the liquidity preference.

After deciding how much of his income he will save, an individual faces two options before him; to hoard his savings in cash or to part with his money in exchange for a debt for a stated period of time. With Keynes, the rate of interest has nothing to do with waiting as such. Instead, he regarded it as the "reward for parting with liquidity for a specified period".[32]

But the question why such a thing as liquidity-preference exits still waits to be answered. One of the main building-blocks of the Say's law is that money is only the medium by which the circulation of commodities is effected. In other words, money is nothing other than the medium of exchange, the role of which is limited merely to facilitating the exchange of goods and services. At this point the classical political economists make a crucial error by overlooking the fact that money is used also as a means of storing wealth, a function which stretches back into ancient times.

[31] ibid., p. 211.
[32] ibid., p. 167.

Sometimes the effect of uncertainty about future on the minds of economic agents becomes so powerful that people prefer to hold his savings in cash which yields no interest to investing them in some kinds of debts such as bonds, stocks and securities, etc. Keynes counts three types of motives in demanding for money; firstly, the transactions-motive, which corresponds to the need for cash for the current exchanges of commodities; secondly; the precautionary-motive, which depends upon the desire for having a buffer against some unexpected events at the future; and thirdly, the speculative-motive, which has something to do with the appetite for securing profit from taking a position better than the other players of the market.

The first two motives for keeping wealth in a liquid form are related proportionately with income, and therefore, entirely independent of the rate of interest. On the other hand, the speculative demand for money is an inverse function of interest rate; the higher the rate of interest is, the lower the speculative demand for money will be, and vice versa.

On account of the function of money as a store of wealth, it is believed to be the case that money has tendency to leave the transaction process of goods and services in times of economic downturns, exacerbating the lack of adequate effective demand. Keynes sympathized with the ideas about imposing carrying cost on money and particularly held Silvio Gesell in high respect.[33] By charging a kind of negative interest rate on money, these schemes aimed at deterring people from hoarding money. By forcing people to spend their money in depression times, it was hoped to get a result that market would rejuvenate again by means of this pent-up demand for commodities. But these plans never realized.

Against this theoretical background, Keynes concludes that any change in investment expenditures causes the total output to move in the same direction, in whatever degree is necessary to bring savings into equation with investments at a new level.

[33] ibid., p. 355.

"Saving and Investment are the determinates of the system, not the determinants. They are the twin results of the system's determinants, namely, the propensity to consume, the schedule of the marginal efficiency of capital and the rate of interest…. The traditional analysis has been aware that saving depends on income but it has overlooked the fact that, income depends on investment, in such a fashion that, when investment changes, income must necessarily change in just that degree which is necessary to make the change in saving equal to the change in investment."[34]

From the above passage, we can draw a conclusion based on the Keynesian theoretical framework that any incremental in investments raises the level of income through the multiplier process so as to generate new savings of an equal amount to the increase in investments, thereby satisfying the condition that saving must be equal to investment. As we have noted above, the crucial point here is that this equality is of *ex post* character.

The causality runs from investment to saving, however; in other words, investment is assumed to have the ability to create its own resources, a conclusion which is diametrically opposed to the one based on the classical assumptions.

1.2.2. THE KALDOR–KALECKI APPROACH TO THE SAVING-INVESTMENT MECHANISM

Michal Kalecki was a Polish economist who is believed to have discovered the *General Theory* before Keynes. The similarity of the theoretical conclusions these two economists drew independently of each other is so striking that one cannot but think they should have put their heads together in trying to solve the economic problems of the period on a theoretical plane. But we know this was not the case and they never met each other during the time when they were constructing their theory about the working of capitalist economy. Although Keynes was a well-known economist at that time across the world, a fact which points out that Kalecki was informed about him; Kalecki himself wrote all his books and articles in Polish, a language which Keynes could not speak.

[34] ibid., p. 184.

Like Keynes, Kalecki also defends the view that investment is precursor to saving. But the mechanism by which investment generates saving is slightly different. We can summarize it just as follows:

An expansion in the production of investment goods creates additional demand for consumption goods as the workers and employers engaged in the production of means of production get incomes; since an increase in the production of consumption goods is made possible by the additional supply of means of production, the consumption goods industry meets the additional demand for consumption by extending its productive capacity; on the other hand, a higher level of investment activities both in investment goods and consumption goods industries accelerates capital accumulation and thereby raises total output; after the extra demand for consumption is being satisfied, the remaining balance is the residue of the increased total income destined for savings.[35] Therefore a higher level of production of investment goods creates, at the end of the period, a new level of savings which corresponds to the increased investments, by means of the accelerated capital accumulation.

Kalecki formulated a distinctive theory of profits according to which "capitalists earn what they spend, and workers spend what they earn".[36] In order to fully grasp the meaning of the maxim, we should go further into the details. According to Kalecki, given the assumption made in advance that a capitalist society consists of only two classes, namely, capitalist and working class, the level of profits in that economy amounts to gross capital formation, plus the fiscal deficit, plus the net export, plus capitalists' consumption, minus workers' saving.[37] This equation can be derived easily from the famous Keynesian national income identity, in which saving denoted by (S) is equal to investment denoted by (I), plus budget deficit

[35] Kazimierz Laski, "Three Ways to… High Unemployment", **Kalecki's Economics Today**, ed. by Zdzislaw L. Sadowski and Adam Szeworski, Routledge, this edition published in the Taylor & Francis e-Library, 2004, p. 112.
[36] Nicholas Kaldor, "Alternative Theories of Distribution", **The Review of Economic Studies**, vol. 23, No. 2 (1955-1956), p. 96
[37] Jan Toporowski, "Kaleckian Economics", **The Elgar Companion to Post Keynesian Economics**, edited by J.E. King, Edward Elgar Publishing, Cheltenham, UK, 2003, p.227.

denoted by (government expenditure minus taxation, G-T), plus net export denoted by (export minus import, X-M). Let Y denote national income, and C consumption:

$$Y = C + I + (G - T) + (X - M), \text{ and } S = Y - C,$$

Therefore, $S = I + (G - T) + (X - M)$

Thinking the assumption made above that only two classes exist in the Kaleckian model, we arrive at the equation where total saving is equal to capitalists' and workers' savings, let them denote by S_c and S_w, respectively.

$$S = I + (G - T) + (X - M) = S_c + S_w$$

When we deduct the workers' saving from both sides of the equation, then the saving identity provides us only with capitalists' saving:

$$S_c = I + (G - T) + (X - M) - S_w$$

Considering that capitalists can either consume or save out of their profits, we add capitalists' consumption, denoted by C_c, to the right side of the equation and thus we can incorporate profits into the saving identity:

$$P = S_c + C_c = I + (G - T) + (X - M) + C_c - S_w$$

Hence we can safely assert that the greater the capitalists' investment expenditures and/or unproductive consumption, or the budget deficit, or the expenditure of foreign residents on net exports, the greater the capitalists' profits will be. In the above referred article, Kaldor quotes a passage from Keynes' *Treatise on Money*, vol. I, p. 139 in order to show how much similar the theoretical results Keynes and Kalecki arrived at are:

"If entrepreneurs choose to spend a portion of their profits on consumption (and there is, of course, nothing to prevent them from doing this) the effect is to increase the profit on the sale of liquid consumption goods by an amount exactly equal to the amount of profits which have been thus expended…. Thus however much of their profits entrepreneurs spend on consumption, the increment of wealth belonging to entrepreneurs remain the same as

before. Thus profits, as a source of capital increment for entrepreneurs, are a widow's cruse which remains undepleted however much of them may be devoted to riotous living."[38]

Capitalist class, by spending a part of their income on consumption goods, boosts at the same time the demand for them, and this in turn raises the price level of consumption goods industry, which is a favorable thing for the capital employed there. Whether capitalists buy luxuries or not, makes no difference in terms of the profits arising out of the increased demand for consumption.

On the other hand, if the price level of wage-goods becomes higher than it was before, as a result of the demand pull inflation originating from the increased consumption on the part of capitalist class, and nominal wages still remain unchanged, then real wages erode in the face of a rise in the cost of living, a situation which is conducive to an acceleration in the accumulation of capital.

The Kaldor theory of distribution is another proof of the maxim that capitalists earn what they spend. By rejecting the neoclassical theory of distribution based on relative factor prices and quantities, Kaldor offers an alternative theory which is "beautiful in its simplicity"[39].

While neoclassical theory relates the relative price of a productive factor to its contribution to the total output, which is determined by the relative quantity of that factor used in the production process under the assumption of diminishing marginal returns, Kaldor thinks that the neoclassical theory of distribution is not only full of problems, but also unnecessary. With Kaldor, the share of profit is related to the share of investment in total output and the propensity to save out of wages and profits, and therefore it has nothing to do with the marginal productivity of capital.

As in the Kaleckian theoretical framework, the Kaldor theory of distribution is also based on the assumption that total income can be divided into two broad categories, namely, wages and profits (W and P). While S_w and S_p stand for

[38] Nicholas Kaldor, op.cit., p. 94 ft.
[39] A. P. Thirlwall, "Kaldorian Economics", **The Elgar Companion to Post Keynesian Economics**, edited by J.E. King, Edward Elgar Publishing, Cheltenham, UK, 2003, p. 223.

aggregate savings out of Wages and Profits, s_w and s_p denote the propensity to save out of wages and profits, respectively.

$$Y = W + P$$

$$I = S$$

$$S = S_w + S_p$$

Under the assumption of full employment, national income and investment are taken as given. Considering that simple proportional saving functions are $S_w = s_w.W$ and $S_p = s_p.P$, we obtain:

$$I = s_p.P + s_w.W = s_p.P + s_w.(Y - P) = (s_p - s_w).P + s_w.Y$$

When we divide both sides of equation by Y,

$\frac{I}{Y} = (s_p - s_w)\frac{P}{Y} + s_w$ and rearranging the equation with respect to the share of profits in national income, we get:

$$\frac{P}{Y} = \frac{1}{(sp - sw)} \cdot \frac{I}{Y} - \frac{sw}{(sp - sw)}$$

Given the propensity to save out of wages and profits, the share of profits in total output depends on the ratio of investment to total income.[40]As distinct from the formal validity of the equations above, the economic significance of the model lies in the fact that "investment, or rather, the ration of investment to output, can be treated as an independent variable, invariant with respect to changes in the two saving propensities s_p and s_w".[41] Treating the ratio of investment to output as an independent variable, Kaldor meant profits must be dependent variable because "capitalists can decide what to invest but they cannot decide what they earn"[42].

[40] Nicholas Kaldor, op.cit., p. 95.
[41] loc.cit.
[42] A. P. Thirlwall, op.cit., p. 224.

If we assume that workers' marginal propensity to save is equal to zero, which is a limiting case, we figure out that profits amount to the sum of investment and capitalists' consumption.

$$\frac{P}{Y} = \frac{1}{sp}\frac{I}{Y}$$

It would not take much effort to see that the coefficient before the ratio of investment to output ($\frac{1}{sp}$) stands for the multiplier of capitalist class which equals to ($\frac{1}{1-cp}$). Therefore an autonomous increase in investment raises the share of profits in income by an amount larger than the initial increase thanks to the multiplier effect. The larger the capitalists' marginal propensity to consume, the higher the sensitivity of profits to investments will be. This is exactly what Keynes meant when he had invoked the parable of widow's cruse. An increase in capitalists' consumption raises profits by an equal amount.

1.2.3. THE ROLE OF BANKING SECTOR IN THE KEYNESIAN THEORETICAL FRAMEWORK

Considering that Keynes' theory of interest can be classified under the head of liquidity–theory of interest, not saving–theory of interest, this theoretical exposition of the Keynesian thought would be incomplete if we did not mention the role of the banking system in regulating the finance of investment.

When concluding the enquiry about how the saving-investment mechanism works in the Keynesian model, we have noted above that when investment goes up, income must necessarily grow in exactly that degree which is necessary to make the rise in saving equal to the initial increase in investment. But the question of how the initial rise in investment can be financed in the beginning still remains unanswered in

the *General Theory*. No wonder that a number of prominent Keynesian economists, including Kaldor, directed their criticisms towards this crucial neglect.[43]

Even if we accept that through the working of the multiplier, a rise in saving equal to the primary increase in investment can be generated; there must be an interregnum between an autonomous investment increase and the attainment of a higher level of saving-investment equilibrium. But the conditions where the need to finance primary investment expenditures turns into a kind of financing problem are a little bit complex. If the flow of investment is at a steady rate, the financing requirements of current new investments are provided by the finance released by the current ex post investment.[44]

For that reason, there arises a financing problem when the transition from a lower to a higher level of investment activities takes place, that is to say, when the current rate of ex-ante investment is higher than the current rate of ex-post investment. A simple example given by Keynes himself sheds some light on the question at hand.

Suppose that a head of a family orders a house to be built for his family through a building society to which he mortgages his future savings for repayment; but the builder needs the finance, not the promise to pay the installments due in the future. "The ex-ante saver has no cash, and but it is cash which the ex ante investor requires".[45] And the building society collects the funds it needs from the general pool of liquid resources at a suitable rate of interest. "[T]finance required during the interregnum between the intention to invest and its achievement is mainly supplied by specialists, in particular banks, which organize and manage a revolving fund of liquid finance"[46].

For Keynes, this process is simply a book-keeping transaction in the sense that the lending during the interregnum is self-liquidating at the end of the interim

[43] Robert Pollin, "Saving", **The Elgar Companion to Post Keynesian Economics**, edited by J.E. King, Edward Elgar Publishing, Cheltenham, UK, 2003, p. 306.
[44] John Maynard Keynes, "The Ex-Ante Theory of The Rate of Interest", **The Economic Journal**, vol. 47, No. 188 (Dec., 1937), p. 666.
[45] ibid., p. 665-666.
[46] Loc.cit.

period because the cash flow released by the completion of the investment covers the credit the banking sector accepted to open to investors in the beginning.

But the funds for an autonomous incremental in investment can be found only through the banking system and it is particularly important at which rate these funds will be offered. The rate at which the finance is available has a direct influence upon the size of this investment expenditure and the supply of liquidity depends wholly upon the terms on which the banking sector is prepared to become more or less liquid.

Unless the banking sector is willing to accept a temporary decline in its own liquidity, the financing cost of an autonomous incremental in investment will rise as a result of a higher active demand for liquidity. Saving does not come into the picture because it is incumbent upon the banking sector and other private intermediaries to channel the supply of credit to non-financial sector, not upon ultimate savers.

If the central bank accepts to encourage the private banking sector in credit growth by turning on the money tap, that is to say, by expanding the monetary base and increasing the supply of reserves to the banking system, then all sorts of private intermediaries will possess the power to create resources for a higher level of investment activities without becoming less liquid. Therefore an increase in the rate of interest due to a rise in demand for liquidity is not an inevitable result.

Keynes sums up his most fundamental conclusion within this field as follows:

"This means that, in general, the banks hold the key position in the transition from a lower to a higher scale of activity. If they refuse to relax, the growing congestion of the short-term loan market or of the new issue market, as the case may be, will inhibit the improvement, no matter how thrifty the public purpose to be out of their future incomes…. The investment market can become congested through shortage of cash. It can never become congested through shortage of saving. This is the most fundamental of my conclusions within this field."[47]

[47] ibid., p. 668-669.

Therefore, in this less known article, Keynes overcame a theoretical difficulty which had been overlooked in the *General Theory*, without abandoning his theory of liquidity preference and interest rate determination.

SECOND SECTION

THE RELATION BETWEEN DOMESTIC SAVING AND CAPITAL FLOW

Having discussed the basic approaches to the question of the investment-saving nexus, we will now proceed to analyze the relation between domestic saving and international capital flows and judge the predictions of the mainstream economics about the capital flows by asking whether the neoclassical theory fits to the data on the contemporary trends in capital mobility. And by introducing the international mobility of capital into our basic scheme of saving-investment causation, we take another step towards concrete reality.

2.1. INTERTEMPORAL TRADE AND THE LUCAS PARADOX

Before going into the analysis of current trends in international capital flows, we had better take a look at what the neoclassical economics expects to find in theory from the deregulation of capital account across the world. In order to be able to offer a solution to this investigation about the neoclassical economics, we should first mention about intertemporal trade.

Open economies differ from closed ones in one fundamental way that an open economy has an option of borrowing resources from the rest of the world or lending its own resources abroad. An economy can smooth out its consumption and investment patterns by means of loans from foreign savers, even if it suffers from a temporary income shortfall. On the other hand, an economy with excessive resources not being used can contribute to the productive investment projects in other countries

in need of resources. Therefore resource exchanges across time are defined as intertemporal trade[1].

The basic instrument in explaining how intertemporal trade works across time is intertemporal production possibility frontier which reflects a trade-off between present and future production of the consumption good. It is a self-evident fact that a country consumes only a part of its current output and the rest goes into the production of capital goods, buildings and other forms of productive investments. Within the neoclassical theoretical framework, the only way to consume more in the future is to release resources by consuming less today in the absence of unemployed resources, a proposition fully compatible with the one we pointed out above under the head of the loanable funds theory and Say's law.

The question of how a country trades over time is replied by referring to a representative agent behavior in the neoclassical models. When an individual borrows, he is able to spend beyond his means, but later, the loan must be repaid together with the accrued interest and therefore, in the future, the representative agent has to spend less than he earns. By borrowing, then, our representative agent indeed trades future consumption for present consumption.

Just as an individual sitting on debt must repay it with interest in the future, so does a country when it gets a loan in order to have the resources larger than it can produce today. To put it specifically, the trade-off which an individual or a country faces is one unit of present consumption for (1 + r) units in future consumption, where r stands for the real interest rate. And we may add to this that the relative price of consumption in future 1 / (1 + r). The higher the rate of interest, the lower the relative price of future consumption will be in terms of present consumption, and vice versa.

At this point we witness once again what Kaldor described earlier the "anthropomorphic nature"[2] of neoclassical economics, a tendency to apply to the

[1] Maurice Obstfeld and Kenneth Rogoff, **Foundations of International Macroeconomics**, The MIT Press, Cambridge, Massachusetts, 1996, p. 1.

national or international economy the same principles and rules of conduct as have been regarded as rational to a single individual. On the other hand, one cannot expect a complex economy with millions of economic agents with divergent and often opposing interests to function in a way that would be found only in a Robinson Crusoe world.[3] In other words, the neoclassical assumptions are too simple to be true.

Let's return to the subject after this short digression. It should be noticed here that every country has its own intertemporal production possibility curve, the shape of which is different from those of other countries'. Some countries have intertemporal production possibility curves which are biased toward present output, and others are biased toward the production of future consumption.

Now we face the question of what real differences these different biases correspond to. If an economy has a comparative advantage in future production of consumption goods, the relative price of future consumption would be cheaper than that of present consumption and this amounts to saying that the economy would have a high real interest rate in the absence of international capital flows. Once the capital account is de-regulated, it is quite right to expect that countries with ample savings would lend their resources to countries with a high real interest rate. Paul Krugman and Maurice Obstfeld explain this situation as follows:

"This high real interest rate corresponds to a high return on investment, that is, a high return to diverting resources from current production of consumption goods to production of capital goods, construction, and other activities that enhance the economy's future ability to produce. So countries that borrow in the international market will be those where highly productive investment opportunities are available relative to current productive capacity, while countries that lend will be those where such opportunities are not available domestically"[4].

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[2] United Nations Conference on Trade and Development, **Trade and Development Report, 2008: Commodity prices, capital flows and the financing of investment**, New York and Geneva, 2008, p. 67.

[3] Loc.cit.

[4] Paul Krugman, Maurice Obstfeld, **International Economics: Theory and Policy**, Pearson International Edition, 7th edition, 2006, p. 157.

Consequent upon deregulating its capital account, a country that has a high real interest rate relative to the rest of the world would see a reduction in domestic interest rates and an increase in the availability of foreign savings, that is to say, the funds which the neoclassical theory expects would spur domestic investments. A fall in the rate of interest would cause the intertemporal relative prices of present consumption to diminish, inducing the people of that country to consume more and save less. Because of its relatively abundant profitable investment outlets and its relative preference for consumption at present, the country with an intertemporal production possibility frontier biased toward future output would be an importer of present consumption goods. The increase in domestic investment and reduction in domestic saving would be financed by capital inflows.

Therefore we can safely say, according to the neoclassical theory of growth with foreign capital that when expressing concern about national current deficits, economic policy makers get it absolutely wrong because current account deficit is not necessarily a sign of economic failure. In contrary, since low-income countries have too little resources of their own to take advantage of all their profitable investment opportunities, they need to borrow from capital rich countries where saving levels are relatively high but there are not enough profitable investment outlets to absorb these redundant savings.

A critical feature of the analysis above is "its implication that the desired capital stock is independent of domestic consumption preferences! Other things equal, wouldn't a less patient country, one with a lower value of β [low marginal propensity to save or high marginal propensity to consume – SÇ], wish to invest less? Not necessarily, if it has access to perfect international capital markets. A country that can borrow abroad at the interest rate r never wishes to pass up investment opportunities that offer a net rate of return above r"[5].

Therefore international capital flows resemble a win-win game in which all participants can and do profit from it because, within the neoclassical theoretical framework, both lenders and borrowers reap the rewards of trade. While borrowers

[5] Maurice Obstfeld and Kenneth Rogoff, op.cit., p. 19.

can build up their capital stock beyond and above what they could have done in the absence of a deregulated capital account, lenders can take advantage of participating in lucrative investment projects in developing countries. Krugman and Obstfeld appear to have admitted the results of this reasoning by declaring that it "provides a rationale for developing country external deficits and debt"[6].

But there is still a question to be answered: why should developing countries have rich domestic investment opportunities relative to capital-rich countries? The reply lies in the law of diminishing marginal returns to factors of production. Robert E. Lucas, Jr. sums up the egalitarian predictions of the simplest neoclassical models of trade and growth as follows:

> "Consider two countries producing the same good with the same constant returns to scale production function, relating output to homogenous capital and labor inputs. If production per worker differs between these two countries, it must be because they have different levels of capital per worker. I have just ruled everything else out! Then the Law of Diminishing Returns implies that the marginal product of capital is higher in the less productive (i.e., in the poorer) economy. If so, then if trade in capital good is free and competitive, new investment will occur only in the poorer economy, and this will continue to be true until capita-labor ratios, and hence wages and capital returns, are equalized"[7].

According to the basic neoclassical model, it is a natural tendency for capital-rich countries to export their capital to capital-scarce countries. And then the countries which suffer from a lack of capital would absorb, in their turn, these foreign savings by transforming them into productive investment expenditures. The liberalization of capital account, which is a highly recommended policy today as it was in the recent past, would set in motion the process in which the funds available to profitable investment projects flow from capital-rich countries to poor ones until it would bring the capital-labor ratio in poor countries into equality with that of advanced countries.

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[6] Paul Krugman and Maurice Obstfeld, ibid., , p. 610.

[7] Robert E. Lucas, Jr., "Why Doesn't Capital from Rich to Poor Countries?", **The American Economic Review**, vol. 80, No. 2, May 1990, p. 92.

In the process during which poor countries catch up with advanced economies by means of the foreign resources flowing from them, foreign direct investments play a special role in bringing the new technology into those poor countries. Philippe Aghion and Peter Howit stress the point: "But catching up with the frontier [technology – SÇ] in any sector requires the involvement of a foreign investor, who is familiar with the frontier technology, together with effort on the part of a local entrepreneur, who knows the local conditions to which the technology must be adapted"[8].

The reason why a developed country should have beneficent spirits enough to help less developed country to catch up with it is that a country with a low stock of capital would offer a higher marginal productivity of capital as compared to capital-abundant countries. "The higher return on investment would allow the poorer country to increase its productive capacity, later paying to the richer country the interests and the total amount of the incurred debt with the results of the productive investment of borrowed resources"[9]. Therefore, the capital-rich country is not as beneficent as it seems at first sight.

The lower the capital stock per worker a country has, the higher the marginal productivity of its capital will be. And developing countries where there are a lot of natural resources and labor inputs are basically resource-constrained economies in need of foreign capital inflows to make up for the insufficiency of domestic capital accumulation. In sum, capital-scarce countries are deemed to have an intertemporal production possibility frontier biased toward production of future consumption goods because relatively cheap price of future consumption reflects a high real interest rate corresponding to lucrative investment possibilities. Now we find the rationale behind the expectations of the international capital flows from developed to developing countries across the world.

[8] Philippe Aghion, Peter Howitt, "When Does Domestic Saving Matter for Economic Growth?", Preliminary draft of paper to be presented to the conference on Financial Frictions and the Macroeconomy at the Bank of Canada, November 17, 2005, p. 2.

[9] Luiz Carlos Bresser-Pereira, Paulo Gala, "Why Foreign Savings Fail to Cause Growth", **International Journal of Political Economy**, vol. 38, issue 3, 2009, p. 58-76.

But, unfortunately, neoclassical economics looks beautiful only on paper. The predictions of the neoclassical models do not fit into the current trends in the international capital flows. In other words, facts and data on growth and international capital flows do not support the predictions of neoclassical economics.

Especially since the Asian financial crisis, there has occurred a shift of developing countries as a group from net capital importers to net capital exporters and thus capital began to flow uphill, that is, from poor to rich countries, a strange phenomenon which led some leading mainstream economists such as Ben Bernanke to conclude that some developing countries had been generating "savings glut". But there is more. Not only did capital flow uphill, but some developing countries running huge current account surplus also tended to grow faster and invest more than their peers receiving net capital inflows.[10] Net capital exporting developing countries outdid those developing countries that depended to a great extent upon foreign savings by running a current account deficit over the past decade. The fact that the United States has been the biggest debtor country in the world and spent beyond its means at the expense of such poor countries as China, India etc. clearly illustrates the perverse nature of international money flows over the past decade. Eswar Prasad et.al. summarize this fact as follows:

> "Yet … the average income per capita of countries running current account surpluses (with income measured relative to that of the richest country in that year, and with countries weighted by their surpluses in calculating the average) has been trending downward. Correspondingly, the average relative income per capita of deficit countries, weighted in the analogous way, has trended upward. Indeed, in this century the relative income per capita of the surplus countries has fallen below that of the deficit countries"[11].

In other words, at the turn of the twenty-first century capital ceased to flow from rich to poor countries in the quantities the neoclassical model would expect.

[10] United Nations Conference on Trade and Development, **Trade and Development Report, 2008: Commodity prices, capital flows and the financing of investment**, New York and Geneva, 2008, p. 51.

[11] Eswar S. Prasad, Raghuram G. Rajan, Arvind Subramanian, "Foreign Capital and Economic Growth", **NBER Working Paper**, No. 13169, Nov. 2007, Cambridge, Massachusetts, p.2.

Moreover, in contrary to the predictions of the neoclassical theory, it began to flow from poor to rich countries. But there is more: "it seems that foreign capital does not flow even to those poor countries with more rapidly growing economies, where, by extension, the revealed marginal productivity of capital (and probably creditworthiness) is high"[12]. We can conclude that the neoclassical theory according to which those capital-scarce countries with high marginal productivity of capital should have the ability to attract foreign savings seeking for a higher rate of return than is prevalent in capital-abundant countries ceases to hold.

It should be noted, in passing, however that one of the factors which made the Great Depression of 1929-1933 so severe was the financial flows between countries after the First World War. During the roaring twenties, bankrupt Germany was being squeezing for war reparations by Britain and France and they, in turn, were handing that money over to the United States to pay their war loans. Money had been flowing from Germany burdened with war reparations through the victors, Britain and France, to the United States. These unsustainable monetary flows had to collapse and drag the world trade down with themselves.

After pointing out that the world has run out of willing and creditworthy private borrowers, Martin Wolf, in his column, warns:

> "The spectacular collapse of the western financial system is a symptom of this big fact. …In the long run, the global economy will have to rebalance. If it doesn't, The open world economy may even break down. As in the 1930s, this is now a real danger."[13]

On the other hand, albeit the recent limited counteracting trend in capital inflows into developing countries after the Great Recession by which North America and other Western European economies had been hit the worst, the great bulk of the international capital flows went not to developing countries but to other advanced

[12] ibid., p.3.
[13] Martin Wolf, "Global imbalances threaten the survival of liberal trade", **Financial Times,** 02.12.08, http://www.ft.com/cms/s/0/027b1efc-c0a4-11dd-b0a8-000077b07658.html#axzz33r9FKFro, online: 06.06.14.

economies. In his time, Robert Lucas, Jr., too, admitted that "[w]e do, of course, see some investment by wealthy countries in poorer ones, but an example with some rough numbers will help to make clear just how far the capital flows we observe fall short of the flows predicted by the theory I have just sketched."[14] Therefore, in real world, international capital flows do not help poor economies to catch up with the most advanced economies; in contrary, capital moves to a great extent from one developed country to another, thereby deepening the inequalities in economic development between capital-rich and capital-scarce economies. In other words, it is not right to expect that all economies should eventually converge in terms of capital-labor ratios with the aid of liberalization of capital account, as it must be the case under the assumptions of neoclassical economics.

Lucas explained the discrepancy between neoclassical theory and the hard facts by his endogenous growth model. According to him, the predicted rate of return differential between developed and developing countries as it seems at first glance disappears as soon as we take into account the external effects of human capital.[15] The assumption made by neoclassical economists that relates output to homogenous capital and labor inputs is terribly wrong because it totally ignores the concept of human capital. Replacing labor with effective labor in the way Lucas did entirely eliminates the predicted return differential between developed and underdeveloped countries because a worker from a developed country would produce always more output than his fellow from a backward country in a given time.

But this explanation by Lucas does not seem to us satisfactory for reasons outside the scope of our thesis. We should briefly mention about an alternative explanation of capital exports between developed countries, namely, the law of uneven development.

Ernest Mandel, a Belgian Marxian economist, recorded that in contrast to the period spanning from 1880 to 1940 during which capital was exported from the metropolitan countries to the underdeveloped ones, the late capitalism which

[14] R.E. Lucas, Jr., op.cit., p. 92.
[15] ibid., p. 94.

according to him corresponds mainly to capitalism from 1945 onwards, saw the tendency of capital to move from some imperialist countries to other metropolitan countries.[16] The explanation provided by him is as follows: however low the price of labor-power in the semi-colonial countries may be, and therefore however high the average rate of profit in those countries may be as a result of a ruthless exploitation of working class going on there, the capital seeking a higher rate of return in the dependent countries than in the imperialist countries where the level of real wages is high finds soon itself in a very unpleasant position because the low level of wages in poor countries also acts as a limit on the further accumulation of capital. In other words, the size of the market is limited within extremely narrow confines by the low level of real wages and the modest needs of the workers in the Third World, so that those industries in the underdeveloped countries which are equipped with modern technology mostly have to operate at low capacity utilization. That is to say, the size of the market in the Third World countries is usually smaller than the volume which is necessary to absorb all the output produced in the modern factories that have economies of scale as well as a high degree of capacity utilization.

An extract from *Late Capitalism* helps us clarify the point. After pointing out that the capital accumulation in the semi-colonies in his time created a manufacturing industry there which had remained, on average, one or two stages behind the technology or type of the industry predominating in the metropolitan imperialist countries and the international division of labor was slowly and gradually moving towards the exchange of light industrial goods for capital goods such as machines, equipment and vehicles, Mandel proceeded to explain why it had proved to be so:

"… [T]his a corollary of the narrow domestic market, the enormous industrial reserve army [which consists of involuntarily unemployed workers – SÇ], and the trend towards industrialization with obsolescent machinery (i.e., with the 'castoffs' of Western industry discarded because of the accelerated obsolescence of fixed capital) and even with obsolete equipment especially produced for this industry (itself in turn determined by the

[16] Ernest Mandel, **Late Capitalism**, transl. by Joris De Bres, Verso, London-New York, fifth impression, 1993, p. 64.

narrowness of the market, i.e., by small production series, which are unable to achieve the valorization of capital needed for the most modern equipment)". [17]

In sum, the small size of domestic market and the nearly subsistence level of local wages which is determined in turn by a high rate of unemployment force the firms which are organized along the lines of capitalist production to set up and use sub-optimal technology in the underdeveloped countries. And the obsolete equipment for small production series obviously costs less than the capital goods based on the new technology. Therefore, international capital inflows into the so-called Third World countries are expected to be small scale as compared to those bound for developed countries where the large size of the capitalist market makes it possible and necessary for foreign investors to open large-scale production facilities in view of the scramble to get a bigger share of market.

2.2. THE FELDSTEIN & HORIOKA PUZZLE

Keeping what the neoclassical economics said about the benefits of uninhibited international capital flows in their minds, many economic policy makers have been embracing the idea of capital account liberalization for developing countries at the end of 1980s and at the beginnings of 1990s. Back then, economists extolled the virtues of a deregulated capital account by arguing that growing financial integration helps developing countries augment their capital stock thanks to the foreign savings.

But, by the end of the decade, the hope that developing countries would take off with the aid of the funds flowing into them from capital-abundant countries faded away, in part, because of the crises in East Asia and Russia. And thus, the debate began to shift from "when to open the capital account" to "whether to open it at all" among the economic policy-makers in the emerging economies.

[17] ibid., p. 368-369.

Martin Feldstein and Charles Horioka asserted that in a world where the capital account is fully liberalized, the link between domestic saving and investment should be broken because there could be no room for the possibility of profitable investment opportunities not being exploited due to the lack of adequate domestic funds. "With perfect world capital mobility, there should be no relation between domestic saving and investment: saving in each country responds to the worldwide opportunities for investment while investment in that country is financed by the worldwide pool of capital"[18]. According to the neoclassical theory, new savings tend to be invested not in the country of origin but in any country where there are lucrative investment projects for them. Therefore, differences among countries in investment rates should correspond to anything but differences in saving rates. Otherwise, the theory would cease to hold.

The main tenet of neoclassical approach to the capital flows around the world is the postulate that foreign savings are perfect substitutes of domestic savings in financing gross capital formation. It is natural that domestic savings are deemed to have no impact upon investments and growth rates by neoclassical economists.

In contrast to the expectations of the neoclassical economics, there has been a strong link between domestic saving and investment around the most part of the world. "International differences in domestic saving rates among major industrial countries have corresponded to almost equal differences in domestic investment rates"[19]. We should bear in mind that Feldstein and Horioka wrote this article in a world where a great part of the world capital stock was held in illiquid forms since the process of what some economists called the "financialization" did not yet gain much ground. Having recorded that short-term liquid capital is able to take advantage of short-term interest rate differentials; they admitted that "most capital is apparently not available for such arbitrage-type activity among long-term investments"[20] and therefore much of the foreign direct investment is made with a view to enhancing trade positions or utilizing special knowledge but it is not sensitive to "differences in

[18] Martin Feldstein, Charles Horioka, "Domestic Saving and International Capital Flows", **The Economic Journal**, vol. 90, No. 358 (June, 1980), p.317.
[19] ibid., p. 328.
[20] Loc.cit.

saving rates or relative capital intensities"[21], a situation totally incompatible with the results of the neoclassical reasoning.

Feldstein and Horioka gave this "puzzle" their name and paved the way for further studies focusing on the nature of international capital flows. Aizenman et al. tried to construct a new methodology of which is capable to shed some light on the issues the neoclassical theory failed to explain. By calculating the self-financing ratio which indicates "what would have been the autarky stock of tangible capital supported by actual domestic past saving, relative to the actual stock of capital"[22], Aizenman et.al. scrutinize the growth dynamics of developing countries in the context of international resource transfer. The self-financing ratio which is the same thing as the cumulative savings gap reflects the degree to which the stock of capital has been financed by domestic resources, an aggregation of past domestic saving and gross capital formation. It is self-evident that a value of self-financing ratio below 1 refers to a partial dependence on foreign savings in funding domestic investments.

After noting that " [a]ll that we can infer is that despite greater financial integration, foreign savings on average have not provided a viable source of financing domestic capital for developing countries", Aizenman et.al. go further:

> "There is no evidence of 'growth bonus' associated with increasing the financing share of foreign saving. The evidence suggests just the opposite: throughout the 1990s, countries with higher self-financing ratios grew significantly faster than countries with low self-financing ratios. This reinforces the skeptical assessment of the growth effects of financial liberalizations"[23]

The main finding of the study is that notwithstanding the wave of financial liberalization throughout the 1990s, developing countries on average financed % 90 of their capital stock by their own resources. In other words, the average self

[21] Loc.cit.
[22] Joshua Aizenman, Brion Pinto, Artur Radziwill, "Sources for financing domestic capital – is foreign saving a viable option for developing countries?", **NBER Working Paper Series**, No.10624, June 2004, p.5.
[23] ibid., p. 4

financing ratio for developing countries was about 0,9, a certainly high ratio which remained stable during the period.

Aytül Ganioğlu and Cihan Yalçın, two economists from the Central Bank of the Republic of Turkey, updated the study of Aizenman et.al. by extending the time span of their work into the end of the first decade of twenty-first century. By calculating the self-financing ratios of 46 countries for the period of 1993-2010, they found that despite a further intensification of financial integration around the globe and a surge in international capital flows across countries, countries on average financed a great part of their capital stock by domestic savings during the 2000s[24]. They added that the larger the fraction of domestic resources in the financing of the stock of capital, or the higher the self-financing ratio, the faster an economy will grow, an empirical finding which is particularly relevant for "countries with low SFRs [low self-financing ratios – SÇ] and low-middle income countries"[25].

Another interesting result of the study of Aizenman et.al is that the main benefit derived from greater financial integration has been to increase countries' ability to diversify their assets and liabilities. Since financial liberalization resulted in inflows of foreign saving financing outflows of domestic saving, it had little net effect on the self-financing ratio. This fact is compatible with the notion that "financial integration has facilitated greater diversification of assets and liabilities"[26].

In their article, Helmut Herwartz and Fang Xu bring together economic models aimed at finding a reason for a high domestic saving and investment relation.[27] One of these models suggests that the stationary nature of the current account balance implied by the long-run budget constraint could give rise to a high domestic saving-investment relation:

[24] Aytül Ganioğlu, Cihan Yalçın, "Domestic Savings-Investment Gap and Growth: A Cross-Country Panel Study", Working Paper No: 13/46, December 2013, TCMB, p. 18
[25] Loc.cit.
[26] Aizenman et.al., ibid., p. 3.
[27] Helmut Herwartz, Fang Xu, "What determines the relation between domestic saving and investment–a new look at the Feldstein-Horioka puzzle", March 2006, http://ecomod.net/sites/default/files/document-conference/ecomod2006/1641.pdf, online: 06.06.14.

"Introducing a market determined risk premium on borrowing, Coakley et.al. (1996) show that the long-run solvency constraint implies a stationary current account. For the case of simple Solovian economy with stochastic growth, Taylor (2002) demonstrates that stationarity of the current account is a sufficient condition for the long-term intertemporal budget constraint to hold"[28].

To put it in simple words, if borrowing and lending are allowed, a country whose intertemporal production possibility frontier is biased toward the production of future consumption goods would borrow present consumption goods in the first period and repay its debt with consumption goods produced in the second period. Or, a country whose intertemporal production possibility frontier is biased toward the production of present consumption goods would lend consumption goods produced by exporting them in the first period and import consumption goods in the second period from abroad when its first period loans are being repaid to it with interest. In case loans given or taken abroad are not repaid with accrued interest, those countries which fail to meet their liabilities will face the insolvency laws. Therefore, according to the neoclassical economics, the fact that intertemporal trade must, by definition, be balanced could induce a strong relation between domestic saving and investment.

Another economic model which tries to explain why a high domestic saving-investment relation exists among major countries propose that since large countries dominate the world investment market, any decline in their domestic savings should have repercussions for the worldwide pool of loanable fund.

"Harberger (1980), Murphy (1984) and Obstfeld (1986) show empirically that large countries are likely to have high SI [saving-investment – SÇ] relations. For a large economy, the world interest rate and many good prices are more likely endogenous. Then, a shortfall in domestic saving may drive up both the world's as well as the domestic interest rate. As a result, a large countries' domestic investment decreases. Thus, although capital flows are mobile for the large country, it is likely to show a high SI relation. In contrast, most developing countries are small and cannot influence the world interest rate. Therefore, the corresponding SI relation is lower for developing countries"[29].

[28]ibid., p. 5.
[29] ibid., p. 6.

However convincing these models may seem, we think that they fall short of providing a full explanation for the relationship between international capital flows and growth. In order to find a solution to the "capital flows paradox", we should have recourse to the theories which examine the effects of international capital flows on the growth rate of an economy in terms of the real effective exchange rate appreciation/depreciation.

2.3. A CASE FOR THE DUTCH DISEASE

Now we are able to scrutinize whether domestic saving and foreign capital may complement each other or not. By doing so, we shall also address the question of how foreign capital inflows affect the rate of growth in those countries receiving them.

It can be easily recalled that in a simple Solowian economy, economic growth could stem from either an increase in total factor productivity or capital accumulation. During the transition process to the steady state level, an economy can grow by simply adding capital, thereby enabling it to reach the steady state faster. After that level has been reached, the economy will need to enhance its total factor productivity in order to grow more.

For backward, capital-scarce countries that are also far from the steady state level, and where capital accumulation is held back by the lack of adequate domestic resources, it is self-evident that economic growth can be attained by additions to capital stock. But, on the other hand, backward countries in steady-state equilibrium will need to attract foreign direct investments, by means of which they could advance productivity of their economies, since growth in steady-state equilibrium could result mainly from a rise in total factor productivity. Therefore the question of whether there is a growth bonus associated with financial integration for developing countries can also be re-formulated in that way: "[D]oes foreign capital help poor countries grow, either by advancing the stock of knowledge and productivity of the economy

or by augmenting scarce domestic resources?"[30] We shall handle this question throughout the sub-section.

As we have shown above, the underlying assumption behind the neoclassical theory of growth and trade is that the binding constraint for nonindustrial countries is low level of domestic savings. Where the complete financial integration across countries is fulfilled, larger current account deficits should help resource-constrained poor countries grow faster by enabling them access to the resources they lack.

But the evidence seems to challenge the fundamental premise of neoclassical theory. While countries that had high investment ratios and lower reliance on foreign savings (i.e., countries that had smaller current account deficits, or larger surpluses) have fared well compared to those countries that had high investment ratios but relied more on foreign savings, foreign capital has been flowing into countries with a low marginal productivity of capital during the first decade of the twenty-first century. After pointing out to this fact, Prasad et.al. conclude: "Even the most conservative interpretation of our finding –that there is no negative correlation for nonindustrial countries between current account balances and growth, or equivalently, that developing countries that have relied more on foreign finance have not grown faster in the long run, and have typically grown more slowly– runs counter to the predictions of standard theoretical models"[31].

If the standard neoclassical theory fails to explain this puzzle, the question arises before us: now that larger current account deficits do not foster growth in developing countries by augmenting capital stock there, what kind of effect do foreign capital inflows have on developing countries? Prasad et.al. answer this question by making use of the concept of Dutch disease.

The term Dutch disease, when simply defined, refers to a situation where an economy loses its competitiveness in manufacturing industry due to the appreciation of real effective exchange rate resulting from large inflows of foreign currency. The term was coined in 1977 by *The Economist* to describe the decline of the

[30] Prasad et.al., op.cit., p. 4.
[31] ibid., p. 5

manufacturing industry and agricultural production in Netherlands after the discovery of a large natural gas field in the North Sea at the end of 1950s.[32]

Whether it is the result of a colossal amount of export revenues following the discovery of some large natural resources such as was the case in Netherland during the 1970s, or it stems from simply a speculative attack by foreign investors or currency traders taking full advantage of the liquidity abundance in the world economy, large inflows into a country could lead to a real overvaluation of domestic currency, making the country's exports more expensive for other countries to buy and its imports cheaper for the residents of that country. "[W]hen it [foreign capital] flows in, it leads to real overvaluation of the currency, further reducing the profitability of investment beyond any constraints imposed by an inadequate financial system"[33]. Therefore, consequent upon large inflows of foreign currency, the manufacturing industry in a country receiving the external liquidity would become less competitive relative to its foreign rivals because of a fall in the marginal productivity of capital.

Prasad et.al. constructed a theoretical framework in which foreign capital inflows would shift the investment schedule inward and reduce total investment at any interest rate, depending on the magnitude of the inflows, the responsiveness of the exchange rate to those inflows, and the responsiveness of investment to the change in the exchange rate.

"In particular, large inflows could lead to an increase in real wages, an appreciation of the currency in real terms, and a fall in the marginal product of investment. Equivalently, the higher domestic consumption that necessitates a greater reliance on foreign finance could fall substantially on nontraded goods, pushing up their price and leading to currency overvaluation. The greater the capacity of a country to expand nontraded goods, the less the overvaluation. Thus, where domestic saving is insufficient, the use of foreign capital to finance investment may further depress the profitability of investment by causing an overvaluation of the currency – a form of what is commonly known as Dutch disease.

[32] **The Economist**, "It's only natural", Sep. 9th 2010, from the print edition, http://www.economist.com/node/16964094 online: 10.06.14
[33] Prasad et.al., op.cit., p. 6.

Countries that rely excessively on foreign capital to fund their investment may find themselves becoming increasingly uncompetitive on the trade front"[34].

In fact, a less developed financial architecture could more likely to channel foreign savings not to potentially highly lucrative but hard-to-finance investments in the manufacturing industry and agriculture, but rather to easily collateralized nontradable investments such as real estate, a perverse situation which could exacerbate foreign inflows' contribution to an increase in costs in the nontraded sector.[35]

At this point, we should bear in mind that the real effective exchange rate can be defined in two distinct ways. While the first definition is made in line with the purchasing power parity by adjusting the nominal exchange rate by the ratio of foreign price level to the domestic price level, the second definition is based on the distinction between tradable and nontradable goods. What should interest us for comprehending the effect of foreign capital inflows on the real exchange rate is absolutely the second definition.

The second definition takes the relative price of the tradable and nontradable goods in a country as a proxy for that country's competitiveness level in the foreign trade. Given that the prices of tradable goods should be equal across countries, the real exchange rate is the nominal exchange rate adjusted by the ratio of the international prices of the tradables to the domestic prices of the nontradables.

Let us clarify the definition on the basis of the tradable and the nontradable goods by using a simple numerical example. Suppose that the prices of the tradable and the nontradable goods are 1 and 4 respectively in the first period, and that the real exchange rate for that period is 0.25. If the price of tradable goods remains constant, an increase in the price of nontradable goods by 1 unit-price will change the relative price of them in the second period. Thus the new real exchange rate will become 0.20 since the prices of tradables and nontradables are now 1 and 5

[34] ibid., p. 19.
[35] ibid., p. 6..

respectively. The economic meaning of this alteration in the real exchange rate is clear: while the amount of nontradable goods to get 1 unit of tradable goods was equal to 4 units in the first period, it becomes 5 units in the second period and therefore the relative price of tradable goods produced in that country ends up being more expensive. If the international price of tradable goods stays unchanged, a higher relative price of nontradable goods results in a deterioration in that country's level of competitiveness in the tradable manufacturing sector.[36]

An increased demand for nontradable goods as a result of foreign capital flows appreciates the real exchange rate, thereby making the manufacturing industry less competitive and reducing the profitability of investment in the tradable sector. We can draw a conclusion that a country which has become heavily dependent on foreign savings to finance its domestic capital stock might lose its global competitiveness in the foreign trade. In addition, we can assert that foreign capital inflows might have a detrimental effect on manufactural exports and overall growth rather than augment capital stock in a supposedly resource-constrained developing country.

On the other hand, an autonomous expansion in the level of domestic savings in such an economy can lead to an expansion of investment and growth by reducing the saving-investment gap and the reliance on foreign finance. In other words, a decline in the capital inflows at each level of the interest rate brought about by an expansionary shift in domestic saving will have a favorable effect on investment by limiting the extent of overvaluation.[37] The crucial point here is that an improved domestic saving rate exerts its influence over the level of aggregate investment and the rate of growth not necessarily through the cost-of-finance channel, but through the profitability channel.

Dani Rodrik and Arvind Subramanian as well seem to be cognizant of the significance of domestic saving in financing investment in a world where capital

[36] Ahmet N. Kıpıcı, Mehtap Kesriyeli, "The Real Exchange Rate Definitions and Calculations", Central Bank of the Republic of Turkey, Research Department, Publication No: 97/1, January 1997, Ankara, p. 2-3.
[37] Prasad et.al., op.cit., p. 20.

account is globally liberalized. Even if their argumentation might seem weak to some economists when it comes to providing a satisfying explanation for why domestic saving matters with respect to growth in developing countries where the main problem lies with investment, not saving,[38] they managed to challenge the conventional wisdom about international capital flows by offering an insight based on the institutional deficiencies in developing economies.[39]

They begin their reasoning by asking why we cannot turn Ethiopia into a Netherlands by trying to fix all market and government failures simultaneously through coordinated policy reforms across the board.[40] For them, the answer should be searched in the nature and cause of underdevelopment. They take it for granted that poor economies are poor because there are a lot of things which are wrong with them. Since it is only a fool's errand to find a solution for too many problems at the same time, it is not so difficult for them to jump to the conclusion that developing countries should pursue a host of relatively small scale reforms that tackle the most binding constraints of the moment over time. The postulate that it's all their fault if poor countries are poor lurks behind the answer given by these authors. And herein lies the weakness of their argumentation.

They propose an explanation for the absence of a positive growth impact of international capital inflows by making a distinction between savings-constrained and investment-constrained economies.[41] The reason why investment rates linger at low levels in developing countries can be attributed either to the scarcity of credit or to the problems related with low perceived returns.

An economy is called as savings-constrained when there exist a lot of profitable investment projects but they cannot be realized because of the low current cash flow. Despite the existence of many profitable investment outlets, entrepreneurs cannot exploit these opportunities because they cannot finance their undertakings at

[38] United Nations Conference on Trade and Development, **Trade and Development Report, 2008: Commodity prices, capital flows and the financing of investment**, New York and Geneva, 2008, p. 69.
[39] Dani Rodrik, Arvind Subramanian, "Why Did Financial Globalization Disappoint?", **IMF Staff Papers**, vol. 56, no. 1, April 2009, pp. 112-138.
[40] ibid., p. 127.
[41] ibid., p. 131.

reasonable cost. The lack of sufficient domestic resources leaves firms in need of external finance for the undertaking of incremental investments. Therefore, it can be fairly expected, as is in the neoclassical textbook model, that capital inflows could relax the savings constraint and, by lowering the rate of interest, boost investment and growth in those developing countries where the main problem lies with a low level of domestic savings.

On the other hand, an economy is called as investment-constraint when there exists plenty of credit but profitability of investment projects is low relative to current cash flow. Where investment demand schedule is virtually vertical, financial conditions cannot be deemed as a major determinant of the volume of the aggregate investment. Whatever the level of the supply of loanable funds, banks are sitting on top of idle cash reserves and chasing after borrowers because entrepreneurs are reluctant to take credit for making investments. In contrast to the predictions of neoclassical economics, capital inflows have no effect on the level of aggregate investment and economic growth, but they raise aggregate consumption level in investment-constrained developing countries. But there is more. In this type of economies, foreign capital inflows harm economic growth because they lead to a domestic currency overvaluation and hurt tradable manufacturing sector.

Starting out from a very realistic assumption that capital inflows to emerging markets always respond to monetary conditions in the United States, Rodrik and Subramanian offer a simple test with which to check whether domestic investment moves alongside changes in the resource inflows in the direction suggested by the neoclassical textbook model. They make use of US Treasury bill rates adjusted by Consumer Price Index inflation as a proxy for the strength of capital inflows to emerging market economies.

Their finding is exactly the opposite of what one would expect to find in the case of a savings-constrained economy. The vast majority of the developing countries examined, including Turkey, exhibits positive correlations between US real interest rate and domestic investment. To put it simply, the lower the US real interest rate or, what is exactly the same thing under the assumptions made above, the higher

the volume of capital inflows, the lower the domestic investment will be in most of the developing countries. If the savings constraint bound, domestic investment in emerging market economies would be higher in response to a higher volume of foreign capital flowing into them. Therefore they conclude that an overwhelming majority of developing countries suffers from investment constraint.

There is one more question left unanswered: why does such a thing as investment-constrained economy exist? Their answer is grounded in the view that investment demand in low income environments is severely shrunk as a consequence of the imperfect appropriability of the social returns to investment:

"…[P]oor property-rights protection, weak contract enforcement, and fear of expropriation are the root causes of underdevelopment. Each one of these keeps investment demand lower than what would have been the case under better institutions"[42].

In order not to leave a point neglected in our presentation of the views of Rodrik an Subramanian, we should mention why tradable sector, and especially industry, are much more demanding than nontradable sector of the institution environment. This also explains why an overvaluation should affect tradable sector more severely than nontradable sector.

"A barber needs little more than a few implements and a stool to operate. But a garment firm depends on the reliable delivery of a whole range of public inputs and services (licenses, certification, transport links, public safety, enforcement of contracts with suppliers, and so on). Therefore, weak institutions impose a larger 'tax' on tradables than they do on nontradables. The effect of appreciation is to exacerbate this distortion and –in a model of endogenous growth model– reduce growth further"[43].

In the same vein of thought, Philippe Aghion et.al. put forward that domestic savings matter for economic growth in those countries that are not too close to the

[42] ibid. p. 130.
[43] ibid., p. 133.

frontier technology. But in those countries where prevalent technology is sufficiently close to the frontier, local entrepreneurs are more likely to be familiar with the frontier technology and therefore it is not necessary for them to attract foreign direct investment in order to undertake innovative projects. Therefore domestic saving has no considerable effect upon growth in relatively rich countries where there is no need for a foreign investor to have innovation. And in their case any promising innovative project can easily be undertaken without being affected by the level of domestic savings because local entrepreneurs of rich countries can tap into the worldwide pool of capital for financing the project more easily than their counterparts in developing countries can.

Domestic savings in poor countries can function as collateral to draw foreign investment. A higher level of domestic savings raises the collateral that can be put up by local entrepreneurs, which in turn facilitates to encourage entrepreneurial effort while guaranteeing a fat share of profit for a foreign investor to take part in an innovation project. High domestic saving does not only induce local entrepreneurial effort by giving local entrepreneurs a stake which they will lose if the project fails for lack of effort on their part, but also it serves as collateral which accrues to the foreign investor if the project fails for whatever reason .[44] When the rate of domestic saving is low in a poor country, foreign investors more likely choose to invest their funds elsewhere at the prevailing market interest rates because their participation constraint has not been satisfied by this country.

The crucial point here is that according to this model, growth in relatively poor countries comes primarily from increases in total factor productivity, which could stem from the foreign direct investment. Innovations which foreign investors bring in permit native entrepreneurs of developing countries to become acquainted with the current frontier technology.

They sum up their theory as follows:

[44] Philippe Aghion, Diego Comin, Peter Howitt, Isabel Tecu, "When Does Domestic Saving Matter for Economic Growth?", **Harvard Bussines School, Working Paper 09-080**, in draft form, January 4, 2009, p.2.

"…[A] country's ability to take advantage of international technological diffusion, is positively correlated with the level of its domestic savings. Familiarity with the frontier technology reduces its cost of adoption… [E]ntrepreneurs in these countries [poor ones – SÇ] need to rely on foreign investors that are familiar with the frontier technology. However, there is moral hazard in the relationship between local entrepreneurs and foreign investors: namely, the domestic entrepreneur may not deliver on her input contribution, unless she has invested sufficient capital in the project. This co-investment is in turn financed out of domestic savings"[45].

If technological progress in developing countries entails attracting foreign direct investments in order for local entrepreneurs of these poor countries to be able to utilize frontier technology, domestic savings will play an important part in inducing them make an effort needed to render the foreign investment profitable. Since local entrepreneurs have stake in that innovation project, it is less likely that any foreign investment is unable to continue for want of effort on the part of local entrepreneurs.

[45] ibid., p. 34.

THIRD SECTION

THE SAVING-INVESTMENT GAP IN TURKEY

In this section, we shall try to make an empirical analysis of the saving-investment gap in Turkey in the last decade. We focus our attention on the dynamics affecting the decline in total domestic savings since the phenomenon of a widening savings gap in Turkey has been the result of not so much a higher level activity in the gross capital formation, as a drop in the domestic saving rate. But, on the other hand, since the distribution of investment which has been more and more biased towards nontradable sector also determined the growth performance in the last decade, we postulate that the free drop in the total domestic saving rate has something to do with the allocation of resources across different sectors via free market mechanism.

Many economists at home and abroad has generally acknowledged that the most urgent problem the economic policy makers in Turkey should address is the country's chronic current account deficits and its declining domestic saving rates in recent times. While Turkish economy witnessed not-so-brilliant growth rate in the period after the adoption of IMF Stand-by Agreement and the implementation of the Transition to the Strong Economy Program delineated by, among others, Kemal Dervis, the then Minister for economic Affairs, it has done so at the expense of incurring current account deficits at an all-time record levels. Therefore it has been broadly agreed that a high level of current account deficits left Turkish economy susceptible to a sudden stop in capital inflows, a situation reflected in the boom-bust cycles of economic growth in Turkey.

This situation raised many suspicions on the part of economists about the sustainability of the country's economic growth in the long-term and it sparked a debate among economists over whether the quality of growth in Turkish economy over the last decade was poor or not. Here we confine ourselves to saying that the

tendency of total domestic saving rate to fall has become a serious growth bottleneck for Turkish economy because it often leads to balance of payment crisis of the sort many developing countries have undergone in their near past for the reasons we shall explain below.

3.1. A WIDENING SAVING-INVESTMENT GAP VIS-À-VIS MEDIOCRE GROWTH

Coupled with the liquidity abundance around the world, the idle capacity left over from the economic collapse in 1999 and 2001 and a colossal amount of pent-up demand due to the crisis helped Turkish economy grow at a rate of 8-9 percentage points in GDP between 2003 and 2007. At that time this relatively high growth rate was deemed miraculous by an overwhelming majority of economists, who paid no heed to its sustainability. But now, looking retrospectively back at the record of economic growth in Turkey, we can safely assert that it was not-so-miraculous in terms of both quantity and quality.

Here we have prepared a table which shows the growth rate and its concomitant current account deficit in Turkey over the period from 1992 to 2013. And thus we can easily find out the price we have paid for economic growth throughout the two decades in terms of current account deficits.

Considering that growth rate between 1923 and 2002 was on average % 4.9,[1]a period which covers the years from the foundation of Republic of Turkey to the coming into power of the Justice and Development Party (AKP), the growth performance of Turkish economy in the period spanning from 2003 to 2013 is seen to be not-so-impressive, being around 5 percentage point per year. In other words, the annual growth rate in the last decade has been on average close to the rate of growth during the last 70 years before 2002.

[1] Korkut Boratav, "Türkiye Cumhuriyeti'nin İktisadi Gelişimi Üzerine Gözlemler", **Sosyalist Türkiye Hangi Kaynaklarla Kalkınacak?: Kapitalizmin Kaynak İsrafı ve Sosyalizmin Olanakları**, ed. Erkin Özalp, soL Meclis, Sempozyum Tebliğleri, NK Yayınları, Ekim 2003, p. 11.

Moreover, when compared to other developing countries' growth performance during the same time period, it can be clearly seen that Turkish economy displayed relatively normal growth rate.

Figure 1: The Relation between GDP Growth and Current Account Balance, 1992 - 2013, constant prices

Years	GDP Growth (as % change)	Current Account Balance (as a % share of GDP)	Years	GDP Growth (as % change)	Current Account Balance (as a % share of GDP)
1992	6,0	-0,4	2003	5,3	-2,5
1993	8,0	-2,6	2004	9,4	-3,6
1994	-5,5	1,5	2005	8,4	-4,4
1995	7,2	-1,0	2006	6,9	-6,0
1996	7,0	-1,0	2007	4,7	-5,9
1997	7,5	-1,0	2008	0,7	-5,5
1998	3,1	0,7	2009	-4,7	-2,0
1999	-4,7	-0,4	2010	9,2	-6,2
2000	7,4	-3,7	2011	8,8	-9,7
2001	-7,5	1,9	2012	2,1	-6,1
2002	7,9	-0,2	2013	4,0	-8,0

Source: TURKSTAT, "Expenditure on the Gross Domestic Product at constant prices", online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1063, 15.11.2014.

Figure 2: GDP Growth in Some Selected Developing Countries, constant prices, 2002-2012 average

Countries	Average Annual Percentage Growth Rate of GDP
China	10,3
India	7,4
Argentina	5,5
Vietnam	6,4
Indonesia	5,5
Philippines	5,0
Malaysia	5,1

Source: Our calculations based on the World Bank Database, "GDP growth", online, http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG, 15.11.2014

All the developing countries listed here grew faster than Turkey during the same period. Although Turkey's growth rate exceeded that of many advanced countries in the last decade, it fell short of the level needed to help the country escape from the middle-income trap.

But the alarming point in the data on GDP and current account balance lies elsewhere. When we ask ourselves at what cost this medium-level growth was achieved, many underlying problems come into the surface.

When both the rate of growth as percentage point change and the current account balance as a share of national income has been averaged over the two periods of ten years (1992-2002 and 2003-2013), we can establish that Turkish economy has more and more relied on foreign savings to achieve a modest rate of growth. During the earlier period (1992-2002), Turkish economy had had to run a current account deficit at % 0.17 of national output in order to grow by one percentage point in GDP. But in the later period (2003-2013) a one percent increase in GDP could only be attained by incurring a current account deficit at % 1.1 of the national income. In other words, for every one percent rise in gross domestic product, there has accompanied much more current account deficits over time. The trade-off between economic growth and current account balance has become deteriorated over the last two decades.

We are able to detect this trend in the International Monetary Fund projections for Turkish economy in the near future. IMF staff point out that the Turkey's annual gross external financing requirement which is defined as the sum of current account deficit, amortization on medium- and long-term debt, and the outstanding stock of short-term debt has already exceeded a quarter of total national income per year.[2] Turkey's gross external financing need is projected to be $ 1.447,2 trillion over the years between 2014-2018 and is forecast to remain elevated over the medium term. "The high current account deficit and the reliance on short-term financing [rather than FDI – SÇ] are the main culprits behind the persistently large

[2] International Monetary Fund, "2013 Article IV Consultation", Country Report No. 13 / 363, December, 2013, Washington, DC, p. 4.

financing needs"[3]. By all accounts, it is a scaring figure. On the other hand, IMF staff estimated an annual growth rate averaging about % 4.24 and a current account deficit around % 7.7 of GDP for Turkey during the period of time. From this projection we can draw a conclusion that Turkish economy will have to run a current account deficit at % 1.8 of its national income to attain one percentage point increase in GDP over the next five years.

In this master thesis, we shall repeatedly state that the current account deficit and the savings gap are two sides of the same coin. The dramatic rise in current account deficit which culminated at its highest level in 2011 (namely, a deficit at -9.7 percent of GDP) has found its counterpart in the declining domestic savings. The gulf between saving and investment in Turkey has yawned wider during the course of time. As a result, there exists a huge savings gap side by side with a large current account deficit, with all the ensuing consequences.

The higher vulnerability to foreign shocks comes first and foremost among the dire consequences of an economy fraught with deficits. The high reliance on foreign savings which expresses itself in the record levels of current account deficits leaves the country more and more vulnerable to any change in the direction of international capital inflows. With the domestic savings rate at a low of 15 percent of GDP, the pace of gross capital formation is determined by the availability of volatile foreign capital inflows. When foreign capital flows into the economy, investment expenditures and aggregate consumption expand rapidly. On the other hand, when foreign resources become scarce, the economy starts to contract. In other words, any decline in capital inflows drag the economy down with them. The IMF report we have mentioned above stresses the point: "The correlation between GDP growth and capital inflows in Turkey is about 80 percent, much higher than in peer countries"[4]. Due to its reliance on foreign resources for a higher level of economic activity, Turkey remains prone to the boom and bust pattern of growth.

[3] ibid., p. 50.
[4] ibid., p. 20.

The odds are that the volume of capital inflows into the emerging market economies will decline with the Federal Reserve tapering off quantitative easing. As the liquidity released from the asset-purchase programs of the central banks of advanced countries dries up, it will become increasingly difficult to find resources for financing growth and the possibility of Turkish economy slipping into a recession will be higher given the size of Turkey's current account deficit.

As a result of its high reliance on foreign resources in financing domestic capital stock, Turkey stands out for its volatile pattern of growth. The IMF staff points out that the standard deviation of the growth rate in Turkey is strikingly high during the last fifteen years.

> "Over 1998-2012… GDP either contracted or grew faster than 6 percent in more than 70 percent of the observations. Domestic demand was even more volatile, either contracting or growing faster than 5 percent in every single year"[5].

It is obvious that the chief reason behind this volatility is low domestic savings. The saving rate of around 15 percent of GDP is too low to finance the country's investment and consumption schedules and therefore leaves Turkish economy highly dependent on unstable capital flows. The financing structure of Turkey's current account deficit also warrants concern and its poor quality results in boom-bust cycles in national output, a point which we shall tackle below.

Another important point to be stressed is that as we have mentioned above, the high level of Turkey's current account deficit reflects the low level of domestic savings rather than a rise in investment expenditures. It means that the deficit is being incurred for unproductive ends, and that the piled-up debt-burden will surely wreak havoc on the future performance of the economy.

We want to digress for a moment to point out that IMF once used to cite the Turkey's declining (private) saving rate as an indicator of the success of the structural reforms advised by the Fund:

[5] ibid., p. 21.

"These results suggest that lower private saving rates chiefly reflect the improved outlook for economic stability, in general, and fiscal policy, in particular. Lower inflation arguably captures macroeconomic stability, whose positive effect on consumer confidence has been found in other studies to depress private saving rates"[6].

Moreover, the evolution of the marginal capital-output ratio in Turkey calculated by the Ministry of Development indicates that Turkey should need to invest at least 25-30 percent of its GDP in order to climb up on the international income ladder and to catch up with advanced countries. Remember that capital-output ratio shows how much capital is needed to produce one unit of output.

Figure 3: Marginal Capital-Output Ratios (according to the Plan periods)

	1963-1967	1968-1972	1973-1977	1979-1983	1985-1989	1990-1994	1996-2000	2001-2005
Manufacturing	3,8	5,9	6,7	13,2	3,3	6,2	6,5	5,2
Energy	8,6	10,5	12,1	111,7	12,3	7,2	13,9	10,2
Transportation	3,7	4,4	3,6	8,4	11,6	8,1	10,5	6,3
Total Fixed Investment	2,7	3,5	5,2	11,6	5,1	7,5	6,9	4,6

Source: Ministry of Development, Economic and Social Indicators, "Marginal Capital-Output Ratios," online, http://www.mod.gov.tr/Pages/EconomicandSocialIndicators.aspx, 15.11.2014.

To put it simply, in order for Turkish economy to grow by 7 percent a year, it needs to invest slightly less than a third of its national output. The IMF staff also seems to concur with this idea: "Looking into the medium-term, studies suggest that Turkey will need to invest 25-30 percent of GDP in order to fulfill the potential offered by its young population, strategic location, and low female labor participation rate"[7].

At this point, it is quite illuminating to compare the share of aggregate investments in Turkey's GDP with those of peer economies since this comparison

[6] International Monetary Fund, "Turkey: Selected Issues", Country Report No. 07/364, November 2007, Washington, DC, p. 5.
[7] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 24.

reveals the country's urgent need to speed up its investments in order to be able to vie with their competitors to get a bigger slice of the world market.

Figure 4: The Ratio of Aggregate Investment to GDP in Peer Countries, 2008-2012 average

Countries	Investment / GDP (%)
China	47.5
India	35.6
Indonesia	31.9
South Korea	28.8
Thailand	26.5
Mexico	24.9
Chile	23.4
Colombia	23.1
Russia	22.4
Malaysia	22.3
South Africa	20.1
Turkey	20.0
Brazil	19.2
Philippines	19.1

Source: IMF[8], World Economic Outlook Database, October 2014, online, **http://www.imf.org/external/pubs/ft/w...**, 15.11.2014.

It is too obvious to need any argument that Turkey's investment rate ranked close to bottom among peer developing countries. In addition, as we shall see it below, the share of investments in total output has shown some inertia in the last two decades. If the inertia in investment persists in the years to come, Turkey will more likely lose some ground to its global competitors. To avoid this outcome, Turkey should immediately adopt a new policy aimed at spurring investment expenditures.

But on the other hand, as we have emphasized above, total domestic saving, which is comprised of public and private saving, has steadily declined since 1988, exacerbating the constraints on the country's gross capital formation. If total domestic savings are so crucial for especially developing countries in escaping from

[8] Fatih Özatay, "Tablo Açık; Yoruma Gerek Var mı? (4)", **Radikal Gazetesi**, 22/03/2014, http://www.radikal.com.tr/yazarlar/fatih_ozatay/tablo_acik_yoruma_gerek_var_mi4-1182633 online: 19.06.14

boom-bust cycles in growth, why did the rate of national saving continually drop over the recent past in a middle-income country such as Turkey, which needs to grow faster to move up on the income ladder? We can answer this question by dividing the country's recent economic history into two periods during which domestic saving rate fell for different reasons.

Figure 5: The Shares of Total Domestic Savings and Gross Fixed Investments in GDP (%)

Years	Public Saving	Private Saving	Total Domestic Savings	Public Investment	Private Investment	Gross Fixed Investments
1988	5,1	24,0	29,1	6,6	17,6	24,2
1989	3,6	20,8	24,4	5,7	15,5	21,1
1990	2,6	22,1	24,7	5,2	16,0	21,2
1991	0,7	23,9	24,6	5,6	16,5	22,1
1992	-0,6	24,8	24,0	5,5	16,4	21,9
1993	-0,7	25,8	25,1	5,4	19,2	24,6
1994	-0,1	25,0	24,9	3,7	19,1	22,8
1995	-0,1	24,6	24,6	3,1	19,6	22,8
1996	-1,1	23,4	22,3	3,8	20,0	23,8
1997	0,8	22,6	23,4	4,6	20,5	25,1
1998	-1,4	25,7	24,3	4,8	18,3	23,1
1999	-5,0	25,1	20,1	4,9	14,4	19,3
2000	-3,4	21,8	18,4	5,2	15,7	20,8
2001	-7,1	25,5	18,4	4,7	11,7	16,4
2002	-4,8	23,4	18,6	4,9	11,2	17,1
2003	-4,1	19,6	15,5	3,8	13,6	17,4
2004	-1,0	16,9	16,0	3,2	17,5	20,7
2005	2,8	13,1	15,9	3,8	17,6	21,4
2006	4,2	12,4	16,6	3,8	18,9	22,6
2007	2,4	13,1	15,5	3,9	17,9	21,8
2008	1,7	15,1	16,8	4,1	16,1	20,2
2009	-0,9	14,1	13,2	4,1	13,1	17,2
2010	1,6	12,3	13,9	4,3	14,8	19,1
2011	3,7	10,7	14,4	4,1	20,0	24,1
2012	2,9	11,8	14,7	2,4	16,2	18,6
2013	2,4	12,8	15,2	4,5	16,7	21,2

Source: Ministry of Development, Economic and Social Indicators, "Shares of Domestic Savings and Fixed Investments in GDP", online, http://www.mod.gov.tr/Pages/EconomicandSocialIndicators.aspx, 15.11.2014.

While gross fixed investments remained more or less flat during the course of time, a fact which we called "inertia" above, total domestic savings fell continuously. During the period which ranges from 1988 to 2001, the decline in the saving rate was brought about by the public sector dissavings. The ratio of public saving to gross domestic product which was 5.1 percent in 1988 dropped to -3.4 percent in 2000 and again to -7.2 percent in 2001. "The ratio of the public deficit to GDP expanded from 5.5 percent in 1990 to 11.7 percent by the end of 1999"[9].

During the second period spanning from 2002 to 2013, the saving rate plummeted further, declining to 13.2 in 2009, the lowest rate since 1980. The decline in the rate of total domestic savings, by contrast, was driven by the sharp fall in private saving which outweighed the recovery in public sector savings. Private sector savings which hovered around 24 percent of GDP in the 1990s declined to an average of about 12.8 percent in 2005-2013, thereby pulling the total domestic savings down to 15.1 percent.

So far we have seen that the main challenges which Turkish economy has to face are its mediocre and volatile profile of growth, and the relatively insufficient level of investment, together with its yawning savings gap.

3.2. DISTRIBUTION OF INVESTMENTS AND CAPITAL INFLOWS

In tackling the issue of the relation between economic growth and international capital flows at theoretical plane, we underlined the point made by neoclassical economics that for a developing country to grow, it should deregulate its capital account since a poor country suffers from the inadequate level of domestic resources in funding the investment expenditures necessary for a take-off.

[9] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 2.

According to the neoclassical theory, current account deficit is a thing not to be worried about for developing countries because excess resources in rich countries would absolutely flow into poor countries where there are ample profitable investment opportunities. Capital being scarce in developing countries, the marginal product of capital there is high relative to capital-abundant countries and the high expected rates of return make it a rational economic behavior for the investors in the advanced countries to export physical capital into underdeveloped regions.

In accordance with the premises of the neoclassical economics, IMF advises Turkey as follows: "For an emerging market economy with a young population and still many investment opportunities such as Turkey, a current account deficit is an integral part of growth"[10].

But, on the other hand, we have also stated that the data seems to challenge the predictions of the neoclassical economics. Now we have the opportunity to show the inadequacies of the neoclassical theoretical framework in the context of Turkish economy.

A case has always been made for the opening of capital account in Turkey that with the perfect capital mobility, Turkish economy could attract more foreign direct investments it has been chasing after for decades because there has been a hope that foreign capital would certainly bring the new technology into the country with itself. Therefore, attracting foreign capital had always a meaning more than just to close the chronic current account deficits in a more stable way on the minds of Turkish policy-makers.

But we should unfortunately note that these hopes have always been frustrated. With the perfectly liberalized capital account and the flexible exchange rate regime, Turkey could finance only a fifth of its current account deficit through foreign direct investments during the last decade, a statistic the details of which are much more striking.

[10] International Monetary Fund, Turkey, Selected Issues Paper, Country Report No. 13/364, December 2013, Washington, DC, p. 54.

"Turkey's FDI stock, at slightly more than 20 percent of GDP, is one of the lowest among emerging peer economies… Low FDI not only limits transfer of know-how, it also means that external imbalances are financed with less stable sources of funds contributing to the boom-bust pattern of growth"[11].

And also IMF staff informs in the Report that in 2012 foreign direct investment inflows into Turkey remained at the level of 1.6 percent of GDP, which was below the average of 2.2 percent of GDP for G-20 emerging market peers.[12] We find it useful to give an account of what had happened with regard to foreign direct investment inflows and current account deficit in the last eleven years since it shows us how rich the quality of the financing structure of the current account deficit had been.

Figure 6: Foreign Direct Investment and Current Account Deficit, Million $

Years	Foreign Direct Investment Inflows	Foreign direct Investment Outflows	Profit Repatriation on FDI	Current Account Deficit
2002	571	5	401	626
2003	696	8	643	7,554
2004	1,190	98	1,043	14,198
2005	8,535	401	1,051	21,449
2006	17,639	657	1,182	31,836
2007	19,137	743	2,213	37,781
2008	14,748	35	2,953	40,372
2009	6,266	82	2,929	12,124
2010	6,256	35	2,867	45,420
2011	16,136	1991	2,928	75,082
2012	10,759	588	2,637	48,497
2013	10,195	633	4,009	65,061*
Cumulative Sum	112,128	5,276	24,856	400,012

*Provisional

Source: Central Bank of the Republic of Turkey, Balance of Payments and related Statistics, online, **http://www.tcmb.gov.tr/wps/wcm/connec...**, 15.11.2014

[11] International Monetary Fund, "2013 Article IV Consultation", Country Report No. 13 / 363, December, 2013, Washington, DC, p. 23.
[12] ibid., p. 27.

When we deduct both the FDI outflows and the profit repatriations on FDI stock from the FDI inflows, we will reach the net FDI inflows which amount exactly to 81,996 billion dollars over the eleven years. Given that the cumulative current account deficit is around 400 billion dollars, the ratio of the net FDI inflows to the current account deficit in cumulative terms is approximately 1/5, a rate which leaves the country heavily dependent upon the unreliable sources of foreign financing such as what may be called "the hot money".

When we take a look at the foreign direct investments in Turkey by sectors, we stumble across the fact that the nontradable sectors represent the biggest component of the FDI stock in Turkey. That is to say, foreign investor has tilted their capital towards portfolio investments and bank credits in a period during which all the impediments to the capital account liberalization have been removed one by one.

Figure 7: Foreign Direct Investments by Sectors, $ million

Years	Services	Electricity, Gas, Water Supply etc.	Manufacture
2002	405	68	96
2003	249	87	347
2004	843	63	206
2005	7,622	2	865
2006	14,645	1,164	1,701
2007	14,091	570	4,131
2008	9,520	1,070	3,972
2009	2,331	2,158	1,640
2010	3,288	1,827	924
2011	8,067	4,295	3,596
2012	5,237	924	4,342
2013	5,336	2,371	2,199
Cumulative Sum	71,634	14,599	24,019

Source: Central Bank of the Republic of Turkey, Balance of Payments and related Statistics, online, **http://www.tcmb.gov.tr/wps/wcm/connec...**, 15.11.2014

Between 2002-2013, slightly more than two-thirds of the foreign direct investment inflows have been to the services sector which consists of construction,

wholesale and retail trade, real estate, financial and insurance activities, and information and communication services. Only % 22 of the FDI inflows went into the tradable manufacturing sector, a too low ratio to speak of any meaningful technology transfer when compared to the huge size of the current account deficit over the same time period. In conclusion, it can be established that since FDI flows have concentrated in the non-tradable sectors such as banking and real estate, the expectations about the technology transfer from FDI inflows have not been fulfilled.

IMF staff summarizes up the consequences of the foreign direct investments skewed towards the nontradable sector in this way:

> "The largest FDI flows into Turkey went into the financial service sector. To a lesser extent, inflows also went into the information technology and communication service sector… FDI into the non-tradable sector… created few opportunities for technology transfers, import replacement, or export expansion… [A]n IMF study on sectoral composition of FDI … shows that countries where FDI in the non-tradable sector dominated had the largest current account deficits. This is particularly true for FDI into the financial sector, which is associated with credit booms and larger imports"[13].

Therefore we can conclude that foreign direct investment in Turkey has deteriorated, not ameliorated, the country's current account deficit by fuelling credit growth and spurring unproductive consumption.

So far we have examined the allocation of foreign resources between sectors. Now we want to turn our attention to how domestic investment has been distributed across the different branches of economic activities and how efficiently domestic resources have been allocated by free market mechanism and individual entrepreneurs in the last decade.

We have shown above that with Keynes the main engine of growth is the level of investment activity in an economy. Gross capital formation is extremely relevant not only for economic growth, but also for the competitiveness of an

[13] International Monetary Fund, Turkey, Selected Issues Paper, Country Report No. 13/364, December 2013, Washington, DC, p. 50-51.

economy[14] since the investment expenditure is the only means to acquire the newest technology in a world where technological advances perpetually occur and the existing capital stock continuously undergoes a moral depreciation. Marx defines this kind of depreciation apart from the material tear and wear of the capital stock as follows: "[A] machine… loses exchange-value, either because machines of the same sort are being produced more cheaply than it was, or because better machines are entering into competition with it"[15]. In a technologically dynamic environment, old capital equipment is constantly superseded by the newly produced and more productive machines and thus the existing capital stock becomes technologically obsolete as a result of the change in the conditions of production. Therefore it is absolutely necessary to invest more and more resources in machinery and equipment to keep up with the current developments in the production technology. Otherwise, it would be increasingly difficult to become competitive in the foreign trade.

For the reasons mentioned above, we find it quite important to check out how much of the aggregate investment as s share of total output has been made by public or private sector, and how much of the gross fixed capital has been allocated into machinery and equipment, or into construction. A distribution of investment expenditures more tilted towards machinery and equipment is expected to be a good sign for the efficiency of resource allocation. And also the fact that private sector constitutes the bulk of the gross capital formation is assumed to be a great triumph for free market mechanism.

After its lowest point during the 2001 crisis, the aggregate investment expenditures recovered rapidly and gained momentum in the next years until they reached a new growth plateau. Between 2003-2013 the gross capital formation has averaged around 23.5 of the national output. But its composition changed dramatically. Maybe in part because of the neo-liberal policies adopted by the AKP government, public sector withdrew from investing in machinery and equipment, the

[14] B. Ali Eşiyok, "AB Sürecinde Türkiye'de Kalkınmanın Dinamikleri: Sabit Sermaye Yatırımları, Tasarruflar ve Büyüme", Türkiye Kalkınma Bankası AŞ, Araştırma Müdürlüğü, Aralık 2005, Ankara, p. 2.
[15] Karl Marx, **Capital**, Trans. by Ben Fowkes, vol. I, reprinted in Penguin Classics 1990, London, p. 528.

Figure 8: Gross Fixed Capital as a % share of GDP, at constant prices

		Public Sector			Private Sector		
Years	Gross Fixed Capital Formation	Total	Machinery-Equipment	Construction	Total	Machinery-Equipment	Construction
1998	22,9	4,6	1,3	3,3	18,3	11,7	6,5
1999	19,8	4,5	1,4	3,1	15,3	8,6	6,7
2000	21,8	5,0	1,4	3,6	16,8	10,6	6,2
2001	16,2	4,2	1,0	3,2	12,0	6,6	5,4
2002	17,5	4,3	1,2	3,1	13,2	7,2	6,0
2003	19,0	3,5	0,9	2,6	15,5	8,9	6,6
2004	22,3	2,9	0,7	2,2	19,3	12,1	7,2
2005	24,1	3,4	0,9	2,5	20,7	13,5	7,2
2006	25,5	3,3	0,7	2,6	22,3	14,2	8,1
2007	25,2	3,3	0,7	2,6	21,9	13,7	8,2
2008	23,5	3,7	0,9	2,8	19,8	12,6	7,1
2009	20,0	3,9	0,8	3,1	16,1	10,2	5,9
2010	23,9	4,2	0,8	3,3	19,7	13,4	6,3
2011	25,9	3,8	0,7	3,0	22,1	15,4	6,8
2012	24,7	4,1	1,0	3,1	20,6	14,0	6,6
2013	24,7	4,8	1,0	3,8	19,9	13,6	6,3

Source: TURKSTAT, "Shares of Expenditure on the Gross Domestic Product (at 1998 prices)", online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1063, 15.11.2014.

share of public sector investment in them being almost fixed below 1 percent of GDP during the period. On the other hand, given the fact that private investment expenditures in machinery and equipment made up more than half the gross capital formation throughout this period, private sector seems to have filled the void left by the public sector. That is to say, private sector more than offset the contraction in the contribution of the public sector to machinery and equipment investment by investing more than two-thirds of its resources in capital expenditure. Only a third of private sector investments went into the construction during the period.

Despite the fact that the expenditures on machinery and equipment by private sector absorbed on average % 54 of the gross capital formation from 2003 onwards, it is quite interesting to see that the share of industry, agriculture, construction and

manufacturing in total output plunged sharply. Thus the economic growth in Turkey has brought about by virtue of the expansion in the service sector.

Figure 9: GDP by Kind of Economic Activity, in current prices, % sector share

Years	Agriculture	Manufacturing	Construction	Services	Industry
1998	12,5	23,6	5,8	51,7	32,6
1999	10,5	21,6	5,4	56,9	30,3
2000	10,1	19,9	5,0	55,4	28,1
2001	8,8	18,9	4,5	58,4	26,9
2002	10,3	17,6	4,2	55,0	25,2
2003	9,9	17,6	4,0	54,2	24,9
2004	9,5	17,2	4,4	54,3	24,8
2005	9,4	17,1	4,4	54,0	24,7
2006	8,3	17,1	4,7	55,0	24,9
2007	7,6	16,7	4,9	57,0	24,8
2008	7,6	16,0	4,7	57,8	24,5
2009	8,3	15,1	3,8	59,5	23,0
2010	8,4	15,5	4,2	57,2	23,6
2011	8,0	16,1	4,5	56,3	24,4
2012	7,9	15,5	4,4	57,5	23,8
2013	7,4	15,3	4,4	57,6	23,6

Source: TURKSTAT, "Gross Domestic Product in current prices by kind of economic activity", online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1045, 15.11.2014.

The shares of industry, manufacturing, construction and agriculture in nominal GDP has declined during the period from 1998 to 2013, but, by contrast, the services sector got a bigger slice of the national output over time. While manufacturing industry accounted for % 23.6 of the national income in 1998, its share fell to % 15.3 in 2013. Similarly the share of agriculture in Turkish economy amounted to 12.5 in 1988 but, by 2013 it had fallen to % 7.4. On the other hand, the services sector showed a great performance during the period of time. The ratio of the services sector to gross domestic product rose from % 51.7 in 1998 to 57.6 in 2013. Finally, we observe a relatively slight decline in the share of construction in total output.

At this point we want to make a caveat. By saying that the share of manufacturing in total output tended to fall in the last fifteen years, we don't mean

that the manufacturing production declined in absolute terms. In contrary, the real manufacturing output in constant prices at 1998 increased from TL 16.5 billion in 1998 to TL 29.4 billion. In other words, manufacturing production increased by % 77.4 at basic prices.

It is remarkable that industry as a share of GDP has fallen from % 32.6 in 1998 to 23.6 in 2013. Note that the industrial sector is comprised of manufacturing, mining and quarrying, and electricity, gas, steam, water supply and sewerage. Since the share of industry in GDP is assumed to be a good proxy for the tradable sector[16], we can establish that the tradable sector in Turkey has lost a considerable ground between 1998-2013. It means that the economic policies pursued during the period have tilted Turkish economy away from productive sectors to unproductive sectors. Turkey's ability to produce industrial products domestically appears to be eroded away.

However, it can still be made an objection to our conclusion to the effect that the relative decline in the tradable sector, namely, in the industrial production may have reflected a huge amount of productivity gains in that sector. It is true that when there occurs a rise in the productivity of workers in general, one worker becomes more than one effective worker due to the technological advances. It is a good thing for an economy to have more effective workers than the size of population because each worker needs to consume the amount of one person while producing the amount of more than one person does. As technology advances, it requires less and less workers to produce the same level output. The result should be clear: advances in manufacturing productivity will sooner or later translate into lower prices for buyers, thereby reducing the importance of manufacturing in the economy. From this perspective, manufacturing's declining share of national output is deemed something to celebrate.

Firstly, we must say that the declining share of manufacturing is not a thing to be cheerful about at least in the case of Turkish economy. To see why, we need to

[16]International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 25.

look at the figures on the Figure X. While the manufacturing firms constitute only % 12.9 of the total enterprises operating in Turkey, they produce more than a third of the total value-added at factor cost. Despite a vast literature on the virtues of the services sector in the "post-industrial era", the manufacturing industry still continues to be the main engine of growth in Turkey.

Figure 10: Proportion of Some Basic Indicators for Manufacturing Industry, Proportion in Turkey, 2011

Year	Number of Enterprises	Number of Employees	Value-added at factor cost
2011	12,9	31,7	36,0

Source: TURKSTAT, Small and Medium Size Enterprises Statistics, online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1033 , 15.11.2014

Secondly we can reject the objection outlined above by arguing that we could have spoken of a significant rise in the productivity of the industrial sector if the relative decline in industrial output had been outstripped by a larger fall in the ratio of industry employment to total employment. To the contrary, industry's declining share of GDP has not been accompanied by a decline in the industry employment as share of total employment.

Therefore we can conclude that the industry's share in total output has significantly dropped without an accompanying decline in the employment in industry as part of total employment. Thus the relative decline in industrial output cannot be attributed to a greater efficiency in that sector.

Moreover, the relatively limited productivity gains achieved during the period immediately after the crisis years between 2001 and 2005 should be attributed not so much to some extensive investment expenditures on new capital equipments which would, by nature, bring with them a higher level of employment by expanding the productive capacity beyond the level afforded by existing capital stock, as to the increased exploitation of the existing workforce by impelling workers to produce

Figure 11: Employment in Industry as % of Total Employment

Years	Industry
2004	20.0
2005	20.8
2006	21.0
2007	20.8
2008	20.9
2009	19.2
2010	19.9
2011	19.5
2012	20.0
2013	19.9

Source: TURKSTAT, Labor Force Statistics, "Economic Activity by Years, NACE Rev.2", online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1007 , 15.11.2014

more and freezing real wage rates at the same time, a situation which economists labeled as "economic growth without employment".[17] While capital expenditures on new machinery and equipment went mainly into replacing the morally and physically depreciated old capital stock without creating an additional productive capacity, the workers employed in the manufacturing sector and who managed to keep their jobs after the crisis were compelled to produce more by prolonging the working day. From 2001 to 2005, manufactural output grew annually on average by 10 %, while the employment in the Turkish manufacturing industry and the number of hours worked by employees there expanded on average by 2.9 % and 4.2 % per year, respectively. In other words, the increase in the manufacturing output outgrew the rise in the employment and the number of hours worked by employees in that sector.[18] Therefore a relatively small rise in output per worker consequent upon the crisis can be ascribed to the productivity gains achieved by forcing fewer workers to work more hours.

On the other hand, there are many observations which indicate that the importation into Turkey of some goods and services has to a considerable extent

[17] Bağımsız Sosyal Bilimciler, "IMF Gözetiminde On Uzun Yıl, 1998-2008: Farklı Hükûmetler, Tek Siyaset", Ankara, Haziran 2006, p. 26.
[18] ibid., p. 27.

replaced the domestic production in many branches of economic activities, especially in agriculture and intermediate manufactured good sectors.

Although the investment rate remained relatively stable and the capital expenditures in machinery and equipment accounted for more than half the gross capital formation, why did the relative decline in industry happen in Turkey from 1998 onwards? To be able to answer this question, we need to make some qualifications to the Keynesian principle that whatever their qualities may be, all sorts of investments increase economic growth equally. Keynes did not attempt to make any distinction between different kinds of investment expenditures such as productive and unproductive investments when dealing with the problem of the determinants of national income. Moreover he failed to take into consideration the technological dimension of investments. Leaving aside the problems as to the choice of the production and the technology used, he simply took the technology as given by proposing the "amount of employment associated with a given capital equipment" as the solely determining factor on the current level of output.[19]

But, in the case of Turkish economy, we see the importance of how investments are distributed among different branch of social production and whether the capital expenditures in machinery and equipment create a sub-optimal capacity in the economy. A quick glance at the size of firms operating in Turkish manufacturing industry gives us a clear understanding of what is going on there. The overwhelming majority of manufacturing firms are too small to realize scale economies and therefore mostly suffer from the lack of economies of scale.

Here firms employing below 250 workers are classified under the head of small- and medium-sized enterprises (SMEs). Of all the firms operating in manufacturing industry only the 1467 big firms which amounted to just 0.4 % of the total manufacturing enterprises produce 57.6 % of the total value added alone. These manufacturing "giants" employ more than a third of the employment in manufacturing and reach 54 % of the total turnover in that sector. The small scale

[19] John Maynard Keynes, **The General Theory of Employment, Interest and Money**, first Harbinger edition, USA, A Harvest/HBJ Book, 1964, p. 41 and 44.

Figure 12: The Basic Indicators in Manufacturing Industry by the Size Class, 2011

Size Class (by the number of the workers employed)	Number of Enterprises	Number of Employees	Turnover (000 TL)	Value-Added at Factor Cost (000 TL)	Number of Hours worked by employees (hours)
1-19	308,700	622,914	72,922,710	11,067,166	1,343,629,718
20-49	15,760	487,590	87,983,336	13,945,718	1,053,585,106
50-99	4,299	291,586	62,677,262	9,952,858	630,147,417
100-249	3,062	465,248	109,681,258	19,538,409	1,006,409,621
SME	331,821	1,867,338	333,264,566	54,504,150	4,033,771,862
250+	1,467	975,108	399,678,795	74,446,109	2,102,593,867
Total	333,288	2,842,446	732,943,360	128,950,259	6,136,365,729

Source: TURKSTAT, Small and Medium Size Enterprises Statistics, online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1033 , 15.11.2014

firms producing lower value-added and operating at sub-optimal size account for almost the entire of the manufacturing industry firms in Turkey. It is fair to say that the distribution of the capital and workforce among the scattered and small production units through free market mechanism leads directly to the wastage of the already limited resources.

It is clearly seen that the larger the size of the firm, the more productive the worker employed in that firm will be. As the scale of the plant increases, the output per worker goes up, too. A worker employed in a big firm is nearly three times as productive as the fellow worker employed in a small and medium size enterprise. Considering that almost two-thirds of the workforce in manufacturing are employed in small and medium sized enterprises, it would not be wrong to claim that the bulk of the social labor is being wasted in Turkish manufacturing industry.

Here we see the failure of the free market mechanism to allocate the resources in a most efficient way. The existence of a vast amount of small property owners in the Turkish manufacturing industry gets in the way of the development of productive forces in the country. In order to operate in a more productive way, we can say that Turkish manufacturing industry should undergo a process of capital concentration so

Figure 13: Productivity of Labour by Size Class

Size Class	Value-added at factor cost per annual work unit
1-19	8,2
20-49	13,2
50-99	15,7
100-249	19,4
SME	13,5
250+	35,4

Source: Our calculations based on the TURKSTAT, Small and Medium Size Enterprises, 2013, online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1033 , 15.11.2014.

that the dispersed and atomized industrial units can be combined in larger and more efficient plants. But the property relations prevalent in Turkey present a formidable impediment to satisfying this need. After noting that since the small and medium sized enterprises in Turkey are mostly owned and managed by families, the World Bank Report concludes that their growth is closely bound up with intra-family relations. As a result, "[f]irms may have difficulties in reaching optimal scale due to splits of capital among the second generation"[20]. As the capital splits up more and more among the legal heirs with each successive generation, we can safely foresee that the Turkish industry will become increasingly inefficient in the future and Turkey will lose ground on the world production chain to the advantage of its peer competitors, a fact already reflected in the declining share of manufacturing industry in the national output.

[20] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 2.

3.3. AN ANALYSIS OF TOTAL DOMESTIC SAVING IN TURKEY

The total domestic saving consists, by definition, of the sum of private and public savings in an economy. And private savings are, in turn, comprised of corporate and household savings. In this sub-section we shall analyze the evolution and determinants of the domestic saving rate in Turkey by focusing on the component parts of it.

Unfortunately, since the decomposition of private savings is not being made by the Ministry of Development in Turkey, data on corporate and household savings is not publicly available. For that reason, we will make use of some specific studies to obtain an understanding of the dynamics behind corporate and household savings when dealing with them separately.

3.3.1. THE FACTORS BEHIND THE CORPORATE SAVINGS

To begin with, we shall offer a definition of the corporate savings specifically to better grasp the movements and determinants of them. The undistributed profits and depreciation fund of an enterprise form the gross corporate saving. The depreciation fund comes from the depreciation allowances for a firm's existing fixed capital. The fund is generally used to replace the worn out old capital stock with new fixed assets. After interest payment and corporate income tax have been deducted from gross profits, we are left with net profits which amount to the undistributed profits plus dividend payments to shareholders. It has been generally accepted that corporate saving is identical with the retained earnings, or what amounts to the same thing, the undistributed profits in the private sector.

"Gross corporate savings are typically defined in national accounts as the sum of the undistributed profits of enterprises and the amortization of fixed capital. Net corporate savings in turn refer to undistributed profits – retained earnings. The definition refers to a specific enterprise, where net saving is defined as net profit (after tax and net interest payments) minus dividend payments"[21].

Therefore it would not be perplexing to find that corporate saving is closely related with profit margins. In 2011, the World Bank economists conducted a study on the Turkish corporate savings by using primarily the balance sheets and profit-loss accounts of the non-financial firms listed on the Istanbul Stock Exchange (ISE). The study also utilized a larger data compiled by the Central Bank of the Republic of Turkey (CBRT) that contains the balance sheets and profit-loss accounts of over 6000 non-financial firms although, unlike the data provided by ISE, this data set lacks the figures about the dividend payments.

The main result of this study is that the corporate saving rate defined as net profits minus dividend payments as a ratio of net sales is highly correlated with net profit margins.[22] Both ISE and CBRT data reveal that albeit a decline in 2008 due to the global financial crisis, corporate saving rate and profit margins increased on average after 2002. Since the dividend payout ratio which is defined as dividend payments as a share of net profits has been relatively stable during the period, a higher profit margin resulted in more funds available for internal financing and dividend payments.

But the World Bank economists point out that the Turkish corporate saving rate is far away from being sufficient. "[ISE-listed nonfinancial firms'–SÇ] average saving rates are lower than in emerging market comparators like India, Malaysia, South Africa, Argentina, Brazil, Thailand, Mexico, Poland, and Hungary, though higher than Italy, Germany, and China".[23] What is to blame for this relatively low corporate saving rate in the Turkish private sector?

[21] ibid., p. 7.
[22] ibid., p. 8.
[23] ibid., p. 9.

According to the reasoning we have sketched above regarding the close relationship between corporate saving rates and net profits as a share of net sales, the main culprit behind the low corporate savings should be searched in the factors determining the profit margins of nonfinancial firms. We find here that profit margins of large manufacturing firms which are heavily involved in tradable activities seem to be easily affected by the changes in the real effective exchange rate. To put it plainly, an appreciation in the real exchange rate inflicts serious damage on the profit prospects of the manufacturing firms that have a high export share. The more valued real exchange rate an economy has, the lower the profits of export industry will be, and thus, the lesser the corporate savings in the tradable sector will be. The IMF staff notes how much appreciation the Turkish Lira has experienced during the period: "The EBA [external balance assessments–SÇ] assessments show that the current account deficit in 2-4 percentage points of GDP larger than the level that can be explained by fundamentals and desired policy settings, and that real exchange rate is 10-20 higher".[24]

The real exchange overvaluation has been driven by both the appreciating domestic currency and the positive inflation differentials with trading partners and trade competitors. With the Federal Reserve announcement in May 2013 to the effect that it would begin to taper off its asset purchasing program, the nominal exchange rate has depreciated significantly as a result of a sharp deceleration in foreign capital inflows into Turkey. "In particular, the recent nominal exchange rate depreciation has not been enough to offset domestic price increases"[25]. In spite of the large depreciation of the Turkish Lira in recent times, an inflation rate stuck at around % 9 has pushed the real effective exchange rate up again. The fact that domestic prices in Turkey have been rising much more than those in trade competitors and trading

[24] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 25.
[25] International Monetary Fund, "2013 Article IV Consultation", Country Report No. 13 / 363, December, 2013, Washington, DC, p. 26.

partners rendered Turkish exports less attractive because Turkey's exports were getting more expensive than those from other emerging peer countries.[26]

Figure 14: CPI Based Real Effective Exchange Rate (2003 = 100)

Years	Real Exchange Index
2003	100
2004	103,88
2005	114,26
2006	112,97
2007	122,15
2008	123,19
2009	114,62
2010	126,98
2011	112,36
2012	116,74
2013	114,89
Jan-2014	101,73
Feb-2014	102,16
Mar-2014	102,25
Apr-2014	107,94
May-2014	110,24

Source: Central Bank of the Republic of Turkey, "CPI Based Real Effective Exchange Rate (2003 = 100)", online, **http://www.tcmb.gov.tr/wps/wcm/connec...**, 15.11.2014

If the composition of Turkey's exports had been moving towards the high-technology goods over time, the negative impact of an overvalued reel effective exchange rate on the export industry would have been much more limited because the price elasticity of demand for high-tech goods are relatively small. But, unfortunately, when we look at the composition of Turkish exports goods, it becomes very clear to us that Turkey has lost ground on the world production chain. Since the primary sector based and low- and medium-technology products constitute the bulk of Turkey's exports, price competition remains very important for most of exporters although high inflation continues to contribute to the real exchange rate

[26] International Monetary Fund, Turkey, Selected Issues Paper, Country Report No. 13/364, December 2013, Washington, DC, p. 49.

overvaluation. Therefore we can conclude that the appreciating Turkish Lira severely damages many Turkish exporters who have to face a highly price-elastic demand curve due to the low technology content of their products.

Figure 15: Exports by Manufacturing Industries Based on Technology Intensity, April 2014

Sectors	Value (Million US $)	Share (as % of total exports)
Total Manufacturing Industries	12,617	100.0
High-technology Industries	475	3.8
Medium-high-technology Industries	4,216	33.4
Medium-low-technology Industries	3,500	27.7
Low-technology Industries	4,426	35.1

Source: TURKSTAT, "Press Release: Foreign Trade Statistics, April 2014", online http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=16074, 15.11.2014

The ratio of exports of high-technology products in manufacturing industries is only % 3.8 while more than one-third of Turkey's export income derives from primary-sector-based and low-technology products.[27] The IMF Report on Turkey describes the evolution of manufacturing exports by technological intensity as follows:

[27] Here classification of product group by technology intensity is prepared by OECD based on ISIC. Rev. 3. In this classification method, the cut-off points between "high", "medium-high", "medium-low" and "low technology" were revealed by research and development expenditures relative to value-added and gross production statistics. Therefore OECD classifies according to relative recent R&D performance by looking at direct R&D intensities. Here we are presenting the classification of manufacturing industries into categories based on R & D intensities. **High-technology Industries**: Aircraft and spacecraft; Pharmaceuticals; Office, accounting and computing machinery; Radio, TV and communication equipment; Medical, precision and optical instruments. **Medium-high-technology Industries**: Electrical machinery and apparatus, n.e.c. [not elsewhere classified]; Motor vehicles, trailer and semi-trailers; Chemicals excluding pharmaceuticals; Railroad equipment and transport equipment, n.e.c.; Machinery and equipment, n.e.c. **Medium-low-technology Industries**: Building and repairing of ships and boats; Rubber and plastic products; Coke, refined petroleum products and nuclear fuel; Other non-metallic mineral products; Basic metals and Fabricated metal products. **Low-technology Industries**: Manufacturing, n.e.c.; Recycling; Wool, pulp, paper products, printing and publishing; Food products, beverages and tobacco; Textiles, textile products, leather and footwear. Vide: OECD (2011), OECD Directorate for Science, Technology and Industry, Economic Analysis and Statistics Division, "ISIC REV.3 TECHNOLOGY INTENSITY DEFINITION", 7 July, 2011, OECD Publishing.

"Between 2003 and 2013, the share of primary sector and low-technology exports went from 45 percent to 34 percent. During that time, the share of medium-technology exports rose from 50 to 64 percent. The move toward high-technology exports however has been much more limited, which may explain why the value of Turkish export has started to lag behind that from peer countries".[28]

When thinking about the overvalued real effective exchange rate, we should always keep in mind that the main reason behind the continually appreciating Turkish Lira was the policy pursued by the monetary authority of overvalued exchange rates and high real interest rates during the years. Coupled with the low expected depreciation rate of the domestic currency, high interest rates relative to those prevalent in the advanced countries attracted a colossal amount of foreign capital inflows in the shape of portfolio investments and short-term bank credits, rather than foreign direct investments. These gross capital inflows contributed both to fuelling credit growth and building up foreign exchange reserve by the Central Bank. It is extremely important, however, to note that the banking institutions found it increasingly more profitable to lend their resources to households to fund their consumption. The Turkish banking sector provided to households more and more consumption credits including credit cards because of the relatively high interest rates combined with short-term maturity. On the other hand, the non-financial firms sought credit abroad because it was less costly for them to borrow from a foreign bank due to the low interest rates prevailing in the developed countries and the perpetually appreciating domestic currency. Caroline van Rijckeghem and Murat Üçer explain the surge in corporate sector external indebtedness as follows:

"Gross capital inflows (i.e., before reseverve build-up by the banking sector including CB) surged to over $ 150 billion (cumulative) in the period from 2004 through 2007. Injection of this external liquidity into the Turkish financial sector was a key driver in fuelling credit growth. During the period, loans to corporate sector grew at a lower pace. On the other hand, the ratio of consumer credit (including credit cards) to total loans has risen from a pre-crisis 25 % to over 40 % in late 2008. As a result of the fact, corporate sector indebtedness rose by 4-fold from around $ 30-35 billion to about $ 125"[29].

[28] International Monetary Fund, Turkey, Selected Issues Paper, Country Report No. 13/364, December 2013, Washington, DC, p. 51-52.

[29] Caroline van Rijckeghem and Murat Üçer, "The Evolution and Determinants of the Turkish Private Savings Rate: What Lessons for Policy?", TÜSİAD, Economic Research Forum, Publication No: EAF-RR/09-01, February 2009, p. 52.

To update the data given by Rijckeghem and Üçer on the non-financial firms' external indebtedness, we may say that the foreign exchange loans of the Turkish corporate sector skyrocketed after the year 2008, reaching to almost $ 240 billion by the first quarter of 2014. Thus the net foreign exchange short position in the Turkish real sector hit the record level of $ 174 billion dollar by the end of 2013.

But, on the other hand, what is the missing link in the analysis of Rijckeghem and Üçer is the question of who would run the risk of the external indebtedness of the Turkish corporate sector in the case of its bankruptcy. To complete the picture, we should analyze which parties, domestic or external, provide the non-financial firms in Turkey with foreign exchange loans.

It is interesting to find that after the collapse of Lehman Brothers in 2008, a development triggering a sheer panic in the financial sectors of the developed world, the foreign banks and foreign subsidiaries of Turkish banks which used to fund the Turkish corporate sector until then have started to reduce the volume of foreign exchange loans given to the Turkish firms. And, on the other hand, the share of the domestic banks in the foreign exchange liabilities of the non-financial firms rose significantly, with the national financial institutions filling the void left by external parties. Moreover, the external debt stock of the Turkish companies did not cease piling up after the change in the funding structure of their foreign exchange liabilities, exacerbating the currency mismatches in the non-financial firms' balance sheets which borrow in foreign currency and invest in domestic currency. To put it clearly, while the domestic banks provided $ 48 billion in foreign exchange loans, which represented slightly more than a third of total foreign exchange liabilities of non-financial corporate in 2008, now their share rose to the 64 percent by the end of the first quarter of 2014. In this way, the risks have been transferred from the foreign to the domestic banking system.

Given the huge amount of the net foreign exchange short position of the Turkish real sector, any sudden stop in capital inflows would not only reduce the external resources available for investment, but also deteriorate the balance sheets of firms with high foreign exchange exposure as a consequence of the nominal

Figure 16: Foreign Exchange Liabilities of Non-Financial Companies in Turkey, (Million USD)

Years	Liabilities	Domestic Loans	External Loans	Import Payables	Net Foreign Exchange Position
2002	31,638	600	25,693	5,345	-6,538
2003	48,651	18,158	23,948	6,545	-18,499
2004	56,753	20,458	26,905	9,390	-19,082
2005	67,344	26,429	29,910	11,005	-21,952
2006	91,466	34,804	44,952	11,710	-28,807
2007	129,992	46,323	69,170	14,499	-53,861
2008	151,789	48,066	89,085	14,638	-71,324
2009	147,799	50,333	82,219	15,247	-64,723
2010	176,601	81,887	76,609	18,105	-92,423
2011	200,726	102,292	77,986	20,448	-122,609
2012	226,003	121,842	81,618	22,543	-139,469
2013	266,683	155,164	83,314	28,205	-174,094

Source: Central Bank of the Republic of Turkey, Balance of Payments and Related Statistics, "International Investment Position", August-2014, **http://www.tcmb.gov.tr/wps/wcm/connec...**, online, 15.11.2014

exchange rate depreciation associated with the sudden stop.[30] The IMF staff estimates that "[a] one time depreciation of 30 percent cause the external debt stock to rise above 70 percent of GDP."[31] And also it is worthwhile to be aware of the fact that "by regulation, FX loans can only be granted to large companies (and only at maturity of more than one year) or to companies with FX receipts"[32]. To put it simply, big firms and exporters would bear the brunt of any possible exchange rate shock.

The negative impact of any possible nominal exchange rate depreciation on the real side of the Turkish economy is two-fold. On the one hand, it would cause the external debt stock of firms to go up in terms of domestic currency, thereby forcing the local firms to spare a greater portion of their revenues for debt servicing and squeezing the resources available for investments. On the other hand, since

[30] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 10-11.
[31] International Monetary Fund, "2013 Article IV Consultation", Country Report No. 13 / 363, December, 2013, Washington, DC, p. 50.
[32] ibid., p. 7.

investment and intermediate goods form the bulk of Turkey's imports, a point with which we shall deal below, a depreciated domestic currency would make the investment expenditures on machineries, equipments, raw materials and auxiliary tools etc. more expensive and thus lower the profitability of investments. A relative rise in the prices of imported investment goods would drive the owners of the firms with low export share to form low expectations about the profitability of their planned investments.[33]

Another aspect of an overvalued real effective exchange rate is that it always encourages more imports by making them cheaper relative to the goods and services produced domestically. This proposition is valid not merely for the importation of consumption goods. An appreciated domestic currency sooner or later induces the local entrepreneurs to use more the imported intermediate goods rather than buy the domestically produced intermediate goods. In other words, the imported intermediate products eventually crowd out their domestic substitutes owing to the cost concerns on the part of local entrepreneurs. Therefore the imported inputs displace the domestic inputs, forcing the firms which produce semi-finished products for domestic market to go bankrupt. The tendency of the manufacturing firms at home to depend on the cheap imported intermediate products begins to take hold and the workers employed at the production of domestic intermediate goods leave unemployed. This situation surely implies a lower content of domestic value added generated by the local producers. The margin between national output and imported intermediate products narrows with the result that domestic producers become unable to produce high value-added products. By the same token, the import content of domestic production becomes higher and higher in the face of the possibility to import investment and intermediate goods from abroad cheaply, leading to the explosion of trade deficits at an all-time record levels at home.

In sum, the domestic manufacturing firms end up being totally dependent on the imported intermediate goods at the end of the process, since the domestically

[33] Seyfettin Gürsel, "Düşük büyüme, yüksek enflasyon", **Radikal Gazetesi**, 05.03.2014, http://www.radikal.com.tr/yazarlar/seyfettin_gursel/dusuk_buyume_yuksek_enflasyon-1179580 online: 30.06.14

produced intermediate products cannot compete with the imported inputs due to the appreciating exchange rates. Moreover, domestic manufacturing producers move down the value-added chain, swelling their import payables for capital and intermediate goods, and thus leaving their balance sheets more vulnerable to any volatility in the nominal exchange rate.

The rise in the rate of import dependency in the manufacturing industry emanates from the fact that the imported intermediate and capital goods used up in the domestic production expand faster than the national output on value basis. In other words, when the growth in the value of the imported inputs outstrips the upward change in the value of total output, the domestic value added content of the goods and services produced at home declines rapidly during the course of time. As a result, the production at home will be able to create less and less domestic value added since the proportion destined for the imported inputs ratchets up.

> "If the import bill for domestic production rises faster than the value of the total output produced at home, it means the transfer of revenue from the Turkish private sector to the countries from where the imports are made. This, in turn, has a negative impact upon the private sector savings".[34] ["Üretim için yapılan ithalatın faturasının üretimin değerinden daha fazla artması, Türk özel kesiminden ithalatın yapıldığı ülkelere gelir transferi anlamına gelmektedir. Bu da özel kesim tasarruflarını olumsuz etkileyecektir." – translated by me]

In other words, as the import content of the domestic production rises, an increasingly greater portion of the value of the total output produced at home leaks abroad in the form of a swollen import bill. This leakage which represents the net transfer of value from home to abroad depresses the national income, out of which the total domestic savings are made. Since domestic production hinges wholly on the availability of imported inputs, any rise in gross domestic product spurs the economic growth elsewhere. The table below shows how the Turkey's import changed in the last decade according to the type of goods imported.

[34] Ümit Özlale, Alper Karakurt, "Türkiye'de Tasarruf Açığının Nedenleri ve Kapatılması için Politika Önerileri", **Bankacılar Dergisi**, vol. 83, December 2012, p. 13.

Figure 17: Imports by Broad Economic Categories, 000 $

Years	Capital Goods	Intermediate Goods	Consumption Goods	Total Imports
2003	11,325,907	49,734,760	7,813,324	69,339,692
2004	17,397,440	67,549,436	12,100,277	97,539,766
2005	20,363,222	81,868,284	13,975,300	116,774,151
2006	23,347,556	99,604,660	16,116,330	139,576,174
2007	27,054,433	123,639,631	18,694,022	170,062,715
2008	28,020,665	151,747,101	21,489,236	201,963,574
2009	21,462,823	99,509,821	19,289,707	140,928,421
2010	28,818,242	131,445,426	24,734,930	185,544,332
2011	37,270,611	173,140,243	29,692,268	240,841,676
2012	33,925,389	174,930,331	26,699,252	236,545,141
2013	36,759,350	183,812,513	30,415,875	251,650,642

Source: TURKSTAT, "Imports by Classification of Broad Economic Categories (BEC)", online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1046, 15.11.2014

It can be obviously seen that the share of intermediate goods as total of imports has significantly risen at the expense of capital and consumption goods. More importantly, when looking at the composition of the imported intermediate products, we soon notice that importation of the processed materials incidental to industry scaled up more than three-fold from $ 24.1 billion in 2003 to nearly $ 86 billion in 2013. That means that Turkey relied not only on the imported raw materials such as oil, natural gas and so on which Turkey has to import because it lacks natural endowments, but also on the processed materials incidental to industry to go on producing. It should not come as a surprise that this kind of production activity resulted in fewer and fewer domestic value-added.

The appreciating exchange rate has been conducive to the growth of the manufacturing branches with high imported input dependency. Here we prepared a table which indicates that some manufacturing sub-sectors with higher import dependency ratios tended to grow faster than other sub-sectors with lower than average import dependency ratios during the period between 2005 and 2012. Our calculations are based on the Input-Output Table for Imports at basic prices (2002) prepared and presented by TurkStat. Note that we constructed this table by using the Industrial Production Index (2005=100) by TurkStat and calculated the Import

Dependency Ratios for each sub-sector by dividing each sub-sectoral production by the amount of the imported intermediate input used up there.

An overvalued real effective exchange rate obviously created a good environment for the growth of manufacturing industry sub-sectors with high import dependency ratios. But we should make a caveat that the last Input-Output Table for Imports has been prepared in 2002. Since then, the structure of the Turkish manufacturing industry has undergone a significant transformation process during which the appreciating Turkish Lira distorted the method and way of production. Therefore we think that the coefficients of the Input-Output table presented above are now not the same as they were in 2002.

On the other hand, the large-scale modern industrial firms which, as we have shown above by Figure 12 and 13, produce more than half the Turkey's manufacturing value-added tend to use more imported intermediate products than the small and medium sized enterprises do. Although they alone contributed more to the creation of manufacturing industry value-added than the rest of the firms operating in that sector put together, the domestic value added margin of big firms is narrower than that of small-scale firms. Figure 19 shows that the larger the size of a firm is, the more it will tend to import and the worse the foreign trade balance of that firm will be.

Even if the firms which employ between 50 and 249 workers import more than they export, the total foreign trade balance of the small and medium sized enterprises is positive. On the other hand, the big sized firms which employ more than 250 workers are net importers and the main culprits behind the country's huge trade deficits. Net export revenues which the small firms brought into Turkey in 2012 are less than enough to offset the trade deficit of big firms. It is an unfortunate thing for a country that its large-scale manufacturing firms which utilize the most modern production techniques at their factories and plants constitute also its foreign exchange black hole.

Figure 18: Annual Average Growth Rate of Industrial Production (2005-2010) and Import Dependency Ratio (2002) in Manufacturing Industry Sub-sectors

Manufacturing Industry Sub-Sectors	Imported Input of Industries, at current prices, 2002, billion TL	Output, at basic prices, 2002, billion TL	Import Dependency Ratio, %	Annual Sectoral Growth Rate, 2005-2010, on average, %
Food Products and Beverages	1,991,216	46,447,641	4,28	4,00
Tobacco Products	319,695	2,457,429	13,00	0,12
Textiles	4,691,343	34,726,107	13,50	-1,32
Wearing Apparel	1,967,430	20,011,320	9,83	-2,30
Tanning and Dressing of Leather	732,668	3,192,890	22,94	2,76
Wood and Products of Wood and Cork	472,889	2,651,017	17,83	17,94
Pulp, Paper and Paper Products	951,769	5,331,601	17,85	5,46
Publishing and Printing	378,390	3,019,185	12,53	3,54
Coke and Refined Petroleum	4,095,882	8,141,930	50,30	-2,90
Chemicals and Chemical products	3,065,052	16,375,114	18,71	6,42
Rubber and Plastic Products	1,814,677	8,229,754	22,05	3,96
Other Non-Metalic Mineral Products	830,207	10,218,995	8,12	2,18
Basic Metals	3,304,371	14,538,255	22,72	3,20
Fabricated Metal Products	1,093,001	7,030,462	15,54	2,28
Machinery and Equipment n.e.c.	1,893,534	11,582,398	16,34	5,64
Office Machinery and Computers	38,713	185,620	20,85	-4,30
Electrical Machinery and Appartus n.e.c.	1,054,954	5,798,842	18,19	12,56
Radio and TV	1,571,785	4,313,331	36,44	-11,82
Medical, Precision and Optical Instruments	203,295	755,102	26,92	10,60
Motor Vehicles and Trailers	1,892,612	10,148,815	18,64	2,94
Other Transport Equipment	174,380	1,356,151	12,85	8,06
Furniture	2,362,795	7,539,776	31,33	8,86
Manufacture Industry Total	34,900,658	224,051,735	15,57	2,88

Source: TURKSTAT, Input-Output Tables, 2002, online http://www.turkstat.gov.tr/PreTablo.do?alt_id=1021, 15.11.2014

Industrial Production Index, 2005-2010, (2005 = 100), online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1024, 15.11.2014

Figure 19: Foreign Trade Balance in Manufactured Products by Employment Size Class, 2012, 000 TL

Size	Imports	Exports	Net Exports
1-9	23,684,123	53,726,161	30,042,038
10-49	54,838,893	60,826,667	5,987,774
50-249	69,426,459	44,778,054	-24,648,405
SMEs Total	147,949,475	159,330,882	11,381,407
250+	167,466,439	97,893,824	-69,572,615

Source: Our calculations based on the TURKSTAT, Small and Medium Size Enterprises, 2013, online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1033 , 15.11.2014.

All the factors that drive the local firms to import more intermediate products from abroad also harm the ability of the private corporate sector to create domestic industrial value-added as a whole. Thinking that an overvalued real exchange rate is one of them, we may conclude that it undermines the private sector savings through value-added and foreign trade channels.

We have stated above, as it can be recalled, that private corporate savings are highly correlated with net profit margin. What we should add to this linkage is that net profit margin, in turn, widens significantly in direct proportion to the size of firm. The larger the size of a firm, the faster it will grow and, as a consequence, the more it will tend to save. The World Bank report mentioned above underscores the point and draws a conclusion from it: "This finding is consistent with the view that corporate sector save less in Turkey because of the large number of small firms, which often operate below optimal size"[35].

On the other hand, we should reiterate that retained earnings which to a great extent depend on the profitability of firms are not the only source of financing. Apart from the internal cash flows, firms may find external sources in funding their operations. But the easiness with which a firm can have an access to external finance varies greatly according to the size of that firm.

[35] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 32-33.

Big firms that have a lot of tangible assets which can function as collateral are able to attain external finance at low cost and therefore they have a low external financing premium. For that reason, big firms do not need to keep retained earnings of large amounts to finance their investment projects and so their investments are lowly sensitive to internal cash flows. The chief advantage of being a big firm perhaps lies in the fact that it can easily find external financing sources at very convenient terms by virtue of its rich collaterals. According to the latest ISO 500 data, the leverage ratio of the biggest 500 non-financial firms has risen to % 132.4, the highest ratio ever seen in the last decade.[36]

Unlike big firms, small and medium sized enterprises have little tangible assets to function as collateral when borrowing from a financial institution. Facing a high external financing premium charged by banking sector, small firms have to rely more on retained earnings than on bank credits in funding their investments since, for them, internal and external cash flows are not perfect substitutes. In other words, it is more difficult for small firms with a low tangibility to substitute external finance for retained earnings as a source of investment. To the extent that small-scale enterprises have formidable hurdles on access to external funds, the volume of their investments is constrained by their ability to create internal cash flows.

Whether a firm faces a low or high premium comes into play as an important factor in determining the firm's net profit margin after net interest payments. Since a high premium makes the debt burden of enterprises heavier, as the cost of external finance becomes more expensive, so the gap between gross profits and interest payments will narrow, depressing the retained earnings if the dividend payout ratio is more or less stable in the process. The result is that for big firms that have no difficulty in finding external finance at suitable terms, any upward change in the leverage ratio which corresponds to a higher level of indebtedness has little effect on the corporate savings, being the cost of credit unchanged with the increased borrowing as a result of the strong collaterals those firms have.

[36] Istanbul Chamber of Industry, www.iso.org.tr, online 04.07.14

Here the reader might notice that the two opposite effects mingle with each other, as the World Bank report put it: "(i) A decline in the external financing premium will increase net profit margins and saving rates for a given level of debt; or, (ii) it will encourage use of external finance and thus reduce the need for retaining earnings, which will lower saving rates"[37]. While a low cost for borrowing has a positive effect on the firm's net profit margin, it also can be a disincentive to save more because in that case the firm feels little need for retaining a lot of funds at its vaults or savings account to finance its investment projects.

To sum it up, the smaller the size of a firm is, the less tangible assets it will have and the narrower the net profit margin will be, the more difficult it will be for that firm to have an access to credit, and the more heavily the firm will depend on its internal funds, and the less the firm's ability to grow will become, and the higher the external financing premium will be, and finally the fewer savings it will be able to generate. The larger the size of a firm is, the more tangible assets it will possess and the wider the net profit margin will be, and the lower the cost of external finance will become, and the more heavily it will rely on external funds, and the less the need for keeping retained earnings will be, and the fewer savings it will choose to generate.

According to the World Bank economists, the transmission mechanism through which low domestic savings cripple the economic growth of a country works as follows:

"To the extent that domestic savings imply higher external financing of investment for a developing country, sustainability of growth faces a significant risk… There are three main transmission channels:

(i) For credit-constrained firms (small and medium enterprises (SMEs)) with little or no means of external financing, lack of domestic saving lowers investment (the Feldstein-Horioka puzzle) and thus lowers growth of the economy.
(ii) For larger firms, financing investments in good times is not difficult, but the possibility of a reversal in capital inflows creates economic vulnerability. In the extreme event of a sudden stop, for example, not only are investments hit directly by the sudden absence of financing but investor sentiment also declines, further undermining investment and growth.

[37] Loc.cit.

(iii) The continuous flow of foreign capital causes the local currency to appreciate, putting pressure on the profitability and competitiveness of tradable sectors"[38].

So far, we have been concerned with the corporate savings in Turkey. Now we shall turn our attention to the other component of the private sector savings, namely, the household savings.

3.3.2. THE THEORIES AND DETERMINANTS OF HOUSEHOLD SAVING BEHAVIOR

Here we shall relate the drastic drop in the private household savings in the last decade to the policies and reforms adopted by economic policy makers after the 2001 crisis because the same policy path which switched the Turkey's growth model to the domestic consumption led growth fuelled by credit expansion based on the foreign capital inflows contributed a lot to the internal and external imbalances accompanied by a mild rise in the total output. For that end, we may sum up the policies adopted after the 2001 crisis under the three headings; the disinflation policy, the cleaning-up of the bankrupted banking sector, and the reform of the tax system. Into the bargain, we may add the pension reform and financial sector reform to these policies.

To begin with, we need to explain briefly the essence and nature of these policy changes.

Let's start with the disinflation policy. The main pillars of the disinflation policy or inflation targeting framework have consisted in the floating exchange rate regime, the short-term interest rate of the CBRT as the main policy variable, and the completely deregulated capital account.[39] The fixed exchange rate regime and the

[38] ibid., p.10-11.
[39] Ercan Uygur, "Domestic Savings in Turkey: Policy, Institutional and Legislative Framework", Background paper for Country Economic Memorandum (CEM) – Sustaining High Growth: The Role of Domestic Savings, World Bank, p. 17.

crawling peg system which failed disastrously during the 2001 crisis has been replaced with the flexible exchange rate regime in which Turkish Lira is allowed to fluctuate according to the foreign exchange market. Coupled with the high short-term interest rates and the resultant capital inflows of large amounts, the floating exchange rate regime paved the way for an overvalued real effective exchange rate and prevented it from falling down to low levels.

In passing, we should note that IMF and World Bank have been, and are still, of the opinion that the success of the disinflation policy in Turkey contributed a lot to declining private savings by improving macroeconomic conditions so that the need for precautionary savings had been reduced.[40] From this perspective, the decreasing domestic savings rate is not a thing to be worried about because it reflects a diminution in uncertainty about future. Since inflation is used as a proxy for uncertainty about future income,[41] a relatively low inflation rate which had declined from double digits to single digit was deemed as a sign for a strong macroeconomic environment. The World Bank Report frequently quoted in this study did a simple math to prove the point:

> "Finally, the large decline in inflation during the 200s was important for the drop in private saving. Had inflation remained at its 1998 value, private saving in 2008 would have been about 22.5 percent of GDP. Moreover, because predicted and actual saving rates started to differ significantly in 2002, it is likely that the effect of inflation on the saving rate is capturing the decline in economic uncertainty over the last few years"[42].

On the other hand, the cleaning-up of the banking sector in Turkey was aimed at ameliorating the financial health by making the so-called necessary changes in banking code, strengthening weak capital structure with banks' own resources, enabling the merger and acquisitions between banks and setting a high capital

[40] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 20.
[41] Rijckeghem and Üçer, ibid., p. 23.
[42] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 16.

requirement ratio for commercial banks. In addition, Banking Regulation and Supervision Agency (BRSA) was set up mainly to monitor the developments in banking sector, to enhance banking sector efficiency and to minimize the potential risks to the economy from the banking sector.[43] As we shall see below, the main engine of post-crisis credit growth was the thus cleaned up banking sector.

At the fiscal policy front, in the early 2004 a legislative package which radically changed the direct tax system and decreased the capital income taxes on yields of financial instruments was put into effect on the recommendation of IMF to the effect that a more efficient financial market might favorably promote private household savings. Ercan Uygur summarizes it: "This package aimed at; (i) harmonizing the system of investment incentives and withholding tax rates on income from financial instruments, (ii) reforming the system of income tax credits, and (iii) simplifying the taxation of corporate earnings and dividends"[44]. As a result, withholding tax rates on yields of financial instruments were in general decreased. Tax rates on TL deposits, FX deposits and repo were reduced from % 17.6, % 18 and % 22 in 2003 respectively to a standardized rate of % 15 in 2006; on the other hand, % 10 tax rate was levied on government and private bonds, A- and B- funds, and stocks. In reducing the capital income tax rates the declared goal of the Turkish government was, however, not to boost private household savings by easing the access to the financial market, but to broaden the tax base and bring the tax regime closer to the OECD standards by simplifying the complicated tax system.[45]

Behind these reductions in the capital income tax rates, as we have stated above, we find the IMF recommendations:

> "Financial sector reform may also have a positive effect on saving rates under certain conditions. On the one hand… the short-run effect is often negative because financial liberalization tends to facilitate access to credit and thereby reduce borrowing constraints. On the other hand… [p]ositive effects on saving could also arise from the further development

[43] Banking Regulation and Supervision Agency (BRSA), "Mission of the Organization", https://www.bddk.org.tr/websitesi/english/About_Us/About_BRSA/2638mission.pdf online: 04.07.14.
[44] Uygur, ibid., p. 20.
[45] Loc.cit.

of Turkey's capital markets as households would gain access to a more attractive range of financial investment opportunities"[46].

To assess how efficiently the Turkish financial market has worked following these reforms with respect to its effect on the Turkish private savings, we should investigate the composition of household financial assets. At this point, we have to note that the efforts at deepening the financial markets have failed in terms of directing household savings towards financial market instruments. Even though economic policy makers in Turkey spared no effort to make the investment in stocks, bonds, bills and mutual funds more alluring, their share in the household financial assets was still hardly above 15 percent by the first quarter of 2014.

It is clearly seen that TL and FX deposits continue to be the most preferred investment instrument by Turkish households despite the strenuous effort made by economic policy makers to change the composition of the assets held more towards financial market instruments. On the other hand, we observe that the share of FX deposit accounts has climbed to almost a quarter of total household financial assets in March 2014 from % 20.1 in December 2012 due to the exchange rate increase. As the exchange rate increases, people tend to shift their savings to FX deposit accounts with the aim of getting an advantage of the appreciated foreign currencies relative to domestic currency.

On the other hand, Kıvılcım Metin Özcan et. al. conducted a study into the effects on the private savings rate of a number of macro- and socio-economic variables, including the financial depth. Much to the surprise of these economists, the coefficient for the broad money to GNP ratio is both negative and statistically significant. "This finding does not confirm the prediction that an increase in 'financial depth', as proxied by the increase in M2/GNP ratio, is likely to be very important in a country like Turkey, which is undergoing a financial liberalization

[46] International Monetary Fund, "Turkey: Selected Issues", Country Report No. 07/364, November 2007, Washington, DC, p. 7.

Figure 20: Household Financial Assets, March 2014

Type of Asset	Billion TL	Share, %
TL Deposits	351,4	48,1
FX Deposits	181,4	24,8
(billion USD)	84,1	
Precious Metal Deposits	15,1	2,1
(billion USD)	7	
Bonds and Bills	18,9	2,6
Public Sector	7,1	1
Private Sector	11,8	1,6
Mutual Funds	52,9	7,2
Private Pension Funds	27,8	3,8
Other Mutual Funds	25,1	3,4
Stocks	37,1	5,1
Repos	2,8	0,4
Currency in Circulation	70,6	9,7
Total Assets	730,1	100

Source: CRA [Central Registry Agency], CMB [Capital Market Boards], Central Bank of the Republic of Turkey; CBRT, Financial Stability Report, May 2014, p. 15.

process"[47]. Moreover, if the degree of monetization of the economy is used as a proxy for financial depth measure for Turkey, the result is totally incompatible with the conception that "countries with deeper financial systems will tend to have higher private saving rates"[48].

In parallel with these reductions in capital income taxes, there occurred major cuts in the rates of direct taxes. Perhaps in part because of the tax rivalry in Europe during the first half of the last decade, sometimes referred to as "race to the bottom", Turkey has cut the corporate income tax rate from 33 to 20 percent following the introduction of the new Corporate Income Tax Law 5520. In addition to this, the Justice and Development Party government put into implementation a new investment incentive scheme, thereby enabling the corporate income tax rate to fall down to 2 percent. Moreover the highest marginal tax rate has been reduced to 35

[47] Kıvılcım Metin Özcan, Aslı Günay, Seda Ertaç, "Macro and Socioeconomic Determinants of Turkish Private Savings", Journal of Economic Cooperation and Development, 33, 2 (2012), p. 116-117.
[48] ibid., p. 119.

percent from 50 percent, and the lowest rate to 15 percent from 22 percent as a consequence of the amendments made in the tax code.

The result of the fiscal policy reform has been that the share of direct taxes in total tax revenue declined to about 30 % since 2002. This rate was around 40 % in the 1990s and the early 2000s. On the other hand, indirect taxes in Turkey account for about 70 % of total tax revenues, up from 60 % in the 1990s. Ercan Uygur cites the greater reliance on indirect taxes from 2002 onwards as one of the principle contributors to the fall in private saving rate: "The reason is that higher direct taxes (on income) reduce household disposable income, while higher indirect taxes raise the value of consumption expenditure"[49]. But the World Bank Report is clearer on this point: "For low- and middle-income households that have little flexibility to adjust their consumption, increased indirect taxes imply a higher cost of consumption (higher prices) and thus lower savings…"[50]

Also we should mention about the effects of the wave of privatization in public services on the private savings rate. The commodification of such public services as education and health care reduced the household savings through private consumption rate channel.

> "Higher proportional payment for such public services by households will increase consumption spending and reduce household saving. Privatization of public enterprises, the rising weight of private schools and universities in education and of private hospitals in healthcare since the early 2000s might have raised private consumption rate"[51].

We find at the IMF report just quoted above that the highly recommended pension reform, according to IMF economists, would have the potential to raise private savings by shrinking entitlements without a compensating decline in contribution rates and thus driving the young population to put aside additional

[49] Uygur, ibid., p. 23.
[50] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 20.
[51] Uygur, ibid., p. 24.

precautionary savings for retirement. But Figure XX reveals that the share of private pension funds in household financial assets remains only at 3.8 percent.

Moreover a study carried out by the two CBRT economists, Özgür Özel and Cihan Yalçın, shows that the existing private pension system revised in mid-2012 to encourage household savings by enlarging pensioners' base and simplifying the benefit mechanism is expected to have little impact on Turkish private savings rate due to a barrage of reasons, one of which is the volunteer character of participants' contributions.[52] While the examined 21 developing countries introducing predominantly mandatory private pension schemes through reforms in social security system since 1980s, including Turkey, have been able to raise their saving rates, though with a time lag, by about 1.5 percentage points according to econometric estimations, the rise in the savings rate in Turkey is estimated to be lower than even this meager rate because private pension companies in Turkey currently charge management fees so high that participants are projected to prefer not to join the system and instead invest their personal funds outside the system.

As the proverb says, they who sow the wind shall reap the whirlwind. We noted above that the cleaned-up banking system was able to rapidly expand credit volume.[53] Now we turn our attention to the data on the issue. After a sharp rebound from post-crisis trough, annual consumer credit growth reached a high plateau of % 60 year to year basis in real terms from early 2005 through mid-2006. "During this period, consumer credit rose from around % 4 of total private consumption in 2003, to some % 15 at the end of 2007"[54]. The expansion in consumption credits ignited a boom in durable goods sales which plunged % 30 during the 2001 crisis and were pegged at low levels in 2002; the sales of durable goods rebounded rapidly in 2003

[52] Özgür Özel, Cihan Yalçın, "Yurtiçi Tasarruflar ve Bireysel Emeklilik Sistemi: Türkiye'deki Uygulamaya İlişkin Bir Değerlendirme", **CBRT, Çalışma Tebliği No: 13/04**, Şubat 2013, Ankara, p. 29.
[53] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 20.
[54] Rijckeghem and Üçer, ibid., p. 51.

and remained 80 percent higher during 2003-2006 than in 2001-2 as the pent-up demand came back in earnest.[55]

This consumption mania was reflected in the ratio of household liabilities to household disposable income. Looking at the figures, we can easily speak of a private household overleveraging. Even if "debt servicing risks are mitigated by the fact that most loans are at fixed interest rates"[56], household debt has exponentially risen from % 4.6 in 2002 to more than % 55 of disposable income in 2013. Though not large by peer standards, the rate is extremely scaring given the ever declining private household savings. Worse still, "the relatively short maturity of household debt (4,1 year on average) implies principal payments of about 20 percent of disposable income"[57].

Caroline van Rijckeghem and Murat Üçer try to explain the over-use of credit by Turkish households by the theorem of hyperbolic discounting.[58] The reason why a widespread availability of consumer credits tends to reduce savings even of those people who are not liquidity-constrained can be laid down, according to Rijckeghem and Üçer, like this way: while people use a high discount rate for discounting the near future, they set a low discount rate for discounting the distant future. In other words, when it comes to discounting the near future, people are more impatient than they are in the case that they discount the far future. For instance, when faced with a choice between a $ 50 now and $ 100 from one year from now on, most people will prefer $ 50 now to $ 100 a year later. But, if they are offered to make a choice between $ 50 in five years and $ 100 in six years, nearly all people will choose $ 100 in six years, although that is the same choice only to be made after five years. Here we stumble across the dynamic time inconsistency of people's preferences; namely, after five years have elapsed, people will most likely change their mind and once again prefer $ 50 now (i.e. in year five) to $ 100 a year later (i.e. in year six). From

[55] Rijckeghem and Üçer, ibid., p. 47.
[56] International Monetary Fund, "2013 Article IV Consultation", Country Report No. 13 / 363, December, 2013, Washington, DC, p. 4.
[57] Loc.cit.
[58] Rijckeghem and Üçer, ibid., p. 24-25.

Figure 21: Household Debt to Disposable Income

Years	Household Liabilities as a Percent of Disposable Income
2002	4,6
2003	7,4
2004	12,8
2005	19,5
2006	26,0
2007	31,0
2008	36,5
2009	36,3
2010	43,4
2011	47,4
2012	48,8
2013	55,2

Source: CBRT, Financial Stability Report, November 2013, p. 54.

this exposition, Rijckeghem and Üçer conclude that people borrow more once their access to credit is made easier, or what amounts to saying the same thing, liquid-constraints are removed one after another. No matter how much financial asset they have, and no matter how easy it is for them to get liquidity from banking sector in other circumstances, all people may become credit freaks when hindrances to credit access are eliminated.

This surge in consumer credits leads to lower private savings. In his background paper for the World Bank report on Turkish economy, Ercan Uygur calculates that the correlation coefficient between private saving rate and the ratio of private credit to GDP was -0.77 during the period from 2001 to the third quarter of 2010.[59] Therefore he seems to blame the consumption boom spurred by an extraordinary rise in consumption credits for the recent decline in the private household savings. He also mentions about a very interesting analysis of the relationship between economic crisis and private credit growth in 13 emerging countries including Turkey:

[59] Uygur, ibid., p. 20.

"Büyükkarabacak and Valev (2006) … find that each of the corporate credit growth and household credit growth increase the probability of both a banking crisis and currency crisis. They emphasize that household credit expansion in countries with low propensity to save have a stronger effect on crises".[60]

As a consequence of a higher reliance on credits in financing domestic private consumption, Turkish economy have become less immune to a banking crisis, a conclusion which completely contradicts many economists' belief in the strong nature of Turkish banking system after the sweeping reforms towards a stronger financial architecture in the country.

When looking at which income groups save how much, we observe that only the highest income group can afford to save. Considering the enormous income inequality between households to the degree that the share of the highest income group of total income is 8 times more than the lowest 20 %, we may establish that the income distribution biased towards the richest segments of the population gets in the way of a higher level of household savings in Turkey.

Whereas the share of the lowest 20 % in total consumption expenditure was 8.7 % in 2012, its share in disposable income stuck at 5.9 %. It is very important to note that the only income group whose share in household disposable income is higher than its share in total consumption expenditure is the riches 20 % of the total population. In other words, the income distribution skewed towards the richest people in Turkey prevents the larger segments of the population from saving in the face of their consumption needs below which they cannot afford to survive.

Now let's examine the theories of household saving behavior and their relevance in the case of Turkish private savings.

Permanent Income Hypothesis, put forward by Milton Friedman in 1957, starts with the postulate that a representative individual who seeks to optimize his lifetime utility wants to smooth out consumption over a life time. But this effort to maximize the utility from lifetime consumption is constrained by the present value of

[60] ibid., p. 18.

Figure 22: Distribution of Income and Total Consumption Expenditure among Income Groups, 2012

Quintiles ordered by income	Shares of the Quintiles in Total Consumption Expenditure, %	Distribution of Household Disposable Income by Quintiles, %
First 20 %	8,7	5,9
Second 20 %	13,5	10,6
Third 20 %	17,8	15,3
Fourth 20 %	22,2	21,7
Fifth 20%	37,8	46,6

Source: TURKSTAT, Income and Living Conditions Survey, 2006-2012, Household Budget Surveys, 2012, online, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1011, 15.11.2014.

lifetime income plus any original endowments minus any bequests.[61] This representative agent prefers a stable consumption pattern and any transitory change in his income is mostly absorbed as saving or dissaving. To put it more simply, a windfall gain on wealth such as an improvement in the terms of trade, or a rise in the stock market, or an increase in housing prices is being saved by the representative agent to be consumed over the rest of his lifetime, and vice versa. While a temporary shock to income is compensated for by a change in savings in the same direction, a permanent shock to income directly changes the consumption pattern of the representative agent. If national income expands permanently, the representative individual will surely leap at the opportunity of consuming more, and as a result it can be concluded that a permanent rise in gross domestic product has an adverse effect on savings.

But on the other hand, when the shock stems from a change in the preferences for savings, the neo-classical growth model predicts that both investment and growth change in the same direction until the economy arrives at the new steady state.[62]

In sum, according to the neoclassical theory of household behavior, when people tend to form an optimistic expectation about their future income, they should dissave; when they become pessimistic more and more, they should save. The reason

[61] David Bunting, "Consumption", **The Elgar Companion to Post Keynesian Economics**, edited by J.E. King, Edward Elgar Publishing, Cheltenham, UK, 2003, p. 73.
[62] United Nations Conference on Trade and Development, **Trade and Development Report, 2008: Commodity prices, capital flows and the financing of investment**, New York and Geneva, 2008, p. 66.

why people lessen their consumption in anticipation of a decline in their future income can be found in the fact that high saving makes it possible future consumption to remain unchanged. To formulate it in simple words, saving will decline when consumer confidence is high, and vice versa.

Rijckeghem and Üçer note that according to CNBC-e indicator of consumer confidence in the years 2004 and 2005, more people expected their economic situation and finance to become worse rather than to ameliorate over the next years.[63] Moreover, expectations for employment from TURKSTAT reveal that prospects were rather bleak, with more people expecting their job situation to become worse than to improve starting in early 2004.[64] In other words, in the same time period during which private savings rate had witnessed a sharp drop, consumer confidence also seems to have been very low in contrast to the predictions of the neoclassical theory of household saving behavior according to which low consumer confidence should have prompted people to save more in the expectation of a lower future income.

The another neoclassical theory of household saving is Life-Cycle Saving model, put forward by Franco Modigliani and Richard Brumberg in 1954. According to this model, since rational economic agents tend to have a strong dislike for a jagged time profile of consumption, younger people are expected to save more while older population is presumed to dissave. A representative individual prefers to save during working age, and he begins to dissave after retirement. At the theoretical level, both savings and dissavings of an individual would be equal to each other in the absence of bequest motive. The savings of an individual exhibit a hump-shaped pattern, with the saving rate increasing during the working age, and then declining after the retirement. Of course, people do not know exactly when they will die, and for this reason they usually pass away leaving bequest their behind. Apart from this fact, when an improvement in labor productivity enriches young population, their lifetime earnings will become higher than the older population, and therefore saving

[63] Rijckeghem and Üçer, ibid., p. 45-46.
[64] Loc.cit.

by the young who are expected to consume more after retirement will become greater than the dissaving by the old. This is called "Aggregation Effect"[65].

The Life Cycle Saving model counts three phases in demographic transition, which undoubtedly has a strong effect on the aggregate saving. In the earlier stages, mortality rate falls, and this in turn leads to more surviving children, in which case aggregate savings will be depressed in the face of a higher young dependency ratio. In the intermediate phase, fertility rates tend to decline, and the resources thus released as a result of a lower young dependency ratio are called as the first demographic dividend. [66] In the final phase, the age profile of the working population will become older and older because they face greater longevity as a consequence of the improved living conditions. Since the years after retirement will be more and more, and the elder population will depend less and less on their children to take care for them, they tend to accumulate assets for retirement in the absence of government provision for the elderly, which is exactly called as the second demographic dividend.[67]

But according to the World Bank, the Life Cycle Saving model lacks empirical evidence in the case of Turkish households because saving increases with the age of the household head:

> "…[C]ontrary to the life cycle theory, the pattern in Turkey is not hump-shaped – that is, savings do not decline with age and dependency ratio, evidence of a bequest motive, or a selection bias in the data. (Such a bias could arise if some elderly who had saved for retirement could afford to stay as household heads while other move in with children"[68].

[65] ibid., p. 20.
[66] Loc.cit.
[67] Loc.cit.
[68] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 6.

3.3.3. THE EVOLUTION OF PUBLIC SAVINGS

Since our main concern is to analyze the factors behind the fall in domestic savings rate in the last decade, and the public savings have begun to ameliorate and turned positive for the first time since the late 1990s during this period, we are not going to delve deeply into the public savings issue. The issue of public savings concerns us here to the extent that the changes in public savings affected the domestic savings in general. The relationship between public savings and domestic savings is not as straightforward as it may seem at first glance.

Consequent upon the tight fiscal stance after the economic turmoil in the early 2000s, the ratio of gross public debt to GDP had declined to 42.9 percent at the end of 2008 from 78.9 percent at the end of 2001. Moreover, as interest rates decreased from the crisis peak of almost 100 percent to 19.2 percent at year end 2008 by virtue of the resolute disinflation policy meticulously followed, interest expenditure descended from 17.1 percent of GDP and 93.7 percent of tax revenues in 2001 to 5.3 percent of GDP and 30.1 percent of tax revenues in 2008.[69] Lightening the burden of interest expenditure on the government budget paralleled the transition from negative public savings to positive savings in those years.

However much the fiscal performance may seem to have improved in Turkey, we should be cautious to make any assessment about it because most of the ground gained in the sphere of fiscal policy can be attributable to privatization proceeds and one-off tax revenues in the last decade.[70] In order to determine how strong fiscal stance has been, we should first of all subtract one-off revenue items whose effects usually may spread over one year or few more. But this job is obviously outside the scope of this study. However, we think it useful to count here one-off revenues which have been relevant for the budget balances in Turkey during the last years: privatization revenues, CBRT profit transfers, dividends from public banks, revenues

[69] World Bank, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, "Sustaining High Growth: The Role of Domestic Savings", Turkey: Country Economic Memorandum (CEM), Report No. 66301-TR, December 23, 2011, p. 18.
[70] Loc.cit.

from third generation GSM sales, net tax payments collected as per laws concerning integrating some assets into national economy and restructuring some claims (these laws have been dubbed by some commentators as "tax amnesty"), revenues from 2 B sales, and payments by energy-related state-run energy enterprises on overdue liabilities.[71]

While contributing to domestic savings directly, an increase in public savings is believed to diminish total savings indirectly through the channel of the Ricardian offset. That is to say, the theory of what economists called as the "Ricardian equivalence" holds that public and private saving are fully complementary. To put it in simple English, one unit increase in public saving is made up for by one unit decline in private saving, which suggests a full Ricardian offset.

Under the assumption that there are no shocks to preferences, any development which changes the lifetime household budget constraint such as a new policy adopted by government with a view to stimulating economy through deficit financing affects also saving decisions of rational economic agents whose only objective is to maximize their lifetime utility given their lifetime budget constraint. Since a higher level of public spending can be made possible by a rise in tax rates or the issue of treasury bonds, the choice from the point of government is simply tax today or tax tomorrow. Therefore, a newly implemented deficit-financing program implies higher public debt levels now and an accompanying tax increases in the future to pay off the debt incurred. Thus rational economic agents should, and do, internalize the actions of the government when making their saving decisions. "In this situation, the discounted value of future taxes will not change and will not affect lifetime household budget constraint, leaving today's household consumption decisions intact".[72]

But it is important to note whether the change in fiscal policy is permanent or temporary. According to the Permanent Income Hypothesis, it is to be recalled that any transitory shock will not affect consumption decisions of rational households but

[71] Central Bank of Republic of Turkey, Inflation Report, 2014-I, ISSN 1306-8199, p. 80.
[72] World Bank, ibid., 19.

their saving decisions. The same rule can be applied here. When public saving rises as a consequence of an increase in tax rates, rational economic agents take it as a temporary shock because this rise in tax revenues is deemed to diminish future tax rates. Therefore lifetime budget constraint of rational households stays unchanged. It does not require a change in consumption level but, unlike that, household savings will decline.

On the other hand, when public saving goes up due to a decline in public expenditures, and this lower level activity is accepted to be permanent, then there will occur a change in household lifetime budget constraint, namely, rational households will have higher lifetime resources with which to jump to a higher consumption path. Thus we can establish that private savings decrease by the same amount as the reduction in public expenditures. In 1974, Robert Barro asserted that rational "agents also adjust their bequests to offset the effect of future taxes on next generation".[73]

Now we are able to answer the question of how and to what extent the Ricardian offset did work in Turkey during the last decade. The IMF Report in 2012 reads:

> "The decline in national savings happened despite large increases in public savings. Fiscal consolidation efforts led to an 8.5 percentage points of GDP increase in public savings over the last ten years. However, this was more than offset by a 9 percentage point decline in the private saving rate. As for the striking public-private offset, it stemmed from a combination of partial Ricardian equivalence (with estimates of the Ricardian offset in the 0.4–0.8 range)…"[74]

Another study on the interaction between public and private savings in Turkey summarizes different calculations of the partial Ricardian offset:

[73] Rijckeghem and Üçer, ibid. p. 22.
[74] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 23.

"Caroline Van Rijckeghem (2010) finds an offset coefficient of -0.63 in her key specification; Metin Özcan, Günay, Ertaç (2003) finds an offset coefficient between -0.42 and -0.656; IMF (2007) finds an offset coefficient between -0.72 and -0.77. … In this exercise, we come up with a Ricardian offset coefficient between -0.38 and -0.58, which is on the lower side of previous estimations for Turkey".[75]

However varied these estimations about the Ricardian offset may be, all of them remain below one. In other words, one percentage point rise in public saving is accompanied by a decline in private saving by less than one percentage point of GDP. The economic meaning of these estimations is that there are still some rooms for fiscal policy actions when it comes to raising national savings rate. "…[G]iven only partial Ricardian equivalence, fiscal policy can play a role in raising national savings."[76]

[75] Eser Pirgan Matur, Ali Sabuncu, Sema Bahçeci, "Determinants of Private Savings and Interaction Between Public and Private Savings in Turkey", Topics in Middle Eastern and African Economies, vol. 14, September 2012, p. 113.
[76] International Monetary Fund, "2012 Article IV Consultation", Country Report No. 12 / 3338, December, 2012, Washington, DC, p. 24.

FOURTH SECTION

ECONOMETRIC ANALYSIS

4.1. THE PRESENTATION OF THE MODEL

Now the time has come for analyzing the economic factors behind the falling domestic savings. But before moving on, we need to state what outcomes we are expecting from our empirical examination.

In the sections of our thesis dealing with the problem of the decreasing domestic savings, we mainly focused on four potential determinants, that is, growth in national income, inflation rate, changes in real effective exchange rate, and volume of consumer credits. The Keynesian tradition, according to which the causality runs from investment to saving, holds that gross domestic savings have a lot to do with national income. To put it in simple words, according to this approach, we should always expect that the higher the national income growth, the more domestic savings will be.

When it came to questioning the motives for making a saving decision, we stumbled across the precautionary savings. There we have stated that since inflation rate is used a proxy for uncertainty about future, savings is expected to increase with a rise in inflation rate, or vice versa. In sum, growth rate and inflation rate are assumed to have a positive relationship with domestic savings.

On the other hand, an overvalued real effective exchange rate always tends to depress the profit level of tradable sectors. In other words, when the real exchange rate appreciates, it wreaks havoc on the proceeds of industrial firms heavily involved in export activities through foreign trade channel. Insofar as an amelioration in

current account and a rise in domestic savings go hand in hand, any change in real exchange rate is supposed to be in a inverse relationship with domestic savings.

Maybe it does not require much thoroughly scientific investigation, and it suffices to have a common sense to see that any upward change in the volume of consumer credits is believed to push domestic savings down. A relaxation in liquidity constraints surely fuels consumption, thereby deterring economic agents from saving. In sum, gross domestic savings are expected to change in the opposite direction with real exchange rate and consumer credits.

In order to examine the influences of more than one determinant, we prefer to use a multiple regression analysis. And a multiple regression model has the form:

$$Y_i = \beta_o + \beta_1 X_i + \beta_2 X_i + \ldots + \beta_p X_i + \varepsilon_i$$

.

Much to our surprise, real effective exchange rate and inflation rate turn out to be statistically insignificant within the scope of model. But we may say beforehand that the other determinants strongly affect the regressand.

Our dependent variable is gross domestic savings in current Turkish Lira. One of the independent variables is nominal GDP and the other is the Deposit Bank Credits extended to Private Households in current TL, and from now on we call the second independent variable, in short, consumer credits. While we downloaded the data on gross domestic savings and nominal GDP from the World Bank database, we obtained the data on consumer credits through Republic of Turkey Ministry of Development.

Moreover we have deflated all variables, namely, gross domestic savings, nominal GDP and consumer credits by using the price index (1998=100). And also, all variables in the model have been log transformed.

4.2. TESTS AND RESULTS

Using the data set which covers the period from 1990 to 2010 on an annual basis, we have reached the statistical results shown below, indicating that our independent variables, GDP and the consumer credits are statistically significant at the % 5 level. According to this, these independent variables exert a strong influence upon the gross domestic savings, the dependent variable. This point can be clearly seen the high level of the R-square. Econometrics says us that there is an intimate relationship between R-square and F test, the latter indicating "a measure of the overall signification of the estimated regression".[169] Thus we can establish that the larger the R-square, the greater the F value will be. Any one percentage point increase in GDP raises the domestic savings by 1.78 percent, while a rise in the consumer credits by 1 percent causes the gross domestic savings to decline by 0.15 percent. Also we may add that positive contributions of national income growth have been more than offset by negative effects of rises in the volume of consumer credits, and this fact expresses itself in steadily declining gross domestic savings.

Thus we may write down our regression model as follows:

$$LNTASARRUF = -13.49991 + 1.780825\ LNGDP - 0.156675\ LNKREDI + \varepsilon_i$$

In order to test whether our model satisfies a series of econometric assumptions, we should scrutinize the results of the Breusch-Godfrey Serial Correlation LM test.

[169] Damodar N. Gujarati, **Basic Econometrics**, Fourth Edition, The McGraw-Hill Companies, 2004, p. 258.

Table 1: The Regression Results

Dependent Variable: LNTASARRUF
Method: Least Squares
Date: 09/08/14 Time: 15:23
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.49991	4.748491	-2.842989	0.0108
LNGDP	1.780825	0.310165	5.741537	0.0000
LNKREDI	-0.156675	0.060553	-2.587415	0.0186

R-squared	0.946906	Mean dependent var	16.44818
Adjusted R-squared	0.941007	S.D. dependent var	0.246595
S.E. of regression	0.059894	Akaike info criterion	-2.660908
Sum squared resid	0.064572	Schwarz criterion	-2.511690
Log likelihood	30.93953	F-statistic	160.5103
Durbin-Watson stat	1.395752	Prob(F-statistic)	0.000000

From the table given below, we can conclude that no first-order autocorrelation problem is present in our model at the 5 % level of significance.

Table 2: The Breusch-Godfrey Serial Correlation LM Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.614927	Probability	0.220916
Obs*R-squared	1.821842	Probability	0.177094

White Heteroskedasticity test results show us that there exists no changing variance problem at the 5 % level of significance.

Table 3: The White Heteroskedasticity Test Results

White Heteroskedasticity Test:

F-statistic	0.531552	Probability	0.714411
Obs*R-squared	2.463305	Probability	0.651218

Besides, according to the results of Ramsey RESET Test, our model does not suffer from specification error at the 5 % level of significance.

Table 4: The Ramsey REST Test Results

Ramsey RESET Test:

F-statistic	1.390107	Probability	0.254626
Log likelihood ratio	1.650590	Probability	0.198879

CONCLUSION

The present study has been comprised mainly of two broad parts. In the first part which includes the first two sections, we have explored the theoretical dimensions of saving-investment causation in both closed and open economy conditions respectively. Our main focus has been on the split between neo-classic economics and the Keynesian School in analyzing the saving-investment nexus. We have seen that these two mainstream schools of economics held views diametrically opposed to each other. While neoclassical theoretical framework wholly backs up the argument that the causational relationship runs from saving to investment, for Keynesian school of economic thought, quite the reverse is true. Therefore, their policy implications contradict each other. To neoclassical economists, one of the vital economic issues on the agenda is whether the public authorities adopt or turn a deaf ear to the austerity measures suggested by them in order to stimulate economic growth by creating resources for capital accumulation. On the other hand, what is essential for a Keynesian economist is to encourage investments by whatever means and this certainly includes abandoning the fiscal discipline and pursuing deficit-financing.

Moreover, we have demonstrated theoretically and empirically that in open economy conditions, some of the neoclassical postulates about the efficacy of international capital flows in bringing about desirable outcomes with respect to economic development in emerging countries ceased to hold, at least, in the last three decades since the deregulation of capital accounts worldwide. As an alternative, we have mentioned about the Dutch disease in terms of the pernicious effects of capital inflows into emerging countries on their economic development through real exchange rate channel.

In the second part encompassing the last two sections, we have traced the evolution and economic determinants of the declining domestic saving rate in Turkey. In order to fully comprehend the economic dynamics affecting the

movements of gross domestic savings, we had to delve into a wide range of subjects from the relationship between saving gap and growth performance to the distribution of both domestic and foreign investments across different sectors. Against the background of the not-so-brilliant economic growth, the current account deficit in Turkey has almost spiraled out of control in the last decade. If one possible explanation for this fact is the gross capital formation biased toward nontradable sectors such as finance, real estate, insurance and construction, the other is the overvalued real effective exchange rate which undermines the competitiveness of the industrial sector to the advantage of peer competitors.

Having presented the historical evolution of and the possible economic reasons for the falling domestic savings rate, we have proceeded to empirically investigate the determinants of gross domestic savings in Turkey. Contrary to our previous expectations, the real effective exchange rate and the inflation rate are not statistically significant within the scope of our multiple regression analysis. On the other hand, however, the growth rate and consumer credits prove to have a strong influence on the gross domestic savings. In completely accordance with our expectations, the growth rate has positively contributed domestic savings, while the colossal amount increase in the volume of consumer credits the Turkish economy witnessed after the 2001 crisis is seen to have discouraged the economic agents from saving out of their incomes. In addition, we can fairly establish that the positive contributions of economic growth to gross domestic savings have been outstripped by the negative effects of the surging consumer credits on saving decisions in the period from 1990 to 2010.

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