New Economics

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NEW ECONOMICS

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INTRODUCTION: A NEW ECONOMIC ERA

The 2020 GP (Global Pandemic) is nor only changing the World in many dimensions, it has started a new economic era. What are the characteristics of this new era? They are five: 1) Large amounts of money printed, sustaining low interest rates. The four most relevant central banks have expanded, up to the end of September 2020, their balance by 6.7 trillion dollars. 2) Large governments' debt borrowed at low interest rates. Advanced economies general government gross debt over GDP is expected to increase from 104% in 2019 to 124% in 2020, and to remain at this level until 2025. The same indicator in Emerging markets and developing economies is expected to increase from 52% in 2019 to 61% in 2020, and to increase furthermore to 69% in 2025. 3) Central banks buying huge amounts of government's debt. The four most relevant central banks have bought between 50% to 75% of their corresponding governments debt issued since February 2020. 4) Governments allocating huge amounts of resources. Up to September 11, the total fiscal effort in the world has been 11.7 trillion dollars; which represents 11.9% of global GDP. Of this amount around half has directly impacted the budget, and the rest is liquidity support, such as guarantees and others. 5) Central banks buying directly private sector financial instruments –what is known as QE (Quantitative Easing). Although this effort has been of secondary relevance as compared with the fiscal one. These characteristics are consequence of urgent economic policies, which however have not followed any theoretical framework. Therefore, a new economic theory is needed: 1) to confirm whether the policies adopted were the adequate ones or not; 2) to suggest alternative economic policies that could had been used; and 3) to define what risks poses the future.

Each economic era has brought along new advances in economic theory, which allowed to create proper policies to resolve the main economic problems of the time. The era of the Gold Standard was concerned with preventing inflation; and it used and developed neoclassical economics. 1930s era was advocated to avoid depressions under Keynes' econom-

ics. The 50's to the late 70's era was guided by the desired to manage properly the business cycle, and its corresponding theory was the IS-LM model. Since the 80's era the goal had been to prevent stagflation from occurring; and the theoretical framework applied was monetarism and rational expectations. The challenge of this new era, starting in 2020, is to get out of the crisis without a politicized take over of the economy and a renew inflationary period. It will not be easy. And there is not yet a theory at hand. To discuss how to do it, and to develop a theoretical framework capable to handle this new challenge is the purpose of the New Economics (NE) proposed in this book.

There are two questions that deserve to be answer. The first question is Why the world has been so aggressive printing money and increasing the government deficits? The answer can be found in the slow economic recovery after the 2008 GFC (Global Financial Crisis).

The second question is Why money printing and government borrowing in this new era has not produced neither stagflation nor inflation? The reason is as follows. The ICT (Information, Communications, Technology) revolution that started in the late eighties has produced such increase in global productivity that inflation has been subdued, pressuring nominal interest rates down. The huge savings from China and other countries that join the ICT revolution has created a supply of capital that has maintained the real component in interest rates also down. It is in this environment of low interest rates and high global productivity that the 2020 GP occurs. This already take us to an important reflection: *it is not possible to explain macroeconomic phenomena without taking into account what is happening in the real productive economy*. This is why Section III in this book is on the new theory of economic growth.

New economic theories do not discard previous ones, they built upon them. Therefore, the New Economics (NE) proposed in here takes many elements from previous theories, but it gives them a new perspective. One of the main conclusions of the IS-LM controversy was that macroeconomics needed better microeconomic foundations, which was then one of the main concerns in the development of the theory of rational expectations. Since we agree that it is not possible to have a good macroeconomic perspective without solid microeconomic foundations, we will use Section I on this manuscript to discuss the new microeconomics.

Why is there a need for NE? Because previous theories cannot explain the present situation. Neoclassical economics do not have a macroeconomic theory. According to monetarism and rational expectations, neither the 2008 GFC, nor the 2020 GP, should have had happened. And, in addition, so much free money should have had created already stagflation. The IS-LM model was created to manage a business cycle, and does not have much to say about how to manage a major economic crisis. And Keynes' economics would of have recommended the large fiscal adjustment that had happened, but never contemplated the possibility of QE.

In Section I we discuss the new microeconomics. We built upon Game Theory. Information Theory, Behavioral Economics, and Institutional Economics. The main conclusion of this chapter is that there is not a unique microeconomic equilibrium. The three attempts to find one: Welfare Economics, General Equilibrium Theory, and Rational Expectations, have failed. It is now clearly established that the setting (whether it is a game, an institution, the level of information, or other behavioral conditions) do influence in the final equilibrium obtained. Therefore, there is the need to develop a macroeconomic theory and model of economic growth to define the settings, which go beyond their microeconomic foundations.

Section II present the new macroeconomics. It defends two main theses: 1) that the macroeconomic equilibrium nor only depends in the microeconomic conditions in place, but also in both: the macroeconomic adjustment policies (the fiscal and monetary policies); and on the economic growth model. And 2) that the macroeconomic adjustment policies should go beyond traditional fiscal and monetary policies. That there is space for an extended and modified version of QE (Quantitative Easing), but that this would imply creating new institutions capable to direct the new credit to the productive economy.

Section III presents the new theory of economic growth. It is based upon the rapid changing preferences of the international middle class, which guide technological change. It distinguishes between develop economies (DE) and emerging economies (EE). In DE the technology develop is always at the frontier; but in EE the technology used may be obsolete. Obsolete technology only produces temporary economic growth, which will disappear as soon as the EE opens up to the international market.

It is argued that an economy must have the proper model of economic growth, and that growth dilemmas cannot be solved through macroeconomic adjustment policies.

The main conclusion of the book is that the World has erroneously put all the burden of the economic adjustment in fiscal policies, which are inefficient to promote economic recovery, create improper transfers from the tax payer to the rest of the population, and jeopardize the future of the economy. So much free money, if there is not a proper recovery program of the productive economy, puts the world at risk of the resurgence of inflationary pressures, which could bring back inflationary rational expectations and the menace of stagflation. It is needed to develop institutions capable to channel the free money properly to the productive economy, this will both contain inflationary pressures and maintain inflationary expectations under control. The government has never been trusted by the private sector, and it is not to be trusted know – a large presence of the government in the allocation of productive resources is a recipe for future problems.

Any economy main goal, as Adam Smith clearly anticipated, must be economic growth. Macroeconomic adjustment policies cannot and should not try to substitute for a proper economic growth model. The recent failure of Japan is the perfect example, it entered erroneously the ICT revolution; and that mistake of course has not been able to be repaired by expansionary macroeconomic policies. At the center of the NE is the policy for economic growth. Which can be of very distinct nature in diverse countries.

The government should not be a substitute for the private sector, and should not impede market signals to flow freely. The government in some countries is a key participant in the design of the economic growth program; and its guidelines, when concerted with the private sector, can be and had been in many countries very productive. But the government allocating resources by itself is a poor allocator. This is the main problem of relaying mostly in fiscal policy. NE proposes 1) To reduce the burden of the adjustment via fiscal policies; 2) to increase the use of non traditional monetary policy through a modified and extended version of QE, creating a proper institutional arrangement to this purpose; and 3) to extent the realm of influence of traditional monetary theory, while avoid-

ing negative interest rates, incentivizing the private banks to lend more through a premium, as the ECB is already doing; which is equivalent to negative interest rates for the private banks, but which allow positive interest rates in the deposits.

Free money is required to get an economy out of a major crisis, but channeling most of it through fiscal policies is a mistake. The government is a poor allocator. Money should be channel directly to the productive economy. But it is argued, we do not have today in most economies the necessary institutions to be able to do it properly. NE *discusses and proposes major changes in the institutional arrangement both in DE and in EE.*

The major problem of traditional economics is that it has not taken seriously the need to develop institutions capable to establish the correct setting for the market to operate properly both nationally and globally. The 2008 GFC was consequence of the inadequate institutional financial arrangement, both at the national and at the global level. The 2020 GP was also a consequence of the lack of proper global and national health institutions. And as I have argued elsewhere there are other potential global crisis in the making[1]. The *World need to take seriously the need to develop an adequate International Arrangement that permits acceptable levels of global governance.*

Institutions cannot substitute markets; these are needed for a rapid technological change. But markets without proper institutions generate suboptimal unstable equilibriums. NE proposes that the DE, the EE, and the World at large must seriously discuss how to strengthen their corresponding institutional arrangements to be able to a) better resolve crisis like the 2020 GP; b) get out of the present situation without ending in politicized economies and/or an unwanted return to inflationary expectations; c) avoid other major global crisis; and d) resolve the problems of underdevelopment and poverty.

This book is mainly about theory. However, in the conclusion, we relate our theoretical proposals to the specific situation that the global economy has been living due to the 2020 GP.

[1] Obregon, Carlos; 2020. *A New Global Order.* Amazon.com. Also available at Research gate.com

SECTION I: NEW MICROECONOMICS

In general, there are two distinct ways to see the micro-interaction between economic agents. The first one is as the consequence of a given nature of the individual economic agents. The second one is as a consequence of the settings under which such micro-interaction between the economic agents happens. In the first one which is presented in Chapter One, we encounter three schools of thought: 1) Neoclassical Economics; 2) Sen's Economics; and 3) Behavioral Economics. In the second one presented in Chapter Two, we find four schools of thought. 1) Game Theory; 2) Information Economics; 3) Uncertainty Economics; and 4) Institutional Economics. Chapter Three presents our own proposal for a new microeconomics.

Within Neoclassical economics we have had three different theoretical efforts: a) Welfare Economics; b) General equilibrium; and c) Rational Expectations. We show that these three efforts failed to show that markets are stable, have a unique optimal equilibrium and maximize social welfare; and therefore there is not a market efficient solution, independent of the institutional characteristics of a given society. These three theoretical efforts however, taught us a lot about markets functioning, and had been very useful in the solution of many theoretical and policy economic problems.

Sen took rationality to a whole new dimension, and endow humans with two unique characteristics: A) the capacity to know what is moral, and B) the capacity to act according to what they know is moral. But as we emphasize in the third section in this chapter, there is nothing in neurobiology, nor in evolutionary theory that justifies any of these capacities. Therefore, moral judgments, and moral behavior, are consequence of the institutional social arrangement.

Behavioral economics have clearly shown that the strong rationality assumed by the contemporary neoclassical school does not hold. Human's are guided by their emotions. But there are two main limitations

to Behavioral economics. The first one is that it cannot explain how large markets work, in fact in large markets humans behave selfish. And second, even the emotional responses proven in the laboratory by Behavioral Economics are setting' dependent. Therefore, Behavioral Economics findings do depend upon the institutional arrangement.

Thus, the first chapter concludes that the three attempts to explain the microeconomic-interaction by the human individual nature (Neoclassical Economics, Sen's Economics, and Behavioral Economics) failed. The microeconomic-interaction does depend upon the setting on which it happens. In the Second Chapter, we review the main known theories that show how the microeconomic-interaction can be explain by the setting in which it occurs: Game Theory, Information Economics, Uncertainty Economics, and Institutional Economics. And we discuss how they relate to one another. And finally in the Third Chapter we present the new microeconomics that this manuscript proposes.

CHAPTER ONE. MICROECONOMICS BASED ON THE INDIVIDUAL

BACKGROUND

Economics started with Adam Smith. He asked the question of why Holland and particularly England were growing fast, while Spain that have had the gold trade, and Portugal the species trade, did not. He found the answer in the technological development consequence of mass production, which in turn was due to the enlargement of the market. Smith clearly saw the free markets as a positive institutional characteristic of certain societies like England. And his whole argument was that individuals must be free to exercise their selfishness through free markets, because these actually benefit the whole society by promoting economic growth. Smith was right. 1950 to 2000 the USSR's GDP Per Capita grew less than the Africa's. The failure of the USSR, and the success of the US, is explained by the enlargement of the middle class market in the US. More on this will be discussed in Section III, but the point to be emphasized here is: *that free markets are fundamental for economic growth.* Therefore, it is very crucial to study and analyze how markets do transmit information of the individual preferences. This was the initial goal of the Neoclassical School.

Free markets in Smith imply that individuals behave selfish. But two points must be emphasized. The first one is, that the fact that individual behave selfish in large markets does not mean that they behave selfish in other activities in society. In fact, Smith himself wrote the Theory of Moral Sentiments (before the Wealth of Nations). In it he argued, that in those actions in which either the individual or the society consider that the individual may harm others, there must be moral-non selfish behavior by the individual, and that if he does not behave morally the

society must intervene and force him to comply. Thus, it was clear for Smith that markets do operate within a given institutional arrangement. The second point is that the market in Smith do not require individual rationality. Markets are made of choices revealed by actions, and whether those choices are very rational or very emotional is not really relevant.

By the time in which Ricardo and Marx wrote, Capitalism was already growing rapidly; and therefore economic growth was not any longer their concern. Therefore, they concentrated in the problem of economic value and the allocation of resources through the price system. Economic value for both of these authors came from labor. For Ricardo, was mostly a technical problem, which solution allowed for better economic policies. For Marx, it was mainly a problem of social justice. Ricardo was unsuccessful in finding a *numeraire*, and therefore could never fully established his labor theory of value. The *numeraire* was finally found by Sraffa, almost two centuries latter, and only for a non-monetary stationary economy without technological change. Marx labor theory of value was trap into a tautology that had no solution. He clearly understood that incorporated labor could not produce economic value. The value of labor had to be verified by the market – what Marx called socially necessary labor. But if economic value can only be defined ex-post, once the market transactions do happen; then, it could never be verified ex-ante that labor is in fact the source of economic value. Marx's labor theory remains as a proposal about social justice. But as a technical explanation of market prices and the allocation of resources through the markets it was not unsuccessful. *Ricardo's and Marx's failures send the economic profession into new routes to explain Where* does *economic value come from*?

For the old neoclassical economists, scarcity and individual preferences, expressed in the market, define through supply and demand the market prices. This was both an elegant and successful solution. And it must be emphasized, that it does not require individual rationality: it is enough with individuals being able to identify and express their preferences in the market. Markets play the very important function of transmitting individual preferences through actions, what Hirschman called *Exit*[2]: *and expressing oneself through exit does not imply any form of rationality*.

[2] Hirschman, A.O., 1970. *Exit, Voice and Loyalty, Responses to Decline in Firms, Organizations, and States*. Cambridge, MA; Harvard University Press.

The neoclassical school first attempt to understand formally the working of a market was with Walras' General equilibrium Model. But understanding the workings and advocating the virtues of the market, did not stop Walras from proposing a social reform to make the working class property owners. His social reform involved the nationalization of land, the abolition of taxation on wages, the curbing of monopoly power, and the promotion of a strong cooperative movement. It is not really until Pigou, that there is an attempt to claim that the microeconomic equilibrium maximizes welfare. And even with Pigou, the idea was that an egalitarian society maximizes welfare, thus this author was far away from defending the status quo. Neoclassical economists, even the contemporary ones, understood that the political and social system was not included in the problem of maximizing social economic welfare. Lionnel Robbins, for example, oppose the usage of interpersonal comparisons, because the question to answer was If the economic system by itself could maximize social economic welfare? But Robbins never denied that interpersonal comparisons should be made in the political and social system.

The neoclassical school main goal was to distinguish between efficiency and equity considerations. Economic efficiency was thought could be shown as independent of political and social considerations as to the distribution of income or wealth. It was the attempt to build solid microeconomic foundations, that could show an independent and efficient market equilibrium. Notice that the original neoclassical economist's research program was more ambitious than the rational expectations' one; because the latest is based in partial equilibriums useful to solve specific problems like stagflation, while the former aim at a general equilibrium.

To prove that markets, maximize economic welfare was an old research project in Neoclassical Economics, which culminates in the mathematical conditions imposed by the Contemporary Neoclassical School. Distinct levels of rationality were introduced all along the development of the two key research projects of Welfare Economics and General Equilibrium Theory, such as: 1) an ordinal utility function. 2) a well defined set of alternative strategies. 3) a behavior of maximizing expected utility. 4) that preferences are transitive. 5) that they maintain today's transitivity through time. 6) a known probability function of future scenarios. 7) that future markets can be treated by adding dated commodities as distinct goods. 8) that the risk facing the individual is probabilistic risk 9) that uncertainty can be managed through insurance based in probabilistic risk.

However, the fact that these theoretical economists were concerned with establishing the mathematical conditions to be able to model the workings of a market, does not mean that they believe that the market is the only social institution that counts, not that the market is stable, or finds by itself an optimal solution. It must be understood that many of the contemporary defenders of Welfare Economics and of General Equilibrium did not believe that the microeconomic model was independent of the rest of the institutional conditions of the economy. Maximizing social welfare was always understood as maximizing *economic* social welfare; and not the full blown welfare of the society as a whole. Samuelson proposed a strong version of individual rationality to understand mathematically the microeconomic functioning of the economy; but at the same time he was a defender of Keynesian economics, and of the need of government intervention at the macroeconomic level. Arrow one of the main builders of contemporary general equilibrium theory, was the scientist that show that welfare economics could not prove that the free interaction of economic agents maximizes social welfare. It is not really until rational expectations, that an attempt is made to build a microeconomics that fully defines the macroeconomic equilibrium and its stability. The rational economic man never pretended to be a description of the true nature of man, that could be used to describe the full blown relations between the individual and the society. The rational economic man of contemporary neoclassical thinkers was only an abstraction of how individuals behave in large markets; which unsuccessfully attempted to demonstrate that markets have a unique stable equilibrium and maximize social welfare. But, it is worth to emphasis that the utility function that was pretended to maximize: *always only included* economic motives in the utility function.

Non-economic motives were first introduced in the utility function by Gary Becker and others; and were not widely accepted by the profession. Becker's view of individuals jointly maximizing economic and noneconomic motives, fully contradicts the vision of the world of Adam Smith. For whom ethical and economic issues belong to two different systems of relationship between the individual and the society[3]. The radical version

[3] It has always been tempting for economists to introduce in the utility function non-economic motives. Boulding did, for example, to explain altruism. This is however, the wrong route, and one that has never been accepted by the main tradition. There are strong reasons not to do it. Man, as Boulding himself also has argued, has other relationships beyond the economic exchanges. That was also the vision of Smith. Optimizing welfare for the main

of free markets represented by Becker, Monetarism, and the school of Rational Expectations is not the logical consequence of Smith's economics, nor of early Neoclassical economics, and neither of the rationalism described by Samuelson and other contemporary neoclassical economists. There is nothing in Welfare Economics or in General Equilibrium Theory that supports or defends the extreme position of the school of Rational Expectation that markets are stable and in an optimal equilibrium by themselves. The school of Rational Expectations introduced one more element of rationality: that individual economic agents use all available information and process it accordingly to rational expectations – that is that they are using the best economic model available. The rational expectations model has been very useful for many theoretical and policy problems – among them the explanation of stagflation. But, that does not mean that the vision of this school of the optimality and stability of the markets is correct, in fact both the 2008 GFC and the 2020 GP had shown that it is not.

Welfare economics lasted a century searching for a way to show that the free interaction of economic agents in the market maximizes social economic welfare, and it was a failure. And general equilibrium also failed in the attempt to show that there was a unique optimum equilibrium. Therefore, the optimum economic welfare and the microeconomic equilibrium are nor only defined by individual preferences, endowments and technology; but also, by the institutional setting under which the microeconomic-interaction takes place.

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tradition, which in this always followed Smith, only refers to economic selfish motives. the main tradition only involved economic considerations based on selfish behavior and excludes altruistic behavior. In Obregon 1984, in the appendix, it is shown that mathematically the conditions for an economic agent to have altruistic behavior just because he maximizes his own utility function – just because he feels good to help – are very restrictive. In a world of n goods, for an economic agent A to behave altruistic in a good 1 in relationship to another agent B, it is required that agent B has less than the minimum that agent A thinks that agent B should have in all the other n-1 goods. Otherwise, it can be shown that, agent A by being altruistic in good 1 looses trading possibilities as to the position of agent B in any of the n-1 goods in which agent B has more than the minimum that agent A thinks that agent B should have. This extremely restrictive condition, indicates that altruistic behavior has to be explained by ethical principles and belonging relationships just as Kant, Smith and most of the great philosophers thought, and not to utilitarian considerations. Obregon, Carlos 1984. De la Filosofia a la Economia, Trillas, Mexico City.

MICROECONOMIC THEORIES BASED ON THE INDIVIDUAL

Neither Keynes' economics nor the IS-LM model had any serious microeconomic foundations. The first microeconomic foundations of macroeconomics were provided by The School of Rational Expectations. This school argued, as we mentioned, that economic agents have all the economic information available and that they process it efficiently. Therefore, they pointed out, the best way to incorporate economic agents' microeconomic behavior is through recursive partial equilibrium models, which are able to handle mathematically the interaction between economic policy decisions and the dynamic responses of the economic agents. There are two strong results from these models. The first one is, that the economy remains close to full employment equilibrium; because the dynamic recursive characteristic of the models used. The second one is that the stagflation that happened in the real world can be explained. Since economic agents have all the economic information available, and they process it efficiently; when the Central bank behaves irresponsible, and prints excess money, economic agents react forecasting inflation, and these inflationary expectations explain the possibility of inflation with unemployment. The assumption that economic agents form rational expectations is useful to solve many economic dilemmas. The two contributions, previously mentioned were very important, and had produced several winners of the Nobel Prize in Economics such as Lucas (1995), Kydland and Prescott (2004), Phelps (2006), and Sargent (2011).

In addition to stagflation the rational expectation models were used to explain the business cycle, whether alone, or with the inclusion of short term lived Keynesian rigidities of one sort of another, in models like the one of Dornbusch y Fisher. Oliver Hart got the Nobel Prize in Economics for his analysis of one of this rigidities – contract theory.

However, despite the undisputable usefulness of the rational expectations models in many economic problems; they have certain critical limitations. Stagflation in these models is the consequence or erroneous economic policies. The markets left by themselves will bring back the economy to equilibrium. These models recurrently go back to the full employment position. Therefore, they could not explain an economy far away from equilibrium.

The School of Rational Expectations went too far. It argued that major crisis could not occur anymore given the state of the art of contemporary macroeconomics. Lucas is famous for saying that Keynes was already dead. From the point of view of this School the 1930 GD (Great Depression) was a curiosum, a unique event never to repeat again; which was of no interest for theoretical macroeconomics. Of course they were wrong, we have had not one, but two major global crises in less than fifteen years. Since science has to explain reality, and the 2008 GFC and the 2020 GP did happen: *the question becomes which other microeconomic foundations can be used to explain them.*

In the search of new microeconomic foundations for macroeconomics, it is important to review the other two critical neoclassical microeconomic controversies: Welfare Economics and General Equilibrium. Both of them failed in their purpose to find a unique stable equilibrium; however, they did provide relevant insights that are extremely useful to understand the characteristics of any microeconomic equilibrium. Therefore, there are a good place to start our inquiry.

Welfare Economics

The story of Welfare Economics lasted a century. It starts in the first decades of the twentieth century with the publications of Pigou's books on welfare in 1912 and 1920, and ends up with the publication of The Idea of Justice in 2009 by Nobel laureate Amartya Sen. They were fourth attempts attempts to show that markets do maximize social economic welfare. In the first attempt, Marshall and Pigou proposed that an egalitarian society maximizes social economic welfare. It failed due to the recognitions that we can not measure utility in a cardinal way, and therefore we can not compare the marginal utility derived from the income of different individuals, and we cannot affirm that an egalitarian distribution of income maximizes welfare[4]. In the second attempt, Kaldor argues that

[4] **First attempt**: Jevons pointed out that the labor-value theory could not be applied to things that lack value; for him, utility arises in things because of its relation to human needs. In the works of Jevons, Menger and Walras, marginal utility becomes the essential element of consumer behavior and they find a rule to transform subjective value into measurable quantities. Wicksteed transformed the utilitarianism of Jevons into a scale of preferences

economists should make recommendations only based on efficiency, because if inequalities are created, the winners can always compensate the losers. It failed because Nobel Laureate Paul Samuelson showed that the only way we can be sure that a bundle of goods B is better than a bundle of goods A is in the case where, for all possible welfare distributions, B is preferred to A. And, like he demonstrates, the above condition is satisfied only in the extreme case, and without economic interest, in which B has more of each good than A (assuming there is no disutility). This conclusion shows conclusively that there is no real efficiency rule. Any efficient solution depends upon the given distribution of resources[5]. In the third

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and analyzed the utilization of resources to the maximum for a certain purpose. Menger, on the other hand, developed his theory in terms of needs and not in terms of pleasure, such as Jevons. For Pigou, economics was a science because it dealt with measurable amounts of satisfaction. Marshall and Pigou accepted the law of incremental marginal utility and assumed that different people obtain the same satisfaction from the same income; under this assumption, an egalitarian society would maximize social welfare.

The first attempt fails: Marshall's and Pigou's conclusion was shown as invalid in view of the fact that satisfactions can not be added and, therefore, we have to use an ordinal ranking and not a cardinal number. Since we can not measure utility in a cardinal way, we can not compare the marginal utility derived from the income of different individuals and, therefore, we can not affirm that an egalitarian distribution of income maximizes welfare.

[5] **Second attempt**: Pareto and Barone presuppose independence between the different satisfactions of people and the absence of external economies and diseconomies; with this frame of reference, it is possible to separate efficiency from equity – ie justice considerations, which is known as the Pareto principle. Kaldor, considered that the economist should be in favor of any change that improves the efficiency of the system, because if inequalities are created, the winners can always compensate the losers. Hicks, like Kaldor, argues that economists should make recommendations only based on efficiency, since the gains and losses are random at the individual level.

Second attempt fails: Three criticisms were made to Kaldor: 1) it is not always possible to measure efficiency (Scitovsky); 2) the consumer surplus used by Kaldor, based on partial equilibrium, can give wrong efficiency results (Samuelson), and 3) compensatory payments are not always politically feasible. Little criticized Hicks and pointed out that some economic changes can cause large changes in the distribution of income; he observed that we can not expect these to be compensated in the future.

It is particularly relevant to understand Scitovsky's criticism of Kaldor, through what was known as the Scitovsky paradox. This says, that having shown that a position B is more efficient than a position A -according to the criterion of Kaldor and Hicks-, using the same criterion it can be shown that after the community has adopted position B, very well A can become a preferred position for B. The reason for the paradox is that there is a reciprocal relationship between the social valuation of the bundle of goods and their distribution.

Samuelson showed that, even in those cases in which the Scitovsky paradox does not occur, we do not have a criterion to define the optimal solution. Since once it is understood that the preference judgments about the bundles of goods A and B are different in the case of the

attempt, Bergson and Samuelson introduced a Social Welfare Function that does not depend upon the distribution of resources, it is only the social aggregate of individual preferences. But, Arrow shows that if one or more individuals has a non linear order in his preferences, the social preferences could be not transitive and therefore the Social Welfare Function could not be built[6]. In the fourth attempt Sen argues that individuals have moral values that give a solid base to establish a social choice that could be the foundation of a social welfare function. Sen's Moral Economics attempted to find the solution to the welfare maximization problem by

two distinct distributions, which correspond to positions A and B: it follows immediately, that that there is a need to understand what happens when there are other distributions: because A and B are not the only feasible ones. Due to the above, Samuelson concludes that the only way we can be sure that B is better than A is in the case where, for all possible welfare distributions, B is preferred to A. And, like Samuelson demonstrates, the above condition is satisfied only in the extreme case, and without economic interest, in which B has more of each good than A (assuming there is no disutility). This conclusion shows conclusively that there is no real efficiency rule.

[6] **Third attempt**: Faced with the impossibility of making economic policy recommendations based solely on efficiency, Bergson introduced the notion of a complete Social Welfare Function, which adds the social preferences of individuals and can take into account external factors, so that the economist can forget about the problems associated with distribution. Samuelson gave an elegant exposition of the mechanism by which social welfare is maximized in the tangency between the Social Welfare Function and the production function that optimizes the use of resources.

Third attempt fails: However, Arrow showed that it is not always possible to add the social preferences of individuals, so that we can not always build a curve of social welfare without falling into contradiction. The argument of Arrow can be easily understood, if we imagine a community composed of three people: a, b and c, which have to choose between three possible policies: 1, 2 and 3. Let us suppose that the order of preference of each person is the following: a-1p2, 2p3, 1p3; b-2p3, 3p1, 2p1; c-3p1, 1p2, 3p2 (p denotes "prefer"). If we assign each person an equal weight and try to build a social welfare function, based on the preferences of the majority; we find two votes for each of the following preferences: 1p2, 2p3 and 3p1. As can be seen, this system is incongruent and has no solution. The results of Arrow are generated basically because the individual c does not show a linear order in his preferences, but this is perfectly valid in reality: for example, an individual may prefer a communist country to a socialist country and at the same time prefer a capitalist country to a socialist country.

Conclusion: The controversy over welfare economics clearly showed that, as Harrod said, we can not talk significantly about efficiency and optimal allocation of resources unless we have a market. And the choice of the market as a method of valuation is in itself a value judgment, since prices imply a given distribution of resources.

Arrow's impossibility theorem put an end to the very long term quest of Neoclassical Economics to show that markets optimize social economic welfare; it was proven technically that they do not. In order to evaluate social economic welfare, we need judgments, external to the market, which is what Sen proposes latter on.

re-defining the nature of man. Sen's solution however requires absolute external ethical values, which the individual economic agents can use as a reference. But, as we will argue latter on in Chapter Three, humans are not evolutionarily made to be able to achieve such external universal truths. Social choices are welcome, but are by definition embedded in the Conceptual System and the Institutional Arrangement of a given society-something that Sen never fully recognizes, even though he seems to get close to it with his partial orderings. So we are back to the notion that markets cannot be shown to maximize social economic welfare, because social choice will always be relative to a specific Conceptual System and its corresponding Institutional Arrangement. The fact, is that there is not one, but a set of economic equilibriums of which many are sub-optimal, and can be characterized by unemployment and/or underdevelopment; and social choice will not be enough to move these equilibriums to the optimum – which in any case is relative.

General Equilibrium

General equilibrium Theory had important repercussions for welfare economics[7]. But, it is not possible to demonstrate a unique optimum equilibrium

[7] The general equilibrium model has been very useful to reinforce some of the approaches to welfare economics and to understand them more precisely. In particular, the two fundamental theorems of welfare economics are derived from the general equilibrium model. The first of these theorems states that the process of assigning a market equilibrium is Pareto efficient (It is said that an allocation of resources is Pareto efficient if there is no possible redistribution that can improve the situation of one person without deteriorating the situation of another).This result, which is very general and does not require any assumption of convexity, is also very important because it emulates mathematically and allows to explain the invisible hand of Adam Smith. This result is the axis of the justification of the importance of the price system as an efficient system of transmission of consumer preferences, a mechanism that, as we have argued, is central to understanding the rise of Western Capitalism. But, remember our discussion about welfare economics: this result implies a given distribution of resources (and in general a given Institutional Arrangement), which is implicit in the prices that manifest themselves in the market. So the success of the market as a transmitter of information in the West can not be exported to other cultures without basic considerations about the institutions in those cultures; for example, the presence or not of a middle class, the legal system, the possibility of coalitions, and so on. The real world is charactherized by Nash and information multi-equilibriums and to design an adequate Institutional Arrangement is a key problem to take into consideration. And in a multi-equilibrium world, the pareto optimality of the first theorem does not hold. Despite the above, this first theorem is not only an impressive result, but one of great importance for the economic science in general.

without the use of a set of *strong* assumptions[8]. The relaxation of these assumptions leads to imperfect competition models, information models, and game theory models in which it is possible to find systems with multiple equilibriums of which many are non-optimal, and even explosive situations without solution. Multiple equilibrium models show that the equilibrium obtained depends to a large extent on the institutions that are assumed. General Equilibrium Theory explained successfully how the market behavior transmits information from the individual to the society; but, was unsuccessful to prove the existence and stability of a unique Pareto efficient equilibrium.

The second fundamental theorem of welfare economics states that, if an efficient Pareto allocation is found, then it will always correspond to a competitive equilibrium characterized by a defined set of prices and a redistribution of resources. This result implies, that any redistribution of goods that one wishes to carry out, can always be done efficiently through the market, through a redistribution of resources. Mathematically, this result requires the assumption of technology and convex preferences. Note that the redistribution of resources can not only be politically impracticable, but can physically involve the redistribution of human capital, which cannot be done. Despite these impediments, there is an important message in this second theorem, because it implies that if the distribution of income is achieved by, for example, a tax (or benefit) from a single exhibition, then the desired redistribution of welfare can be achieved without sacrificing the efficiency of the market. The theorem has relevant implications. On the one hand, it is a natural defender of the importance of using the market and taking efficiency into account, since it tells us that the market can always be used; on the other hand, it makes it perfectly clear that the market can not solve equity problems and that these must be addressed directly via the redistribution of income. This message is important in terms of resisting both the temptation to distort efficiency in order to achieve equity, and the temptation to argue that equity must be sacrificed for the sake of efficiency. In practice, however, the redistributions that would be required do not seem to be politically attractive in many cases, so that considerations are always made between equity and efficiency, and it is not uncommon for non-Pareto solutions to be established.

[8] Walras, also made scarcity the essence of value and forged a process by virtue of which by means of "tantonement" the market moves towards equilibrium. Walras studied the general equilibrium by counting equations and unknowns, and using the Walrasian auctioneer; however, this method does not tell us anything about the existence, uniqueness or stability of the equilibrium.

In the general equilibrium of Leontief, one can prove the existence and uniqueness of the equilibrium, but not the stability of the primal and dual problem at the same time. In a neoclassical general equilibrium with trials (that is, where there are no inventories or transactions are not executed unless they are correct; so that implicitly there is a Walrasian auctioneer); stability can be proved given certain assumptions, such as the theorem of weak revealed preferences (which implies that the aggregate demand excess function behaves as a function of excess demand of a particular individual) or the substitution assumption among all the goods (this implies that the price increase in a good , keeping all other prices constant, increases the excess demand on all other goods). Stability in neoclassical models without trials, and where there are inventories, requires the introduction of new assumptions about the nature of the exchange system (see, for example, Intrilligator, 1971, chapter 9, and Varian, 1984, chapter 6).

A Beautiful Mind is a very enjoyable movie about the life of John Nash who received the Nobel Prize in Economics in 1994. Nash has shown that there are many equilibriums that are not Pareto optimal and that are stable. Which means that markets do not necessarily optimize, and there are many possible equilibrium outcomes What defines the final economic equilibrium? In game theory, which is the field in which Nash worked, the settings of the game. This changes drastically the neoclassical conclusions that given the set of endowments, the technology, and the preferences of many individuals a unique general economic equilibrium could be obtained. The result that one unique stable equilibrium does not exist is fundamental. It means that a generation of economists has been taught macroeconomics in a mislead way. There is not any theoretical reason to argue, as the school of Rational Expectations did, that the economy will remain stable at a full employment equilibrium: *so it is not surprising that in the real world it did not, and that we have had the 2008 GFC and the 2020 GP.* The setting of the game in game theory could be conceptualized, to some extent, as corresponding to the information set used in information economics, field in which Nobel Prize Winner Joseph E. Stiglitz, among others, have shown that there are multi-equilibriums, which may correspond to unemployment or underdevelopment stable equilibriums. Another way in which one could conceptualize the setting in a game is as corresponding with an institutional arrangement. We will discuss more on these alternatives further down. But what is critical in here is: *that it is clearly established that the attempt to find one unique stable optimum equilibrium had failed.*

What are the implications of the failure? Since the setting whether a game, an information set, or an institutional arrangement defines partially the final equilibrium to be obtained – the first implication is that the microeconomic foundations of macroeconomics must take the setting in consideration. The second implication is that despite the fact that markets do not achieve one unique optimal stable equilibrium, they do transmit very efficiently the information of individual preferences – which as we will see in Section III is fundamental for economic growth. It is true that there is no market solution without an institutional arrangement of reference; but, it is also true that institutions cannot substitute the markets. Thus, any macroeconomic policy has to be related to three issues: 1) market's microeconomic efficiency; 2) a proper institutional arrangement – which among other things defines the fiscal and monetary policies; and

3) the economic growth model. But we are getting ahead of our conclusions. Our purpose in this chapter is to establish the microeconomic theories based on the individual. To this end we will briefly discuss in what follows Sen's economics and Behavioral economics.

Sen's Economics

Sen's Economics and Behavioral Economics are the only two of the New Schools of economics that, following the tradition of the contemporary Monetarist-Rational Expectations Neoclassical School, centered their analysis in the economic agent rationality –or irrationality, and not in the institutional characteristics of the economy. Both schools however, have in common that they are critical of the selfish rational economic man. Both the *humans* of Behavioral Economics, and Sen's moral economic agent are socially cooperative and altruistic. However, Sen's economic agent is diametrically opposed to the one in Behavioral Economics. For Behavioral Economics, Kahneman's system 1 is very influential: thus, *humans* display conducts fully defined by emotions. Moreover, humans in general behave ethically, but they are not fully trustable, because certain ethical conducts would change if the monetary reward is significant. In contrast, Sen's rational economic agent is fully rational, even beyond the strong rationality assumed by contemporary Neoclassical Economics. He is capable to distinguish good and evil, is able to control his emotions and his passions, and can be trusted to do what is right beyond his selfish interest.

As we saw before, Arrow's impossibility theorem meant that a Social Welfare Function cannot be built; and therefore, contemporary neoclassical economists were unable to demonstrate that markets maximize social economic welfare. Sen solves this problem going back to what precisely economist from Leonel Robbins onwards were wanting to avoid: interpersonal comparisons. They became feasible in Sen, because economic agents are not longer selfish. They are ethical individuals, who understand rationally their social responsibility. In Sen, the preferential order of a set of social alternatives is not narrowly defined in the space of individual selfish utility, but in other spaces on which individuals can manifest their responsible and ethical preferences.

Sen points out that the political process is insufficient to aggregate individual preferences at the social level for several reasons. 1) does not guarantee that the individual is informed and has analyzed in detail the consequences of his decision; 2) frequently, marginalized groups are underrepresented in the political apparatus because they do not exercise their voting rights, and 3); Given Arrow's impossibility theorem, not all voting aggregation processes give consistent aggregate results, so it is necessary to redefine the possible areas of congruence and obtain the social choice of the individual in relation to those areas[9].

Sen's proposal provides a new mechanism of social communication distinct from the market and democracy, through which the responsible (ethical) individual directly expresses his social preferences. The exercise of social choice confronts the individual with the possibility and the need to reflect on the consequences of certain social states, which go beyond the economic relations contained in the markets. The individual who uses a large old car and pollutes the environment, and who acts in this way because everyone does, could be willing to use a new and smaller car if he knew that everyone else is going to do it. Models, for example, of multiple equilibriums, such as Tirole's model on corruption, as well as many others, show that the result obtained depends on the Institutional Arrangement imposed. In this way, there is room to ask what are the social preferences of individuals that are not expressed in the market, and Sen's social choice may be useful in these cases.

Sen develops his theory of justice and ethics mainly in *The Idea of Justice* (2009). For Sen, it is not possible to find justice in Rawls's hypothetical contract, which originates in a closed impartiality to a specific community, it requires universal ethical principles that generate an impartiality open to man in general. Sen refers to the *impartial spectator* of Smith (which in this author is God), whose requirements are that reason is used to reflect: If what is considered fair for one and for his community would be fair for others and their communities? and If the others observing us would consider what we propose fair? For him there is no social justice possible if it is not based on ethical principles of the individual behavior of an integral and responsible man who reaches these principles with the help of his reason. The ethical man not only understands ethical principles,

[9] Sen, A. 2002, p.77. *Rationality and Freedom*. Bellknap Press/Harvard University Press, Cambridge, London.

but acts according to them. It is not, however, an isolated individual, but one that learns in his relationship with society to distinguish the moral from what is not. The benevolent feelings of man are a guide, but they are insufficient, moral conduct has to be based on reason.

Sen recognizes that there is not a single possible solution to determine which are the ethical principles that should guide individual behavior, and that different cultures, communities, groups and individuals can reach different principles. But he insists that there will always be common principles that will guide possible agreements between different individuals, groups of a community, between communities and at a global level, so that it will always be possible to move towards a less unfair world.

There are many unresolved issues in Sen's vision of justice and ethics. *First*: there is nothing that guarantees that all individuals will use their methodology of the *impartial spectator* and even less that they will behave according to the morality they discover with their reason. *Second*: there is an incompatibility between his theory of freedom exposed in *Development as Freedom (2000)* and his theory of justice introduced in *The Idea of Justice (2009)*. Sen replaces Rawls's notion of overlapping consensus with that of incomplete orderings based on the discussion between different points of view on fairness. But if we accept the notion of incomplete orderings of *The Idea of Justice*, then there is nothing to guarantee that these incomplete orders will result in Sen's basic capabilities related to freedom. The freedoms of Sen do not have to be accepted by all, nor do they have the universality that he confers to them in *Development as Freedom*[10]. *Third*: if there is a plurality of conceptions about justice and incomplete orderings,

[10] The theory of underdevelopment of Sen is based on his theory of freedom and rationality. For Sen, the value of freedom has a strong universalist assumption. Freedom for him is not only the ultimate goal and the way to measure development, but also what drives and causes it. For this author development must be measured through the capacities that the individual has to satisfy: what he considers necessary (according to his reason). Sen argues that all individuals. according to their reason, always consider five basic freedoms of value: 1) political liberties (freedom of expression and choice); 2) economic facilities (opportunity to participate in trade and production); 3) social opportunities (education and health); 4) guarantees of transparency, and 5) protection and security. For Sen, one form of freedom reinforces the other and so development is generated, which is measured in the individual's own freedoms. Sen points out, that it is necessary to focus on the deprivation of these basic needs and not on poverty (even though there may be some correlation). According to him, improving the capabilities of people has positive effects on development. For him, the counterpart of freedom is the responsibility (his integral man) and the possibility of justice, and the latter is a relevant factor for evaluating economic and social changes.

nothing guarantees us that there will be, as he affirms, always partial solutions that reduce injustice.

Empirical international aid data does not seem to justify Sen's vision of common ethical partial orderings between diverse communities. The difference between *us* and *them* seems clear in the data; which seems to confirm Rawls vision that west humanistic values relate only to the west. Social expenditures in developing countries as GDP percentage are in the range of 20 to 30%, international aid is only 0.2% of world's GDP[11].

The undeniable contribution of Sen is that it clearly points out one of the most important limitations of the traditional economic literature, which does not emphasize enough the need to inform the individual of the consequences of social choices. As we have already seen, there are many possible Nash equilibria that are not Pareto optimal. Market equilibrium always depends on an Institutional Arrangement that defines the rules of the game. The social choice of said Institutional Arrangement is of great importance, and can not be carried out through the market, because it depends for its solution on the Institutional Arrangement given exogenously. The political elections, for the reasons described by Sen, are not a sufficient solution to the previous problem, so there is always room for the social choice proposed by Sen. And it is true that this solution requires the participation of an integral man who, being well informed of the social consequences, makes ethical judgments that go beyond his personal interests. The social choice proposed by Sen enriches the delicate balance that exists between the individual and the society, and therefore is an important contribution.

But, admitting the method of social choice, does not necessarily imply accepting the *rationalism of Sen's freedoms*. The great triumph of Rousseau and democracy was to free the individual from the tyranny of reason. The return to rationality is not acceptable. It is true that man can use his reason, but it is not true that he can reach unchangeable universal truths. It is true that there is room for reasonableness and for the scientific study of social problems, but it is not true that the reasonable determines social relations. It is true that there is room for the method of social choice, both

[11] Social expenditures come from Obregón 2018, which uses OECD data. International aid data is our own estimation based upon World Bank Data available in the web - consulted September 12, 2018. Obregon, C; 2018. *Beyond Behavioral Economics: Who Is The Economic Man*. Amazon. Com. Also available at research gate.com.

internationally and locally, to illuminate different social alternatives. But it is not true that local democracy (or the political system that prevails in each case) will always revalidate the inalienable freedoms of Sen, nor that internationally the participating countries will accept them as a guide in their actions. The basic freedoms of Sen are based on the humanistic values of the West, which nor even the West is willing to respect in the international arena. Therefore, given the current global Institutional Arrangement, it is almost impossible to obtain globally Sen's freedoms. And even if they were obtained, they would not generate economic development. The truth is that even given Western freedoms, development may not occur, as many underdeveloped countries illustrate. And even without Western freedoms development can happen, as China and other Asian countries have shown. Sen does not have a theory that can explain economic development[12].

It is not true that the individual always acts in society taking into account ethical considerations. Precisely what distinguishes contemporary Western societies is that the social order does not come only from ethical considerations about the reasonable. The political order (although influenced by ethical discussions) is based on the individual desire expressed in the popular vote. The great virtue of the democratic agreement is that it makes explicit the fact that we can not resolve the balance of power via the reasonable. Finally, democracy –is *based on the will of the people* – and it is the ultimate source of justice in a contemporary Western society.

And given the West's legal Institutional Arrangement (that democracy has decided), the individual in Western countries had been allowed to participate in economic activities in the large markets based on his personal selfishness – and this is the key, as Smith have shown, of Capitalism's rapid economic growth. It is true that an ethical individual is required, but not always, not in all activities. The *integral ethical man* of Sen can be used for social choices in which the markets or the political system are not suitable; but it can not, and should not, supplant neither *the will of the democratic man* nor *the selfishness of the homo economicus*. Man in contemporary western societies acts and should act as a selfish *homo economicus* in the market, as a citizen in democracy, and as a responsible citizen in social

[12] See Obregón, 2008. In this work, it is shown that, in cross sectional data, there is no relationship between Sen's capabilities and economic development. Obregon, Carlos; 2008. *Teorias Del Desarrollo Economico.* Amazon. Com. Also available at research gate.com.

choices (in which he can be encouraged to express ethical preferences – i.e. taking social well being into consideration, but there is no guarantee that he will do so).

Economic freedom as the space in which the individual acts on the basis of his selfishness must be maintained, and does not conflict neither with the need for democracy or an efficient political system, nor with the need for some social choices taken by well informed individuals. It is not convenient for the individuals to participate in the markets thinking mainly on the interests of the community (as would the integral man of Sen), this would transform efficient economic markets in bureaucratic slow ones and would seriously jeopardize economic growth.

Finally, Sen's rational ethical individual rests in two assumptions which are evolutionarily questionable: 1) That human's have rational access to universal moral truths and 2) than they are willing to behave according to them. His notion of partial orderings in the *Theory of Justice* is an attempt to diminish the heavy burden that these assumptions put on Sen's social theory; but it is unsuccessful because, if the two previously mentioned assumptions are gone, nothing guarantees the partial orderings. And then both Sen's solution to the social welfare function and his theory of justice do not longer have the general validity that Sen argued.

Behavioral Economics

Behavioral Economics was built mainly as a critique of the rational economic man of contemporary Neoclassical Economics, particularly in its free markets version. The *humans* of Behavioral Economics are defined as non rational, altruistic and social cooperative individuals. Behavioral economics integrates psychology and economics and argues that we are *humans* and not *econs*[13]. *Humans* are not rational, they are emotional beings

[13] Good reviews of Behavioral Economics, order from simple to complex are: Baddeley, 2017; Tomer, 2017; Cartwright, 2018; and Dhami, 2016. Baddeley, M. (2017). Behavioral economics. A Very Short Introduction. Oxford University press.UK. Tomer, J.F. (2017). Advanced Introduction to Behavioral Economics. Edward Elgar, Nothhampton, Massachusetts. Cartwright, E. (2018). Behavioral economics. Routledge, New York. Dhami, S. (2016). The Foundations of Behavioral Economics. Oxford University Press. Oxford, UK.

who under some circumstances may take the wrong choices and therefore need help from the government. *Humans* are not selfish individuals, they are altruistic and socially cooperative. They argue that there are powerful socio-economic and psychological incentives. People gets well being by compensations different from money, whether intellectual gratification, respecting others, social conventions, and social status. That explains why: paying students to study reduces the quality of their intellectual effort; charging parents for picking up late their child from a nursery had the effect that more parents did it, because they fell free to do it, once they paid for the service; payments for blood donation reduce donations; and higher wages encourage more work only if they are related to be treated well by the employer. Economic decisions, behavioral economists argue, are nor only related to prices but to human relationships and social interactions. Behavioral Economics can be defined as the quest to integrate psychology and economics by showing that the definition of *humans* in psychology can provide light into specific economic problems. At the outset, then, one has to understand that Behavioral Economics is not and will not be a new paradigm in economics - simple because it cannot solve the full set of problems that economics needs to address.

Behavioral economics has been very useful to approach from a different perspective certain economic decisions[14] and has been crucial in the implementation of innovative policies in these cases[15].

[14] Behavioral Economics methodology to criticize traditional economics works as follows: 1) It shows that humans fail in their process of decision making, due mainly to the psychological characteristics of system 1; 2) Intervention is required – in this case Nudges are recommended. But, as we will show, the link between 1) and 2) is not necessarily well established.

The following list of failures due to system 1 is not exhaustive, but good enough for our purposes. Decision failures due to psychological factors are: 1) Anchoring, 2) availability heuristic, 3) representativeness, 4) priming, 5) optimism and overconfidence, 6) status quo bias, 7) loss aversion, 8) psychologically overweighting rare events, 9) probabilities miscalculation, 10) reversals, 11) safety considerations, 12) endowment effect, 13) framing, 14) psychological memory, 15) time and adaptation as psychological dimensions, 16) regret, 17) mental accounting, 18) sunk costs, 19) inconsistent customer behavior in bargains, 20) the house effect, 21) the break even effect, 22) time inconsistent preferences i.e. hyperbolic discounting of the future, 23) altruistic behavior, 24) cooperative behavior, 25) punishing non cooperative behavior, 26) psychological fairness, 27) reciprocity, 28) conditional behavior, 29) lack of self control, 30) influences of advertising or other information, 31) conformity - peer pressure.

Decision failures are also due to other three factors, mentioned by Thaler (2015): 1) economic transactions that do not allow for learning, 2) experts with conflict of interest, 3) lack of salience.

[15] List of principal Behavioral Economics Interventions: 1) Save More Tomorrow; 2) A Di-

That emotions and group's influences do count in the individual's perception of reality and in his decisions, has been shown for decades in many laboratory findings both in social psychology and in cognitive-behavioral psychology. Therefore, to some extent, it is not surprising that Behavioral Economics has found that economic decisions are also influenced by these two factors. Therefore, the interesting question is: Whether or not Behavioral Economics has brought value added in the understanding of a relevant subset of economic problems? And the clear answer is that it has been very relevant in the solution of specific economic problems like organ donation, individual saving decisions, and others[16]. There are five Nobel Prize winners that can be associated with Behavioral Economics: Simon (1978), Akerlof (2001), Kahneman (2002), Shiller (2013) and Thaler (2017).

The scientific method in psychology has been very different than the one used in economics. Psychologists based their results in empirical findings in the laboratory, while economists study reality from an abstract deductive mathematical model. They also differ in the object under study. Psychologists are concerned with broad *human* individual and social behavior. While economist's main interests are market prices, consumer's and producer's microeconomic behavior, allocation of resources, economic value, economic growth and development, income distribution, the open economy and financial and macroeconomic stability. Economics has been able to advance, in the problems it is trying to solve, by introducing the assumption of the *economic man*- the *econ*. Economists are only concern with individual and social behavior to the extent that its study is helpful to solve the set of economic problems mentioned above.

Humans as defined by Behavioral Economics cannot explain several empirical realities such as. 1) Why individuals do behave selfish in large

versified Portfolio: which automatically rebalance through time; 3) RECAP in mortgages; 4) RECAP in student loans; 5) RECAP in credit cards; 6) Nudges for the financial mistakes made in the 2008 crisis; 7) Prescription Drugs Plan for Seniors; 7) Presumed Consent for organ donation; 8) Disclosure of the main emitters of pollution; 9) Choosing a school; 10) freedom to buy or not the the right to sue the doctor for negligence; 11) Replace official marriages for civil unions; 12) Give More Tomorrow;13) The Charity Debit Card and Tax Deductions; 14) Stickk.Com – to help people remind their commitments; 15) Quit Smoking Without a Patch; 16) Motorcycle Helmets; and 17) Gambling Self-Bans.

[16] See Obregon, C. 2019, Beyond Behavioral Economics: Who is the Economic Man. Amazon.com, also available at Research gate.com

markets, despite the fact that they display altruistic and cooperative behavior in laboratory settings or small groups - even in monetary transactions. 2) Why individuals can display altruistic and cooperative social behavior in some cases, like the dictator's game in laboratory setting, or the high social expenditures in developed economies; and not do so in other cases, like the extreme low international aid (which is nothing else than a global Dictator's Game in real life). 3) Why in some cases individuals can display very aggressive behavior, particularly to "other *out-group*" individuals not belonging to the *in-group* to which the individual belongs. 4) Why the companies with more global success are the ones which introduce new options to the customer and new ways to process information in a more rational way. 5) Why despite the presumed individual non rationality markets work so well both to allocate resources and to promote economic growth. To explain these realities, we need to go beyond Behavioral Economics.

Behavioral Economics starts its analysis form the characteristics of the individual human nature. The whole discussion is around whether individuals are selfish or not, and whether they are rational or not. But there is not a careful description of the social group, the institutions and the historical values of the culture of reference. Focusing on the individual to explain social dynamics and economic relations is the wrong methodological approach, which for the free market defenders ended up in their proposals that economic markets can almost do it all. Behavioral Economics rebels against this conclusion. And maintaining the same methodological approach, it ended up with the conclusion that *humans* display altruistic and cooperative behavior even in monetary transactions. But, it could not explain why in some cases they behave altruistic and cooperative and in others they behave selfish. And it could not explain in which cases individual selfishness is welcome, and in which ones it is not. And it could not understand the relationship between the individual selfish behavior in large markets, the efficient allocation of resources, and the Capitalism's faster economic growth. Social dynamics goes well beyond economics, and we do need to integrate other social sciences; but we should not, and cannot, do it using only the methodology of analyzing the characteristics of the individuals; because social dynamics goes, as we will see, well beyond the individuals.

Introducing psychology, allowed Behavioral Economics to describe a non rational individual incapable to know in many occasions what are

his true economic preferences. But then, how do markets work so well to allocate resources and governments do so poorly? Why the USSR failed and the Western economies succeeded? These questions cannot be answered with Behavioral Economics. We need to go beyond.

One of the first relevant studies we would like to mention is The Robbers Cave experiment, which showed how students became influenced by the *in-group* to which they belong in the experiment, to the point of becoming extremely aggressive with other students consider the *out-group*. The aggression was due to competition between the two groups for resources in a camping area. Another study was the very well known Stanford Prison Experiment, which reproduced the conditions of a jail, with students playing both the role of policeman and of prisoners. The students playing the policeman role became very abusive and authoritarian, and the prisoners became submissive. Both experiments had to be stop before the initially planned date for their conclusion. Because the high and unmanageable level of aggression among participants. These studies leave no question that we are social beings, and that we are influenced by others.

The results of these studies cannot be explained neither with Behavioral Economics, nor with its extension into identity economics. Individuals were socially cooperative, but only within the *in-group*, and they behave selfish and aggressive towards the individuals belonging to the *out-group*. Thus, individuals are neither altruistic and cooperative, nor selfish and aggressive – they behave different in distinct situations. And to understand these results, it is not enough to internalize in the individual's utility function the social norms as identity economics do. Because, if the individuals had internalized the humanistic values of their large society, they would not had become so aggressive to the other students group, which after all in reality were part of the same large society to which they belonged. What these studies basically showed, is that there are not very relevant individual preferences, that they can be changed with the influence of the group, actually in a record time of less than a week.

To understand why the group is so decisive in defining the individual's behavior, and to explain the five empirical realities mentioned, we have to go beyond Behavioral Economics into a deeper integration of economics with other sciences. This will be done in Chapter Three, in which we follow an evolutionary approach. In this last chapter of the first section,

we show how the evolutionary approach: 1) allow us to understand the primacy of the group over the individual; 2) explains the five empirical realities mentioned few paragraphs above; and, 3) permits a proper understanding of the contributions and limitations of the diverse schools of thought in microeconomics.

CONCLUSION

None of the economic schools which aim at explaining microeconomic interaction based only on the individual was successful. The Neoclassical school could not prove that markets attain a unique stable optimal equilibrium that maximizes welfare. Sen's Economics and Behavioral Economics also failed. Sen's economics requires either external moral truths which can be attained by individuals willing to follow them; or a set of moral values which is institutionally develop. Since neurobiological humans do not have access to external moral truths, it follows that moral values are institutionally dependent. Behavioral Economics conceived humans as irrational, which is useful for some specific economic problems; however, there is not any given human nature that define individual decisions. Human's are neither aggressive and selfish; nor cooperative and altruistic – what they do and decide is heavily defined by the group to which they belong.

However, despite their failure to fully explain the microeconomic interaction between diverse economic agents; each of these schools have important contributions that we must take into account to develop a new microeconomics. Neoclassical economics established the models to understand how a market works; and has been extremely useful nor only for price theory, but also for many other theoretical problems in economics and in finances. Whether in international economics, in the theory of the consumption function, in portfolio theory, or in public finances, among many other areas, the neoclassical model is a fundamental base. In finances, asset management, derivatives, and corporate finances have developed in the light of the neoclassical model. Sen's economics has changed the way we conceptualize development. It has created the capabilities approach; and his theoretical frame is behind the Millennium

Goals of the United Nations, the HDI (Human Development Index), and the measurement of multidimensional poverty. Sen's social choice theory has and will continue contributing to the creation of a better global world. Behavioral economics has made us aware of the importance of emotions in economics, has been particular useful to better understand some economic decisions, and has allow the implementation of better policies in cases such as *Save More Tomorrow*; *Presumed Consent for Organ Donation*; *Disclosure of the Main Emitters of Pollution*; and many more[17]. Behavioral economics will continue illuminating economic policy decisions from a different perspective, and therefore it is highly useful.

In this chapter we had seen that it is not possible to fully explain the microeconomics interactions between the economic agents only based on the characteristics of the individuals. There is no doubt that the setting in which those interactions occur is highly influential.

[17] Obregon, C. 2019, Beyond Behavioral Economics: Who is the Economic Man, op.cit.

CHAPTER TWO. MICROECONOMICS BASED ON THE EXTERNAL SETTINGS

In this chapter we will review four theories that have explored how the settings define the interactions amongst the individuals: Game Theory, Information Economics, Uncertainty Economics, and Institutional Economics.

GAME THEORY

Game theory has shown that there are nor only multi-equilibriums but that many of them are not Pareto optimal – they are Nash equilibriums. Nine Nobel Prize winners have had very relevant contributions in Game Theory: Harsanyl, Nash and Selten (1994), Aumann and Schelling (2005), Hurwicz, Maskin and Myerson (2007) and Tirole (2014). The main message is that once the game is set, it defines the conditions under which economic agents operate – basically none of them knowing what the other economic agents will do. And since there are not coordinating agencies, many of the economic decision are not globally optimal – because they are optimize conditioned upon what economic agent A thinks other economic agents will do. Therefore, such decisions in fact, may produce many diverse suboptimal equilibriums.

Notice that even informing the participants that it is possible to achieve a Pareto optimal solution will not help, because the fact of the matter is that they cannot communicate with, the other participant, or participants, to be able to establish a pact of no aggression and/of cooperation to the common goal of reaching the Pareto optimal equilibrium. And even if they can communicate they need to be able to trust what the other participant, or participants, said he/they will do. In many cases knowing that not complying with the committed behavior will bring extra benefits that can be substantial. Given the game, agent A does not know what Agent B (or other agents)

will do; and a movement of A towards the Pareto equilibrium, may end up putting him in a worse position that the one in which he started, if B decides not to cooperate – this can easily be shown in the Prisoners Dilemma.

There is a close relationship, as we mentioned, between the game, the Institutional Arrangement, the set of information, and the uncertainty as to the future. Both the wrong game, and the improper set of information, can be seen as the equivalent of having the inadequate Institutional Arrangement. And the uncertainty as to the future may also be seen as the lack of confidence in the Institutional Arrangement to manage properly future events.

Tirole (1996), is a good example of what occurs in the real world, he shows that both a corrupt economy and a non-corrupt economy have stable equilibriums. In a non-corrupt economy, the optimal individual strategy is to be no-corrupt; but, in a corrupt economy it is to be corrupt. That is why both equilibriums are stable. Notice that the equilibrium has little to do with the individual's preferences. Even if we assume that all the individuals in the corrupt economy would rather live in a non-corrupt economy, the corrupt economy will persist as long as there are not institutional features (including market prices – because markets are in itself an institution) that allow the individuals to act in a non-corrupt manner. This example can be extrapolated to full employment or to the right development path; almost all, if not all, of the individuals rather have full employment and proper economic development, yet their individuals' optimal behavior may not take them there. Institutional interventions are required.

Game theory, like Neo-Institutionalism, and Information economics, focuses in the settings – that define the game; and not in the individual characteristics of the economic agents, as Neoclassical Economics, Behavioral Economics, and Sen's economics do. Even strong rational agents, in the wrong game, will produce suboptimal equilibriums.

INFORMATION ECONOMICS

Information Economics success is also shown in the fact that it has produced four Nobel laureates: Mirrless and Vickrey, 1996; and Spence and

Stiglitz, 2001[18]. Information Economics represents a strong critic to the vision of the economy of the free market of neoclassical theorists, according to which neither the institutions nor history matter. For the free market neoclassical economists, given the distribution of income, which is assumed not to be a problem to be solved by economic theory, equilibrium is basically determined by the fundamental forces of preferences, technology and endowments. On the other hand, information theorists argue that information and coordination problems may impose limits on economic possibilities which are as real as technology or any of the other fundamental forces.

Information economy focuses on understanding the causes of *coordination failures* due to which the neoclassical equilibrium is not obtained. This literature shows the possibilities of multiple equilibriums, in which one or several of them can be sub-optimal; and, nevertheless, the markets, and in general even the existing institutions, may be insufficient to move the economy from the sub-optimal equilibrium to an optimal neoclassical equilibrium[19]. In addition, the sub-optimal equilibrium can create path dependence[20]. And temporary shocks can have long-term consequences, there is hysteresis[21].

The models used in the study of the information economy are dynamic, either with continuous or discrete decision variables. In some cases, the

[18] Akerlof also won in 2001 the Nobel prize due to his contributions in Information Economics; but, given also his relevant contributions in Behavioral Macroeconomics, we have included him in the group of Nobel laureates in Behavioral Economics.

[19] Arnott and Stiglitz, 1991, Kranton, 1996, North, 1994. Arnott, R., Stiglitz, J.E. (1991). "Moral Hazard and Nonmarket Institution: Dysfunctional Crowding Out or Peer Monitoring?", American Economic Review 81-1, pp. 179-190. Kranton, R.E. (1996). "Reciprocal Exchange: A Self-Sustaining System", American Economic Review 86-4, pp. 830-851. North, D.C. (1994): "Economic Performance Through Time", American Economic Review 84, pp. 359-368. Alfred Nobel Memorial Prize, Lecture in Economic Science.

[20] Engerman and Sokoloff, 1997, Hoff, 1994, Mookherjee and Debraj, 1999. Engerman, S.L., y Sokoloff, K.L. (1997): "Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies: A View from Economic Historians of the United States", in Haber, S. (ed.): How Latin America Fell Behind: Essays on the Economic Histories of Brazil and México, 1800-1914, Stanford University Press, Stanford, pp. 260-304. Hoff, K. (1994): "The Second Theorem of the Second Best", Journal of Public Economics 54, pp. 223-242. Mookherjee, D., Debraj, R. (1999): Contractual Structure and Wealth Accumulation, Boston University,inedited manuscript.

[21] Tirole, J. (1996). "A Theory of Collective Reputations (with Applications to the Persistence of Corruption and to Firm Quality)", Review of Economic Studies 63-1, pp. 1-22.

economic actors are identical; in others, they differ in their benefit functions (payoff); and in others, they differ in their strategy sets.

The inefficiencies of information give rise to a large set of economic externalities, that can not be resolved through private arrangements, such as: 1) information; 2) group reputation effects; 3) effects of agglomeration; 4) spillovers of knowledge, and 5) pecuniary. The sequence is that there are multiple Pareto equilibriums that can be ranked according to their degree of efficiency; one of these equilibriums is superior to all the others in the sense that it is better for all, but the other inferior equilibriums exist, with their corresponding vector of prices, that do not move the system out of the inferior equilibrium. Information Economics has been applied to diverse economic problems, among them, financial crisis[22], and underdevelopment[23].

There is a very close relationship between an insufficient information set, the inadequate Institutional Arrangement, and the uncertainty regarding the future. Knight and Keynes had explored the consequences of uncertainty for obtaining economic equilibrium and for the determination of employment levels, but none of these authors managed to properly formalize their thinking. Theorists of underdevelopment have argued for a long time that it was due to development traps such as low industrialization, low research and inappropriate institutions; but they did not formalize their thinking either. The great contribution of the Information Economy is that it formalizes: 1) that the economic equilibrium depends on the Institutional Arrangement; and 2) that the growth path of a given economy also depends on the Institutional Arrangement. A critical message is that today market prices and institutions may not deliver neither the desire economic equilibrium nor the required long term growth path.

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[22] Greenwald, B., Stiglitz, J.E., (2003): Towards a New Paradigm in Monetary Economics. Cambridge University Press. Cambridge.

[23] Hoff, 2000; Hoff and Stiglitz, 2002. Hoff, K. (2000): "Beyond Rosenstein-Rodan: The Modern Theory of Coordination Problems in Development", en Pleskovic, B. (ed.): Proceedings of the XII Annual World Bank

Conference on Development Economics, World Bank, Washington. Hoff, K., Stiglitz, J.E. (2002): "Modern Economic Theory and Development", en Meier, G.M., y Stiglitz, J.E. (eds.): Frontiers of Development Economics. The Future in Perspective, 3a ed., World Bank/Oxford University Press, Washington, pp. 389-485.

Information Economics argue that whatever institutional interventions have to be done must be analyzed in a dynamic path. Information Economics proved that even with strong rationality assumptions, markets do not necessarily produce either full employment or the desired growth path.

UNCERTAINTY ECONOMICS

The success of Information Economics produced a renew interest in Keynes' macroeconomics. This, can be seen in Greenwald and Stiglitz (2003)[24], which is more or less a formal presentation of Minsky's model of a credit economy, which in turn was based in Keynes liquidity preference theory. But the 2008 GFC made the revival much stronger. Because reality had shown in a dramatic way both that Lucas was wrong in saying that Keynes was dead, and that the Rational Expectations claim that the markets will always maintain developed economies near full employment equilibrium were seriously mistaken.

In Keynes thought economic agents are rational, but they cannot foresee a future that does not exist; therefore, if institutions make mistakes that show them as incapable, confidence as to the institutional capacity to deal with future unknown events may deteriorate rapidly. There are two channels through which such lack of confidence impacts the economy. The first one is the liquidity preference theory, which basically says that banks confronted with a deterioration in the balance sheet of the economic agents will raise the banking lending rate and that this rate will become inelastic (it will not respond) to changes in the central bank rate. Therefore, traditional monetary policy will not be successful. Bernanke's policy of buying directly private sector debt, was an explicit recognition that there was in fact a liquidity preference phenomenon in the 2008 crisis, and that traditional monetary policy influencing the central bank rate was not going to be successful. The second channel is the marginal efficiency of capital, which says that the lack of confidence will force investors to increase the discount rate of future investment returns. Notice, that nor only investors are affected by the lack of confidence, but also consumers

[24] Greenwald, B., Stiglitz, J.E., (2003): Towards a New Paradigm in Monetary Economics. Cambridge University Press. Cambridge.

of durable consumer goods who should also increase their rate of discount. This second phenomena, explains why consumer confidence took so long to recover in the US after the 2008 GFC[25].

The revival of Keynes' thought is explicitly recognized in Mervyn King's latest book, *The End of Alchemy (2016)*, in which he calls Keynes' uncertainty - *radical uncertainty*; and argues that it has an enormous relevance to understand the real economy and the financial markets. Mervyn King was the Governor of the Bank of England 2003-2013. Akerlof's and Shiller's book on *Animal Spirits* (2009), also pretends to be a revival of Keynes thought; although, as we had argue elsewhere, they misinterpret Keynes[26].

In Keynes, as in Neo-Institutionalism, Information Theory and Game theory, markets are unable to reach the optimal equilibrium due to setting failures, and not to the lack of rationality of the economic agents as it happens in Behavioral Economics.

INSTITUTIONAL ECONOMICS; NEO-INSTITUTIONALISM

Both Neo-Institutionalism and Behavioral Economics argued that the contemporary neoclassical vision of how the economy works is wrong, and they both agree that institutions are needed. However, their vision of the economic dynamics of the social system is diametrically opposed. Neo-Institutionalism focus its analysis on the institutions; while Behavioral Economics focus it on the limitations of the individual. For Neo-Institutionalism the analysis of social dynamics and economic equilibrium starts with the Institutional Arrangement, the individual economic agent is always a given datum. The individual is always creative, and he is the source of economic progress; but whether there is progress or not depends upon whether or not the Institutional Arrangement is the proper one. A proper Institutional Arrangement is such that allows for individual creativity to be express. For Behavioral Economist the individual economic agent cannot identify

[25] Keynes never discusses this second phenomenon, but it could be argued that it is implicit in his consumption function, in which consumption is a function only of today' income. See the section on Behavioral Macroeconomics.

[26] See Obregon, C. 2018. Beyond Behavioral Economics, op. cit.

always what is his real interest and institutions are need to help him. For Neo-Institutionalism proper institutions are required; but not to guide the individual, just to let him express his creativity. For Behavioral Economist the individual has to be guided, and institutions are responsible to guide him so that he arrives at a proper solution. For Neo- Institutionalism the individual is a given datum and there is nothing wrong with him, economic problems such as underdevelopment arise due to improper institutions. For Behavioral Economics individuals have to be guided and institutions must decide what is best for him – because even though the individual is given a choice, it is predictable what choice he will take depending upon how the institution frames the question or the circumstance.

Neo-Institutionalism has been influential to such a degree, that it could be said that nowadays the thesis according to which the market is delimited by an Institutional Arrangement is generally accepted. This is reflected in the fact that several neo-institutional economists have received the Nobel prize: Coase (1991), Fogel and North (1993) and Olstrom and Williamson (2009). In spite of this, it is still not clear what is meant by Institutional Arrangement and there is discussion about this[27].

In general, Neo-Institutionalism has been predominantly influenced by the analysis and study of the institutions of Western economies. The vision of institutions is the consequence of the microeconomic analysis of transaction costs, the analysis of property rights, and the development of contract theory. Coase's proposal[28] that Neoclassical Economics without friction does not correspond to the real economy -which is characterized by transaction costs (costs of searching and obtaining information, costs of negotiating and deciding, and costs of monitoring and make contracts effective) - led to important changes in the study of the industrial organization in the contributions of Alchian, Williamson and others.

In this friction economy, the system of property rights defines the incentives of economic agents. North, for example, makes a historical analysis of the consequences of different systems of property rights. In this type of economy, asymmetric information problems as well as incen-

[27] Obregón, C; 2008. *Institucionalismo y desarrollo*. Pensamiento Universitario Iberoamericano (PUI), México. Available in Amazon.com and in Research Gate.com

[28] Coase, R.H. (1937). "The Nature of the Firm", Economica 4, pp. 386-405. In Stigler, G.J., y Boulding, K.E. (eds.): *Readings in Price Theory*, Richard D. Irwin, Homewood, 1952.

tives are central, and contract theory becomes basic for the analysis. The agent's theory studies the information problems between the contractors (Fama, Alchian, Demsetz, Stiglitz and Holmstrom), while the relational and incomplete contracts theory studies the information problems between the contractors and an interested third party, a judge for example (Macaulay, McNeil, Williamson and Alchian).

The historical roots of the thought of Neo-Institutionalism are in the North American institutional thought of Commons. This author defined the institution as the collective action in control of individual action[29]. Commons placed a special emphasis on the study of the transaction as a transfer of ownership. It is particularly notable that there is no influence of Veblen's thinking in the New-Institutionalism, and this is particularly due to the vision of this new school, which considers history and institutions only from the point of view of the Institutional Arrangement that characterizes the West; so that a broader and more general historical point of view, like Veblen's, was left aside. More in this point, below.

In fact, the idea that markets work under uncertainty and lack of information, and that, therefore, economic decisions depend on an Institutional Arrangement, has a long tradition in economic thought. Even though this idea never managed to dominate the mainstream of economic thought, it was always defended by various economists throughout the history of economic thought. In this tradition one can point out[30], among other authors, Smith, Malthus, Marshall, Keynes, Knight, Marx, Schumpeter, Veblen and Boulding.

Neo-Institutionalism is a great contribution to economic thinking, uncertainty and lack of information make institutions essential. The Neo-Institutionalism has allowed a new vision of the harmony of Adam Smith. Coase, Alchian, Williamson, North and others have had a great influence on contemporary economists. The most recent growth models explain the non-neoclassical convergence based on institutions. The Information Economy finds in the institutions the explanation of the possibilities of multi-equilibriums. Sen's Moral Economy sees in the establishment of institutions -for example, democracy or individual freedom- the path of economic progress.

[29] Commons, 1934, p.69. *Institutional Economics: Its Place in Political Economy*, University of Wisconsin Press, Madison/MacMillan, New York.

[30] Obregón, C; 1984. *De La Filosofia a la Economia*, op.cit.

Despite its great successes, Neo-Institutionalism is far from being an integrated discipline with a precise unique vision. There are important contradictions, for example, Williamson versus North. At one extreme, Neo-Institutionalism has adherents who consider it an extension of the neoclassical model[31], which should be expanded and include more restrictions. At the other extreme, some other exponents of Neo-Institutionalism consider the new paradigm as antithetical to the neoclassical model and incompatible with it[32]. There is not a well-integrated view, of general acceptance, that we can call the Neo-Institutionalism model of the economy, which could constitute a true alternative to the well developed neoclassical model. However, Neo-Institutionalism clearly delimits the neoclassical perspective, even giving rise sometimes to opposite conclusions: as for example in anti-oligopoly regulation and the auction of public monopolies.

Neo-Institutionalism shares with most of the other New Schools the concept that underdevelopment is the result of the absence of the institutions that the West has. For this school, the Western individual's creativity is the motor that generates historical change; and progress is generated by establishing institutions that adequately motivate respect for private property, democracy, order and for the law in general. The problem with this vision is that it prevents the study and understanding of the historical evolution of other societies, which do not take the individual as a central figure in their social dynamics[33].

From the point of view of economic policy, Neo-Institutionalism allows to understand problems such as the firm, oligopolies and others, for which it has been very useful. However, as regards to the international policy of patent protection, the case of its importance for global development has been exaggerated by some exponents of this school. Rodrik has pointed out that such a protection is not always justified from the point of view of the interests of the underdeveloped countries[34].

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[31] Dahlman, 1979.

[32] Furubotn, E.G., y Richter, R. (2003). Institutions and Economic Theory. The Contribution of the New Institutional Economics, University of Michigan Press, Ann Arbor.

[33] This topic is developed with breadth in Obregón, C; 2008 *Globalización y subdesarrollo*. PUI, México. Available in Amazon.com and in Research Gate.

[34] (Rodrik, D; 1999, p.148. *The New Global Economy and Developing Countries: Making Openness* Work, John Hopkins University Press, Baltimore.

North's contribution on the resilience of informal institutions, allows explaining why in certain cases the export of Western institutions to underdeveloped countries does not work properly (this is the historical example of India, or México); and this in itself was a great contribution. But what North does not explain are the strengths of these informal traditional institutions that, mixed with heterodox new formal institutions, have produced economic success stories in countries like China, and other Asian countries, that never fully adopted the Western institutions[35].

Neo-Institutionalism showed that economic development is a function of the Institutional Arrangement; but it failed to prove that Western institutions are indispensable for such development, nor that the establishment of Western institutions in underdeveloped countries promote economic development.

[35] Rodrik represents an advance on North as he recognizes the importance of the strength of domestic institutions to stimulate development, but there is still in Rodrik the insistence of seeing the institutions of other countries as a transition to the optimal institutions, which are the Western ones; and to explain the success stories based on these institutions, i.e., respect for private property and democracy. (Rodrik's proposals are presented more extensively in Obregón, 2008 Teorias Del Desarrollo, op.cit.) The reality is that Asia developed mostly without democracy and that in China respect for individual rights is very limited, and of course there is no democracy. These societies are competitors of the West, not their followers; they have adopted from the West the minimum necessary to integrate globally and compete, but basically they continue to be societies with values and institutions that are very different from the West. Openly analyzing these differences is relevant, and changes our focus on the problem of underdevelopment; Obregón, C; *Institucionalismo y Desarrollo* 2008, and *Globalizacion y Subdesarrollo* are widely dedicated to this analysis (both available in Amazon.com and in Researh Gate.com. The New Schools of economics, like the previous ones, have not dealt with the consequences of not seeing development as a natural process. In particular, the vision that development is a process that occurs naturally once the appropriate institutions (and policies) are implemented, has diverted the attention of economists, both of the new and old schools, from the study of two central problems: 1) the analysis of how development could be generated from the current conditions of the underdeveloped countries and from the own specific historical institutions of each country, and 2) the possibilities and development consequences of reordering the international Institutional Arrangement that exists between developed and underdeveloped countries have not been sufficiently studied. The thinking of the New Schools, even though it means a great advance over the old ones, continues to be influenced by the predominating epistemology in economic thought, that of the economy of reproduction. This epistemology conceives economic development only as a natural consequence of individual economic freedom – which suppose to produce progress and accumulation of capital; and has restricted the analysis of underdevelopment to answering which are the absent Western institutions in the underdeveloped countries that impede individual economic freedom. This epistemological position has precluded the analysis of other routes to development, like the one followed by China and other Asian countries.

It is convenient to establish the main difference between Neo-Institutionalism and traditional Institutionalism, particularly in the works of Veblen and Boulding. In Veblen, as in the Neo-Institutionalism of North, an institution includes both the Conceptual System of values and the actual institutions that implement such Conceptual System. But there are two key differences, one that in our opinion favors North and another that favors Veblen. In Veblen, like previously in Marx, social change happens only as a consequence of technological change; North introduces the social change that happens because of social intentional design, a key feature of contemporary societies. But what favors Veblen is that, while the individual is a given datum in North, it changes historically in Veblen. Thus, in Veblen we can understand the historical genesis of the free economic man. It becomes very clear thanks to Veblen, that the free expression of the individual's selfishness in large markets is a particular institutional characteristic of contemporary Western societies. The individual is not historically always the agent of change in Veblen; while it is clearly so in North.

Boulding, pointed out that the economic relation trough the market is just but one of the three key relations of the individual with the society, beyond the Economic System there is an Integrative System and a Power System. This contribution of Boulding is central, because it points out that man's behavior changes accordingly to the system in which he interacts with society. He may behave selfish in large economic markets and altruistic and cooperative through the Integrative System. Moreover, if we put together Veblen's and Boulding's contributions, we can see that there is a historical dynamic of the three social systems. And therefore the interaction of the individual with the society in each one of the three systems is distinct in diverse societies and in different points in time in the same society. All this means that there is not a unique *human* nature. There are basic evolutionary traits of humans, but how they are expressed depends upon the specific historical Institutional Arrangement. Our nature as *humans* cannot just be found through empirical laboratory findings in a particular society and at a given point in time – mainly because such findings imply already a given Institutional Arrangement. Human behavior cannot be disentangled form the institutions that are influencing it. An individual economic agent just does not exist by itself. The laboratory

findings are very useful, but they have to be related to what we know from other social disciplines in an evolutionary and historical institutional perspective.

Take for example the finding of Behavioral Economics that, in the Dictator Game people displays altruistic behavior. Voluntarily 74% of participant dictators divide money equally with the other participant; which is argued by Behavioral Economics as an empirical demonstration that *humans* are not rational selfish calculators maximizing their personal well being. But, what it really shows is that in developed countries there is a strong Integrative System. And we must recall that both the Integrative System and the Power System are reflected in monetary and economic transactions. Therefore, it is not surprising to find that the Integrative System plays a role even in monetary transactions in the laboratory in the Dictator Game and others.

The Integrative System and the Power System are part of the economy. Governments at the beginning of the 20th century were in average in developed economies only around 10% of GDP, today they are around 40%; of which the Power System represents around 4%, social expenditures around 25% and other integrative functions 11%. Thus, the Integrative System represents 36% of the economy, the Power System 4% and the Economic and Exchange System 60%[36]. Individuals living in developed economies live in a world in which social cooperation is a reality, that is why they display cooperative and altruistic behavior. That however does not mean that they will behave altruistic in a large competitive market, *in these markets in fact it has been shown empirically that they behave selfishly*.

Internationally there is a very weak integrative system, therefore it should be expected that humans will not behave altruistic, and this is the case. While the integrative system represents around 36% in a DE, the international aid from DE to EE is only around 0.2% of Worlds GDP.

[36] These calculations are not precise because available data does not allow to do it. But they are good enough proxies. For calculations on government size and social expenditures see Obregón, C; 2018 *Globalization: Misguided Views*. MPRA_paper_85813.pdf which uses OECD data. Military expenditures can be found in CIA world factbook – www.indexmundi.com, which are updated up to January 1, 2018. Military expenditures are around 2.5% of GDP. The Power System includes military expenditures plus other enforcing agencies of which no hard data can be found, but we estimate that they do not add more tan 1.5% of GDP.

CONCLUSION

Each one of the schools reviewed in this chapter have found that the microeconomic interactions between economic agents critically depend on the settings under which such interaction happens. Game Theory showed that there are many non Pareto equilibriums which depend upon the settings of the game. Information Economics obtained multi-equilibriums which are function of the diverse information sets. Uncertainty Economics explain why an economy may be away from full employment equilibrium. And Institutional Economics explain how the equilibrium obtained is function of the Institutional Arrangement. Despite the fact that each one of these schools has its own technical method and they do not strictly relate to each other. Conceptually there is a close relation between all of them. Uncertainty can be seen as lack of trust in the institutional capacity to deal with the future economic problems. Insufficient information can be reinterpreted as the consequence of inadequate institutions capable to guarantee the required flow of information. The setting of the game in Game Theory could be understood as representing an Institutional Arrangement. *Therefore, a simple way to summarize all the findings of these diverse schools is to say that the microeconomic interaction between economic agents is substantially influenced by the Institutional Arrangement in which it occurs*.

A particular interesting result of Institutional Economics is North's discussion of the relevance of social engineering. In Veblen, like previously in Marx, social change happens only through technological change. Through social engineering North incorporates individual creativity in the process of social change. This establishes a connecting point between institutionalism and the schools reviewed in Chapter one which explain microeconomics based on the individual.

CHAPTER THREE. NEW MICROECONOMICS (NMI)

We know reality through images created with the information provided by our senses, and we create scientific models of such a reality which may work or not. They work when they cannot be shown empirically to be false. But more than one scientific model may work to explain the same reality; and therefore although they are distinct, they are both valid. This is the case for example of Newtonian Physics which uses an absolute notion of time versus General Relativity which uses a relative notion of time. Newtonian Physics explains as well as General Relativity 95% of the macro-physical phenomena. Scientific models are not reality, they are only a way to explain it, and they also only explain reality partially. General Relativity can not yet be integrated with Quantum Physics, just to give an example. All of the microeconomic schools reviewed in the first two chapters have key contributions, and that is why they have received so many Nobel Prizes in Economics. But, many of them have attempted a microeconomic vision that goes beyond their particular contribution. For example: rational expectation models are very useful to explain stagflation and other particular economic phenomena, but the School of Rational Expectations attempted to go beyond. Despite the failures of Welfare Economic and General Equilibrium Theory in showing a unique, stable, optimum equilibrium that maximizes economic welfare; the School of Rational Expectations, using partial recursive dynamic equilibriums, again insisted in finding a stable full employment equilibrium, and it failed. In building a NMi we will be using an evolutionary vision of humans that is compatible with what we know in other sciences like Physics, Evolutionary Biology, Evolutionary Linguistics, Social Psychology and so on, and which is flexible enough to integrate the contributions of the diverse schools in microeconomics. But NMi recognizes the limitations of each one of the micro visions that these schools have built.

The microeconomic theories in Chapter One were not able to explain the microeconomic interactions between economic agents based only in the individual, and the theories in Chapter two have shown that the Institutional Arrangement clearly influences the equilibrium that is obtained. And North has insisted in the relevance of social engineering consequence of individual creativity. Therefore, it is necessary to explain to what extent the individuals' interaction is defined by the institutional arrangement, and what is the space left for individual creativity to influence the equilibrium obtained and its dynamics. To be able to answer this question is critical to be able to integrate the microeconomic theories discussed in Chapter One with the ones presented in Chapter Two. And to be able to do it we need to be able to answer two questions: The first one is Who is the individual? The rational selfish individual of Neoclassical Economics, the altruistic and social cooperative individual of Behavioral Economics, the morally responsible individual of Sen's Economics, or is someone else. The second question is How institutions are form and how do they change? We need to be able to ascertain what is the role of individual creativity in this process. In what follows we will present the answers to these two questions, which will be the base that sustains the construction of the conclusions presented as the NMi.

FIRST QUESTION: WHO ARE WE?

We are consequence of an evolutionary process of live, which occurs in a material universe in expansion. We cannot understand who we are, without reference to our belonging relationship with the material and biological universe that surround us. Therefore, before explaining our self in evolutionary terms, we will digress briefly in the existence of the universe at large, and in the general process of adaptation and evolution of life. This detour is necessary to be able to explain why we are neither the rational selfish individual of Neoclassical Economics, or the altruistic and social cooperative individual of Behavioral Economics, or the morally responsible individual of Sen's Economics.

Existence: Synchrony and Diachrony

There is a universal synchrony[37]. A harmonious universe that follows physical laws. One in which everything that exists is related to everything else. In physics, both Newtonian gravity and General Relativity express formally this synchrony. As I am sitting in here, writing this book, I am connected to the whole universe and its physical laws. If it was not for gravity, I could not remain here where I am. And since I am made of organs with tissue and cells made of atoms. It means that my existence links from the smallest particle in an atom to the whole universe of existence. But at the same time each existent particular has its own diachrony – giving by its own arrow of time. The universe of energy is permanent –it always exits, but existent particulars happen to appear and disappear. Whether it is the material universe, earth, live or each one of us, particulars have its own diachrony. Each one of them starts its existence and then disappears, we in particular are born and then we eventually die.

The universe follows physical laws and can be understood in its synchronicity either with causality (classical physics) or probabilistic (quantum physics) methodologies. But there are no laws that can explain the diachronic existence of a particular. We know for example that starts do collapse into black holes and understand the physics as to how it happens, but we cannot forecast which star will collapse. Thus, the universe that looks synchronic from the point of view of the relations between all of the particulars, is diachronic from the point of view of each particular.

Humans are the only living animal, that as Heidegger emphasized, are aware of their own diachronic arrow of time – we are the only ones which abstract thought allows for the understanding of an extended time. So we are the only existent particular that is anxious about its future disappearance. This particular anxiety of humans is mitigated to a large extent due to their belonging to a social group. The social group and its institutions provide the individual human with a more forecastable known environment. That is why any fear that the institutions of the group will not work, translate into a profound sense of mistrust of the future, this is how we can interpret Keynes and Knight definition of uncertainty as to the

[37] Please see, Obregón, C; 2014. Existence and Time: Philosophical and Scientific Inquiry. Amazon.com. Also available at Research gate.com

unknown future. If the institutions behave normal as always, the past and the present knowledge are good indications of the future, the economy is near equilibrium and risk can be calculated in a probabilistic manner. However, when institutions seem unable to do their normal tasks, the individuals' confidence in the system goes down abruptly and the future becomes unknown.

Adaptation and Evolution

The universe is defined by energy which transforms itself in matter, life is just one expression of matter. The material universe in its actual form is much older than life, fourteen billion years versus less than four. Live is an accident of matter; the DNA, that characterizes life, is but a minor chemical alteration of the RNA, that defines matter. The material universe is expanding an ever changing. Particulars appear and disappear. The existence of life is not guaranteed; life may disappear in the future and nothing will happen to the material universe. Nor only life is significantly younger than the material universe, but it's size is also insignificant in relation to the one of the material universe. Life disappearance may be caused by small, today unknown, future small change in the material universe. Life disappearance would not be a significant event in the existence of the material universe.

Since the material universe and earth are changing, to survive life has to adapt to such changes. And since the future changes are unknown, life must diversify as much as possible its genetic pool. More diversification means better survival chances. This diversification happens both, by diversifying the species, and by diversifying the genetic pool in each specie, by given different individuals distinct genetic pools[38]. Adaptation and evolution mean that, once there is a significant change in the material universe, some species will disappear, like the dinosaurs did, and others will survive, like it happened with the mammals. Of those species

[38] The two main themes of evolution are natural selection and random genetic drift. Individual genetic variance (due to random mutation, recombination - sexed reproduction or migration - gene flow), sexual reproduction, inheritance and natural selection allow the adaptation of the species to environmental changes. Random genetic drift allows the random genetic variability of the species, regardless of environmental changes. These two processes operate concomitantly.

that survive, some individuals will disappear and others will not. The individuals that survive, are those better fit genetically to the new material world brought about by the material changes previously referred. But those individuals surviving the material changes, will have to die eventually. Because, they have to inherit their superior genetic pool (only superior in relationship to the particular specific new material world), in order for new generations to be better adapted, which increases the survival chances of the whole specie. We are individuals, and we are born and we die, because that optimizes the human specie chances of survival.

Our Evolutionary Self

At one point in time, likely seven million years ago, we had a common ancestor with the Chimpanzee. An accident taught us to use the sharp edges of a broken rock for productive reasons; and as the rock technology progressed it produced an economic surplus, that allowed to feed larger social groups. Both the new rock technology, and the more intense social life, produced evolutionary changes that finally ended up with the Homo Sapiens. The brain grew in size; technology became more advanced; social life in larger groups; more sophisticated language; we learn to read other people minds and to express and control our emotions; a more erected body position that free the hands for productive purposes and permitted a larger phonetic capacity. Chimpanzees can learn in the laboratory the rock technology belonging to 3.5 million years ago, but they cannot learn the one of 2.4 million years ago[39]. Thus, somewhere in this period we became significantly different.

The point to emphasize is that man in evolutionary terms already comes from an ancestor that lived in groups. And that the evolutionary changes that ended up with the Homo Sapiens were concomitant with a larger group and a more intense social life. If anything distinguishes us from the animals is our syntactic language, which is due to more intense social life. To be human meant from the beginning to live in a group. Individual's survival depends upon his belongings' to a group.

Thus, we have two key evolutionary characteristics: we are individuals, geneti-

[39] See Obregón, C; 2014. Existence and Time: Philosophical and Scientific Inquiry, op.cit

cally differentiated from others, who born and die; and we belong to a social group. In order to maximize our survival chances, evolution gave us two instincts: *selfishness and belonging*. Selfishness, to guarantee that each individual looks up to his own survival. Belonging to guarantee that the individual is related to a group, because that increases his survival chances. And because group and species survival is evolutionarily more relevant than the specific survival of any individual; the belonging instinct was evolutionarily designed to guide and redefine the selfishness instinct.

Group Formation - Our Belonging Self

Our belonging instinct has been carefully documented by the Psychology of Attachment[40]. Psychological and neurobiological studies done in more than twenty countries have shown that we are born with a belonging instinct. Infants recognize their mother voice immediately after they are born. They can imitate an adult face 40 minutes after being born. The child's brain takes years to develop, and thus requires the mother attention and care. The relationship with the mother or care giver during the first twelve months defines in most cases the adult's personality. In extreme cases even the neurobiological development of the child's brain is at risk. We are social animals; whose survival requires the social group.

The belonging relation with the mother or take giver the first twelve months is emotional. The mother teaches the child not to be aggressive and socializes him; among other things she teaches the child to speak. Learning a language, other careful teachings from the mother, and the maturity of the child's brain develops the child's capacity to reason; thus, with time the belonging relation becomes also based on reason.

The belonging relation is nor only social, but also chemical. When we share time with others we love we produce dopamine and oxytocin, drugs that eliminate stress and foster a better functioning of our immunological system. Loneliness, or being subject to social abuse, produces cortisol, which in extreme cases destroys our cells and neurons.

[40] See Obregón, C; 2009, 2013 y 2017. 2009, La soledad y el amor. PUI, México. Available in Research Gate. 2013, El camino a la libertad. PUI, México. Available in Research Gate. 2017, ¿Quienes somos realmente?: La historia del yo. EU, México. Available in Research Gate.

Thus, belonging to a group is the most human characteristic that we have, we actually became *humans* due to the enlargement of the social group. Now, evolution, according to our brain size, prepare us to live in groups of around one hundred participants[41]. In groups of this size our emotional and chemical belonging works properly. However, as technology developed, the economic surplus grew and fostered the enlargement of the group significantly above its originally designated evolutionary size. As a consequence, emotional and chemical belonging to the whole group were not longer possible. Therefore, social belonging became more and more a conceptual – rational - relation.

Belonging is always both an emotional and a rational relation, because the brain is only one. However, there is a spectrum. With those more near to us with whom we have the possibility to look mutually at each other eyes, to eat together, and eventually to touch each other, the relationship is more emotional. With those with whom we cannot, the relationship is more conceptual and rational. To distinguish them, I have called the first type Love, and the second one Social Significance (significance because the individual gets meaning – significance – through social belonging).

In Addition to Love and Social Significance, the individual also has an instinctive belonging relationship with the biological and material universe, also needed for survival – which I have called Existential Significance. That is why we get amuse and relax when we: a) listen to the wind, to the ocean waves, or to a bird singing; b) look at a beautiful valley, or a dolphin swimming in the ocean; c) contemplate the moon or the sun or the stars. Existential Significance is expressed in many forms of religious and spiritual life, which in many societies is also a social event that strengthens the relation of the individual with the society.

In primary societies, Love and Social Significance were/are both with the social group; and Existential Significance is also largely obtained through the social group. In traditional societies, love was/is mainly with the extended family, and Social Significance with the social group; Existential Significance may or not be obtained through the social group. In contemporary Western societies, Love is mainly with the unicellular

[41] Obregón, C; 2014. Existence and Time: Philosophical and Scientific Inquiry, op.cit.

family and Social Significance is with the social group[42]. Existential Significance, through Protestantism, has become related to working for the well being of the social group. Since, we are evolutionarily prepared for having an emotional and chemical belonging tie, Love is central for and adequate individual belonging; that is why the disappearance of the unicellular family in Western societies is a serious threat to the psychological stability of the individual.

Moreover, in contemporary Western societies the individual is fully differentiated and for the first time becomes responsible of his belonging relationships through the three routes. Love – who to marry for example; in primary and traditional societies was decided by the group or the extended family. Social Significance was automatically obtained because by being born in such a society the individual had already a well defined social role; whether it was to be a fisherman or a carpenter or a king. And Existential Significance was obtained from the group or was quite accessible. In Western contemporary societies, love – who to marry – is decided by the individual, his Social Significance is obtained by merits which given the predominant role of the Economic and Exchange System in most cases require nor only social success but also monetary success (although inheriting name and money still helps a lot), and he is also responsible of his Existential Significance – he can decide whether to be a religious man or not. This new freedom in the Western contemporary societies present great opportunities for the individual, but has the disadvantage that when he fails, he is left with no belonging relationship to recur to. That is why: while Freudian neurosis was the most common mental illness in traditional societies, because they refrained the natural satisfaction of selfish instincts; in the contemporary Western societies, the most common mental problem is personality disorders, due to social isolation.

What we would like to emphasize in here is: *that the individual needs the group, nor only for his economic survival, but also for his psychological well be-*

[42] The primary, the traditional and the Western societies are abstract categories of analysis used in previous works. They are defined as follows. Primary society: the individual is not differentiated from the society. The society, in turn, is not differentiated from the existential universe. Traditional society: the individual is differentiated from society in terms of his responsibilities, but not in terms of his rights. The society may or may not be differentiated from existential universe. Western society: the individual is differentiated, in addition to his responsibilities, by his rights. The individual exercise his rights of: expression; political participation and voting freedom; economic freedom and property; and to pursue his individual economic interests. The society is differentiated from the existential universe.

ing. Extreme cases of loneliness produce uncontrolled aggressiveness or auto- destruction. Monkeys that are grown isolated mutilate themselves, and are never any longer capable to establish social relations with other monkeys. Drug abuse is in fact one way to compensate for the lack of dopamine and oxytocin, consequence of inadequate emotional belongings in our contemporary societies[43].

We already have in here an initial explanation of why social expenditures over GDP in Western countries are between 20 and 30%, but international financial aid over world's GDP is only 0.2%. Individuals belong to a given country, but not to a world community.

Emotions versus Reason

Emotions are inherited evolutionary traits of successful patterns or response to environmental cues. As we have said before, to survive life has to adapt to the environment; thus, even the most simple of the unicellular being has patterns of response to the environment[44]. Reptiles do not have emotions as such, but they do have inherited patterns of response to the environment which manifest themselves in two main kinds of survival instincts: aggression and attachment. In mammals, emotions started as the brain developed areas capable to sustain those feelings; but emotions in mammals, despite the self feelings associated, are only surviving patterns inherited from earliest and simplest forms of life. In *humans*, attachment becomes belonging, which nor only has an emotional basis but also involves reason. But, the critical point to emphasize is *that emotions are our most fundamental inherit way to interact with the environment*.

Emotions actually help us to preselect what is relevant in the environment, to be store as images in the brain. What is emotionally irrelevant we simple do not store. Wherever you are standing, if it is not at home, ask yourself what do you have behind, and you will discover that you do not know. Emotionally irrelevant cues are just not storage. And actually, events that may be too emotional intense and that put at risk our psycho-

[43] Obregón, C; 2009. La soledad y el amor, op.cit.

[44] Obregón, C; 2014. Existence and Time, op.cit.

logical stability may not be store either; very young kids that have been raped, often do not remember the event (or events). Because emotions preselect what we store, they are always involve in any relationship with the out-there. We just cannot be pure rational beings. But at the same time what distinguish us from other animals is, that due to our syntactic language, we can process more images in more combinations, and we have therefore the notion of an extended time. We are the only animal capable to visualize itself in extended time. Reason developed, as a part of a larger brain, concomitant with more social life and more sophisticated language. Reason is part of our evolutionary brain, and our brain is only one and works like a unified system. Therefore, while we cannot be purely rational, we cannot be purely emotional either. Despite the fact that they may be some innate responses that are purely emotional – we dislike snakes for example, they mainly only dominate early stages of life. As the child's brain matures and the mother teaches him to talk and to control his aggressive instinct – the child uses his reason. In adult life, we do have instances in which emotions may be very intensive and may dominate us; but in most normal circumstances, actions in the human beings always involved the use of reason. Emotions are not opposing reason; reason was built to complement emotions. They work together to optimize surviving possibilities. It does not make sense from an evolutionary point of view to conceptualize a human that does not use his reason efficiently, survival does not work that way.

Let us just take one classical conformity experiment in psychology labs. An individual is introduced in a dark room and he is asked the length of a light lane in front of him. But before he enters the room, he is introduced to a professor whom he is told will also participate in the experiment. The trick is the student listens, by a planned accident, the professor's intentional wrong answer in a nearby room. And it is shown statistically that the answer of the student is influenced by the professor's wrong answer.[45]. Does it mean that Kahneman's system 1, which connects emotionally the student with the professor, dominates system 2? Or just simply means that an evolutionary trait is to follow the group, and since the student is not so sure, he does what is rational, follow the leader who suppose to know better. Following the group is evolutionarily the right rational decision. What goes wrong in this experiment is that

[45] There had been several versions of this study, the first ones were made by Asch in the 1950s.

evolution did not prepare us for the group to lie to us, as the professor did. Evolution could not had prepared us to misread the environmental cues, emotions and group belonging in fact augment and do not diminish our capacity to read the external cues. System 1 prepares us for a better usage of system 2, system 1 is not oppose to system 2.

The rational economic man does not adequately picture us as *humans*, but the emotional man dominated by the system 1 of Behavioral Economics is neither a good description of the economic man. Because, while emotions enter everything that human beings do and there is no action that does not involve them, they are not evolutionarily designed for us not to appreciate reality correctly – it is just the other way around they help us to improve such appreciation. A being which cannot decide what is best for him would not survive. Thus, due to very fundamental reasons, Behavioral Economics cases in which system 1 make us fail have to be a reduced set.

There is a confusion which has to be clarify, the rational economic man is an abstraction related to the behavior of individuals in large markets, but it does not imply that man is rational in the sense that his emotions do not count or that he can fully control them. When preferences are expressed in the market they involve emotions. In fact, one of the virtues of the economic markets is that they allow for the expression of individual's emotions. Both economic markets and democracy surge as a consequence of the demise of rationalism, understood as the philosophy that argues that everything can be understood with our reason. If reason could be used to order the social world, then the most intelligent should guide society – like in Plato – and they must decide what to do both socially and economically, they must decide who does what and who gets what – there is no need for the markets nor for democracy. In the markets the individual selfish instinct expresses itself, and it is of course dominated by passions and emotions; which does not imply that the reason is nor also involve.

The rational economic man of the contemporary Neoclassical School is a rational calculator that in some-ways represents a come back of Rationalism. Because reason in each individual imposes itself upon emotions and orders the individual preferences with such clarity that they can be aggregated and provide a new form of rationality to the whole social

economic system. In this view, particularly in the case of the market defendants of the contemporary Monetarist-Rational Expectations Neoclassical School, markets establish a unique stable equilibrium, and maintain economies near full employment. Thus, individual rationality provides order to the economic world. Furthermore, since non-economic motives are introduced in the individual's utility function, markets nor only organize the production and distribution of economic goods but also solve other non-economic problems like for example social discrimination. This view of the markets, as we had been showing since the first chapter, *was unsuccessful*. Thus, we can not give order to the social economic world only by assuming individual rationality; we need institutions, values, history and so on.

The rational economic man does imply a form of rationalism that does not correspond to our evolutionary traits in which emotions are crucial. But, refusing the characterization of humans provided by the rational economic man, does not mean that we have to move into an alternative in which emotions make us fail as to the adequate appreciation of the external world. Emotions are actually a key feature for us to appreciate correctly reality. And being emotional does not imply that reason is not being used. The free economic man expressing his preferences in the market is fully compatible with our evolutionary traits; and expresses his preferences using both his emotions and his reason. And the social economic world is nor ordered only by individual preferences, but also by the Conceptual System and the corresponding Institutional Arrangement. *The economic man does not fail in appreciating what he really wants of what is really convenient for him, at least does not fail usually-otherwise it could not be a survivor*. Thus, if he fails it has to be in particular cases, and finding these particular cases is actually the contribution of Behavioral Economics. But it must be understood that these particular cases, described by Behavioral Economics, are not the general case.

When an individual is in a market place there are four main kinds of economic transactions that occur, and in all these cases emotions may play an important role: 1) there are many products which are bought without much thinking, remember yourself in a super market. But many of those are decided this way, because their price is low and it is not reasonable to spend time researching on them – the search cost is too high related to the price. But the buyer is conscious of what he is doing.

And what is good for him is not to incur in the search cost. 2) repetitive transactions in which the buyer may initially decide without much thinking, but then goes home and uses the product and decides again, after few repetitions the buyer knows what is good for him. 3) relevant unique and significant economic decisions in which the buyer invest enough time and effort finding information and external advice to decide what to do. After this process the buyer knows what is good for him. 4) economic decisions in which system 1 dominates and the buyer does not know what is good for him. Notice that due to information, educational and knowledge insufficiencies in 1), 2) and 3) there may be market failures and the buyer may end up deciding something which is not good for him and government and non-market institutions intervention may be required. But 4) is a distinct case, it is assumed that even with education, information and adequate knowledge, system 1 dominates and a market failure occurs. While possible, 4) is not very common, and in reality many of the Nudges are really due to lack of information, education and knowledge. Therefore, there are only few economic transactions in which system 1 dominates the scene and the individual really does not know what is good for him. Such cases do exist and it has been the contribution of Behavioral Economics to find some of them. And it has been shown that Behavioral Economics is useful in particular cases like individual saving decisions and organ donations. But the point that we want to stress is: *that Behavioral Economics refers itself to a particular case, in which system 1 dominates, so that due to our emotions we do not appreciate reality in a proper way, and that is why we do not know what is best for us.*

OUR HUMAN PSYCHOLOGY

We are evolutionarily built to belong, because belonging is key to survival. Belonging guides and redirects our selfish instinct. Contrary to popular belief there is no contradiction between belonging and selfishness. Belonging does not reduce freedom, it increases it. Adequate belonging is key for a healthy individual psychology – one capable to make economic choices. Belonging failures create stress and in this intense emotional periods the areas of the

brain required to reason do not work properly[46]. An adequate emotional development increased the possibility of the adequate use of reason. An emotional balance person is ideally prepared to take rational decisions.

Mclean for descriptive purposes have divided the human brain in three: the reptilian brain, the limbic brain and the cortical brain. As an analytical count of brain functioning Mclean classification is wrong, because the brain is only one integrated system. However, it has the virtue that it emphasizes our evolutionary heritage. The reptilian brain coordinates the autonomous functioning of our body, the limbic brain the emotions, and the cortical brain the reason. The freedom to choose basically consists in our ability to use properly our cortical brain. But to be able to do that, we need to be healthy and emotionally balanced. In other works, I have described the road to freedom as consisting of six steps[47]. The first one is to satisfy our evolutionary need of free movement, maintaining ourselves alert in a challenging environment; which is basic to develop our capacity to learn from the environment. The second is to satisfy our basic selfish instincts guided by our belonging instinct. The third one is to establish adequate belonging through the three previously mentioned routes: Love, Social Significance and Existential Significance. The fourth one is an adequate emotional development. The fifth is to be conscious of our self and our relationship with our belonging surroundings. And the sixth is mentalizing, which implies to look with flexibility and perspective our past and our future alternatives. The key message is that to get to the sixth step, we need to properly satisfy the first five. In other words, the rational economic man only exists, if he is healthy psychologically, and that means mainly emotional development through adequate belonging.

The notion that the individual always know what is best for him is obviously wrong, think in someone buying a shot gun to kill many others and then to suicide himself, clearly he does not know what is best for him. But, if there is psychological freedom due to good emotional balance obtained through proper belonging, the individual in most of the cases will be able to know what is good for him[48]. He will not satisfy the condi-

[46] Obregón, C; 2013. *El Camino a la libertad.* PUI, México. Available in Research Gate.

[47] Obregón, C; 2013. *El Camino a la libertad.* op.cit.

[48] The individual always knows what he wants, the discussion is about whether What he wants is what he needs? Behavioral Economics argues that in many cases it is not. But, needs imply a normative dimension which relate to values in the Integrative System and

tions of the rational man of contemporary Neoclassical Economics, but he will clearly satisfy the ones of the economic man of Adam Smith. He will able to express his preferences through the market.

A healthy psychological individual does not jump the gun, and he is not dominated by Kahneman's system one. He has learned to use his system two, and to use all help that he can acquire from the social group through: 1) market participants like firms selling information and analysis or giving it for free (examples: the Mayo Clinic web, or the World Bank web, among many others); 2) non market participants like friends or non profit oriented organizations; and 3) the government. We live in a world of abundant information and analysis. Many of the examples used by Behavioral Economics involve lack of time to take the decision, non repetitive decisions, un-aid decisions and so on. But in real markets those conditions do not happen. For example, people always can ask somebody who can help them to calculate probabilities. Lack of knowledge does not mean to be dominated by system 1.

Emotions do not jeopardize rational decisions, they help them to be better, because they provide additional useful information and a connection with the group which can help the individual to be more rational. The only emotions that do jeopardize rational decisions are those due to belonging failures. That is why a society has to develop a proper social Integrative System that permits adequate belonging for the three routes. That we are emotional when making decisions is an inherited evolutionary trait, but that does not mean that we are being non rational or irrational. Even buying a convertible car that we do not *really* need and that we will use only once a month may be a very pleasant decision. To be rational does not mean not to be emotional.

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in the Conceptual System (there is not an absolute rational external standard that defines needs).Values which the individual learns through social belonging, which implies information, education and knowledge. If there is a failure in here, is a belonging social failure, not due to the individual's psychological characteristics, and must be corrected and social intervention is adequate by the democratic means chosen. The contribution of Behavioral Economics in these terms could be seen as the proposal that due to the individual's psychological characteristics these types of failures happened more often in certain cases that could be identified studying these psychological characteristics. But, Behavioral Economics goes beyond this, and argues that due to its psychological characteristics the individual even with knowledge, information and education, in many cases, does not know what he needs because due to system 1 he jumps to conclusions. Such cases, as we had argued, should not be very frequent, because evolutionarily our emotions are designed to help us read the external environment and not to misread it.

Markets do not work isolated; they need a proper Institutional Arrangement. Including an adequate Integrative System. Proper social analysis has to be done also at the institutional level, and it cannot be restricted only at the level of the discussion of the universal characteristics of individuals. Because the only individual universal characteristics are evolutionary traits, which expression varies in function of the institutional conditions.

The weak rational individual of Behavioral Economics is dominated in many instances by his emotions and therefore is unable to understand his true preferences, and is altruistic and socially cooperative. Our criticism is not that this is not a good description of *humans*, but that any description will always be wrong. *Humans* can be under some circumstances altruistic and cooperative, in other situations they can be tuff economic competitors that show no mercy for their competitors, and in certain cases can be aggressive selfish predators that do not respect any law or social limit. In fact, the same human person may display all of these behaviors at a given time: he may be a selfish competitor in large markets – the economic man that Smith proposed, and at the same time being an altruistic social cooperative individual through the Integrative System of his *in-group*, and an aggressive predator towards others in the *out-group*. Think for example in a pilot of the US forces dropping bombs against the *out-group*, belonging to a church given charity, and displaying selfish rational behavior in large markets. There is not a fix human nature, there are only general evolutionary traits.

The Economic Man

The economic man – the *econ* - is not a description of our human nature. It is an abstraction of human behavior in large economic markets. The version of Smith is quite compatible with the evolutionary psychological characteristics of the *human* beings. Under normal social circumstances psychological individuals will be able to express their preferences through the markets. The economic man is a useful abstraction to explain the rapid growth of capitalist economies. The rational economic man of contemporary neoclassical economics proposes a rationality that goes beyond the evolutionary psychological characteristics of *human* beings. But, despite its inconveniences, it has been useful to build mathematical mod-

els that up to today are the best explanation of the allocation of resources through the price mechanism in large markets.

The *humans* of Behavioral Economics are not useful to explain many of the most fundamental economic phenomenon such as economic growth, or the allocation of resources; in that sense it is not an abstraction that can substitute the *econs*. The *humans* of Behavioral Economics are neither a good description of our evolutionary human characteristics. Behavioral Economics main problem is that methodologically it focuses only in the individual, and not in the individual relations with the social group and the environment which are the basis of the evolutionary traits of the human beings. Behavioral Economics loses sight of how institutions can influence human behavior, and therefore was unable to understand that in the main tradition *econs* were just an abstraction of the behavior of individuals in large markets, which no doubt is selfish and for which the experiments of Behavioral Economics are only of a secondary relevance.

Despite its limitations, Behavioral Economics has had relevant contributions, mainly pointing out some of the instances - due to the psychological characteristics of individuals - under which there can be market failures. And therefore, institutions – mainly the government - needs to provide help to the individual, for him to be able to process his choices in a rational way.

Our Selfish Self- the Neoclassical Man

The great contribution of Smith is that he understood that England by institutionalizing economic freedom in large markets had liberated the selfish instinct of man in such a way that, in instead of producing social damage, it would produce social well being. Thus, economic markets presented a solution for Smith's previous work in *Ethics*. Markets allow for individual selfishness to become an ethical conduct. But remember, that according to the Theory of Moral Sentiments, it is only so, if both in the eyes of the society and in those of the individual, the activity in the markets can be proven that does not damage others or the society at large.

Now, we must be very careful not to confuse our selfish instinct with the selfishness of the economic man in large markets. The selfish instinct is an evolutionary characteristic of man which is a constant in all societies, but in many of them social belonging did not allow for any social expression

of this individual selfish instinct, at least for the majority of the individuals. It is the particular case of modern Western societies that the expression of the selfish instinct is allowed, to most of the individuals, through the large markets[49]. Therefore, the *selfish economic man* is an institutional characteristic of a specific society, and it is restricted to a specific activity – the markets.

Sen's Global Moral Human Does Not Exist

As Kant anticipated us, we never really get to know the out-there. We encounter reality through our senses, and the beats and pieces received through them are put together by our brain as images. These images are decomposed and store, and when needed they are recall. In fact, our imagination is nothing else than recombining the images that we had stored previously. This process, up to here, is identical to the one that evolved mammals follow up to know the out-there. The only distinction is that we have a syntactic language, one in which the meaning of each word is contextual. Our more sophisticated language allows for more combinatory possibilities of images. Thus, as far as we know, we are the only animal with an extended notion of time. We are the only one aware that will die in a defined range of future time[50].

Since we cannot get to know the out-there by any other method, that science recognizes, it means that scientifically speaking man is unable to have access to universal ethical values, whether they represent a full blown ethical system of just partial orderings as Sen affirms. Therefore, altruism and social collaboration have to come either from natural sentiments or from social learning. Since evolutionarily we know that the instinct of belonging relates only to a small group with which we have visual and other contacts. It follows that we do not have universal moral sentiments. And since there is not an institutionally established international society, it is easy to understand why international aid is so low.

[49] Poverty may not allow some individuals to express their selfish interest through the market.

[50] Obregón, C; 2014. Existence and Time,op.cit.

IN SUMMARY:

We are the outcome of evolution. We have two instincts a selfish instinct and a belonging instinct; the second directs the first. But if there are belonging failures the selfish instinct dominates. But we should not confuse our selfish instinct with the selfish economic man. The latter is the outcome of an institutional feature of a particular society, the Western society; and it only refers to the economic and exchange system as it manifests itself in large markets. Neither the Rational Economic Man as described by contemporary Neoclassical Economics, nor the emotional altruistic individual of Behavioral economics correspond to our evolutionary characteristics. Sen's human with access to universal moral truths does not fit with how the mind works according to contemporary neurobiology.

SECOND QUESTION: HOW INSTITUTIONS ARE FORM AND HOW DO THEY CHANGE?

Institutions include the pragmatic Institutional Arrangement and its corresponding Conceptual System. They are form through a long historical cultural process. They are resilient and change slowly. They are highly influential in defining the social-economic equilibrium and its dynamics. However, since the group's main evolutionary goal is survival, when confronted with drastic internal (example technological shocks) or external shocks (example wars or a pandemic) institutions have to change. And this change is always lead by individual creativity. Therefore, individual creativity occurs at two key levels: the technological process of production, and the required social engineering for institutions to adapt to internal and external shocks.

The Conceptual System and The Institutional Arrangement

What is an institution? In other works, I have defined an institution as the sum of the Conceptual System and its corresponding Institutional Ar-

rangement[51]. The definition sounds somewhat tautological, but it is not. It is meant to indicate that the actual pragmatic institution that we see in a society always has a corresponding Conceptual System attach to it. Think for example in the institution of the parliament in England, it has its members, they are elected and they discuss in a specific building and so forth – but they also represent a Conceptual System –i.e. the constitution, the laws and so on. The Conceptual System is defined as a mixture of knowledge, beliefs and habits that comprehensively explains social and physical reality, which guides and directs social and individual behavior. An Institutional Arrangement is the set of institutions that make the Conceptual System operable.

The Conceptual System and its corresponding Institutional Arrangement have a specific historical culture in a given society. Therefore, social decisions nor only correspond to today's democratic choices, but are also related to the historical institutions. Whether we talk about representative democracy or participative democracy; democracy always operates in a given Institutional Arrangement and its corresponding Conceptual System, which do change through democratic and other decisions, but slowly.

The Three Social Systems

The interaction between the individual and the society is intermediate by three social systems: The Integrative System, The Power System and The Economic and Exchange System. The basic social system of any society is the Integrative System. The Integrative System consists in the traditions and customs; socially established obligations - established norms, the law; values, and social beliefs in general; ethical principles; the religion; benevolence, and commitments acquired individually but socially sanctioned. This system holds society together, and it is the base that defines the main relationship between the individual and the society. The Power System refers to the use of public force. The use of force is usually only allowed to the state; individuals are forbidden to use any sort of force against other individuals of the same *in-group*, although they may be

[51] Obregón, C; 2008. Institucionalismo y Desarrollo. PUI, México. Available at Amazon.com and Research gate.com

allowed to use it against other individuals which are conceived like *out-group* members, i.e. slaves, enemies, or simply members of other groups. The Power System usually governs, to a large extent, the relationship between in-group and out-group members. The Economic and Exchange System is the production and distribution of economic goods, and the selfish relations of exchange in general, including economic exchange.

In the primary society the Integrative System and the Power Systems are more relevant. But as societies become more complex the Economic and Exchange System gains importance, until it gets to the Western society in which it is a rival of the Integrative System as to define the main relationship between the individual and the society.

Social Change

Kenneth E Boulding use to say that the main problem of the social sciences was the relationship between the individual and the society. Table 4.1 presents the main elements of such relation. Individuality is defined by the specific individual genetics which combined with survival instincts gives rise to our individual self. Self preservation is closely watch by our selfish survival instinct. But since individual survival requires the group, the individual also has a belonging instinct, to the people very near to him - Love; to the society - Social Significance; and the the biological and material universe - Existential Significance. The social significance is expressed through the three social systems: The Integrative System, The Power System, and the Economic and Exchange System. Society is defined by its Conceptual System and its corresponding Institutional Arrangement.

There are many theories of social change. We shall mention four of them. The classics Stationary State, Marx's, Veblen's and North's.

At the bottom of the table we find the Economic and Exchange System, which for Marx explained social and institutional change. For him the changes in the relationship of man with the material universe define the changes in the social universe. For him history is a teleological process which at the end will bring about the humanitarian communist soci-

ety, in which the human needs of the individual will be satisfied. Veblen agreed with Marx in many ways, but he points out that the social institutions created by the previous technological process will enter in conflict with the new institutions consequence of the new – most recent – technological process. And that, the result of this conflict varies from society to society and it is distinct in diverse historical times-therefore it is not, as in Marx a teleological process. According to him we can study the historical past, and he did, but we cannot forecast the future. In North, social change happens in any of the categories in the table except those defining individuality, which may change genetically but is a much slower process than the rest. For him individual creativity nor only changes the technological process of production, but also the social process by which individuals interact. There is a permanent questioning and redefining of the Conceptual System and its corresponding Institutional Arrangement, which in turn modifies the three belonging relationships. And since it modifies Social Significance, it also changes the three social systems. But change can start at any of the instances of the table, individual creativity may modify the Integrative System which then will have repercussions in the other two systems, in the Social Significance and in the Conceptual System and its corresponding Institutional Arrangement. North point is that social creativity occurs at any social instance, and nor only in the technological process of economic production. North, however warn us as Veblen did that old institutions are resilient and difficult to change. This is how he explains why exporting Western institutions to developing countries has been so difficult and unsuccessful.

TABLE 4.1. RELATIONSHIP: INDIVIDUAL – SOCIETY

Individuality		Belonging		Institution
Individual genetics	Individual	Love	Society	Conceptual System
Survival instincts		Social Significance Existential Significance		Institutional Arrangement
		Social Significance		
		Integrative System		
		Power System		
		Economic and Exchange System		

Finally, the classical economics stationary state argued that as the population grows less productive land is used, therefore the cost of producing food goes up, the salaries go up, rent of the land goes up (because its defined by the less productive land) and profits go to zero. Different economists design distinct ways to escape the stationary state fatality; Malthus recommended policies to maintain population growth under control (which are still critical for many developing economies), Ricardo recommended importing food (which is also useful for developing economies). But the true way out of the stationary state is technological development. Technology in food production and in other goods increases productivity and allow for both salaries and profits to go up. That is why technology was for Smith so crucial in his thinking. And What does technology depend on? Mainly on mass production allowed by the enlargement of the markets. The positive cycle of economic development implied in the West is as follows: 1) international trade increased due to both, gold from the Americas and species from the east; international trade meant already access to cheaper imported food. 2) countries that were not involved neither in gold or species had to developed mass production. 3) which implied that the Burgos-cities grew; and this, by the way, was the best possible policy to reduce population growth, because having children in cities became more expensive and difficult. 4) as cities grew the middle class grows, democracy comes along and the consumption of the middle class provides a new substantial and decisive enlargement of the markets. In all this process the enlargement of the markets allowed for the mass production, which fostered technological development both in food production as well as in other goods. Smith's main contribution is to have understood the relationship between large markets and technological change.

There are only two groups of countries that had become developed, a group of Western countries and a group of Asian countries. We already briefly explained how the first group developed. The second group development have been due to what I have been calling The Asian Development Model[52]. This model is dependent upon the West, because it maintains its technological development at the world's frontier by heavily exporting to the middle class of the Western countries. But it has special features of its own. 1) It has a very high internal saving rate, which reduces the dependence on foreign capital, allows for a stable undervalue

[52] Obregón, C; 2018. Globalization: Misguided Views. MPRA_paper_85813.pdf

exchange rate and provides enough resources for investing in local companies that may become worldwide export leaders; 2) It has an industrial policy aim at: a) integrating other companies as providers to the exporting companies, b) reduce imports, through the undervalue exchange rate, and using import substitution policies, among which there are all sort of administrative tricks – fostering the growth of local companies in the local market, c) promote the development of local productive chains of economic value added, like the construction sector – which is also possible because the high internal savings. The huge internal savings and the appropriate industrial policy has made it possible for a group of Asian countries to become developed economies. But we must emphasize that a critical key feature of the Asian Development Model is that it exports to the West and maintains first class global technology. Why is this so crucial? Because if a country develops with obsolete technology whenever it opens up its industries are not competitive, and they just disappear as the consequence of the confrontation with a superior technology. This explains why, for example: 1) East Germany became so small after joining West Germany, and 2) Russia collapsed when it opened up to the West[53].

We will further discuss economic growth theories in Section III, but by now the two critical points to understand about social change are. 1) that although it occurs as North argues at any place in the social system, its main determinant is technological development, and 2) that by its very nature social change is slow, particularly due to the opposition of the old institutions. Once we understand that institutions are not only pragmatic actual institutions, but also the Conceptual Systems that they represent, we can see why social change is so difficult, values and concepts remain attach to societies for centuries. The Western Capitalism and the Asian Capitalism had been exceptions, and even in them social change is slower than may seem. Asian Capitalism changed faster than Western Capitalism, but was only able to do it, because it had access to the frontier technology of the West. In some other regions like the Arab countries, South Asia, and large parts of Africa and India the Conceptual Systems have prevailed and social change has been very slow.

Social change is the consequence of old institutions, technological change, and individual preferences and creativity all throughout the social

[53] Obregón, C. 2018. Globalization: Misguided Views, op. cit.

system. Notice that democracy only happens in a limited number of societies, and even on them it is only one of the components in all the complex process of social change. Can we change our social world, in any desired direction? Yes. But at a much slower pace that we may wish. Democratic or any other political choices have to cope with the fast social transformations produced by technological change, that has a dynamic of its own; and are embedded in old institutions – many of which clearly delimit how far democratic or political choices can go. Our societies are the reflection of their own history, strongly embedded in values and pragmatic institutions that necessarily constrain today's social democratic or political choices.

NEW MICROECONOMICS (NMI)

The microeconomic equilibrium is form in diverse societies in distinct manners. In particular, in Western societies individual choices are through democracy and the economic markets a key element of the social equilibrium attained and its dynamics. But even in Western societies there are other important elements that also have critical influence, such as internal and external shocks, and institutions. The interplay between the individual and the Institutional Arrangement is complex. None of the two elements is decisive by itself, and one influences the other as well as the outcome. The following are the critical conclusions of NMi:

1) The micro foundations of macroeconomics developed by the School of Rational Expectations are useful for economies near full employment equilibrium in which there is enough information to built a rational expectations model that will describe properly the possible future.

2) In Economies far away from equilibrium in which the economic agents have lost confidence in the financial authorities' capacity to manage the situation, the rational expectation models do not work (more on this initial two points will be discussed in Section II).

3) Since both Welfare Economics and General Equilibrium Theory failed in showing a unique, stable, optimum equilibrium

that maximizes economic welfare; it follows that there are others elements that intervene on such determination.

4) Game Theory, Information Economics, Uncertainty Economics, and Institutional economics have shown that the social and economic settings are decisive in the determination of the social-economic equilibrium and its dynamics. And although each one of these schools use its proper technical language; the social-economic settings in each case could be reinterpreted as the Institutional Arrangement.

5) The way in which the social-economic equilibrium and its dynamics is obtained varies across societies and historical times. In primary societies, the primary cosmology defines the Integrative System which in turn specifies the Economic and Exchange System. There is no room for individual creativity. If there is a need for social change due to an internal or an external shock, decisions are taking by the group as a whole, or in some cases the council of elders. In traditional societies there are all sot of variants, but still the participation of individual creativity is highly restricted. Even in Rome where the senate played a key role, the senate was chosen by the elite and not democratically. Free voting, and free economic individual participation is a unique feature of contemporary Western like societies.

6) In contemporary societies individual preferences and creativity are critical elements in the determination of the social-economic equilibrium and its dynamics – but it is not the only one. The Institutional Arrangement continues to play a fundamental role.

7) Because the microeconomic equilibrium and its dynamics can not be defined out of individual preferences, endowments and technology; it follows that there is room both for macroeconomics as a tool to maintain or bring back the economy to its full employment equilibrium, and for a economic growth policies looking for generating and maintaining a proper level of economic.

8) Institutions have a historical root and they are resilient and difficult to change. Therefore, the macroeconomic policies adopted both in the 2008 GFC and in the 2020 GP are consequence of previous institutions, not necessarily adequate for the new conditions. This will be a topic for Sections II and IV.

9) The same happens with economic growth. Many countries copy the institutions of the West and failed, because they were not longer the proper ones - precisely because the West had been already developed. For example, higher savings in the history of the West were always associated with frontier technology; because the West was the frontier. For other countries savings may be associated with obsolete technology; because the frontier is in the already developed West. In fact, one of the key features of the Asian Model is that it used frontier technology, because it developed through exporting to the West's middle class. The success of Asia is that it designs a new Institutional Arrangement (that use old institutions and created new ones) to confront the new world brought about by the ICT.

10) Both a proper stable macroeconomic equilibrium and adequate economic growth cannot be obtained only as a consequence of an efficient microeconomic interaction between the economic agents, the role of institutions is fundamental.

11) However, the key contribution of Adam Smith remains valid, a key feature of an adequate Institutional Arrangement is to let free markets operate. The key difference between capitalism and previous modes of production is the fast technological development consequence of the enlargement of the middle class market.

12) To free individual creativity is fundamental to obtain fast and adequate social change, but it must be guided by proper institutions.

13) Many of contributions of Neoclassical Economics remain valid, in price theory, in public and private finances and so on. A rational economic man as described by contemporary Neoclassical Economics is not a good description of the evolutionary features of humans, but for certain purposes the models based in such abstraction had and will result very useful.

14) Sen's economics failed in showing that a responsible moral human defines the microeconomic equilibrium and its dynamics. His description of human beings is incompatible with contemporary neurobiology; the human' mind does not have access to essential moral truths; and nothing indicates that even if he had, those moral truths would necessarily guide human behavior. However, Sen's vision of development as something that goes beyond economic growth stands; and his defense of minimum capabilities, and of the need to improve the standard of living of the poor, is an important contribution that already guides and should continue guiding social policy.

15) Behavioral Economics failed in describing the human nature as altruistic and mainly defined by emotions. There are many economic problems that cannot be approach through Behavioral Economics. But it was successful in showing the limitations of the Rational Economic Man of contemporary Neoclassical economics. And some of its contributions to improve particular economic policies stand.

16) Game Theory is a very useful frame to analyze many economic problems, and it is highly beneficial for institutional design. Information Economics is also useful for the same reasons. Institutional economics has already been discussed plentiful. And Uncertainty Economics will be further discussed in section II.

CONCLUSION

The main conclusion of NMi is that the microeconomic equilibrium and its dynamics is directly influenced by the Institutional Arrangement. Therefore, the theoretical possibility of a major macroeconomic crisis like the 2008 GFC and the 2020 GP exits. There is not proper microeconomic dynamics without an adequate macroeconomic policy. However, a proper macroeconomic policy does not substitute an adequate microeconomic design, that allow for individual preferences and creativity to be properly manifested. Markets do not attain an optimal dynamic equilibrium by

themselves; but, they cannot be substituted by institutions. Institutions alone cannot obtain either an adequate dynamic micro equilibrium. New Macroeconomics will be the topic of Section II.

Since there might be stable equilibriums characterized by underdevelopment, the problem of economic growth cannot be either solved just by establishing the proper microeconomic conditions. An adequate growth institutional program is required. Although again, Institutions cannot, and should not, attempt to substitute the market; because they will fail. New growth Theory will be the subject of Section III.

SECTION II. NEW MACROECONOMICS (NMA)

For the classical and neoclassical economists, cycles were seen as a natural feature of the economies. Therefore, they did not have a macroeconomic theory. Smith was concern with economic growth; Ricardo and Marx with the source of economic value; the neoclassical school with the allocation of resources. None of these schools ever thought that the government could do anything to dramatically modify the economic cycle or to prevent major economic crisis to occur. For the classical and neoclassical schools, the role of fiscal policy was to provide resources for the government to be able to execute its responsibilities related to: guarantee the rule of law, education, infrastructure, national defense, social aid. and regulation of the political life. But it was never conceived as a means to seriously influence the economic cycle, or to get the economy out more rapidly of a major crisis. Monetary policy was understood as providing the neutral conditions for the economy to work properly, thus the purpose was to maintain the central bank interest rate at the level of the natural rate of the economy – not to interfere with the productive side of the economy, which by itself defined the natural interest rate.

It is not until Keynes that macroeconomic started – basically with the proposal that the governments had also the task to get the economies out of mayor economic crisis. He argued that monetary policy was not suited to the task, and that fiscal policy had to be used. Since the second World war, the 20th century did not suffer any major global economic crisis, and macroeconomics – the IS-LM model, was used to manage the economic cycles – reducing their length and deepness. In the beginning with more emphasis in the fiscal policy, but soon was recognized that monetary policy was useful as well to manage the economic cycle. And in fact that the fiscal policy has the disadvantage that has to pass by congress and therefore is too slow to be efficient as a countercyclical policy – and more emphasis was given to the more flexible monetary policy.

The IS-LM model was subject to strong controversies between Keynesians and Monetarists that finally were won by the second group. At the

end of the seventies the world economy suffered stagflation that could not be explained through the IS-LM model. The school of Rational Expectations (SRE), outgrown from monetarism, was able to explain stagflation by conceiving full informed economic agents which use the information in an optimal way. This school used recursive dynamic models which maintain the economy near full employment. Business cycles were conceived as short term lived, or as having real causes which could not be influenced by macroeconomic policy. Therefore, there is a return to the classical-neoclassical view that the role of the government is to remain neutral versus the economic cycles. The 1930 GD was argued as a curiosum, consequence of mistaken government economic policies, which never suppose to happen again due to the contemporary knowledge in economics. Lucas argued that Keynes was dead. The SRE was however not fully convincing for all the economists, and some other rational expectations models were built that included short term Keynesian rigidities. These other models did emphasize the need for the government to manage the business cycle. But, their share the view that business cycles are short lived, and that the 1930 GD was a curiosum never to happen again. Then came 2008 GFC, and could not be explained with the theoretical economics that had been developed since the 1950's. It was in particular unexpected and unexplainable with Rational Expectations models. Therefore, Keynes was resuscitated. But so many years had passed by, that most contemporary economists did not not know much about Keynes' theories; in fact, they had never read any of his books. The consequence was that Keynes was often misrepresented. Finally, the 2020 GP occur; governments incur in huge fiscal deficits, and central banks printed huge amounts of money; and here we are – without a proper theoretical explanation of why those policies were taken.

It is true that Keynes advocated large fiscal deficits to get out of major economic crisis; but Keynes himself was concerned with the consequences of big government spending. Moreover, Keynes never realized the possibility of an efficient monetary policy such as QE (Quantitative Easing). We need a new theoretical perspective, and we must design new institutions to confront major economic crises; in particular, the world has to be very careful not to create again in the future inflationary expectations. This is one of the major tasks of the NMa (New Macroeconomics).

At the global level Keynes was always concerned with institutional design. Since he wrote *The Economic Consequences of the Peace*, Keynes saw in an

inadequate global economic design a major cause of world economic crises. His concerns culminated in Bretton Woods design, in which his ideas were influential. However, Bretton Woods ended in 1971. And todays Free Floating Exchange Regime and the ICT revolution have created new global financial problems, that require new global institutions that we have not built. The 2008 GFC was mainly consequence of inadequate institutions, both nationally and globally. Under the influence of the School of Rational Expectations markets were seen as stable by themselves, and the US financial authorities argued during three years that the market was going to solve the problem of the crash in the adjustable rate subprime mortgages. It did not. And European financial authorities insisted that the subprime crash problem was a US problem, that did not concern them. They were also wrong. We just did not have the proper institutions, both nationally and globally, to understand what was really happening. The 2020 GP has been consequence of an inadequate global health system. We knew it could happen. In fact, years before Bill Gates had warn the world of the possibility of a global pandemic. President Obama created a special US health office dedicated to observe pandemics worldwide, which was dismantled by president Trump. However, even Obama's US health office was insufficient; what was needed was a strong WHO (World Health Organization) – which we did not have. And, Trump's decision to dismantle the US' office was just unbelievably incorrect. Nor only we had managed the pandemic wrongly, in addition the macroeconomic responses had been based on badly understood Keynesian policies, and using old inadequate institutions. We need to think new ideas, create new theories, and built new institutions, this is the goal of NMa.

CHAPTER FOUR. NEOCLASSICAL MACROECONOMICS

Fiscal policy was conceived as a tool to provide resources for the government to be able to execute its responsibilities related to: guarantee the rule of law, education, building infrastructure, national defense, social aid, regulation of the political life and so on. But it was never thought as a macroeconomic tool to influence the economic cycle, or to get the economy out more rapidly of major crisis. Therefore, Neoclassical Macroeconomics was centered in monetary policy.

Neoclassical monetary theory was simple, more gold implied higher nominal GDP, and less gold implied lower nominal GDP. Nominal GDP always followed real GDP. Therefore, although there were economic cycles, these were always around the equilibrium defined by the real economy. The Neoclassical Monetary Theory (NMT) is closely related to the Theory of Capital. Real savings and real investment opportunities equal each other and define the natural real interest rate, that maintains the economy at its long-term growth potential. Note that there can be more than one long term growth potential, but only one that relates to full employment equilibrium. But that was not a concern for neoclassical economists, for whom real savings and real investment opportunities are exogenously given.

A good summary of NMT is given by Wicksell[54]. For him the "natural rate" is the one that equals real savings and real investments in an inter-temporal sense, which is compatible with Bohm Bawerk's Capital Theory. It is an inter-temporal equilibrium, between the inter-temporal preferences of the savers and the inter-temporal opportunities of investment as foreseen by investors. Thus, the role of the monetary policy is to maintain the "nominal rate" equal to the "natural rate".

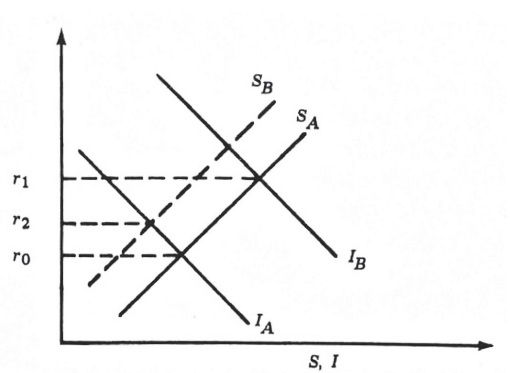
The disequilibrium may have both monetary and real causes. Monetary causes relate to banks intermediating between the supply of savings

[54] Mainly in Interest & Prices.

and the demand for investment. If banking credit is higher than real savings –which means the bank rate is lower than the natural rate, investment is higher than savings and there will be excess aggregate demand and inflation. If it is less, investment is less than savings and there will be insufficient aggregate demand and deflation. The role of monetary policy is to remain neutral, so that real savings equal real investment and monetary disturbances are avoided. The real causes of disequilibrium relate to parametric changes in the inter-temporal preferences of the saver, or in the investors' planned investment (which among other causes, may be due to an external shock). These real and monetary parametric changes may result in the previous banking rate to be higher or lower that the new natural rate.

Wicksell's adjustment process can be easily appreciated in figure 4.1. To start with let us assume that is the natural rate of interest, therefore the central bank rate should also be . Now let suppose a real shock (a new technology, a new mine discovery, and so on) that implies that investors wish to invest more. Investment moves moves from therefore the new natural rate is , if the central bank maintains the interest rate at there will be an excess credit demand (aggregate demand) and there will be inflation. Now, as a second example, let us assume that we start with a natural rate equal , and that there is another real shock, this time in savers preferences, so that they decide to save more. Saving move from and the new real natural rate will be equal to if the Central bank maintain the interest rate at there will not be enough credit demand (aggregate demand) and there will be deflation.

FIGURE 4.1. INTEREST RATE AND THE SAVINGS-INVESTMENT EQUILIBRIUM



There is already in Wicksell a justification for what latter would become the preferred monetary policy of Monetarists and proponents of Rational Expectations, a stable rate of growth of money supply. This is because in Wicksell's view, the role of monetary policy is to remain neutral. In other words, the Central bank should not produce monetary disequilibria.

It is remarkable that the rule of a stable rate of growth of the money supply has never convinced central banks in the real world. And the explanation can already be found in Wicksell's vision of the frequent parametrical changes, both in real savings and in real investment. In this sense, there is in Wicksell a recognition that monetary policy has to be active, because it should react to parametrical changes in either real savings or real investment, to avoid the banking rate to remain above or below the new natural rate.

Therefore, Wicksell, summarizes what would constitute accepted monetary theory for many years to come: (1) Central banks most avoid a monetary policy that introduces unnecessary fluctuations in nominal GDP. And, (2) given real shocks, whether internal or external, to the economy; a conservative, but active central bank policy is required.

The most important lesson to learn form NMT is that money is not and end of itself, the key problem of any economy at any time is the real economy.

Keynes' *Treatise of Money* was written in the neoclassical tradition. Following Wicksell, Keynes argued in this work that the role of the central bank is to maintain the bank rate equal to the natural rate, which means real savings equal real investment. Thus, Keynes in the Treatise is still compatible with Bohn Bawerk's Capital Theory. Keynes' Treatise of Money is still in the neoclassical tradition, but it differs from Fisher's Quantitative Theory of Money. The latter focuses on monetary disequilibria, while Keynes focuses on the disequilibrium produced due to parametrical changes in savings and investment.

In the *Treatise of Money*, economic equilibrium is defined by real savings and real investment. Disequilibria mainly expresses itself in the level of prices, although Keynes argues that disequilibrium can have short term consequences in the level of employment. *The Treatise*, however, is not a significant departure from the NMT. In fact, Keynes' second

fundamental equation in the Treatise may be written in such a way that it is compatible with Fisher's. The difference between the two being that: Fisher's covers all the transactions and Keynes' does not. However, Keynes places special emphasizes in the instability of the real economy, particularly due to parametrical shifts in investment – a concept he will use latter on in the *General Theory*.

To explain economies near full employment equilibrium – as they were in real life in the second half of the twentieth century, and to make the explanation compatible with the neoclassical capital theory, Hicks substituted Keynes' MEC, for his Investment Theory (IT); and Tobin changed Keynes' Liquidity Preference Theory (LPT), for his Liquidity Theory (LT). IT and LT are a function of the interest rate, and therefore define an endogenous model. This defines a clear equilibrium position which, through the interest rate, connects with the neoclassical capital theory. Once the IS-LM model was defined, there was a macroeconomic controversy between Keynesians and Monetarists, which as we said, was won by the Monetarists. Understandably so, because in the real world prices are mostly flexible, information generally flows well, and markets are quite efficient. Therefore, any assumption of money illusion or of price rigidity (as the ones used by the Keynesians) was not validated by the data.

The Monetarist success came with the conviction that more solid microeconomic foundations were needed. And the more these were developed, the clearer it became that markets display homoeostasis on their own. Thus, normally they maintain themselves close to full employment equilibrium.

The final blow to the Keynesians was the success of Rational Expectations to explain Stagflation. However, the Monetarist's and Rational Expectations' proposal of a fix rule of money growth was never accepted. Because, although the economies in the real world were near equilibrium since the second world war until 2008; economic cycles were evident. The initial Rational Expectations School's explanation of such cycles, based in the lack of transmission of information between the Phelp's islands, was very unconvincing – for the same reasons that monetary illusion was previously rejected. Therefore, it was soon replaced by the theory of Real Business Cycles (RBC) of Kydland and Prescott, which also used rational expectations models, but explains the cycles as a consequence of a myriad of unpredictable internal and external real events that

hit the economy. They argue that the most important of such events was technological changes. The problem with RBC models was that they left unexplained why monetary and fiscal policy had been successful from the 50's to the 80's in managing the business cycle. The cycles then were explained by Taylor, Fisher, and Dornbusch, introducing in the Rational Expectation model short term Keynesian rigidities, which justify the need of a moderate active monetary policy. The conclusion of all of this is the contemporary NMT, characterized by a view that prescribes very moderate and conservative monetary policy.

The development of the endogenous microeconomic foundations strengthened the view of an economy always near equilibrium, in which risk is viewed in terms of historical probabilities. Tobin's LT became the cornerstone of future key developments in finances and in portfolio theory. An economy in equilibrium, and a concept of probabilistic risk, are the theoretical basis for: (1) Black and Scholes options theory which had a huge impact on the growth of the derivatives markets. (2) Modern portfolio theory developed by Tobin, Markowitz, Sharpe, and others, which is the theoretical basis of today's professional asset management practice, and has been decisive in convincing large pension funds of the benefits of index investing. (3) The Modigliani-Miller theorem which is the foundation of contemporary financial thinking about the capital structure of a company. The actual functioning of the world global finances just would not have happened without the vision of an endogenous economy, in which risk is perceived in terms of probabilities.

In summary, NMT explains nor only the behavior of central banks before QE, but also the functioning of the financial markets in the global economy, and how individual consumers and investors make their economic choices. Its success is undeniable.

There are however key problems that remain unresolved with the NMT. The main one is why the economies move drastically away from equilibrium like in the 1930 GD, the 2008 GFC, and the 2020 GP. And why in all these cases governments used a highly expansionary fiscal policy supported by a rapid growth in the balance of the central banks. And why QE was introduced in 2008 and again in 2020. What theory justify these actions? Were they correct or wrong? What else could of have been done?

CHAPTER FIVE. KEYNES MACROECONOMICS

Keynes had three key contributions, and two unwarranted propositions. The first critical contribution was, as Patinkin has convincingly argued, his theory of the consumption function. Keynes' consumption function for the first time allowed the conceptualization of theoretically diverse economic equilibria, of which only one corresponds to full employment. As far as this contribution goes, the IS-LM model does recover it very well. His other two contributions were his Liquidity Preference Theory (LPT), and his concept of the Marginal Efficiency of Capital (MEC). The first was substituted by Tobin's Liquidity Theory (LT), based in a probability view of risk, while the second was substituted by Hick's investment theory (IT). To understand why LPT and MEC were left behind one needs to understand the two unwarranted proposals made by Keynes.

The first one is that the dynamics of the real economy were mainly defined by the volatility in the investors expectations, derived from uncertainty about the future. In other words, he implied that his concept of the MEC was relevant at any point in time in any given economy. However, if he had been right, we should have seen many more major crises in history. The uncertainty of the future is always there, yet major crises only occur infrequently. The MEC is relevant in a major crisis; this is why we listed it as significant contribution. It however, does not explain the normal functioning of the economy which is better accomplished by IT. Economies are usually close to full employment equilibrium; because markets are efficient and flexible prices make the economy quite homeostatic.

Markets usually operate within a given institutional arrangement, which normally works well. But, when there is a serious institutional mistake, the economy may move from near full employment equilibrium to a far away suboptimal one, in the form of a major crisis. When this happens, the confidence of economic agents in financial institutions worsens drastically, and MEC becomes relevant.

A similar argument applies to LPT. In normal times the balance sheets of most economic agents are sound and therefore, central bank policy rate movements define movements in the banks' lending rate – in line with Tobin's LP, which explains rather well the economic mechanisms at play. But once a major crisis occurs, the balance sheets of most economic agents seriously deteriorates, and Keynes' LPT becomes relevant. Because both LPT and MEC are only relevant in major crises and not during the regular operation of the economy, these concepts were removed from the IS-LM analysis, and substituted by LT and IT, both of which explain better the functioning of the economy in normal business cycles.

The second unwarranted proposal in Keynes is found in the chapter in the General Theory titled *Sundry Observation on the Nature of Capital*, where he argues that the interest rate is a pure nominal phenomenon. This chapter reflects Sraffa's influence – the latter had mounted a critique of Neoclassical Capital Theory and which he would develop in his book *Production of Commodities by Means of Commodities,* many years later.

As I have argued elsewhere, Sraffa's was wrong[55], but under his influence, Keynes mistakenly abandons the Neoclassical Capital Theory, and makes the economy hang on pure nominal categories. These approach will have defined Mrs. Robinson volatile *animal spirits*. With this proposition Keynes, dissociates his theory from the real economy, and from the problems of economic growth. A view of nominal quantities dominated by the uncertainty of the future was clearly a poor substitute to the Neoclassical Capital Theory, where the real interest rate was a function of savings and investment. LT and IT had the virtue that they were compatible with a vision of a real interest rate, as defined by the Neoclassical Capital Theory. Years later, Solow's Theory of Economic Growth would be compatible with the IS-LM frame, and therefore with LT and IT.

It should be quite clear why the main economics tradition refuses to incorporate LPT and MEC: they were not useful to explain the regular or normal operation of an economy. *Despite this however, once a major crisis happens, LPT and MEC become relevant concepts. The first one, to explain the inefficacy of the traditional monetary policy after a major crisis occurs. And the second one, to explain the deterioration in the economic agent's expectations as to the capacity of the institutions to manage the crisis.*

[55] See Obregon C; 2018. *Globalization: Misguided Views.* MPRA_paper_85813.pdf

It is important to understand that Keynes did not have a monetary theory of his own. However, both LPT and MEC are key elements in his thought that allow us today to explain why QE (Quantitative Easing) did work in major crises. This understanding will be helpful in the construction of a new monetary theory. The *Treatise of Money*, as we said before, is compatible with the NMT, and Keynes did not develop a new Monetary Theory of his own in his *General Theory*.

What changed between the *Treatise*, published in 1930, and the *General Theory*, published in 1936, was the Great Depression. Keynes made two major contributions in the General Theory. First, the consumption function which allowed him to understand full employment equilibrium, as distinct from other equilibriums. Second, an explanation of why monetary policy may be some times ineffective in maintaining the economy at full employment equilibrium. This second contribution is lost in the IS-LM model. The consequences are serious. As we already mentioned, Hicks left out Keynes' MEC, and Tobin dismantled Keynes' LPT; and with these two changes the IS-LM model became incapable to explain the inefficacy of the monetary policy. And in fact, unable to understand an economy far away from the full employment equilibrium. The Keynesians versus Monetarists debate of the post war era ended up with the triumph of the monetarists, latter reinforced by the triumph of Rational Expectations explaining Stagflation.

Keynesians were doomed from the start because, without Keynes' MEC and LPT, they had to mount their defense on rigidity assumptions and monetary illusions that were both theoretically and empirically indefensible (prices are almost always quite flexible, and markets disseminate information efficiently): 1)Wage rigidity, to explain unemployment; 2) Monetary illusion, to explain movements in the full employment level; 3) An inelastic investment function and the Liquidity Trap, to explain the inefficacy of monetary policy.

The results of the debate were: First, that the Keynesian policies directed towards managing aggregate demand were shown less useful than what Keynesians initially suggested. In turn, this was due to (a) external shocks, uncertain expectations, and unknown response lags, it is difficult to forecast and understand the results of a specific aggregate demand policy; (b) the fact that if the economy is near full employment, aggregate

demand policies will only produce inflation; c) inflationary expectations which seriously restrict the possibilities of aggregate demand policies. These results did not fully eliminate active aggregate demand policies, but seriously restricted their scope. Second, the instability of the money demand function makes it impossible to fully abandon monetary policy and to substitute it by fixed rules. And, third, the microeconomic foundations of the IS-LM model were very poor and needed to be addressed, which was done by the Rational Expectations School. Under the assumption that all the economic agents have all the available information, and that they process it accordingly to the best available economic model, Rational Expectations was able to explain the Stagflation phenomenon of the late seventies. Despite its enormous success, however, this school was unable to convince the profession that a policy of aggregate demand was not needed at all. Short term, Keynesian-like, rigidities were introduced in models of Rational Expectations, that became the accepted justification of minor interventions on aggregate demand. The vision of the economic world was mostly back to the NMT. The central bank was argued has to avoid creating unnecessary monetary disturbances, and active monetary policy is needed to attend the minor disequilibria produced in the real economy by small and short-lived rigidities.

This was the state of mind in the economics profession when the GFC arrived in 2008. As I have argued elsewhere, the GFC was not inevitable – it was rather caused by untimely and misguided intervention of economic institutions such as the Fed and US Treasury[56]. Intervention, when it finally came, was based on the incorrect theoretical framework, i.e., NMT. This framework works very well when economies are in the vicinity of full employment equilibrium. But it is ill-suited to explain economies far away from it, as was the was the case during the 1930 GD, the 2008 GFC and is the case now in the 2020 GP.

For these extreme cases, something else is needed to understand the role of monetary policy. This was understood by Keynes who provided some highly useful insights in this area, though was unable to provide a full answer of what is needed to be done. Keynes argued that monetary policy was inefficient in these cases because of his LPT, and he was right. He, however, did not develop an alternative proposal for a new mon-

[56] See Obregon 2011 and 2018c. 2011, La crisis financiera mundial: Perspectivas para México y América Latina. Siglo XXI, México. 2018b, Globalization: Misguided Views. op.cit

etary theory, nor concrete policy ideas. *We will argue in this book that an extended and modified QE could provide such new monetary theory*.

Keynes had doubts as to the possible efficacy of the fiscal policy in large crises, but since he was left without monetary policy, he did not see other option but to use fiscal policy fully. In the response to the 2020 GP, governments are still relying mainly on fiscal policy. We argue that this is a mistake. Once an extended and modified QE is at our disposal, it should be a key element that should collaborate with, and reduce the size and scope of fiscal policy. In what follows, we will review Keynes's theory from the point of view of what is relevant for economies far away from equilibrium. Both, to explain why QE works, and to provide the building blocks of a new monetary theory appropriate for large crises.

KEYNES' LPT

The best way to understand Keynes' relevance for today's 2020 GP crisis and address what is missing in the IS-LM, is to start with Minsky's interpretation, which provides a good version of Keynes' LPT[57]. Minsky modifies the money demand of the IS-LM model to make explicit the precautionary demand of money. In the IS-LM model, the demand for money is given by (1), and in Minsky by (2):

(1) *(1) Ld=Ld (y,p)*

(2) *Ld=Ld (y,Pk,F,NM)*

where, *y* is national income, is the deposit interest rate, is the price of capital goods – and Minsky introduces the uncertainty associated with its possession, is the precautionary motive for possession of Money, and is quasi-money, which can also be used to satisfy the precautionary demand for money. For Minsky, the key is that the price of real capital assets in relation to financial debts depends on , the state of uncertainty. In the recession, when the money supply goes up and p goes down, the debt capitalization rises and should also rise; but if deteriorates, then does not go up enough. The balance sheets of the companies deteriorate. Given;

[57] Minsky, H.P. (1975). *John Maynard Keynes*. Columbia University Press. New York.

the higher perceived risk banks raise their margin and the bank lending rate rises, or banks ration the credit, or a combination of both. Note that in this recessive process there is an increase in real balances as a consequence of the fall in prices and monetary wages, and that this stimulates consumption (the neoclassical effect). But Minsky's point is that, the effect of the increase in corporate the debt (and we would add consumer debt), consequence also of the fall in prices and wages, can more than offset the effect of the increase of the real balances.

In Minsky's and Keynes's model the deterioration in U could be read as volatile expectations. In our view as we will show, it would be due to large and consequential mistakes made by the institutions and policy makers which drastically reduce trust in their capabilities to manage the situation.

To summarize the above model, the distinctive feature of a credit economy is that it depends on the state of confidence , i.e., on uncertainty as incorporated in the view of economic agents about the future. If the state of confidence deteriorates, assets whose value depends on the resulting (more uncertain) view of the future (in the case of Minsky, capital goods) lose their value, the balance sheet of economic agents deteriorates, and banks restrict credit. As a result, the differential with the central bank's policy rate rises, and negative feedback loops are unleashed.

Minsky's model does not include consumers, nor parallel banking[58]. But it is relatively easy to see how it would operate in this case. Parallel banking is more willing and able (because it is less regulated) to take more risk; so that it should ration less the credit, and it will take more the route of significantly higher lending rates. But the macroeconomic consequence is similar as the one in the case or regular banks.

Long-term assets owned by the consumer, such as their home and their investments in the stock market, also incorporate a view of the future. During recessions consumer net worth goes down. Normally when the policy rate goes down the stock market should rise. However, given diminished confidence in the future (in our view, in the capabilities of institutions to manage the situation), deteriorates, and as a consequence the stock market nor only does not rise, but may go down significantly. A similar phenomenon occurs with real estate. Home prices decline, but

[58] Parallel banking refers in here to institutions that intermediate credit but are not regulated as banks.

consumer debt does not, implying a deterioration in consumers' balance sheet. In turn, this lead to a reduction in the supply of consumer loans, unleashing a negative loop. Bank credit and rises, and a negative feedback loop is unleashed. That is what happened in 2008. The slow and incorrect actions of policy makers (such as not addressing sub-prime adjustable-rate mortgage holders when rates started to rise, and allowing Lehman Bros to fall) were a blow to confidence in policy makers that explains, at least partially, why the US recovery has been so slow. In a credit economy[59], monetary policy is not as effective as it is in a traditional macroeconomic model. That is why QE has to be used at the end in large amounts to combat the already very large financial crisis.

The models developed by Minsky, Stiglitz, and Greenwald[60], emphasize the decline in the supply of credit as a result of the deterioration in the balance sheets of credit claimants. The model of Stiglitz and Greenwald has the advantage that it is a more elegant and precise mathematical formulation, but it operates in a similar way to Minsky's[61]. These authors point out that the objective of monetary policy is not p but r. If r rises above the desired equilibrium - if in a recession r is contractionary rather than stimulating - the Central bank must lower p even more and reduce reserve requirements. This task is even more difficult if parallel banking is widespread, as the central bank has little control over it.

Minsky's model makes an explicit description of the demand for money that is not in Keynes's work, but is compatible with the view of this author. In Keynes, as in Minsky, Stiglitz and Greenwald, financial relations are expressed in nominal terms. Keynes criticizes Fischer[62] because he distinguishes between the nominal interest rate and the real rate, but does not distinguish whether future changes in the value of money were anticipated or not[63]. Thus for Keynes, Fischer's theory is written on the

[59] A credit economy is one which largely operates through credit intermediation, a feature not specifically taken into account in the traditional economic model.

[60] Greenwald, B., Stiglitz, J.E., (2003): *Towards a New Paradigm in Monetary Economics*. Cambridge University Press. Cambridge.

[61] For a summary of this model see Obregon, C; 2008. *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.

[62] A point Patinkin did not understand

[63] Keynes, quoted in Obregon, 1989, p. 173. *Controversias macroeconómicas contemporáneas* (un tratado sobre la macroeconomía de Keynes en la controversia contemporánea). Trillas, México.

basis of a real interest rate that would have to prevail "as a result of a change in expectations about the future value of money, so that this change has no effect on the current product"[64]. The distinction of Minsky, and Stiglitz and Greenwald, between p and r is very compatible with Keynes's original thinking in his LPT.

KEYNES' MEC

Keynes goes further. Aside from LPT, he introduces the MEC, , the discount rate used by investors for future cash flow. If is very high, it means that investors are very concerned about the future (again, for us this includes a degree of trust in the capability of institutions to manage any situation). Thus, in Keynes there are two mechanisms that slow economic recovery and hinder the effectiveness of monetary policy. The first is the LPT, i.e., the contraction of bank credit, and the rise in the lending rate of banks. And the second is the rise in the MEC. According to Keynes, uncertainty is reflected both in the LPT and in the MEC. The first maintains too high and/or reduces credit amounts, and the second increases *rd*.

In Keynes, the demand for credit and the supply of credit can determine and the amount of credit, but not . The lack of credit may be a problem for investment, but the presence of credit does not necessarily solve the investment problem, since is defined by the uncertainty associated with expected future cash flows.

With this background we can see with theoretical clarity why it was so difficult for central banks to stimulate the economy after the 2008 crisis: (1) Central banks have control over , but less so over (and with the growth of the parallel banks have been losing control over monetary aggregates); (2) and even if central banks manage to influence , they have no control over the demand for credit and over . What Bernanke brilliantly understood with QE was the need to sustain asset prices by buying them directly, which was equivalent to lower , which significantly quickens the recovery. The recovery, however, was still slow because remained too high for a significant period.

[64] Keynes, quoted in Obregon, 1989, p. 173. Idem..

In Keynes there is also no theory that describes what happens to the consumer, but it is easy to extend the model. The consumer has his own discount rate of the future, let's call it . Even if the central bank manages to influence , it is possible that the economy recovers slowly because and remain too high. Therefore, if we compare what happened earlier in Japan, with what happened in the US after 2008; the difference is that due to Bernanke's heterodox policies the US was able to influence , which Japan never manage to do; this is why recovery happened faster in the US than in Japan. But still Bernanke's large purchases of assets did not influence nor , that is why US recovery, despite being faster than Japan's, was slow.

The 2008 GFC began with a bank's credit crisis, consequence of the authorities' mismanagement of the adjustable rate subprime mortgage loans crash. In Minsky's model the confidence in the future deteriorated. Then at first the supply of credit is reduced (the supply curve shifts to the left). Later, as credit quality of bank and mortgage lenders worsened, the supply of credit became inelastic (insensitive to changes in). Finally, the demand for credit itself is reduced as a consequence of the increase in and rise (the demand curve also shifts to the left and also becomes inelastic). At first with the reduction in the supply of credit r rises, then with the fall in the demand for credit r tends to decline. The value of r is indeterminate. However, what we do know is that the total amount of credit is reduced, and that the new LM is inelastic to both changes in p and r.

With the rise of *rd* and *rdc* both investment and consumption fall, and become insensitive to changes in both p and r (the IS also shifts to the left and become inelastic). With the shift of both LM and IS to the left, aggregate demand is reduced, and as a consequence of both curves aggregate demand also become inelastic, hindering the Central bank's ability to help the economy recover.

The consequence of the above is that total credit falls, credit to GDP is low and GDP growth is low, along the lines of what happened in the 2008 GFC. In the US, total credit fell 42% in 2008, and was negative in 2009. Credit granted by financial institutions in 2018 fell 23.2%, and was still negative in 2009. The crisis caused a sharp reduction in credit /GDP. GDP declined -0.3% in 2008, and 3.5% in 2009.

At first sight, fiscal policy seems to have the advantage of increasing aggregate demand directly, and does not have the problem related to the uncertainty of *U, rd* and *rdc*. But unless the increase in aggregate demand

caused by fiscal policy is seen as sustainable, fiscal policy will have similar problems to traditional monetary policy. If fiscal policy is seen as unsustainable, it will not modify the uncertainty of the future. i.e., expectations of institutional capacity to manage the crisis –, and recovery will be spurious.

For fiscal policy to be efficient, it must be seen as sustainable. And its sustainability is related to the economic recovery, which depends in the private sector trust in the institutional capability to engineer and support a recovery. Keynes himself warned us, that while monetary policy in an environment such as the 1930 GD, or the 2008 GFC, had difficulties in recovering the economy; he was not sure that fiscal policy could solve the problem either. Fiscal policy has problems of its own: 1) it is influenced by political considerations[65]; (2) it is directed indistinctly to the social and the productive economy, without considering that only the second can produce economic recovery; (3) even the resources directed to the productive economy are never well focused; because the government lacks the needed understanding of the productive economy, to be able to expediently discern what corporations are viable and which are not[66]. (4) government demand lacks the main virtue of the capitalist system, the transmission of consumer preferences in an efficient way through the price system. Because of all these problems fiscal policy did not produce a fast recovery after 2008.

The basic problem of the economy in 2008 was the lack of confidence in the proper functioning of the economic system because of the deterioration in the balance sheets of systemic agents in the financial system. Thus, the main goal of policy should of have been to regain confidence, i.e., raise in Minsky's model. The first job of the government or the Central bank in 2008 should have been cleaning up those balance sheets. It was therefore of paramount importance to withdraw the so-called toxic assets from the system at an early stage. Without reestablishing health in the balance sheets, it was impossible to achieve economic recovery quickly. If they had acted this would of recover. In Minsky's model, *U* would have risen and the credit economy could of have been put to work[67].

[65] Now in the US, for example, it is under the influence of next November presidential election.

[66] Which right now is a particular key point, given the structural changes that the 2020 GP crisis will produce.

[67] That is why events like the mismanagement of Greece's case by the European financial authorities, in the Great Contraction, was so disturbing for the world economy. Because they raised - the mistrust in the ability of the credit economy to function properly.

If early done, the 2008 GFC could have been avoided. Furthermore, it could have been done cheaply. Waiting only worsen the balance sheets and increases the cost of the rescue. QE was efficient to reduce *U*, but was introduced too late and, as a result, large amounts were needed.

Fiscal policy typically does not influence *U*, and without healthy balance sheets recovery is necessarily slow, as it happened in 2008. Neither QE, nor fiscal policy, influenced directly *rd* and *rdc*. They could only have been reduced if the policies as announced appear sustainable and capable to solve the crisis.

The new monetary policy proposed in this manuscript is directed specifically to the productive (viable) parts of the economy, which are the ones that will bring about the recovery; it should be publicly announced from the start of the crisis to positively shock expectations. This helps both reduce the amounts needed and further deterioration of *rd* and *rdc*. A large monetary package directed to the productive economy, and a proper fiscal policy, both announced early in the crisis, could have had prevented the deterioration in the balance sheets of the economic agents and could of have prevented the deterioration of *rd* and *rdc*.

The key to a new monetary theory is to understand how the central bank can extend its responsibilities to better complement the fiscal policy efforts. The proper communication to regain consumer confidence is a task that the government can do efficiently, but to be credible there has to be real policies of recovery, for which the new monetary policy proposed in here might be very useful. The new monetary theory consists in short in arguing that QE can go much further than it had in the past. The goal of the central bank should be the management of the whole relationship between money and the real economy, which includes: inflation, productivity, economic growth, and employment. The productive economy must be the goal of the central bank, because as the classical economists well understood the only purpose of money is to facilitate the better functioning of the real economy. The social economy should not be a concern of the central bank; it should be the Government's. The independence of the central bank should be increased. And all of the above, as we will argue in the next chapter this will require the creation of new institutions.

In Summary: LPT and MEC do not explain economies in regular times, that is why they were excluded from the IS-LM version, and

were substituted by Hick's IT and Tobin's LT. The IS-LM is an equilibrium theory, which after a long controversy between Keynesians and Monetarists, discussed further in the next chapter, ended up in a revival of the NMT. However, in some rare events, the economy moves from a full employment equilibrium to another far away equilibrium. And in these cases, both the LPT and the MEC can be helpful. There are however many questions that have been left unanswered. First, we have argued that MEC is not a candidate to explain why and how the economy moves to these infrequent far away, inefficient equilibrium because MEC is always there, and these events happen rarely. But then, we need to explain why and how these rare events happen. In the next chapter we will address this issue using Institutional Economics and General Equilibrium Theory.

Second, it is unclear in Minsky and in Keynes why and how *U* deteriorates, and in Keynes why *rd* (and our added rdc) also deteriorates. The topic of What is the role of uncertainty about the future? deserves further attention and explanation, because again uncertainty about the future is always there, and big crises happen rarely. The answer to these questions can only be found in the advances in economic theory achieved in the last years and which have not yet been fully incorporated in Monetary Theory. These advances include the fields of Institutional Economics, General Equilibrium Theory, and Behavioral Economics. This discussion is the subject of the next chapter.

There have been several failed attempts to build a monetary theory based on Keynesian concepts. They involved a large number of economists, which can be divided in four groups: 1) Those involved in the IS-LM controversy; 2) the Post-Keynesians; 3) the proponents of Disequilibrium Macroeconomics; and 4) Behavioral Economists.

What of all them have in common is the use of unwarranted rigidities and/or of irrationality in decision making. Rigidities with flexible markets, however, are short lived, and thus cannot be used to frame an alternative monetary theory-much less explain why economies occasionally may move so far away from full employment equilibrium. The assumption of irrational behavior has the problem that if economic agents are *truly irrational*, since *they must be so all the time, then the frequency of major crises should be much higher than history shows.*

THE POST-KEYNESIANS

The so-called post-Keynesian economists, distinguished between a monetary economy and a non-monetary one. The argument being that money is the reason why economies may be far away from equilibrium. They avoid the rigidities and the monetary illusion of the IS-LM Keynesians. There are two distinct groups within the post-Keynesians. In the first group, the distinguished participants are Clower and Leijonhufvud. In the second, Shackle, Davidson, and Minsky. Clower developed the microeconomic foundations of a monetary economy in a general equilibrium framework, and showed that unemployment is a possibility. Leijonhufvud rescued basic ideas from Keynes' Treatise of Money. However, none of the two is successful in explaining why most of the time economies are near full employment, and then occasionally they move far away from it. Clower's failures at the microeconomic level are always there, therefore they cannot explain either the actual dichotomy in the real world. Clower's microeconomic foundations however, were influential in the General Equilibrium literature later on.

Leijonhufvud used *The Treatise* and went back to Wicksell's NMT. In his formulation there are real and monetary shocks, but the economy always maintains itself in a corridor near full employment. He uses NMT to explain normal conditions of the economy (with the advantage that it connects with the Neoclassical Capital Theory), but he uses Keynes' MEC to explain why the economy moves far away from a corridor near full employment equilibrium. There are however, two problems with Leijonhufvud (1) he ignores the LPT of the General Theory, and (2) he does not explain, (also missing in Keynes' work) what is the source of drastic changes in the MEC during large crises.

Shackle, Minsky, and Davidson, in opposition to Leijonhufvud, insisted that the uncertainty as to the future has its main impact in the economy through Keynes LPT, and therefore, it is a theoretical mistake to remove it out. Davidson, criticizes the use of General Equilibrium used by Clower and Leijonhufvud, because in this framework there is no money. The problem with this second group, however, is that they are never able to explain the dichotomy observed in the real world which Leijonhufvud attempted to explain. This is because, as we said before, since

the uncertainty is always there, then it is inexplicable why economies are most of the time near full employment equilibrium.

Whether uncertainty as to the future only enters through MEC like in Leijonjufvud, or through both MEC and LPT as in Shackle, Minsky and Davidson (closer to Keynes's original thought), the question remains unanswered: why all of a sudden, in very rare occasions, these factors impact the expectations of economic agents so negatively.

DISEQUILIBRIUM MACROECONOMICS

The argument of these group of economists is that unemployment is consequence of rigidities, either in salaries or prices. It is a long tradition that we find in mathematical models of several economists such as Malinvaud, Bennasy, Grandmont, Hahn and others. The main problem of these models is that they can never explain where the rigidities come from. Therefore, Grandmont substitutes the price and wage rigidities by rigidities in the interest rate, and Hahn by conjectures. None of these models is able to explain economies far away from full employment equilibrium. Rigidities of any sort are normally short lived in flexible markets; and Hahn's conjectures were never convincing, and they are also short lived. Short term rigidities were finally incorporated in Rational Expectation Models, like the ones initially developed by Dornbusch and Fisher; which became the justification of the Contemporary CNMT. But still, they only explain movements inside the corridor near full employment equilibrium.

BEHAVIORAL MACROECONOMICS

The triumph of Monetarism and Rational Expectations meant that the old Monetarist-Keynesian controversy was substituted by a debate between the Rational Expectations Model of real cycles, and Rational Expectation models with the Keynesian rigidities. Both of which were used to explain short term cyclical fluctuations near full employment equilib-

rium. This explains Lucas' dictum that Keynes was death, and that the 1930 GD would never happen again with the tools at hand that contemporary economics offered. But 2008 happened, and the NMT had no explanation; because it was not supposed to have happened.

When human beings cannot explain something, they often turn to irrational explanations. The official explanation of the crisis by the economics profession, which we have argued is wrong[68], resorted to irrationality of economic agents in the US real estate market. The crash, of this market was argued as the cause of the crisis.

It is interesting to note here the revival of Keynes irrational expectations using Behavioral Economics. However, as we have said, if the reason for a major crisis like 2008 is that the economic agents are irrational, then Why we do not have a major crisis more often? The volatility in animal spirits that only happens in rare occasions has to be explained by causes different from the irrationality of the economic agents, because economic agents are not on and off irrational/rational. Intrinsic irrationality of economic agents cannot explain rare cases of crisis that move the economy so far away from equilibrium.

In Animal Spirits, first published in 2009, Akerlof and Shiller argue that *"declining animal spirits are the principal reason for the recent economic crisis"*[69]. For them, the understanding of the main drivers of the economy *"lie somewhat outside the traditional boundaries of economic research, in the realm of psychology…"*[70]. They identify five psychological factors: confidence, fairness, corruption and bad faith, money illusion, and stories. They defend that the invisible hand story *"although right in a fundamental way, is wrong at the level of detail and approximation that is necessary to explain what we need to know about macroeconomics"*[71]. The 2008 banking and housing crisis *"was caused precisely by our changing confidence, temptations, envy, resentment, and illusions – and especially by changing stories about the nature of the economy"*[72]. But we ask again, What produces all the changes that they allude to?

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[68] Akerlof, G.A., Shiller, R.J. (2009). Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism. Princeton University Press. Princeton, New jersey.

[69] Idem. p. vii

[70] Idem. *p. viii.*

[71] Idem. *p. xi*

[72] Idem. *p. 4*

For them confidence is more than just prediction, it means trust and "*the very meaning of trust is that we go beyond the rational. Indeed, the trusting person often discards or discounts certain information. She may nor even process the information that is available to her rationally, even if she has processed it rationally, she still may not act on it rationally. She act according to what she trust to be true.*"[73]. "*confidence – implying behavior that goes beyond a rational approach to decision making – indicates why it plays a major role in macroeconomics*"[74]. For these authors "*confidence comes and goes. Sometimes it is justified. Sometimes it is not. It is not just a rational prediction. It is the first and most crucial of our animal spirits*"[75]. And again, it is never explained why confidence comes and goes. Especially how is it that it only goes in certain rare occasions such as 1930, 2008, and 2020, and not at other times?

They quote the experiments of fairness of Kahneman and others. And unemployment according to these authors, is the consequence that employees ask for a fair wage, and employers give it to them because employees then respond with more productivity. However, since the fair wage is above the clearance level, there is unemployment. Their proposal will explain permanent unemployment, but not cyclical unemployment; and much less huge levels of unemployment in far-away equilibria.

They discuss the corruption in corporate America before the 2008 crisis, and argue that it was one of the elements that caused the crisis. Recessions they argued, always involve corruption scandals. They describe Milken's junk bonds, Enron, and the irregularities with subprime loans. They argue that the business cycle is connected to fluctuations in the level of corruption, which are related to "*cultural changes over time to facilitate or to hinder aggressively competitive or predatory activities*"[76]. There are several problems with introducing corruption as an element producing economic crisis. First: Japan, Korea and China have grown quite efficiently with corruption. Of these countries, only Japan entered a major crisis. If corruption produces major economic crisis, Korea and China should of have had one already. Second: the major corruption events happened after the banking crisis in 2008 had already started, not before it. As we have

[73] Idem. p. 12

[74] Idem. p. 13

[75] Idem. p. 14

[76] Idem.p. 39

argue elsewhere, the 2008 crisis was not a real estate crisis, but a banking and credit crisis[77]. Therefore, the corruption that could have happened in real estate before was irrelevant. Third, most non-performing mortgages happened after the beginning of the banking crisis, and as a consequence of the rise in interest rates, and were related to ALT A loans and not to subprime loans[78]. Fourth, there was no corruption in rating agencies. Fifth: Banks held 75% of the MBS (Mortgage Back Securities) that were in private hands; clearly they were not corrupt when they were structuring the securities that they finally held. Banks did not, no body willingly, shoot themselves in the foot. Akerlof's and Shiller's argument that corruption causes major economic crisis is just not theoretically, or factually, defensible.

They argue that at low levels of inflation there should be some degree of money illusion.

The argument of money illusion was already discarded in the Keynesian-Monetarist controversy many years ago. Moreover, to explain stagflation in the real world requires Rational Expectations, which imply that there is no money illusion. Even if we were to accept the arguments of behavioral economists, they would only explain minor fluctuations around full employment equilibrium. Moreover, when counter cyclical monetary policy is used and it works, it is not because there is money illusion, but because economic agents anticipate that there is margin in the economy for a real recovery. This means that they trust that the central bank and the Treasury are doing their job correctly. Finally, in deep depressions, Keynes argument that the monetary policy would not work has nothing to do with money illusion; but with the real fact, that the balance sheets of the economic agents have deteriorated, and banks do not find healthy customers to lend to.

For these authors "*confidence is not just the emotional state of an individual. It is a view of other people's confidence, and other people's perceptions of other people's confidence*"[79]. So they argue that there are new era stories that spread like an epidemic. Confidence is as contagious as any disease. It is true that any

[77] See Obregon 2011 and 2018. 2011, *La crisis financiera mundial: Perspectivas para México y América Latina*. Siglo XXI, México. *Globalization: Misguided Views*. MPRA_paper_85813.pdf

[78] ALT A loans have higher credit quality than subprime loans, but less tan the prime loans.

[79] Animal Spirits, op. cit. p. 55

Institutional Arrangement does have a corresponding story, a conceptual system that binds the institutions together. Therefore, any economic situation does have a story attached, which is reflected in the actual institutions that exist. But these stories are not just imagination, nor are they the outcome of irrationality. They are built as part of the true real history of the economy in question, and they are part of the survival characteristics of such society. Stories found in conceptual systems are not irrational and do not exhibit whimsical abrupt changes. They have a rational survival relatedness with reality which is required for evolutionary and economic subsistence. Stories may end up being wrong ex-post. But but ex-ante, at the time they are formed they are always rational, and compatible with the all available real facts. Such facts may be read in an optimistic or negativist mood. But the mood is not just irrational either. It depends on real events that are changing the economic agents' confidence in the institutional arrangement in question. A gold-mining boom at first sight may appear irrational; but it happens only because someone in fact did find gold. It is true however, that there can be Manias, Panic and Crashes; but they can only explain regular financial crisis, which produce short term fluctuations around the full employment equilibrium. Something else is needed to justify a truly major global economic crisis. Finally, the key thing to focus on is: that stories are there all the time, and therefore major economic crisis that occur sporadically cannot be explained just by stories.

The 2008 GFC

The best way to understand the consequences of using Behavioral Economics for macro problems is to review Akerlof's and Shiller's explanation of the 2008 crisis. Basically, for them *animal spirits* produced a real estate boom which eventually had to crash, and it did. And "*in its wake it has left the biggest real estate crisis since the 1930s, the so-called subprime crisis, as well as a global financial crisis whose full dimensions have yet to be grasped*"[80]. Due to *animal spirits* "*it appears that people had acquired a strong intuitive feeling that home prices everywhere can only go up*"[81]. The story did spread mouth to

[80] *Animal Spirits*, p. 149. Op.cit.

[81] Idem. p. 150

mouth and created cycles of feedback. "*Money illusion appears to explain some of the impressions that homes are spectacular investments*"[82]. This housing boom was greater than ever before because of the political intention to provide housing to the most disadvantageous population. "*The feedback that produced the epidemic of home-price increases had institutional, as well as cultural and psychological correlates*"[83]. And "*In this atmosphere it was easy for mortgage lenders to justify loosing their own lending standards*"[84].

The problem with these authors argument is that major economic crises appear almost from nowhere, from *animal spirits* whose dynamics are mysterious and unpredictable. There is no doubt that markets do have herding behavior, in the sense that people are trying to guess what others will do. But booms do not start out of nowhere. Neither do crashes. They start with stories and in this behavioral economics has a point. However, two arguments must be stressed: (1) these stories always have a rational component. And, (2) They have to be institutionally supported by financial authorities. The critical point is not whether there are or not psychological influences when investing at the individual level, because it is clear that there are. The important discussion is whether these psychological influences at the individual level define market prices.

Keynes' and Knight's uncertainty concept means that the future is not known and investors have to build stories about what is going to happen and doing so they can be optimistic or pessimistic, but there is always real basis for their views. In *Irrational Exuberance*, Shiller argued that stock market boom in the mid-1990s was fueled by "*the story*" of the advent and explosion of the internet. We can argue ex-post how optimistic or pessimistic the story ultimately proved to be, but the phenomenon of the commercial expansion of the internet was a real story. People that believed in this story chose to invest in companies that benefited from the so called ICT revolution (Information, Communications and Technology), and some made a fortune. Today the largest companies in the US stock market are those who best exploited to the ICT revolution.

Given real world uncertainty people have to create stories, but they do it based on the best available information available to them. This informa-

[82] Idem. p. 152

[83] Idem. p. 155

[84] Idem. p. 155

tion is always incomplete and requires intuition and risk taking. Manias do extend market prices away from what pure fundamentals can justify, but not irrationally - people do their best guess, using both their emotions and their reason. Manias are not due to irrationality, but to uncertainty.

In the 2000s prices in real estate in US increased partially due to a long economic boom, which had increased substantially the consumer's wealth, and partially to the fact that stock prices have become expensive while real estate was still reasonably priced[85]. Thus, relative to other assets, fundamentals correctly indicated buying real estate. However, the 2008 crisis was not the consequence of the crash in real estate. Two facts back up this view: (1) real estate prices in Europe in that decade increased much more than in the US, but the crisis did not happen initially in Europe[86]. And (2) a careful analysis of real estate indices reveals that real estate prices in the US only started to fall after the banking crisis had dramatically increased interest rates. The causality is the inverse of the conventional narrative: the real estate crash did not produce the banking crisis, the banking crisis produced the real estate crash. The only crash that took place before the banking crisis was in the adjustable rate subprime real estate market, due mostly to the rapid increase in the policy rate by the Fed in 2005-2007. There is a clear reason that explains why the early boom happened in the adjustable rate subprime real estate market in US, and why the crash occurred: the rapid downward and upward swings in the Federal Funds Rate. But the collapse of subprime did not imply a major crisis. Contagion to the broader system occurred because sub-prime loans were packaged into derivative securities that included mortgage loans of higher quality, the so called Mortgage Backed Securities, or MBS. These derivative products were engineered to get an optimal mix of risk and return. MBS became exceedingly popular because they provided a higher yield at a time interest rates were very low. MBS were so attractive, that banks kept 75% of them in their books. With the collapse of the subprime real estate market, it became very difficult to value the MBS containing these loans; and because banks held the MBS in such large amounts, they began to distrust each other's financial health. The result was a pullback in interbank credit lines and an increase in the LIBOR rate (the rate at which banks lend to each other). The con-

[85] Obregón 2011 and 2018, op.cit.

[86] Obregón 2011 and 2018, op.cit.

sequence was an across the board increase in interest rates, that eventually caused both the generalized real estate and the stock market crashes. Thus, *there are clear fundamental causes of the 2008 crisis*. It is not necessary to resort to irrationality to explain it. These reasons also explain why it did happen initially in the US, and not in Europe[87].

The crisis was not contained in time, because *inadequate institutional policies were implemented*. These were mostly predicated on the basis of a free market ideology of limited intervention. Financial authorities believed that risk was probabilistic, and that markets could manage it well. They thought markets could take care of the subprime segment and would be able to discriminate amongst viable financial institutions. Authorities were wrong-the amounts involved were too high, relative to the banks' capital.

The lack of proper policy intervention added a level of uncertainty with regards to the financial system that could not be managed with probabilistic risk. Confidence in a credit economy is essential for economic transactions. The only way for confidence to be restored was for the Fed and/or the government to extract subprime loans and the "toxic asset" (MBS) from the banking system. If done early in the crisis the cost would have been much lower, the implementation easier and the policy more effective. Because authorities waited too long confidence in the banks suffered, breaking the spinal cord of a normal credit economy. Importantly, trust in the ability of the Fed and the US government to manage such crises took a major blow. The economy entered a credit crisis.

For our purposes it is crucial to understand that the deterioration of confidence was not the result of whimsical irrational shifts, but was based in two real facts: the balance sheets of the banks had deteriorated, and regulatory and oversight institutions were not showing themselves capable of solving the problem. Given these two facts, it is rational to forecast future problems. What allows economic agents to invest in an uncertain future is the assumption that institutions would be able to cope with future internal or external shocks of the economy of a systemic nature, and therefore that the future will resemble the past. This is the assumption under which all the assets are priced in an economy. Only under this assumption Tobin's probabilistic risk works. When institutions make a

[87] For a more detailed explanation of the 2008 crisis, see Obregón 2018, Globalization: Misguided Views, op. cit chapter three.

major mistake in coping with an internal or external shock of large magnitude, people will rationally extrapolate that there will be future trouble – a concern that can become widespread.

In the above environment, economic agents turn more conservative as it happened in 2008. These rational adjustment of expectations drove the severity of the crisis and the muted recovery that followed. By looking carefully at what happened in 2008 we get a first clue about the importance of the credibility of institutions in the determination of U in Minsky's model, and MEC in Keynes's model.

The 2008 crisis was not a psychological crisis of generalized mistrust because the boom in real estate had been overextended. Booms do relate to stories about the uncertain future, and when they are wrong, they correct themselves. And yes, there are manias and contagious effects in these processes. Market volatility is in fact explained by uncertainty about the future. However, that happens all the time in economies hovering within the corridor near full employment equilibrium. But a major collapse like the 2008 GFC is typically accompanied by serious and fundamental institutional mistakes The recovery was slow because the economic agents' confidence was shaken. This causes an increase in , with a corresponding higher spread between the policy rate and the interbank rate. The loss of confidence also increases MEC, which shows up as higher values for and To belabor the point, the shift in confidence is not due to a whimsical or irrational deterioration of confidence. Rather, it stems from the realization of institutional failure. Under these conditions, it would actually be irrational for confidence not to be shaken.

During the duration of the 2008 crisis there is no evidence of money illusion. Buyers read the newspapers and consulted specialists, and they knew houses had become expensive, This, however, did not help them predict when the boom was going to end, which is why they continued buying. While some corruption did happen, it was not the cause of the crisis as it happened later – in the middle of the banking crisis. Some observers have argued that the credit agencies were either irresponsible or corrupt, and that the banks were greedy and abusive; but that story cannot be sustained, in view of the fact that banks kept in their books 75% of the MBS. And as we have said, *nobody deliberately shoots himself in the foot*[88].

[88] Obregón 2011 and 2018, op.cit.

It is also argued that mortgages were sold with irresponsible schemes to consumers of questionable economic means. This happened to some extent, but it happened also with higher quality ALT-A loans, and after the subprime adjustable rate real estate loans crisis had already started. In fact, the rise in interest rates explains the growth in flexible rate mortgage schemes.

In summary, it is difficult to explain the 2008 GFC as the result of irrational mistrust, money illusion, corruption, or stories, or consumer fairness. It was not produced by irrational animal spirits, but by institutional mistakes that improperly managed the shock. *These fundamental mistakes and errors explain the dimensions of the crisis*. They made future uncertainty unmanageable with probability models. The only rational thing left was to be very conservative.

The view of strong proponents of free markets was shown to be wrong in the 2008 crisis. For risk to be able to be managed with probabilities the Institutional Arrangement has to be working properly, so that internal and external shocks do not change much the actual normal course of the economy. If there is a huge institutional mistake, future uncertainty cannot longer be managed, economic agents become conservative (and economic agents reduce drastically their transactions related to the future, and the economy enters a major crisis. Markets manage well risk probability; but they cannot alone by themselves manage uncertainty when the Institutional Arrangement makes a huge mistake.

What explains frequent fluctuations in asset prices, is not that the economic agents are irrational, but the presence of uncertainty about the future which they are continuously assessing because whoever gets it right reaps huge profits. Economic agents may not be as as rational as Rational Expectations assumes; but nor are they as irrational as Akerlof and Shiller have argued.

In the postscript of The Nudge, Thaler argues that the 2008 crisis was partially due to*: (1) extreme complexity in products offered to investors, and in the extreme diversity and complexity of mortgages offered; (2) lack of self control by refinancing the mortgage instead of paying it; (3) the social contagion in the real estate bubble – he cites Shiller. Nudges he argues, if implemented would make a crisis like this less likely to occur*. Is he right? As we had seen, he is not correct; none of the elements mentioned by him caused the crisis. Nudges would not have helped.

As we have seen, Keynes LPT neutralizes conventional monetary policy in acute credit crisis. That is the reason why the Federal Reserve had, for the first time in history, to entered the credit markets directly; implementing QE – buying huge amounts of private assets. This wise move from the Federal Reserve single handedly prevented the global economy from entering a depression like the one in 1929.

For markets to operate they require a proper institutional arrangement normally evolving and learning, and prone to minor mistakes; which create volatility around full employment equilibrium. However, when institutional mistakes are of a systemic nature, they lead to a serious deterioration of the balance sheets of key economic agents in large numbers and shake the confidence of economic agents. Markets alone cannot solve this situation and major economic crises occur.

CONCLUSION

The last seventy years of monetary policy were mainly defined by the huge success of Monetarism and Rational Expectations which consolidated a well founded contemporary version of the NMT. Keynesians, Post-Keynesians, and Macro-disequilibrium theorists failed to resuscitate Keynes' original thought in a useful manner. The main reasons are: that the rigidities of any sort are short-lived in flexible markets, and that information flows are significant enough so as to discard any form of money illusion. However, contemporary NMT can not explain major economic crises. According to this theory the 2008 GFC and the 2020 GP should not have happened. Behavioral macroeconomics also tried to rescue Keynes original thought, but it encountered the problem that irrational animal spirits cannot explain major economic crisis, because they are always there. Economic agents are assumed to be always irrational, yet major crisis only happened in rare occasions. A better understanding of what happened in the 2008 GFC helps us understand why major crises occur: they are the consequence of huge institutional mistakes in coping with an internal or external shock. Markets operate within an Institutional Arrangement, which usually functions well and guarantees the continuity needed to be able to estimate future uncertainty through

probability risk. Large institutional mistakes however, make it rational to expect more problems in the future, due to the loss of credibility in the institutional arrangement. When this happens economic agents' confidence deteriorates (and and the economic agents drastically reduce their transactions related to future consumption and investment plans, and a major economic crisis occurs. To further explore the genesis of major crisis is one of the main topics of the next chapter.

CHAPTER SIX. NEW MACROECONOMICS (NMA)

As we had seen Neoclassical economics really did not have a macroeconomic theory, besides a monetary theory. And monetary theory only task was to accommodate (by equalizing the nominal rate to the natural rate) the real shocks in the economy (consequence of changes either in savings preferences and/or investment opportunities). Macroeconomics started with Keynes, and was conceived to understand what to do in the1930 GD. But Keynes' theory was based in the irrational volatile nature of investors expectations, and therefore could not explain an economy near equilibrium. The IS-LM model reconstructed Keynes' Macroeconomics to make it compatible with Neoclassical Economics; so that, it could explain the economies near equilibrium. Since the 50's until 2008, the world did not experience a major crisis, and therefore the IS-LM was soon seen as the correct version of macroeconomics. The Keynesian-Monetarist controversies, within the IS-LM theoretical frame, had several results. First, with Keynes LPT gone, there remain only two explanation of the inefficacy of the monetary policy: a) *The liquidity trap* which could hardly be defended theoretically. Moreover, in empirical reality it was seen that monetary policy did influence the business cycle. And b) The inelasticity of the investment function which could also be hardly defended theoretically once the MEC was gone; and again empirical data showed that it was elastic. Therefore, it was soon accepted that monetary policy was as useful as fiscal policy to manage the business cycle. Moreover, since in practice the fiscal policy has long delays, because it has to pass through congress, monetary policy became the preferred tool to manage the business cycle. Second, Keynesians explain unemployment based in wage rigidity, and movements in the level of employment arguing money illusion. But with flexible open markets characterized by rapid information flows; defending money illusion was impossible, and any price or wage rigidity had to be short lived. Finally, the stagflation phenomena occur in the real economy, and it could not be explained by the IS-LM model. For all these reasons, Keynesians lost the battle against Monetarists. Fi-

nally, the school of Rational Expectation, an outgrown of monetarism, came along, explained stagflation, and seal the triumph of monetarism with an strong revival of Neoclassical Economics. The discussion then became how to explain the business cycles. Real business cycles in the neoclassical tradition were proposed, but they contradict the successful experience of managing the business cycle that governments have had from the 50's to the 80's. Therefore, short term lived Keynesian rigidities were accepted – like labor contracts – but the economy was still seen basically as having a strong homeostasis, due to rational expectations, that maintained it near equilibrium. From 1980 until 2008 macroeconomics looked as a very scientific, well defined, successful discipline. Rational expectations are very solid to explain why economies remain near full employment equilibrium, but had nothing to say about economies far away from equilibrium. From the neoclassical theoretical perspective, the 2008 GFC and the 2020 GP should not have happened; but they did, and we were left without a theory to explain reality.

After 2008 some economists revived Keynes, but again based on the same irrationality that had motivated from the beginning the construction of the IS-LM model[89]. Therefore, we continued trap. If economic agents are irrational, then we can explain economies far away from equilibrium; but we cannot explain why most of the time they are in equilibrium, and only in rare occasions move far away from it. Just the opposite of what happened before with rational expectations; for as we discussed before, if economic agents are rational we can explain why economics are usually in equilibrium, but not why in rare occasions they move so far away from it. From section I, we already know that the only possible answer, to explain both states of the economy, is found in changes in the institutional arrangement. It is institutional serious failures what takes an economy away from its regular equilibrium[90]. And once it happens, a mistrust in

[89] Akerlof and Shiler, 2009. *Animal Spirits*, op.cit

[90] As we had argued Keynes' economics explain why traditional monetary policy does not work in major economic crises and why fiscal policy might work. But it is important to realize that Keynes' economics does not explain the genesis of the major crises. None of the three major crises that the world has had 1930 GD, 2008 GFC, and 2020 GP started because the irrational volatility of investors expectations. The 1930 GD was the result of a combination of overly restrictive monetary policies and the enactment of highly protectionist trade policies. Thus, it was the consequence of wrong policies, and this institutional failure created negative consumer and investment expectations. The latter were rationally based in the poor performance of the institutions to tackle the economic problem at hand.

the institutions' capacity to run properly the economy develops. The answer to bring the economy back to full employment equilibrium then, has to be a macroeconomic program that recovers trust in the institutions.

The only theory today at our disposal to explain what to do in major crises is Keynes' Theory, which recommends an expansionary fiscal policy. And that is what the world did in the 2008 GFC, and again and even more intensively in the 2020 GP. But is this theory correct? Have we not learned anything in almost a century since Keynes wrote? In the 2008 GFC Bernanke introduced a new policy QE, he just bought the mortgage back securities and put them in the Federal Reserve balance sheet. This policy alone had a lot to do with fasten the recovery. QE had been used again in the 2020 GP, but to a much less extent. Almost all of the increases in the balance sheets of central banks had been used to finance the governments – must of the burden of the adjustment has fallen down in the fiscal policy. We need to understand why QE was successful in 2008, and why it was not being used significantly more in the 2020 GP. And once we do it: *we will argue that an extended and modified QE could be the beginning of a new monetary theory*. We develop in here a NMa that: 1) Explains both why the economy usually only has business cycles near full employment equilibrium, and why in rare occasions is far away from equilibrium; 2) Discuss national and global policies to avoid serious institutional mistakes that may move the economy to far away equilibriums; 3) Explain what should macroeconomic policy do in regular times; 4) Answers what should macroeconomic policy do once the economy is far away from equilibrium, what are the alternatives to Keynes' fiscal expansionary policy; 5) Analyses what are the risks on the present situation and what has to be be done; 6) Establish the connections between macroeconomic theory and growth theory.

The 2008 GFC was the consequence of inadequate polices by the Federal Reserve of bringing down interest rates sharply (and keeping them there for too long) in the early 2000's, and then quickly raising them in 2005-7. Add to this the government's refusal to intervene in the subprime mortgage market early in the crisis. Finally, in Europe there was a complete misunderstanding by regulators of what was in the assets of European banks. Here again, the critical element is the deterioration of economic agents' confidence in the capability of the institutions to deal with the crisis. The 2020 GP is also consequence of real external causes—in this case a virus that was largely out of investors' expectations.

WHY AND HOW MAJOR ECONOMIC CRISIS OCCUR? AND WHY THEY ONLY HAPPEN RARELY?

In normal times there are all sort of frictions that explain economic business cycles around the full employment equilibrium. Among others, these include: short term Keynesian type rigidities, technological shocks, temporary problems in transmission of information, manias, panics and even market crashes that may explain a particular crisis in real estate, a financial sector, the price of gold, the stock market, and others. They also come from particular temporary individual behavioral irrationalities, minor institutional changes and adjustments, minor monetary shocks taking place in the process of adjusting monetary policy to new conditions of the real economy, and all sorts of internal and external shocks which are absorbed usually both by institutional new policies and/or by price flexibility in the markets. All these processes are complex and imprecise, and they induce all sorts of relative minor fluctuations whether in real output, in prices, or in the level of employment. But normally, the economy stays in a corridor near full employment[91].

In rare occasions however, economies move to far away equilibriums. But since there are only two shock absorbers flexible market prices, and institutional policies. And market prices, except for very short-term rigidities, remain flexible. It follows that the explanation of the economy's shift to a far-away equilibrium must be found in huge mistakes in institutional policies. Our previous analysis of the 2008 GFC indicates that such is the case. The 1930 GD was also caused by huge institutional mistakes. In this case, by: a severely contractionary monetary policy, and an unwarranted increase in trade tariffs that produced a draconian reduction in international trade. In the current 2020 GP, US authorities have had more timely economic policies. However, they largely rely in fiscal policies. As a consequence large amounts of free money had been misdirected, and the recession is likely to be deeper and longer that what the underlying shocks justify.

In summary: *major crises happen due to large unwarranted institutional mistakes which occur occasionally*.

[91] We remind the reader that the idea of the corridor was introduced first by Leijonhufvud.

Traditional economics has been caught in a vision of social dynamics defined exclusively by the individual agent. The discussion is whether humans are rational and selfish as contemplated in the contemporary neoclassical economics, or whether they are irrational and volatile like in behavioral economics and in Keynes. By focusing only in the individual agent traditional economic theory has become incapable of explaining major economic crises. This is because if the individual agent is rational and selfish, then markets work and are flexible, and the economy should be in the full employment equilibrium corridor all the time; and if the individual agent is irrational, then she/he is so all the time, and major economic crises should be much more frequent. Since the economic agent's characteristics (whichever they are) are always the same, something has to change, something has to be different, to explain the two distinct realities of the economy. What is different as we had been emphasizing is the institutions which in normal times operate well, but occasionally make huge mistakes.

The 1930 GD, for example, can not be explained without understanding the consequences of the use of power in the First World War. The latter resulted in an inadequate peace settlements which implied excessive transfers from losers to winners which could not be fulfilled[92]. The losers printed large amounts of money (as an inflationary tax) in an effort to extract resources from their economies to fund the transfers committed to the inners. Despite this effort, in the end losers were not able to fulfill their obligations, and the winners did not receive the expected payments. To offset for the missing payments, the winners also printed large amounts of money. The excess global money supply caused the hyperinflation of the 1920s, which was the main precedent of the drastically contractionary policy applied latter on – one of the main causes of the 1930 GD. Furthermore, both war and hyperinflation exacerbated nationalism, which led to the increase in tariffs – which was the other main cause of the crisis.

Institutions are overly complex systems, which due to evolutionary and survival reasons usually work well. However, occasionally something goes awfully wrong, and a major crisis is produced. In the 1930 GD the grave institutional mistakes were the all around contractionary

[92] This was Keynes topic in the Economic Consequences of the Peace.

monetary policy, and an increased in trade protectionism. Understandably, during the Great Depression economic agents lost their confidence in the institutions capability to manage the situation. Keynes's LQT and Keynes' MEC then became relevant.

As we have discussed before, the behavior of any individual agent is heavily context dependent. Individuals can display altruistic and cooperative social behavior in some cases, like the Dictator's Game in behavioral economics, or the high social expenditures in developed economies; and act differently in other circumstances, like the extremely low international aid which is nothing else than a global Dictator's Game in real international economic life[93].

To explain reality, we need to realize markets work within an Institutional Arrangement. This arrangement usually works reasonably well because its task is to guarantee the survival and reproduction of society. It mostly maintains the economy in the full-employment corridor. However, due to its complexity, institutions occasionally makes huge mistakes, and the economy moves to a far-away equilibrium.

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[93] See Section I. In the dictator game in which the player A is a dictator that can give whatever he pleases and keep the rest; surprisingly enough 74% divide the money 50-50, and in the punishment stage 81% choose to punish an unfair allocator. In public good games the standard traditional economic prediction that no one will cooperate turns out to be wrong; on average people will cooperate half their stake to the public good. These results are argued by Behavioral Economics as an empirical demonstration that humans are not rational selfish calculators maximizing their personal well being. However, what it really shows is that in developed countries there is a strong Integrative System. And we must recall that both the Integrative System and the Power System are reflected in monetary and economic transactions. Therefore, it is not surprising to find that the Integrative System plays a role even in monetary transactions in the laboratory, in the Dictator Game and others in developed countries. The Integrative System and the Power System are part of the economy. Governments at the beginning of the 20th century were in average in developed economies only around 10% of GDP, today they are around 40%; of which the Power System represents around 4%, social expenditures around 25% and other integrative functions 11%. Thus, the Integrative System *represents 36% of the economy, the Power System 4% and the Economic and Exchange System 60%*. Individuals living in developed economies live in a world in which social cooperation is a reality, that is why they display cooperative and altruistic behavior. That however does not mean that they will behave altruistic in a large competitive market, *in these markets they behave selfishly*. And it does not mean that humans are, by nature, altruistic. While altruism and social cooperation is very high inside the developed economies, it is almost non existent in the international arena. At the global level, the world economy presents us a *Real Global Dictator Game*, which results in minimal altruism, due to the extreme weakness of the global Integrative System; international aid is only 0.2% of GDP, and even some of it is conditioned to the interests of the donor.

NATIONAL AND GLOBAL INSTITUTIONAL POLICIES TO AVOID MAJOR CRISIS

The world has become globalized due to the ICT revolution. The recent effort to dismantle the global institutions has been a huge mistake. It is the other way around, it is needed to strengthen them. This year I had also written another book titled *A New Global Order*, in which I argue that unless the world do a serious effort to have proper global institutions we will suffer again global crises with enormous costs. The 2008 GFC could had been avoided with proper national and international institutions, which needed to had been closer to the markets to understand what was happening and to had been able to regulate them. Once the NMi, that we develop in Section I, is understood it is clear that markets are not stable by themselves, they need institutional surveillance and regulation. And since markets are now global, that means that global institutions are required. The 2020 GP could also had been avoided have the world had the proper global health institutions. And there are other areas in which global economic crises are in the making such as global climate – with humans warming the planet, transnational crime – which is already the eight larger economy in the world, and international trade – with the weakness of the WTO (World Trade Organization) and the bilateral trade war between US and China. It is urgent that we take seriously the need of institutional design. Institutions cannot replace markets, but markets by themselves may become quite unstable and may end up in very suboptimal equilibriums.

WHAT SHOULD MACROECONOMIC POLICY DO IN REGULAR TIMES?

If the economy is near equilibrium traditional neoclassical rational expectations theory works well, and main role of macroeconomics is managing the business cycle.

However, because the main cause, as we had been arguing, of a major crisis is a large institutional mistake: *the first thing for policy makers to keep in mind is to try to avoid such mistakes*. Preventing is always much cheaper than remedying. Thus, the authorities must all the time being vigilant of the

markets, regulate them and intervene early when critical disequilibrium is being formed, such as the adjustable subprime mortgage crisis in 2008 or the beginning of the pandemic in 2020.

As we had seen in the 2008 GFC there was a cheap preventing measure: to have had applied QE much early, and to have taken out the subprime adjustable rate real estate toxic assets from the private banks. If deployed early, a program of around only 2% to 5% of what was finally done would of had been enough[94]. It could be argued that this recommendation is done with hind sight and that enough information was not available then. But this defense is unwarranted, the Federal Reserve knowingly aggressively hiked interest rates, and should have anticipated that it was going to produce disequilibrium in the mortgage markets that policy makers had to resolved. Instead, they initially left it to the markets because of an erroneous concept of the workings of the economy.

Therefore, policymakers in addition to manage the regular business cycle as rational expectations suggests, must review regularly the impact of changes in the Institutional Arrangement on the economy. Regulators need to be much more involved with the markets.

WHY QE WORKED SO WELL IN THE 2008 GFC? AND WHY WAS IT NOT USED MORE IN THE 2020 GP?

A critical characteristic of large markets is that economic agents behave selfishly, therefore they are eager to obtain information and any help they can obtain in analyzing it. Markets are far from perfect, but they are reasonably efficient, and prices are mostly flexible over the medium term. Therefore, although the rational expectations assumption is very extreme, it alerts us to something quite important, namely, that *institutions and policy makers cannot fool economic agents*. QE worked in the 2008 GFC, because it was the reasonable thing to do, and therefore economic agents regained confidence in the central bank. The reason QE was successful to get out of the 2008 GFC is because it corrected the balance sheets of the economic agents and therefore allow the credit economy to work properly.

[94] See Obregon 2011, La crisis financiera mundial, op.cit.

The reason QE was not more extensively used in 2020 is that while in 2008 it was an obvious need to get rid of the MBS, in 2020 the central banks did not now exactly what paper to buy. They do not have enough knowledge of the productive economy to be able to do early interventions to prevent the economy to fall into a serious recession. Thus most of the increase in the central banks' balance sheets was due to increasing financing to the governments.

WHAT ARE THE PROPER FISCAL AND MONETARY POLICIES TO FOLLOW IN MAJOR CRISES?

The key is to disentangle which policy has better chance to produce the recovery of the productive economy. And therefore it is important to define first what constitutes the productive economy.

One can conceptualize an economy as divided in two: *the social economy and the productive economy*. In general, the economic agents in the productive economy can be distinguished, because they own productive projects that will generate future returns. The social economy in instead is constituted by economic agents that do not have viable economic projects capable to produce future returns; but whom nonetheless are subject to receive social benefits from the government. The main task of the private banks and of the analysts in the financial markets is to distinguish future viable projects from those which are not. It is key that money printed for the recovery of the economy in a major economic crisis is not use either to finance the social economy or those segments of the productive economy which hold economic projects which are not viable in the future.

Governments only future returns come from taxing the productive economy. Therefore, to be credible they should only borrow as far as they can repay the loans with future taxes. And an expansionary fiscal policy (whether by reducing taxes or increasing expenditures) is only credible if it can be believed that the recovery of the productive economy will be such that the increase in future taxes will allow the government to repay. The Government's budget is under enormous

political constrains and pressure to privilege their political bases; it is affected by electoral cycles. Government transfers benefit few, but have to be funded by all taxpayers, thus raising questions of fairness. There is also a risk that the emergency government spending becomes permanent. Government bureaucrats change all the time, and as a consequence they do not develop the required expertise to distinguish the productive economy. Governments lack the expertise to distinguish which companies are viable - have repayment capacities. Because of its built in inefficiencies, government expenditures are just not fit to properly attend the pressing needs of the productive economy, both during the crisis and during the recovery. Economic agents know all of these challenges to the fiscal policy exist, and they rationally distrust large increases in government expenditure.

What is the alternative? *The alternative is that increases in the money supply are not used to finance the government, but to finance directly the productive private sector.*

Traditional monetary policy does not work because Keynes' LPT – that is why Keynes recommended fiscal policy, although he was not so sure that it will work. But, the innovation of QE introduced by Bernanke changed the panorama. Because QE can be used to clean the balance sheets of the economic agents, it will reduce and eliminate the problem of the LPT. Once the balance sheets are corrected credit flows again, which means then that traditional monetary policy becomes effective. But what to do if interest rates are already near to zero? The European Central Bank has found an interesting solution, it gives an economic incentive to private banks for lending, which in fact constitutes a negative interest rate – although interest rates for the savers are still positive. *Any way it must be notice that whatever is done, traditional monetary policy only will works if QE has already clean the balances of the economic agents.* And that even then, there is still the question of the MEC. Therefore, the adjustment program that will be announce have to be of such magnitude that it convinces the economic agents that it will work

The social economy is also important, because it creates demand for the productive economy. Therefore government expenditures to recover the balance sheets of members of the social economy, so that they can continue participating in the economy, are welcome. Tax reductions to the productive economy or government expenditures that create addi-

tional demand to the productive economy – like infrastructure projects – are also welcome, because they increase the chances of recovery of the productive economy. But whatever the government does must be limited to its future repayment capacity.

A large QE program channeled directly to the productive economy is difficult to be manage by the central banks today. It requires a lot of expertise on the productive economy, to be able to distinguish viable projects from non viable ones, that central banks do not have. Previously we had been suggesting that an alternative is for the private banks to help the central bank, but we had gotten convince that it is not enough[95]. There must be a new institution in charge of the extended and modified QE program. This new institute must develop the expertise required to channel resources directly to the productive economy. Whether economic agents borrow through private banks, through other participants in the financial markets, or directly from the new institute – all the efforts should be coordinated by this new institution.

Once we have discovered QE, there is no need to fully follow Keynes' recipe, conceive almost one hundred years ago, of relying mainly on an expansionary fiscal policy. We must be innovative. Me must create new theoretical perspectives. There is no reason for which the increase in the balance sheet of the central bank has to go mostly to the government. In fact, in 2008, Bernanke had shown that the central bank did it better than the government. By buying the MBS the Federal Reserve cleaned the credit channels of the economy. If this money had been giving to the government, it would not have had solve the situation. Fiscal expenditures had already previously been very high and the recover had continued to be very slow. There must be an specialize institute which only purpose is to channel the money to the productive economy. How will the extended QE work? And What should the institute do? What will be the areas of competence of this institute versus the ones of the central bank? And What will be the role of the government and of the fiscal policy?

[95] This proposal we have called the Monetary Bazooka. See Obregon 2020, and Obregon and Mariscal 2020, where the idea was applied to emerging markets. Obregon, C; 2020. *Beyond Quantitative Easing, Towards A New Monetary Theory*, Amazon.com, also available at Research Gate.com. Obregon, C; and Mariscal, J; 2020. Emerging Markets Can and Should Use Non Conventional Monetary Policy Too. Available at Research Gate.com

The New Monetary Institute for Economic Recovery

The role of this institute will be to identify those economic agents that may recover from the crisis – those able to produce economic returns in the recovery. Most of the increase in the balance sheet of the central bank will be channeled through this institute. Which will then lend long term at low interest rates at the productive economic agents, with ample grace periods to allow for their recovery. The institute will also buy financial instruments from the private sector that are in the market such as the MBS and many others. The institute may do it directly or through the diverse financial agents in the system – banks and others.

In many countries there is already accumulated expertise as to the functioning of the productive economy. Such is the case mainly of the Asian countries that had followed what we call in the third section the Asian Development Model, and to a lesser extent is also the case of several European economies. The institute will clearly have an advantage both to the government and the central bank as to how channel this resources efficiently – because it will be its main duty, and it will not have conflicting goals.

The Central Bank

It will remain in charge of traditional monetary policy. It will be responsible, as it is today, both for inflation and for the proper growth of the economy. It will handle the interest rate policy. And it will incorporate the possibility of stimulus to the banks that imply negative interest rates as the ECB is already doing. It will be vigilant of the good health of the banking system. And if needed it would recommend to the institute the buying of certain financial assets held in the private banks, whenever those assets may present a potential threat to the health of the credit economy.

The Government

It continues in charge of the fiscal policy, but it would only be able to borrow from the central bank according to its repayment capacities. It in in charge of the well functioning of the social economy. And may create stimulus for the productive economy through taxes or government expenditures that make more profitable the private sector – like infrastructure projects. But the government's borrowing must be restricted to its repayment future capacity.

Here is not the place to fully develop with precision the roles of the new proposed institute, the central bank and the government – they will be different specific roles in distinct countries. But a strong theoretical message that one must keep in mind is: 1) That Governments should not be the owners of increases in the balance sheets of the central banks; 2) That new money in large amounts should be channeled to the new institute proposed. Which will borrow it, and will recover most of it in the future. Because although it will lend long, borrowers will be chosen carefully. Thus, the loans will be repaid. 3) That contrary to what Keynes believed monetary policy has many possibilities to contribute in the recovery of a major crisis; but that a new theoretical framework, and the creation of new institutions is required.

WHAT ARE THE RISKS OF THE PRESENT SITUATION AND WHAT HAS TO BE DONE?

The main risk of the present situation – although right now it is low - is that so much free money, and so large fiscal deficits, *may in the future renew inflation and inflationary expectations – maybe even the menace of stagflation*.

The Risks of Stagflation

There are diverse theoretical frameworks that can be used to analyze this question. In the IS-LM framework a macro-adjustment policy will

only become inflationary once the economy is near or at full employment equilibrium. According to monetarism (Nobel price Milton Friedman and Ana Schwartz), the long-run inflation is a monetary phenomenon. But, one must be careful interpreting these results. In normal conditions with the economy near full employment, which is the norm in their sample period, their results hold (even in simple IS-LM terms). But this does not mean their conclusions are valid when the economy is far away from equilibrium. In fact, there are clear cases which show empirically that it is not the case. The most recent example is the massive increases in money supply and the huge fiscal deficits witnessed in DE after the 2008 GFC, which have not translated into inflation, and which produced a slow recovery. The second example is the very low growth with low inflation that Japan has experienced for the last 20 years. To understand why money supply increases do not always translate into inflation when the economy is way out of equilibrium, we can see use the simple quantitative equation, , where is money, is the velocity of money, is the price level, and is real output. Assuming a constant velocity of money; either money moves with prices or real output or with both. If the economy is way out of full employment equilibrium, there is a large space for money to go to output and not to prices, the same result can be obtained with a simple IS-LM model. Moreover, the velocity of money is not constant. And when the economy is far away from equilibrium goes down significantly; due to Keynes LPT according to which banks can not find economic agents with healthy balance sheets, and therefore do not lend. Thus, money either goes to , or to and it does not go to . This is not just a theoretical result; rather, this is what has actually occurred in Japan and in the US. It is also important to underscore that not all money supply increases have the same impact on prices. It is critical to understand the degree of connection between Q and M. The more is connected with , the less it will have an impact in .

The period of stagflation in the 70s showed us that economies can have inflation, even if they are not at full employment. When central banks have an irresponsible monetary policy, rational economic agents who have access to all available information and process it efficiently, will mistrust institutions and increase their prices. An important lesson from that period is that central banks must behave in a credible and responsible manner. Otherwise, any increase in money will quickly translate into

inflation. It is all a matter of expectations. Either economic agents believe that the policy used is the right one, expect an economic recovery, invest, and do not increase prices (in which case Q goes up). Or, alternatively, they believe policy is irresponsible and inadequate, will not lead to a recovery, and they do not invest and raise prices (all of the increase goes to P). The use of expansionary macroeconomic policies, in an economy far away from equilibrium, should not produce inflation provided that is properly communicated within an environment of institutional credibility. Institutional leadership is required to help building the bridge between the present and the future.

A company trying to convince potential and actual shareholders of the benefits of an aggressive expansion plan requires credibility and leadership. The same is true for society. Investing in the future requires institutional leadership. This is even better understood with Keynes MEC. LPT, as we have already said, reduces , therefore increases in go to ; but in addition MEC implies that unless there is confidence, people will not invest (neither they will consume durable goods), and therefore a fast recovery will fail to materialize. This is what has happened both in Japan historically, and in most large developed countries after the 2008 GFC. Institutions need to be credible. Any central bank's increase in can be thrown out of the window by changes in (Keynes LPT), or by autonomous economic agents' increases in prices (raises, as explained by Rational Expectations).

Today the risks of stagflation are very low, because economic agents see expansionary policies as the responsible thing to do. However, it must be emphasized that the new macroeconomic policy recommended in here necessarily has much less risks of bringing stagflation back than the actual policy that mostly relies in the fiscal policy. The reasons for what we had been mentioning seem obvious. 1) The institute proposed would channel better the resources to the productive economy than the government; thus the expected impact in Q would be greater. 2) The institute will be more reliable than the government, from the productive economy perspective, not to spend money unwisely.

As the recovery happens in the future, central banks and governments will need to be very responsible. If they are not so, unneeded expansionary stagflation expectations might develop. The policy proposed in this

book has a much lower future risk than an aggressive expansionary fiscal policy, because loans will be repaid and that by itself will reduces the need for future money supply growth.

MACROECONOMIC AND ECONOMIC GROWTH THEORY AND POLICY

We had been arguing that, contrary to what Keynes thought, an expansionary monetary policy might be very useful to get an economy out of a major economic crisis. But it should not be used as an economic growth policy. Economic growth has to be based in real savings, and can never be based in nominal expansions of the money supply. There is however in EE a role for central banks related to maintain large international reserves, to be able to maintain reasonable stability of an undervalue exchange rate.

CONCLUSION

In the 2020 GP most of the policy response has been through fiscal policies. This is mostly due to two factors: 1) Traditional monetary policy does not work because of Keynes' LPT; and 2) Central banks do not have the necessary expertise to use an extended version of QE. We had argued: 1) That fiscal policy is a highly inefficient mechanism to obtain the recovery of the productive sector; 2) That an extended and modified version of QE should be used; but that it requires new institutions, capable to lend directly to the productive economy; 3) That once the credit economy is working well again due to the extended and modified version of QE, traditional monetary theory could be used in the forms of stimulus to the private banks for lending, which in fact may even imply negative interest rates, despite the fact that savers do receive a positive interest rate.

We had reviewed what should be the main goals of the Fiscal and Monetary policies in major crises. We had argued that the main problem in a major economic crisis is that the traditional policies to reduce interest

rates, increase the money supply, reduce taxes, and increase government expenditures do not work well. Due to Keynes LPT, the lower interest rates do not increase the private banks credit to the economy, because the balance sheets of the diverse economic agents are in so bad shape that they are not subject of credit. Therefore, the increases in the money supply are compensated by a diminution in the velocity of money, and the output in the economy does not increase. Tax reductions and the increase in government expenditures are usually not well directed to the recover of the productive economy, and therefore are unnecessaryly inefficient. With the MEC depressed, economic agents are using rational expectations to ascertain whether or not the government program will work. If the government and the central bank behave highly irresponsible, big expansionary macroeconomic programs run the risk of culminating in stagflation. The only way out of a major crisis is to convince the economic agents that the program will work. So they forecast the recovery, and then the long term returns of their investment projects will raise again to normal times and the MEC will go down drastically. Therefore, the key is to be able to influence But, to be able to do that two conditions have to be met: 1) The balance sheets of the economic agents have to be cleaned. And 2) economic agents have to be convinced that the program will work.

This reasoning has given us a theoretical frame as to what to do to get out of a major crisis. An extended and modified QE, if well used, can correct the economic balances of the economic agents and will reduce . And announcing a well concerted package that gives good conditions for the recovery of the productive economy, will change expectations and will reduce both Once an extended and modified QE has got rid of toxic assets, traditional monetary policies to reduce interest rates and to provide more credit to economic agents will work. The announced recovery economic package may also include reducing taxes and increasing government expenditures, but the fiscal policies have to be designed in such a way that the repayments capacities of the government are credible according to a rational expectations model.

We had discussed that there are many problems associated with the use of fiscal policy as the main instrument of the recovery. Governments typically make several mistakes: 1) They often finance to economic agents that do not have a chance of economic recovery; 2) They may finance economic agents that do not increase aggregate demand; 3) They chan-

nel resources in ways that benefit them politically. Most governments do not have the necessary expertise to properly target the recovery of the productive economy. And central banks do not have the expertise either. What happened in the 2020 GP, as we said, is that central banks use QE in very minor scales, and most of the expansion in their balance sheets had been to finance their governments. But all this arrangement we had argued, is theoretically incorrect. Economies need to develop a new institute capable to properly ascertain the opportunities of recovery of specific economic agents that belong to the productive economy.

The only purpose of money is to allow the productive economy to operate properly, and there is nothing to say that the increase in the balance sheet of the central bank should be used mostly to finance the government, we had argued that it could be used to finance a new credible independent institution, which only purpose would be to finance the recovery of the productive economy.

SECTION III. NEW GROWTH THEORY

Economic theory was born in the West, and has been mostly concerned with explaining the West's economic problems. Economics started with Adam Smith focusing in explaining the Wealth of Nations, and he convincingly argued that economic growth was due to technological development due to the enlargement of the markets. Since then, the economic growth of the West has been taken for granted. The stationary state of the classics was used as a frame of reference for recommending economic policies, but was never thought as a true destiny of the West's economy. For Smith, the way out of the stationary state was technological development; Malthus added the need of population policies, and Ricardo the necessity of free trade. For Ricardo then, the key theoretical problem for economists was the theory of value. Marx inherited from Ricardo the notion that the central problem was the theory of value, and transforms it into a theory of exploitation and social justice. He transforms the stationary state of the classics in his theory of the falling rate of profits, and the inevitable collapse of capitalism. Both Ricardo's and Marx' theories of value failed. Ricardo never found the *numeraire* against which economic value could be measure. A *numeraire*, was finally found by Sraffa, using the trace of matrix, for a static economy with no money; restricted conditions that cannot replicate a real economy. Given Ricardo's failure, Marx understood that any theory of incorporated labor was going to be unsuccessful. Thus, he introduced his notion of socially necessary labor – which need to be validated by the market. But if labor, as Marx argue, has to be validated ex post by the market prices, then the labor theory of value becomes a tautology. Which may have some philosophical meaning or not, but is not useful as an economic theory of price determination. Given both Ricardo's and Marx's failed attempts to develop a price theory based in the labor value, the neoclassical school searched for another alternative to understand the allocation of resources in a decentralized economy. *The critical point to realize is that after Smith, economist never concerned themselves with the problem of economic growth.*

Neoclassical Economics conceived the economic world as defined only by the interaction between the individual economic agents. Institutions were mistrust, and pointed out as the reason why a social economic optimum was not obtained. Economic growth was seen as a natural consequence of the efficient economic interaction of individuals in a free market. The neoclassical economist did not have a macroeconomic theory, as we had been discussing in the previous section, and *they did not have either an economic growth theory*. In the neoclassical capital theory both the natural rate of interest and the quantity of capital were defined simultaneously by individual saving preferences and real investment opportunities. Therefore, just as the interest rate, *the economic rate of growth was a natural – real – phenomena defined by free market forces.*

It was not until Nobel Prize winner Robert Solow's growth theory was published in 1956 that neoclassical economist had a formal growth theory. However, it did not have any impact in the economic policies in the West. Its main influence was in the Import Substitution Model adopted in Latin America and other regions, and in the Communist Model used by the USSR. And as we will see in Chapter Seven, both of these models of economic growth failed. They were unsuccessful because saving in these models was associated with obsolete technology; which did not resist the confrontation with the frontier technology developed in the West. The existence of the developed West changed the conditions under which development can occur. When the West develop itself, any new technological discovery was by definition frontier technology. But once the West is already developed, the West defines the frontier technology; and any technological discovery made outside of the West becomes obsolete technology. And any growth based on obsolete technology, as we said, becomes spurious and disappears when the economy opens up to trade with the West. A real experience illustrates this point. When East Germany joined in, it represented around 13% of West Germany's GDP; five years later, it was in the vicinity of 8%[96]. The same happened to Russia in the lost decade from 1990-2000. Obsolete technology is also one of the reasons of the failure of the import substitution model.

Due the failures of the previous mentioned models, it is not surprising that with the neoclassical revival in the eighties, the Washington Consensus

[96] See Obregon 1997, p 260 and Smyser 1993, chapters 7 and 8. Obregon, C; 1997 *Capitalismo hacia el tercer milenio: Una historia cultural de la evolución de las economías del mundo.* Patria, Mexico. Smyser, W.R., (1993). *The German Economy*. St Martin Press, New York.

recommended for EE to fully integrate themselves to the West's microeconomic equilibrium. They were advice to open up their external sector, to free their internal prices, to reduce their government size, and to maintain a conservative monetary policy. Among the countries of the world, the one that followed most closely this recommendation was Mexico – and it was a big failure. Mexico's GDP Per Capita annual rate of growth 1990 to 2018 was only 1.03%. The failure of the neoclassical model is also explained in Chapter Seven. It was unsuccessful mostly due both: to the theoretical disregard of the importance of the institutional differences between DE and EE; and to the ICT revolution which drastically change the parameters under which foreign investment occurred. Western economic growth happened in nations that had already a specific historical institutional arrangement. And exporting those institutions is very difficult as North has pointed out. But even more decisive was the fact that the ICT revolution fragmented the global process of production, so that DE were not longer interested in exporting full production process, and were only concerned with the specific conditions given to them for the particular segment of production they were interested in allocating in EE. Therefore, the whole neoclassical institutional characteristics of an economy became somewhat irrelevant. And the particular conditions given to the fragmented process of production dominated the investment decisions. This explains why so much capital went o to a communist country like China, and so little to Mexico – which is why this last country failed.

In Solow's model technology is exogenous, and economic growth is defined by the level of savings, which is what moves the economy from one growth path to the next. Endogenous models of economic growth, as their name indicates, consider technology as an endogenous phenomenon. Four main schools of endogenous growth are worth mentioning: Science, Learning by Doing, Research and Development, and Education (quality of labor). All of these schools, further enrich our longitudinal understanding of the Occidental Model of Growth. Each one of these variables has been key in the fast Western's economic growth. They however, do not explain cross sectional data. There had been only two successful models of economic growth: The Occidental and the Asian – which are explain in Chapter eight. The endogenous growth models fail to explain the Asian Development Model. None of the countries that adopted the Asian Model had initially advantage in any the variables men-

tioned by the endogenous models. Moreover, the endogenous models of economic growth failed to explain satisfactorily the previously mentioned failures of the Import Substitution Model and the Communist Model. The USSR, for example, excel in science, had significant research and development, applied learning by doing, and had education and highly qualify labor - and despite all this, it grew 1950 to 2000 less than Africa.

The problem with most theories of economic growth is that were built either to explain the West's growth, or having in mind how to imitate it. But the West had its own institutional history and other cultures and regions theirs. This has been the source of many failures, or lack of explanation, of the theories of growth. The attempt to copy the historical savings of the West induce the failure of both the Communist Model and the Impost Substitution Model. Trying to incorporate the EE to the West meant the nonsuccess of the Neoclassical Model. The endogenous growth models do not explain neither the success, nor the failure in non Western economies. Sen's Western freedoms, while important in the West's history, do not explain economic growth or development differences in countries outside the West[97]. Even North assumes, without historical justification in any real case, that the adoption of the Western institutions will produce development in the EE. The truth is that Mexico, by any standards, adopted significantly more Western Institutions than China and failed, while this last country succeeded.

We need a New Growth Theory (NGT) capable to explain: 1) Both the successes of the Occidental Model and of the Asian Model; 2) The failures of the Import Substitution Model, The Communist Model, and the Neoclassical Model. 3) The incapacity of the endogenous growth models, Sen's freedoms, and North's Western institutions to explain the differences in the real world between the countries that adopted the Asian Growth Model versus those that did not. The NGT is explain in Chapter Nine.

One of the consequence of models of economic growth centered in the West, is that it is in general assumed that copying the West is possible. Therefore, it is argued that if all the countries in the World were democratic, and the global markets were open and free, the World would enjoy peace and economic progress. Nor only this idealism is impossible to achieve, but it is theoretically and historically incorrect. The enlargement

[97] Obregon, C; 2008. *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.

of free markets did develop the West, but it always happened within a global order based upon national interest. While capitalism is not bounded by the national borders, democracy is. And this necessarily means global conflict, which can only avoid by building global institutions that recognize the interests and relative power of the nations involved. By definition the global economy implies the need of a different Institutional Arrangement than the one that has developed within each one of the distinct DE. While in most DE institutional development has been a success that has gone hand and hand with fast economic growth; at the global level there is a lack of a proper Institutional Arrangement. Poverty, income distribution, international finances, global health, transnational crime, environmental preservation, international trade, and so on, at the global level look similar to a highly underdeveloped economy; and reflect the lack of a proper Institutional Arrangement. The 1930 GD, the 2008 GFC, and the 2020 GP are explained to a large extent by the weakness of the global Institutional Arrangement. And if we do not do something about it, other global crises will occur; some of which are already in the making. This also will be a topic of discussion in Chapter Nine.

In summary: In the established theories of economic growth we encounter four main problems. The first one is the attempt to export the Western model to other countries. The second problem is to define development basically as the process of adopting the Western institutions. The third one is the lack of a theory of development based upon alternative institutions to the West's. And the fourth problem is the lack of theory to explain the World economy, which requires institutions that are very different from the typical ones of a Western DE. The NGT develop in Chapter nine successfully faces these four challenges.

CHAPTER SEVEN. FAILED MODELS OF ECONOMIC GROWTH

In this chapter we review the failure of three models of economic growth. The Communist, The Import Substitution, and the Neoclassical. The main reason of the failure of the first two models is that, despite the fact that they increased savings these were channeled to obsolete technology. The failure of the last model is due both to institutional differential characteristics in the EE, as well as the new ICT revolution.

THE COMMUNIST MODEL

The failure of this model can be appreciated in the collapse of the USSR, the unsatisfactory economic growth of Eastern Europe and the low growth of Cuba. 2016/1950 USSR grew 0.76 the world's growth, 2000/1950 Eastern Europe grew 0.68, and 2015/1950 Cuba only grew 0.60. The most interesting case is the USSR because it won the second world war, had a large market, technology in the frontier, high education and high savings. So it is needed to explain why the USSR grew less than Africa 1950 – 2000, 0.80 of the Africa's growth, despite the fact that Africa grew only 0.69 the world's growth.

The Communist Model failure has to do with two theoretical misconceptions. The first one is the Marxist believe of a long term falling profit rate, which meant that capitalism was doom. The idea was very simple, because value came from labor, when capital grows with labor growing less than capital, value over capital has to decline, therefore there will be a declining rate of profits. An associate idea was that capitalism is condemned to have under-consumption crisis, since labor can not consume enough because it does not receive the full value that it has aggregated. But in a communist society, it was thought, since theoretically there is no exploitation, workers

suppose to receive the full value that they aggregate and then there will be no under-consumption. Moreover, capital can accumulate without limits because profits do not matter. Therefore, the Marxist recipe for growth was to accumulate capital and to pay the full value added to the workers. The accumulation of capital supposed to be the engine of growth, and this was confirmed by the second theoretical misconception which was Solow's Neoclassical model of economic growth. This model argued that higher savings equal higher investment and therefore more rapid growth. Following these two recipes USSR accumulated capital through a high saving rate, but it did not grow. The collapse of the USSR was nor only theoretically inexplicable, but was politically a surprise. The URSS thought that it was richer, and the West also thought the same about the USSR Why was everybody wrong? Because without market prices the national accounts do not reflect the true state of the economy. The USSR 1990/1950 grew as much as the US, 2.24% in annual terms (0.98 the World's growth), and then the collapse came in 1990; and in a decade (1990-2000) the USSR destroyed all the growth benefits obtained in the previous four decades. And this happens despite the fact that the USSR, after the collapse, followed the advised of the best Western economists.

There are three main reasons for the USSR collapse. 1) Its excessive spending in: a) military armament, b) its imperialistic endeavor and c) its space adventure; meant that no much was left for the rest of the economy. 2) Given 1), the process of industrialization had to put an extra burden in the agricultural sector – ie it was needed to transfer huge resources from the agricultural sector to the industrial sector. 3) The industrial sector that was developed did not trade with the West, therefore it did not have the West's frontier technology. There was not a demanding middle class market in the USSR; but even if they have had one - anyhow the USSR market was only around 20% the size of the West's. Therefore, the industry in the USSR could not developed its own technology at the world's frontier. Frontier technology in the USSR was mainly only in the Space and military areas.

The cold war was a mistake for the USSR, it isolated its economy which was much smaller than the West's, and could not really compete with the latest. The attempt to compete with the West militarily, internationally, and in space exploration, was too expensive. Industrializing at the expense of the agricultural sector meant growing food imports. And the lack of frontier technology in the industry sector meant that industrial exports to

the West were not viable. The model just did not work, finally it had to collapse. Two events precipitated the preannounced collapse: 1) Given the USSR dependence in oil exports, the most relevant event that precipitated the collapse was the oil crisis of the mid eighties, and 2) Ronald Reagan defy directly the imperialistic endeavor of the USSR, all around the world, increasing the USSR spending in this area; and launched the Star Wars defense project, which meant new military expensive technology to stop nuclear missiles, which increase the required USSR military expenditures.

But the main reason of the USSR collapse was that nor all savings produce the same kind of growth. Savings are by definition ex-post equal to investment, and they are certainly required for growth; but they only do produce proper growth if investment is truly productive, that is if the investment uses frontier technology at the international edge. The USSR isolated itself and grew with technology that was already obsolete by Western standards. When it opened up to the West in the 90's a large part of the economic infrastructure collapsed, because it could not compete with the West's technology.

The USSR increase savings, put an emphasis on industrialization at the expense of the agricultural sector, and oriented its efforts to be competitive in military armament and space technology. But it did not have the industrial technology at the frontier that the West had. Which in the West developed due to changing preferences of a large middle class market. Markets are essential, without them an economy does not work properly. All the old empires collapsed because, as the empire enlarged itself centralized expenses that grew exponentially with the geographical size of the empire became too high, compared with the linear fruits of the empires expansion consequence of the new conquests. Therefore, it was more and more difficult to maintain it together. The USSR was no exception to the old empires, because it lacked the stimulus of a growing middle class market, which was the main characteristic that prevented the West's collapse. The middle class growing demand provide to the West an internal motor of growth that the USSR did not have. And given the size of the West's economy, technology at the frontier was defined in the West. The USSR, by isolating itself, did not have access to such technology.

The learning to be taken from the USSR collapse is: that capital accumulation is not enough. An economy has to open up and compete in the global market and has to have flexible local markets so that prices

are accurate and national accounts then can reflect the true state of the economy. USSR was a large market, but not large enough to compete with the West's. In 1990 the value of the Westś market was 5.1 times the USSR market[98]. Moreover, the Westś was an open flexible and competitive market and the USSR was not – it truly did not have any chance to succeed. And, when the USSR had to open up to the West due to the several factors mentioned above, it collapsed because it was not a competitive economy.

Russia did collapse together with the USSR, 1990-2000 the annual rate of growth of USSR was -4.26% and Russian Federation was -3.77[99]. Russia collapsed in 1990- 2000, meant that Russia was not efficient in the usage of its high saving rate. 1988 -2017 saving rate is very high and similar to the successful Asian Economies, but GDP growth is extremely low compared with the same group of countries – due to the 90's collapse. Russia has 25% the average savings efficiency (to produce growth) of the world, 22% the efficiency of Malaysia, 20% the one of Thailand, 16.7% of Korea's, 12.5% of India's and 10% of Chinaś[100] Why? Because Russia collapsed.

It is true that the Russian Federation, and even the former USSR have recovered themselves, if for example we take the same savings efficiency indicator mentioned above and we apply it to the period 2000- 2017 we find a normal efficiency. This of course has two problems. The first one is that 2000- 2017 growth has a bounce back effect from the 1990 – 2000 collapsed, which is left out by concentrating only in 2000 – 2017. And the second one, of course, is that we can not ignore that the collapse did happen. We have to remind ourselves that before 1990 the USSR had the same annual growth rate than US, so everything looked fine - but it was not. The Russian Federation has recovered growth, and it looks fine again – but it is not; it is still pretty much an inward looking economy which public finances and exports continue to be mostly oil dependent.

Thus, it is important to remind ourselves that commanded economies without market flexibility can show high rates of growth for large periods but, whenever they open up to compete with the outside world they collapsed. Probably the only country in Eastern Europe that has

[98] Own calculation based in Maddison Project 2018 and USSR 1989 population census.

[99] World Bank data.

[100] See Obregon, C; 2018. Globalization: Misguided Views, op.cit.

become truly developed is East Germany. But it had to pay a very high price. East Germany had been growing at very high rates before it joined in with West Germany. Before they came together, it was argued that the two Germanys were extremely productive because of the German character. But as we mentioned before, when East Germany joined in, it represented around 13% of West Germany's GDP; five years later, it was in the vicinity of 8%[101] Why? Because most of the goods and services offered by East Germany were not competitive by Western standards. The same happened with the USSR when it opened up in 1990. Therefore, the problem is that if an economy has an inward looking economic growth: it may be growing fast, but when it opens up to the world, it may be worth very little. Because as soon as foreign competitors arrive they make the inward looking technology and its associated industry obsolete; therefore, a lot of the old economy's value disappears.

The Russian Federation is in better shape than before due to several reasons: 1) added local market flexibility, 2) added openness to the external world, and 3) it does not have any longer the pressures associated with the cold war. But it is still a central command economy economy which public finances and exports are oil dependent. Russian federation and USSR have recovered, but they have not pay become modern. They are more efficient than before, but most of the recovery is based in going back to the old mode of a central commanded mode of production. They still have serious problems. Communism did not modernize the Russian Federation: its industry is not sophisticated enough to compete globally.

The Russian Federation is still dependent in oil exports. It lacks competitiveness in the two key lines of industrial exports: the machinery and transport equipment and miscellaneous manufactured articles. It is of course in these two lines where China has become more competitive.

The exports and imports in machinery and transport equipment tells the story of the different growth models very well. The countries in the Occidental Model are very active in exports and imports of Machinery and transport equipment. They import more than they export, but not by much. A simple average share of total imports and exports in this line

[101] See Obregon 1997, p 260 and Smyser 1993, chapters 7 and 8. Obregon, C; 1997. *Capitalismo hacia el tercer milenio. Una historia cultural de la evolución de las economías del mundo.* Nueva Imagen, Patria, México.

in selected occidental countries is: 35.44 and 31.19 respectively[102]. Countries in the Asian Development model export more than they import. Their simple average share is 41.46 for imports and 52.63 for exports[103]. India has some elements of the Asian Growth Model, but has its own model based in services exports as we will explain latter on. The Latin American Countries are mostly importers with an import simple average share of 29.24 and an export share of 10.13[104]. It is clear that Russia's industry is not modernized, its average share is 44.10 for imports and 4.60 for exports. The difference between both shares is higher than any of the Latin American Countries in the selected list chosen. China has modernized its industry, the Russian Federation's remains very underdeveloped. 2016 Russian Federation share in total merchandise exports was very small 1.80 %, versus China's 13.38%. But, its share in machinery and transport equipment exports is even smaller, 0.2%; versus China's 16.99%. An even better key indicator of global competiveness is the share in machinery and transport equipment exports to develop economies. In this indicator the Russian federation almost disappears, it has a share of only 0.09%, which shows that its industry is not globally competitive. In this indicator China remains very strong with a share of 13.6%[105].

Due to the communist model the USSR and the Russian Federation grew their economies inward looking, and as a consequence their economies lack global competitiveness. The communist model has not work properly for neither of them.

Eastern Europe suffered also the consequences of the Communist Model. Up to 1990 everything seemed to be going excellent, 1990-1950 it grew 1.03 the world's growth. But it had a huge contraction 2000/1990, it grew only 0.66 the world's growth. Therefore 2000/1950 it only grew 0.68 the world's, almost the same as Africa's 0.69. 2016/ 2000 Eastern Europe had a similar recovery than the USSR, 1.32 versus 1.38 the World's growth. In 2016 Eastern Europe still has the scars left by the Communist Model of Growth. The only Eastern European Country that became truly developed was East Germany and it happened because the reuni-

[102] See Obregon, C; 2018. Globalization: Misguided Views, op.cit.

[103] Idem.

[104] Idem.

[105] Idem.

fication with West Germany. By 2016 Eastern Europe GDP Per Capita was 4% higher than the USSR's, but only 82% the one of the Russian federation's and 50% the Western Europe's[106].

Cuba's economic growth has been a disaster. 2015/1960 Cuba performed worse than USSR 2016/1950 or Eastern Europe 2000/1950, it grew only 0.60 the World's Growth. Cuba shows a similar pattern to the other communist countries analyzed except that even in the good times 1990/1960 it grew only 0.84 the World's. 2015/1990 Cuba grew 0.71 the World's. And 2015/2000 it had a recovery similar to Eastern Europe and the Russian Federation,1.35 the World's growth. Most of Cuba's bad performance is due to the Communist Model adopted, which also failed in the USSR and Eastern Europe. However, a large part of the difference in performance between Russia and Cuba is certainly due to US's economic blockage of Cuba. In any case Cuba, made the wrong choice adopting the Communist Model, like any body else it overestimated the economic success of the USSR, and became its unconditional ally, confronting the US. Cuba has paid a huge price because its miscalculation of the real relative economic power of the USSR.

Communism in China was not a failure 1980/1950 grew 1.08 the World's growth. But, it is necessary to understand what explains this number before passing a final judgment as to whether communism was successful in China prior to the 1980 -1990 capitalist reforms. First, China was in 1950 quite destroyed by the corruption of the Kuo Mi Tang and by the vandalism of the Western countries in China which had already lasted one century. According to the Maddison project 2013, it is not until 1956 that China recovers the income level it had in 1850. When the revolution wins in 1949 and Mao starts to govern China, the main task was just one of reorganizing the country. Between 1952 and 1950 according to the Maddison project 2018 income in China grew 31%. Therefore, the reorganization 1952-1950 actually explains the good number 1980/1950 that China had. If we re-estimate this number for 1980/1952 it goes down to 0.88 the World's showing already the failure of the Chinese communism prior to the capitalist reforms 1980 – 1990. Moreover, the real trouble for communism in general starts in 1980. USSR number for 1980/1950 is 1.01 the World's growth not far anymore from China's 1.08; and the number for 1980/1952 is 1.05 actually higher than China's 0.88. Up to 1980 China's was perform-

[106] Data from Maddison Project 2018.

ing similarly to the USSR, what saved China is that by implementing the 1980-1990 capitalist reforms avoided what would have been its collapse in 1990, like it happened to Russia. China's income in 1980 was only 77% higher than in 1850 and was at the level of 1894 USSR income, by 1980 China was still a very poor economy.

What really has made China successful was the 1980 – 1990 capitalist reforms, which position it very well for the ICT revolution that occurred in the world after 1990. China enter the ICT revolution adopting the Asian Growth Model that had been already successful in other countries. And its very low wages made it extremely competitive for the new world to come. This story would be developed latter on, in the section in which we explain the Asian Growth Model. For now, we will close this section in the Communist Model of Growth observing that it was not successful in any country. China is communist, but its success is not due to the Communist Model of Growth, but to the Asian Growth

Model. China's recent success reminds us that an economic growth model can function well with different ideologies and diverse forms of governing.

The difference between Soviet and Chinese communism was the Chinese transition period 1980-1990 which changed the characteristics of the Chinese economy and oriented it outwards. By following the Asian Growth Model, that we will further explain explain below, China was able to use as its fundamental source of growth the ICT revolution[107] that started in the mid eighties and gain great speed in the nineties.

The communist model of the USSR and the Russian federation almost look like the Chinese model, in the sense that they have high savings, high exports and a healthy external balance. But the huge difference is that one looks outwards (the Chinese), and the other look inwards. China develop an extremely competitive industry, and the USSR and the Russian Federation a non competitive industry.

In summary there are several key lessons from the communist model: 1) An inward looking economic policy develops a non-competitive industry. 2) An inward looking economy may appear to have healthy economic growth, but whenever it opens up a lot of this growth goes away; as its industry disappears by not being been able to compete with the foreign

[107] I stand for information, T for technology in the work place, and C for communications.

technology. 3) something was wrong with the theory that high savings and huge capital accumulation produce high growth. What it did not take into account is the technological quality of the capital. Savings only produce proper growth if it is used for investing in frontier technology.

THE IMPORT SUBSTITUTION MODEL

The Import Substitution Model had its origins in the postwar Latin America (LA). During the war imports were difficult to obtain, and a process of import substitution naturally originated. And when the war was over, a group of economists, mainly at CEPAL, thought that continuing with this process was the key to modernize LA. These thinkers were impressed, like every body else at the time, with Stalin industrialization success and therefore look forward to industrialize LA following his steps. Moreover, given the weakness of global trade at the time, it was not conceptualized as a relevant source of economic growth. They argue that the West had developed through high savings, and they recommended strategies to increase savings to the West historical standards. Solow's economic growth model, which main article was published in 1956, did reinforce their point of view. The Import Substitution Model does not have the command economy problems of the Communist Model, but it shares with it the inward looking industrialization program. The Model was not successful, LA grew 1990/1950 only 0.91 the World's growth, while East Asia grew 1.56[108]. Contrary to the assumptions made to recommend the Import Substitution Model, Global Trade became a key source of growth, and LA did not benefit from it as much as it could have been. Moreover, focusing inwards meant the usage of obsolete technology as a consequence of an inadequate scale of production and the lack of significant presence in the global markets where the frontier technology is defined. The import substitution of capital goods became nor only inefficient but expensive, and it created current account imbalances that had to be financed, therefore the countries recur to international debt. And given the lack of sustainable competitive exports, when global interest rates increased in the Volcker's

[108] We use 1990 because the debt crisis of the eighties was the consequence of The Import Substitution Model used.

era, LA entered the 80's debt crisis. This crisis and the need to repay the renegotiated debt, limited for many years the potential rate of growth of LA. In many ways the Neoclassical Growth Model was a response to the crisis created by the failure of the Import Substitution Growth Model. But, as we will see it did not work either, LA 2016/1990 grew again only 0.90 the World's growth; while, East Asia grew 2.61.

There are substantial differences between the inward looking and the outward looking approach. 1) The countries that grew more in Asia had much higher exports than LA, the exception is China and India which has not yet entered the Asian Growth model. 2) These countries also had higher savings. But in here two facts stand out, first China high savings which were used to introduce the 1980-1990 transformations that position it so well to adopt latter on the Asian Growth Model and grasp the growth benefits of the ICT revolution. Second, Argentina had higher savings that Korea, yet Korea grew 5.98% annually and Argentina only 0.68%, which again reiterates the thesis that what counts is how these high savings are used. Korea exports were 19% of GDP and Argentina only 0.64%. 3) Few countries like Brazil and Mexico had a good growth with the Import Substitution Model, which shows that import substitution is actually a source of growth, but the cost was to have an inefficient industry. LA represent only 3% of total World's merchandise trade versus 8% of Japan and 11% of other Asian countries. And in terms of Machinery and Transport Equipment exports LA only represents 1%. In 1990 LA was as inward looking as the USSR and Eastern Europe. The inefficiency of LA's industry had a high cost latter on. As the global trade increased 1990 onwards, its industry was unable to compete. Thus, most of LA became a commodities exporter and this defined to a large extent the low growth of LA 1990 - 2018. The exception was Mexico which due to the NAFTA (free trade agreement with US) entered the ICT revolution, and modernized its industry. Yet Mexico only grew 1.03% annually 1990-2018, similar to Brazil's 1.16%, to understand Why? We will review in the next section the Neoclassical Economic Growth Model adopted by Mexico in 1988 with Salinas.

The import substitution model in Latin America was not the success it is often argued, it was a failed model that ended up in the 80's financial crisis, just like the URSS collapsed in 1991. And like in the case of the communist model, it left LA with a non competitive industry. Both the level of indebtedness and the lack of industrial competiveness constrained

enormously, the future potential growth of LA. Just to get a perspective 1990- 2018 China grew 4.4 times LA growth.

With The Import Substitution Model, 1950 to 1990[109], Latin-American had a low savings rate, 21.58 GDP versus World's 25.87 and East Asia's 33.30; relative low exports, 12.88 GDP versus World's 15.60 and East Asia's 15.46; and its growth rate was acceptable 2.26% (similar to the World's annual growth rate 2.28%, but much lower than East Asia's 3.43%). Argentina performed very badly growing only 0.64%, Mexico grew 2.4%, and Brazil 2.7%. Malaysia, the lowest growing country from the ones listed in the Asian Growth Model, grew 3.02%, China 3.35% (partially due to the benefits from the capitalist policies of the eighties), Thailand 4.43%, Singapore 4.73%, Hong Kong 4.93%, Japan 5.87%, and Korea 5.08%[110].

While the countries following the Asian Growth Model grew fast and built a competitive exporting industry, LA grew only at the average of the world's and ended with the debt crisis and a non competitive industry.

LA merchandise exports as a % of the world's went down from 8.05% in 1960 to 4.52% in 1990[111]; while East Asia's went up from 12.47% to 22.04%. In 1990 manufactured exports as a percentage of global manufactured exports was for LA only 2.25%, while East Asia was 23.83%. It is true that in this year LA GDP was 37.25% the one of East Asia, and therefore LA should have had a smaller participation in global manufactures. But at the same level of efficiency LA should of have exported 8.88%. Thus, East Asia in 1990 had 4 times the efficiency of LA in exporting manufactures (8.88/2.25). These higher manufacture exports, plus higher savings explain the GDP growth difference between East Asia and LA. East Asia grew 3.43% annually 1950 -1990 versus LA 2.05. The end result was that while in 1950 East Asia was 1.92 times LA, by 1990 was 2.68 times. A relative increase in size of 40%. Being smaller, more inefficient, and with a higher debt certainly did not help LA in the years 1990 – 2018. The Import Substitution Model was a failure, But, in addi-

[109] S, Ex and EB data not available 1950 -1960, we use 1960 – 1990 in instead.

[110] In here, we are using growth rates 1950-1990 for all the countries to compare them. The Asian countries performed better despite the fact that the Asian Growth model did not start properly until the 60's (with the exception of Japan where it started in the 50's and China where it started in the 80's, but did not fully develop until the 90's).

[111] Notice that both India and South Africa, amongst other countries, became inward looking between 1960 and 1990 due to import substitution policies.

tion, as we will see in the next section, LA took again the wrong choices in 1990 and selected again inadequate models of economic growth.

THE NEOCLASSICAL MODEL

From a pure theoretical point of view, the Neoclassical Model is quite elegant and its logic works. But it left out of the model a key element of the real economic world – Institutions. The model shows that capital will flow to wherever it can obtain more profits, thus it should seek low wage countries. Therefore, it is argued that if the developing countries fulfill some conditions, capital will flow to them; and they will grow quickly, and with first class global technology. The conditions to be satisfied are: open up their economies, maintain low wages, reduce bureaucracy, maintain clean government finances, reduce the government size to give space for the productivity of the private sector to operate, and free internal markets so that market prices reflect true scarcities. The Neoclassical Model was applied in many countries in LA, in Argentina Brazil and other countries, but only for relative short periods; in the Russian Federation, partially during the nineties; but nowhere was it applied more rigorously and for a longer period than in Mexico. And Mexico's growth 2018/1990 was a failure. It grew only at an annual rate of only 1.03%. Why did it happen? The model has two concrete problems. The first one, as we said before, is that it did not take into account the obvious fact that in the real world there are institutions, that distinguish the different countries, which cannot be changed quickly at will. There is a country risk associated with the specific history of each country, defined by historical political or racial conflicts, social classes problems, the legal system transparency, the police professionalism, corruption, bureaucratic inefficiencies, physical infrastructure, Mafia history and so on. A country cannot at will change its cultural, social, political, administrative and physical infrastructure conditions. Therefore, capital was not willing to fully go to developing countries just because they had low wages. There was too much risk involved in transferring fully the technology. But, the second and more definitive reason for which the Neoclassical Growth Model did not work is because only few years pass by when the ICT revolution started to

dominate the international arena. The ICT revolution meant that there was no longer the need to fully transfer capital and its technology to the developing economies. Due to the advances in Information, Communication and work Technology, it became possible to manage from offshore very complex process of production. Such processes of production were distributed fragmented amongst many countries. Diversifying amongst countries and maintaining at home the key managing decisions and controls reduced a lot a specific country risk. These two problems explain why capital did not abundantly come to a specific developing economy to substitute insufficient local savings. In a very short sentence the main difference between Mexico and China, is that Mexico remained expecting the foreign capital to come, and it never did in the amounts expected by the Neoclassical Model. While China increased its local savings a lot. Mexico's average saving rate over GDP was 22% while China was 48%[112].

This remains me of a conversation I had with Paul Samuelson when he was still alive, many years ago at MIT, he said to me "Well, it is true that Solow's economic growth model has many problems (we were discussing the capital theory controversies); but one thing is no doubt correct in his model, *without savings there is no growth*". It is true that huge savings do not guarantee the right kind of sustainable economic growth, savings have to be mostly invested in frontier technology. But, that does not mean that high savings are not required for high growth. High savings may not be enough, but they are certainly needed. Although, as we will see, there are other factors, Mexico's low saving rate explains, to a large extent, its low growth rate.

The ICT revolution change the international economic arena; one cannot really talk anymore about comparative competitive advantage between countries; it has become more and more the competitive advantage of key specific global industries, which have diversified their global process of production among many countries.

We will get back to discuss the reasons of Mexico's low growth and the failure of the neoclassical model. But to be able to better understand why the failure, it is convenient to explain first in the next section: the successful Asian Growth Model, the ICT revolution, and the economic success of China. The reasons of China's success are just a mirror of the ones that explain Mexico's failure.

[112] Obregon, C; 2018. Globalization: Misguided Views, op.cit.

CHAPTER EIGHT. SUCCESSFUL MODELS OF ECONOMIC GROWTH

In this chapter we discuss two successful model of economic growth the Occidental and the Asian. While the first develop with its own historical institutions, the second was consequence of intentional institutional design. Both models were guided by frontier technology.

THE ASIAN GROWTH MODEL

There are many economists that had question whether an Asian Growth Model exists[113]. China took 28 years to grow from 2379 dollars (in1990) to 12569 (in 2018). The questions are: How many years took other countries to achieve the same results? Do other Asian countries use a similar number of years? Does a group of Asian countries cluster and differentiate themselves from other countries? Clearly there is an Asian Growth Model, the Asian countries selected took an average of 29 years[114]. And they clearly cluster and differentiate themselves from LA's average of 100 years; the West's of 100 years and other countries average of 90 years. There are two main phases in this model. The first one 1990/1950 was dominated by Japan, which by 1968 had achieve the same level of Per Capita income than China has today. Other countries that achieved todays China's level of income are: Singapore in 1976, Hong Kong in 1979, Taiwan in 1987, and Korea in 1990. Malaysia and Taiwan, achieved it in the second phase, 1994 and 2008 respectively. The first phase was characterized by cheaper local national production of computers chips, cars and others. The second phase was dominated by the ICT revolution, which fragmented production amongst many countries.

[113] The World Bank in 1992 argued that it did not.

[114] Data comes from Obregon, C; 2020. *Three Lessons from Economists: That policy Makers Should Never Forget*. Amazon.com, also available at Research Gate.com

The Asian Growth Model is distinct in each country, but has some elements in common[115]: 1) A powerful regulatory state that guides the model. 2) Flexible planning involving the private sector, with a high degree of autonomy for companies. 3) The private sector establishes clear commitments, and it is of paramount importance in the definition of the model. 4) The model is based on exports; production is oriented to compete in the global market. 5) High internal savings. 6) Cutting-edge foreign technology. 7) A learning process that promotes local technology and competitiveness with the outside world. 8) Exports are the basic axis of the Asian growth model, but at the same time it efficiently defends the growth of the domestic market, through: a) a series of regulations that–- without being tariffs–hinders the growth of imports, and b) through an undervalued exchange rate. 9) A national agreement that reinforces the historical social belonging of each nation through the commitment to unite to compete with the outside world. The agreement is for economic growth, in the understanding that the only way to achieve this is by competing head to head with the developed world, that is why is so important to export to it. 10) In all cases, there is awareness that it is necessary to learn from the West and negotiate with the West, but always with the aim of competing with it. 11) In all cases, the competitive model strengthened and used traditional local institutions, while creating new ones oriented to global competition. 12) The central objective is to guarantee economic growth at the national level.

The Asian Growth Model provided in the real world a new explanation for development, one that was not foreseen by the theorist of economic development. It was based in high savings, in orienting the economy outwards, and in recognizing the relevance of the institutional arrangement.

The institutional arrangement, though, did not copy the West's. It recognized the need to integrate the economy to the global market, but it did it primordially through promoting exports and restricting imports. It recognized the need of high savings, but it introduced the innovation of savings much higher than the West's. In a very surprising conclusion, imposed upon us by economic reality, we learned with this Model that development happens when the poor save for the rich to consume, and

[115] Obregón, C; 1997, 2008, 2020. 1997, *Capitalismo hacia el tercer milenio. Una historia cultural de la evolución de las economías del mundo,* op.cit. 2008, *Globalización y subdesarrollo*, PUI, México. Available in Research Gate. 2020, Obregon, C; 2020. *Three Lessons from Economists*: *That policy Makers Should Never Forget,* op.cit.

not like previous theory told us, when the rich save to lend to the poor– for the latter to have capital to develop.

The First Phase

1950 – 1990 the Asian country with the highest saving rate was Japan. Following the Asian Growth Model with the characteristics listed above, Japan strategy was simple: save a lot, compete in global exports of manufactures, and specializing in high technology exports. The idea was to confront economically head to head in the global markets the US economy. It was successful, Japan in 1990 had almost the same share than US in manufacture exports, a high share in exports of Machinery and Transport Equipment, and even a higher relative share in Machinery and Transport Equipment exports to develop economies. The average exports over GDP 1960 -1990 were 11.19% in Japan and only 6.87% in US, the average Savings over GDP in the same period was 35.18% for Japan and 22.58% for US. GDP Per Capita annual growth rate for Japan was 5.87% and 2.24% for US. In 1950 GDP Per Capita in Japan was 40 % of USS, in 1990 it was 80%[116]. The Asian Growth Model did work. But not only did it work for Japan, it also did for other countries. While the average 1950 – 1990 world growth rate was 2.28%, very similar to US's; Korea was 5.98%, Hong Kong 4.93%, Singapore 4.73%, Thailand 4.43%, Malaysia 3.02% and even China that only started in 1980 was 3.35%. In many ways, Japan influenced Korea's growth; Hong Kong benefit from the trade between China and the rest of the world; and Singapore, Thailand and Malaysia benefited from the increasingly higher wage rate in north Asia. But the key of their success is that all these countries followed the Asian Growth Model.

Second Phase

To fully understand what happened in the second phase we will first refer in the following paragraphs to What is the ICT revolution? This is

[116] Maddison, 2018.

important, because China's success in the second phase is explained by ICT + Asian Growth Model.

The ICT revolution started somewhere in the mid 80's. We will use it as a reference point 1990. The I stands for information, the C for communications, and the T for technology particularly related to new working methods and work place organizations. In his recent and extraordinary book, Richard Baldwin notes: "Between 1986 and 2007, world information grew at 23%, per year, telecommunications at 28% and computation power at 58% per year"[117]. To understand what it means, we must recall that global GDP Per Capita only grew at annual rate of 2.1%[118]. This means that, while GDP Per Capita multiplies itself 1.6 times in these twenty-one years, information multiplies by 77.3 times, telecommunications by 178.4 times, and computation by 14852.5 times.

The ICT revolution made it possible for the developed nations competitive advantage (know how), to move into underdeveloped countries avoiding the traditional developing countries institutional constrains; because, it did not matter anymore what happened in the developed country as a whole. The only relevant factors were the conditions under which the fragment of the manufacture production are received by the host country. Those conditions, whatever they are, represent a lower risk than a transfer of the whole investment process. In these new technological scenario, it became irrelevant whether tariffs in general were low or not in the host

[117] Baldwin 2016

[118] Maddison project 2013. In order to compare different countries along the years, one necessarily has to make adjustments. In a given year countries'comparisons have to be made using a common currency, normally being thee US dollar. To translate the values of a given country from its currency to dollars, one cannot just use the prevalent exchange rate for the simple reason that the price of a given product or service is not the same in different countries. Therefore, one needs to calculate what is known as Purchase Power Parity (PPP) dollars. These tells us that one dollar of this kind buys the same at all countries and, to avoid distorsions for inflation, one uses constant dollars. Maddison is the only long historical data series calculted in PPP constant dollars. In its case, 1990 Geary- Khamis dollars. The World Bank has also calculated PPP series, the first one was in 2005 constant PPP international dollars and last one in 2011 PPP constant international dollars. The Pen Tables PPP's are like the World Bank's. For 2011 constant PPP international dollars, the World Bank presents data from 1990 onwards. In this work, we will use World Bank data for 1990 onwards and Maddison for any date before, unless stated otherwise. For Maddison, there are two series: first is the 2009 series, which is the original of Angus Maddison and presents GDP, population and GDP Per Capita; second one is a revised version made by his colleages, after his passed away in 2013; this series only presents GDP Per Capita. We will use the second series whenever we use only GDP Per Capita.

country. It was no longer a question of capital moving into the developing country; just know-how of a fragment of production will move. This is why traditional neoclassical trade theory could not explain any longer what was happening; and the reason Mexico did not grow and China did. In very practical terms the ICT revolution meant that the "Neoclassical Quality" of the country became irrelevant, the only thing companies care about is who offered them better conditions for the segment of production they were going to place in any given country offshore. Mexico was able to compete due to the Free Trade Agreement with US, but China offered even better conditions, thus significant more capital went to China. The large amounts of foreign investment received, huge national savings, plus an industrial plan meant that China was able to transfer technology efficiently to his own companies in large scale. By understanding and adapting itself to the ICT revolution, and by following the Asian Growth Model China was able to became an economic powerhouse. Mexico had two problems due to the neoclassical model: 1) Low savings, and 2) It did not have an industrial plan. China used the Asian Growth Model and had a specific industrial strategy to follow. In Summary, there are three key differences between them: 1] China offered a much better deal to foreign investors –thus foreign investment grew substantially more rapidly there–. 2) China's more than double the Mexico's saving rate. 3) China used the Asian Growth Model and had a specific industrial strategy to follow. Much higher foreign investment and much higher saving meant significantly more rapid growth, which gave the possibility of developing national companies, which then were able to absorb technology from the foreign companies. All this process reinforces itself and produce more growth.

Let us analyze more carefully each one of this key differences:

Foreign Investment Net Inflows as a % of the World's: 1970-1989 not surprisingly Mexico received more Foreign Investment than China, 2.37% against 1.34%. But everything changed quickly after 1990. 1990-2018 China receives 10.52% and Mexico only 1.93%. This is a huge difference that can not be justified by the relative size of the two economies. China was only 50% larger in 1990 and income Per Capita in Mexico was 9 times the Chinese, which meant that Mexico had better infrastructure. Mexico was richer, mas closer to the US, and had a free trade agreement with US; it was better position than China to become attractive to foreign investment. But Mexico did not understand the real characteristics of the

ICT revolution. Everything had changed, investors were not any longer looking for a better neoclassical country, but for the country that offered the best deal for the fragmented production that they wanted to place there. China offered better conditions and they went there. By 2005 total foreign investment in China amounted to 4.12% of the World's and was already much higher than Mexico's 2.17%; and by 2018 it was 8.42%, it had more than doubled in terms of the World's; and Mexico was only 1.47% it had shrunk 1/3 in relationship to the World's. The rapid growth of the Chinese economy meant that in terms of its huge GDP size in 2018 Foreign Direct Investment was only 20.30%, almost the same level than in 1990, which shows that China was able to transfer efficiently technology and was able to grow the local economy as much as the fast growth of the incoming Foreign investment. In instead Mexico's FDI share in GDP grew from 28.26% in 1990 to 42.36% in 2018, which shows that Mexico was not able to use Foreign Investment to grow its local economy.

A very well spread half truth is that China grew more because it put more value added in its exports than Mexico. In other words, that Mexico imports a large content of its exports. This is only half true. As reported by the OECD, Mexico's import content of its exports is significantly higher than China. Thus, it is true that there is room for Mexico to improve in this area and it could be a source o additional growth for the Mexican economy. But Mexico's import content of its exports was in 2016 already lower than Korea's, Malaysia's and Thailand's and despite this Mexico grew annually 2016 – 2018 only 0.87%, versus Malaysia's 3.89%, Thailand's 3.73% and Korea's 2.48%. Without sufficient savings and a proper growth model which includes an industrial plan, increasing the value added of the exports (or reducing its import content) is not very helpful.

Besides adding more value to its exports - which they did, the Chinese grew more from FDI just because it came in much larger numbers. The rapid increase in FDI inflows automatically meant a much rapid increase in China's exports, and a much rapid increase in the total value added, and higher economic growth.

Mexico was very well positioned when the ICT revolution was starting, in 1990. As we already mentioned, the Chinese Economy was 50% larger than the Mexican, but Mexican GDP Per Capita was 9 time the Chinese. Theoretically, then Mexico had a much larger savings capacity

and was in a better position for implementing a growth strategy How can we measure the two economies saving capacity in 1990? A simple way is to deduct from the GDP Per Capita the GDP Per Capita poverty line settled by the World Bank at 3.10 PPP $2011 dollars, and then multiply by the population. Using this measure, Mexico's savings capacity in 1990 was 235% China's. But, China took the right strategy and Mexico the wrong one. In 2018 Mexico's saving capacity is only 10% the Chinese.

Average saving over GDP 1991 to 2018 was more than twice in China *versus* Mexico, 47.53% versus 20.6%. The high savings in China explain its growth in the traditional sense of a Solow's model. But there is more than this. The high savings mean the possibility of growing local companies that can learn from foreign investors; Romer's transfer of knowledge became a reality. The problem with Mexico was that its low savings only allowed it to grow enough to bring value added to exports, and to have a very low growth for the rest of the economy. Under these circumstances, it is not possible to develop a national industrial strategy, like the one China has. And it is not possible either, to develop champion national companies capable to compete globally.

China used the Asian Growth Model and had a specific industrial strategy to follow, based upon high savings, high exports, and a positive external balance. Therefore, China accumulated huge reserves. In a first stage, it protected its local industries through restricting imports, and in a second stage –after joining the WTO in 2001–, protected its industries by maintaining an undervalue currency. China's model recognized the fact that economic growth requires large savings and that FDI was not going to solve the problem by itself. Instead, Mexico followed the neoclassical economic model and assumed that its low local savings were going to be compensated with FDI, which did not happen. FDI arrived to create value for international chains due to the ICT revolution and the NAFTA agreement with US, not to substitute the lack of adequate local savings. Mexico had free trade and a free-floating exchange rate, waiting for the FDI that never arrived in the amounts expected by the neoclassical theory. Finally, even though Mexico managed to have a trade surplus with the US, it had an even higher deficit with the rest of the world. Therefore, Mexico was unable to develop a truly competitive national industry.

In the next chapter we will further discuss the sources of economic growth, in general terms they are three: 1) Exports, 2) Import Substitu-

tion 3) Infrastructure and local projects. China used efficiently the three sources of growth. As we will explain latter on with more detail, 2) and 3) cannot work by themselves, as the negative consequence of the communist and the import substitution model have shown. But 2) and 3) can be complementary sources of economic growth when 1) is working properly. The reason is that with 1) in place, there is transfer of frontier technology that benefits the investments in 2) and 3). But 1), 2) and 3) require investments, and since external savings were not enough, for the reasons we have been mentioning, internal savings became the key to be able to enter the ICT revolution with a proper Asian Growth Model.

At this point, it is convenient to explain why Japan was not successful in the second phase of the Asian Growth model, that is 1990 to 2018. Japan made two mistakes. First, it did not increase its saving rate, in instead it went down from 35.18% of GDP in 1960 – 1990 to only 24.05% in 1990-2018. China increased it aggressively from 32.99% to 47.53%, as also did all the other successful Asian countries[119]; none of them had a 1990- 2018 average saving ratio lower than 28% of GDP. This new saving rate was the key for these countries to be able to adapt to the new technological revolution. Second, before the ICT revolution Japan offered a good combination of relative low wages as compared with the West and solid institutions, but once the ICT happened Japan's wages were too high to compete with the new incoming countries. Japan needed to had enter the ICT revolution with very high savings as the other Asian countries did, and as a mature country it would of have needed to increase substantially its production offshore. The ICT revolution meant trade chains that necessarily increased substantially Trade/ GDP; exports over GDP almost double in the World 1990-2018 versus 1960-1990. Exports over GDP increase substantially for all the other successful Asian countries, which shows that they enter efficiently the ICT revolution; in Japan they did not. Even India, that had its own growth program with key differences to the Asian Growth model, had a higher Savings/GDP average 1990-2018 than Japan, and higher Exports/GDP. The consequence was that Japan growth was only 0.9%; while none of the other successful Asian countries grew less than 2.73%, Korea grew 5.98%, and China 8.81%.

[119] See Obregon, C. 2020. *Three Lessons from Economists*: *That policy Makers Should Never Forget*. Amazon.com, also available at Research Gate.com

Technological revolutions always deeply change human societies, and institutions are not always ready to accept the implications of the new incoming technology; and when they resist, it ends up being very damaging for the economic development of those countries involved. Japan is a clear contemporary example; but there had been many historical examples.

The ICT also explains the success of India 1990 – 2018, a growth rate of 4.7%. India following partially the Asian Growth Model also increase savings to 31.42% of GDP and exports to 20.62% of GDP, and it did increase its global share of manufacture exports from 0.52% to 1.75%. But India, has its own peculiar strengths – a large English speaking population, which allow it to enter the boom in offshore services, particularly outsourcing, that was brought about by the new transmission of information capabilities brought about by the ICT revolution.

1990 – 2018 the ICT + The Asian Model work best for China, but it also worked well for other countries with much higher salaries, whose growth rates were also elevated: Korea 4.2%, Singapore 3.44%, Hong Kong 2.73%, Thailand 3.44%, and Malaysia 3.57%. Of the seven successful Asian countries: three had GDP levels very close or much higher than Mexico. These takes away the myth that China was more successful than Mexico because its very low wages.

In the last 68 years we have seen several Asian countries became developed: Japan, Singapore, Korea, Hong Kong; and others improve their GDP income a lot. 1990 - 2018 all the countries that followed the Asian Growth Model improved its relative GDP Per Capita position versus Mexico substantially: China 698%, India 172%, Thailand 91%, Malaysia 100%, Korea 107%; and even the two countries that started with much higher GDP levels improved versus Mexico, Singapore 94% and Hong Kong 59%. Comparing these seven Asian countries plus Japan with many countries around the world, 1950 – 2016 seven of them are the ones with the highest GDP Per Capita annual growth, and only Malaysia grew slightly less than Switzerland. 1990 – 2018, East Asia and Pacific was the highest growth region in the World. The Asian Growth model did work very well.

THE OCCIDENTAL GROWTH MODEL

1950 – 2016, the West grew like the World Average, that means that its GDP Per Capita more than quadrupled during the period, only Asia did better[120]. Thus, the Occidental Model of growth is still alive and well. There are however, substantial differences between countries. With Saving rates going from 14% to 31.7% in 1960 – 1990 and from 15.02% to 33.71% in 1990 – 2918; and external balances going from highly positive to significantly negative. Exports in all the countries increase substantially between 1990 -2018 and 1960 – 1990, which reflects the ICT revolution. GDP Per Capita for the Occidental countries was generally close to the world's or higher in 1960 – 1990, and lower than the world's in 1990 – 2018. The West grew less than the World during the ICT revolution due to the success of the Asian Model.

The success of the Occidental model is undeniable. There had been many articles and books explaining why the West grew rich. The Occidental Model success is explained in many ways, the most well accepted versions are based in any one of these factors or its combinations: free markets, proper institutions, learning by doing, research and development, education and labor quality, and scientific and technological development

The first observation to be made is that the Occidental Model took around 100 years to increase its GDP Per Capita from around 2400 2011 PPP International Dollars (China's 1990 level to around 12600 (China's 2016 level); while the Asian Model took only around 29 years. The same growth of the West changed the global conditions and made it possible the fast Asian success. Asia developed exporting to the middle class in the West, and using the frontier technology of the West.

The Occidental Model is simple put Capitalism. And it is very important to realize that before Capitalism the other productive systems were characterized by extreme poverty. If we use as a poverty line 3.10 2011 PPP International Dollars a day from the World Bank (Which includes out of pocket health expenditures); the World on average was poor until

[120] See Obregon, C. 2020. *Three Lessons from Economists*: *That policy Makers Should Never Forget*. Amazon.com, also available at Research Gate.com

1820 when it crosses barely the poverty line by only 2%[121]. The world's population starts growing in the period 1500 to 1820, and it is not until 1820 to 1870 that both the population and the GDP Per Capita grow significantly. Clearly the way out of poverty is economic growth, and the only productive system that has been able to grow at a considerable speed is Capitalism. What is new in Capitalism? Mainly that the process of production gets globalized.

CONCLUSION

In order to better understand the success of the West, we need to use economic theories, and therefore it is best if we continue our explanation of the Occidental Model in the following chapter. But as an introduction to the next chapter and as an epilogue to this one, we would like to mention that there are three lessons to learn from the Occidental Growth Model. First, before Capitalism there was only poverty, and the population almost did not grow; because it did not have enough food, shelter and other sanitary conditions. Simple put, economic growth is what guarantees human life, without it peoples die. This is why Economic Growth is without a doubt the name of the game in economics. Second - the Occidental Model is just what is known as Capitalism, and its main difference with other modes of production is the globalization of the production process. Before Capitalism globalization meant the conquest of other regions by military means, and the accumulation of richness fruit of the war, but the production process was not truly globalized. Third – what distinguish the Occidental Model is the mass consumption of the middle class, which allows for mass production and fast technological development. Thus, together with the globalization of the production process there is a globalization of consumption. In particular, this is what provides Capitalism with its own engine of growth and prevented the collapse that previous empires suffered. In these empires the increasing cost of administrating centrally the vast territory grew exponentially with the increase in its extension, and at one point it became higher than the fruits of war, which

[121] See Obregon, C. 2020. *Three Lessons from Economists*: *That policy Makers Should Never Forget*. Amazon.com, also available at Research Gate.com

only grew linearly. In other words, as war was fought farer and farer, the cost became impossible to be repaid by its fruits. In Capitalism, economic growth does not require military conquests, it occurs because of the growing consumption of the middle class. Military confrontations happen frequently in Capitalism, because of the conflicting interests of the Nation States, and there is also military conquest of foreign regions – but economic growth mainly happens at the center of Capitalism due to the consumption of the middle class. Fourth, the Asian Model was successful, but it is a dependent model, in the sense that it grows exporting to the middle class of the West. The consumption of this middle class then, is not only the explanation of the success of the Occidental Model, but also of the Asian Model. With these lessons in mind, is time to move into the next chapter to discuss the New Growth Theory (NGT).

CHAPTER NINE. NEW GROWTH THEORY (NGT)

NGT has to take into account what we have learned so far. 1) There are only two successful models of economic growth: The Occidental and the Asian. 2) The Asian is dependent upon the Occidental. 3) At the global level economic growth is mainly explain by frontier technology. 4) And frontier technology depends upon the enlargement of the global middle class market – understanding by middle class the one with consumption capacity of frontier technology products. 5) The enlargement of the middle class market is defined by the growth of both free trade and the middle class. 6) The Occidental Model explains well the success of the West, but cannot be copy by other countries. Once the West is developed it defines frontier technology - and therefore any other successful model would have to be dependent upon the West's technology.

There are several tasks that NGT has to address: 1) Explain the Occidental Model of Economic Growth; 2) Explain the success of the Asian Development Model; 3) explain the failures of the Communist Model, The Import Substitution Model, and the Neoclassical Model; 4) proposed a model of economic growth for the countries that had not been successful. 5) proposed a model for economic growth for the world at large. And all these tasks must be address with a coherent homogeneous theoretical perspective.

Let us first start by listing whether or not the key element mentioned in diverse theories of economic growth was present or not in the Occidental Model, in the Failed Models, and in the Asian Model, see Table 9.1.

TABLE 9.1. ECONOMIC GROWTH MODELS

	Occidental Model	Failed Models	Asian Model
Neoclassical Theories			
Science	Yes	Yes	No
Research and Development	Yes	Yes	Yes
Learning by Doing	Yes	Yes	Yes
Education	Yes	Yes	No
High quality labor	Yes	Yes	Yes
Savings	Yes	Yes	Yes
Other Theories			
Sen' Freedoms	Yes	Yes	No
North's Western Institutions	Yes	Yes	No
Classical Theory			
Smith's Enlarged Markets	Yes	Yes	Yes
NGT new element			
Technology guided by Middle Class	Yes	Yes	Yes

Science was key for the Occidental Model, in the failed models it was clearly present in the USSR and in Russia and it does not explain the success of the Asian Model. Thus, science is clearly needed for the economic growth of the World but: it is not sufficient to obtain growth in particular countries, and it is not necessary to obtain growth in a dependent model.

Both Research and Development and Learning by Doing were both key for the Occidental Model and for the Asian Model. Therefore, it is necessary for economic success. However, by itself does not generates growth because they were also present in the failed Communist Model.

We have distinguished between Education and High Quality Labor, the first being scholar education and the second specific skills acquire for special labor tasks. Education was a key element in the Occidental Model, but was not in the Asian Model. And it was present in the Communist Model. Therefore, education does not promote growth by itself, and it is not necessary for dependent growth to happen. High Quality Labor is necessary for successful growth, it was present in both the Occidental and the Asian Models. But, by itself does not generate growth as the Fail Communist Model shows.

High savings are necessary for successful growth, but not sufficient. It was present in the successful Occidental and Asian Models, but was also present in the failed Communist and Import Substitution Models. Thus, by itself does nor promote growth.

Sen's freedoms explain the Occidental Model, but clearly are not sufficient nor necessary to generate dependent economic growth. In relative terms Latin America enjoy more freedoms than Asia (particularly in the beginning) and Asia perform much better.

North's Western institutions do explain the Occidental model but are not sufficient nor necessary to generate dependent economic growth. Their presence was much stronger in Mexico than in China for example.

Smith's theory of enlarged markets explains both the Occidental Model and the Asian Model, but fails to explain both the failure of the USSR and of the neoclassical model in Mexico.

The technology guided by middle class explains the Occidental Model, the Asian Model, and the failure of the Communist and the Import Substitution models. However, it does not explain the failure of the neoclassical model, Mexico did export to the international middle class and failed. Thus it is necessary, but not sufficient to create economic growth.

What do we learn from the previous comparison between diverse model of economic growth? First, the explanations of the Occidental Growth Model are not necessarily adequate to explain the success of the Asian Model. Second, the explanations of the Occidental Model happened historically all at once, and they all correlate and partially explain the West's success, but each one of them isolated do not necessarily generates economic growth.

Therefore, we need a theory of growth for the Occidental Model, a second distinct theory of growth for the Asian Model, a third neither theory to describe how can todays underdeveloped countries become developed, and finally a fourth theory to promote the economic growth of the world at large.

The theory of growth for the Occidental Model is pretty well known, it is the sum of the neoclassical theories plus the classical theory; but, we will add a new element *technology guided by the enlarge middle class market*.

The theory of growth for the Asian Model has already being explained before. It is distinguished from the Occidental Model in several aspects. As a dependent model it does not emphasizes science, its technology is guided by exporting to the West's middle class, saving are very high, imports and exchange rates are managed, governments intervene in guiding the economy but let markets freely operate. It does not emphasize neither scholarly education, Sen's freedoms, or North's Western institutions.

What should todays underdeveloped countries do? The ones that can should replicate the Asian Growth Model and integrate themselves in the ICT revolution. The poorer countries however cannot do it, and will only become develop if eventually there is a new Marshall type plan focused in their development.

What does the long run rate of growth of the world depends upon? It is defined by: 1) The global savings rate given by inter-temporal preferences and institutional characteristics; 2) technological development which is influenced by many endogenous causes such as science, R&D, learning by Doing, and Education (quality of labor), the size of the world's free market –which includes the global middle class; and the fast changing preferences of the middle class; 3) productivity given by the incorporation of low wage workers, both through migration and the ICT revolution.

In what follows in this chapter we will present three topics before presenting the conclusion about the NGT. The first one will be technology guided by the changing preferences of the middle class. The second one will be the sources of growth. And the third one the role of central banks in EE.

TECHNOLOGY GUIDED BY THE CHANGING PREFERENCES OF THE MIDDLE CLASS

One of the critical questions that economist had to ask themselves from the beginning is: What distinguishes capitalism from previous modes of production? Adam Smith already gave us an important cue: the enlargement of the market is decisive for technological innova-

tion and economic development. Therefore, it is natural to ask: What produced such large new markets? and Why has capitalism not collapsed, like the older empires that extended their markets to very large geographical areas? Distance was always a key problem for economic development. For the older empires, military, administrative, and transportation costs grew exponentially as the conquered regions became increasingly far away, while benefits grew only linearly, therefore eventual collapse was inevitable. Capitalism benefited from the beginning from lower costs of transportation, and they went down dramatically in the eighteenth and nineteenth centuries. However, the true key for its success was that it created an engine of self-growth, the growing consumption of the middle class. In order to understand What happened? It is important to define: What do we mean by middle class? In other works, I have defined the middle class as having two characteristics[122]: 1) it has a political inclination to dispute the control of the country to the high class, and 2) it consumes goods that are produced in the technological frontier[123]. In the older empires, the middle class was non-existent. Capitalism, form the beginning, created a middle class in certain countries. The first country to have a significant middle class was England. Already in 1649, because of a civil war, Cromwell–the leader of the chamber of the commons - beheaded the King. The civil war's goal was to allow the parliament to get control on taxes and military expenditures.

However, the political power of the middle class took a long time to consolidate itself. In the UK, the chamber of the lords–which is elected by the nobility and the church–regained power, and it was not until the twentieth century that the chamber of the commons–elected democratically - had the power to nominate several prime ministers. In France, the French Revolution of 1789 ended with new appointed Kings and Emperors. And it was not until after the World War II that a real powerful middle class emerged in this country. In the US, the independence meant already the consolidation of democracy and of a large middle class, but even in here, only a minority of the population

[122] Obregon, C; 2008. *Teorías del Desarrollo Económico.* PUI, México. Available in Research Gate.

[123] For a measurement of the middle class growth and its economic impact, see table 4.4. in Obregon, C; 2020. A discussion of the table is presented in Chapter 4. 2020 Obregon, C; *Three Lessons from Economists*: *That policy Makers Should Never Forget,* op.cit.

had the right to vote. Black slaves and women were not considered citizens[124]. But, despite the fact that the political consolidation of the middle class was a very long process, it was a process that had been always alive, and that distinguished Capitalism from other modes of production. In the ancient times, production and innovation were mainly directed to the consumption of the high class, which meant artisans making luxurious goods for them–like pyramids, castles, and so on. In capitalism, manufacturing mass production allowed technological innovation, and this was from the beginning the key for economic development, as Smith taught us.

Capitalism and democracy were born together in the West. Democracy gave capitalism a motor engine of its own. The political triumph of the middle class had as a consequence higher savings (because taxes imposed upon the consumption of the high class) and mass production, which are the keys to technological innovation, and therefore for economic growth. However, the dynamic changing preferences of the middle class are what distinguished capitalism from communism. The USSR had high savings, high quality education, advanced technology, sophisticated science, and a large market, but it did not have the middle class' mass consumption that the West did.

As table 9.2 shows, Europe's 30, plus the Western Offshoots, plus 7 Eastern Europe, explain most of the world's market growth from 1500 to 1950[125]. In 1500, they had 32% of the global middle class' market; for 1950, they had 94%. Therefore, this group of countries have had between them an endogenous growth, independent of the rest of the world, sustained precisely by the growth in the mass consumption of their middle class. No other previous empire could have achieved such a market expansion in an endogenous manner for 450 years, as these groups of selected countries did. To expand, previous empires needed new conquered territories. Capitalism expands itself endogenously, because the growth of the middle class' mass consumption.

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[124] See Obregon, C; 2013. *La libertad y sus consecuencias: Preconcepciones filosóficas de Occidente sobre la libertad política y económica.* PUI, México. Available in Research Gate.

[125] Defined as (GDP PPP 1990 Per Capita of the world–Africa's GDP Per Capita –*world population), see footnote table 4.4.

TABLE 9.2. THE MIDDLE CLASS GROWTH[1]

Year:	*1500*	*1820*	*1870*	*1913*	*1950*	*1990*	*2008*
Middle class percentage market	0.32	0.53	0.81	0.83	0.94	0.70	0.50
Middle class population percentage world	16.72	19.34	22.51	25.2	22.54	15.18	13.21
Middle class GDP per capita / world GDP per capita	1.25	1.64	2.11	2.35	2.84	3.59	3.11
Middle class GDP / world GDP	20.93	28.44	47.57	59.26	60.67	49.24	40.54
Middle class GDP per capita	706	1091	1838	3585	5995	18482	23654
World GDP per capita	566	666	870	1524	2111	5150	7614
World GDP per capita without the middle class	538	564	589	830	981	2764	5173
Africa GDP per capita	414	420	500	637	889	1425	1780
		GDP per capita annual growth rate %					
		1500-1820	*1820-1870*	*1870-1913*	*1913-1950*	*1950-1990*	*1990-2008*
Annual growth rate of middle class GDP per capita percentage		0.14	1.05	1.57	1.40	2.85	1.38
Annual growth rate of world GDP per capita without middle class percentage		0.10	0.09	0.80	0.45	2.62	3.54

Source: Maddison original series 2009. See Table 1.1.

[1] Methodology: 1) Europe 30 + Western Offshoots + Eastern Europe represent the middle class. As the table shows, this group of countries have had between them an endogenous growth, aside the rest of the world; sustained precisely by the growth in the mass consumption of its middle class. 2) Market is defined as GDP per capita –GDP per capita in Africa (because this represents middle class consumption) multiplied by the population size. 3) The table shows the enormous growth of the middle class in the selected group of countries for 450 years. 4) We have included in this table Eastern Europe because from a very long historical perspective it was part of the European market.

One of the consequence of the middle class disputing the social power was the increase of taxes and with the years the surge of the Welfare State. The Egyptian Pyramids did require some level of technological innovation and certain social savings by the poor, but were channeled to the wasted luxurious consumption of the death Pharaoh. In previous empires nor only production was guided by manually made single luxury items for the consumption of a very small high class; but also, this class was a big spender and it did not save enough. What tax increases meant was the possibility of higher social savings; and therefore, more resources for investment purposes. Capitalism is just the consequence of democracy, which brought two key elements needed for economic growth: higher savings and mass consumption by the middle class.

Why did development happen in Europe? If Smith was right, it had to be because Europe had the largest available market. That is the case. By 1500, Europe was already richer than other world regions, and it was geographically well positioned for the new global trade. There were four competitive cultures in 1500: The Chinese, The Arabic–represented in here by the 15 West Asian counties as defined by Maddison, The European–represented by the 12 richest European countries, and the Hindu.

Table 9.3 measures the market richness of each of these cultures in 1500 taking into account geographical distance, which, being important today was decisive then[126]. Europe had by far the richest market of the world. It was more than five times better positioned than China, which was the culture that followed. Not only GDP was higher, especially in Italy, whose bankers financed a good part of the maritime adventures that established the global trade of species and gold, but its territory was much smaller. Therefore, despite having half the population than China, the European market was bigger and more concentrated. China's GDP Per Capita was very close to subsistence levels and it did not have enough of a surplus to develop a true market. Europe instead had a GDP Per Capita 18% above subsistence, that created a true potential market.

[126] Data from Maddison 2009.

TABLE 9.3. CLASSICAL ECONOMISTS´ INCOME DISTRIBUTION THEORY

Higher agricultural production	Diminishing returns despite technological advancements	Less productive land used (rent goes up)	More expensive food (salary goes up)	Profits go down despite technological improvements in manufactures
		MALTHUS		
Population grows geometrically		Profits go down and salary becomes a salary of subsistence		
Food arithmetically		Policy reduce population growth		
		RICARDO		
Points out technological advances but argues that they are not enough		Policy import food		
Classes: rent goes up		Renter's income increase, nominal salary goes up but real goes down		
Profits down - Capitalists		Workers to subsistance level		

The previous reflection already gives us the first clue we need to understand: Why such fast economic growth happened in China? In general, economic growth accelerates because of a technological revolution, and it is the country or region better positioned for absorbing such revolution that grows the fastest.

Now, a critical question is: What produces a technological revolution? Smith taught us that it is the enlargement of the market that allows mass production, innovation, and technological progress. He is right, but we are still left with unanswered questions. We cannot deny that the steamboat changed the economic world of its time dramatically. And in a general sense, Smith is right; the steam boat is a consequence of the enlargement of the market. But Why did it specifically occur at that time? Moreover, did it have to happen? What is innovation? Like Karl Pooper answered, innovation is about what we do not know. There is no way to predict when a technological revolution will occur, or how will it happen; but what is certain is that it will be more beneficial for whoever is better positioned.

For the ship technology and the enlargement of the markets in 1500, Europe was better positioned, for the ICT technology, China was. This is so for several reasons: 1) China had abundant supply of low wage labor - what the multinationals were looking for given the new technology that allowed them to manage local manufacturing production processes happening offshore. 2) China was in Asia, which had already become an important producer market; this facilitated placing there the new manufacturing value chain processes. 3) The model of economic development based in low-wage labor had already been used by other countries in the Asian region that had already developed and had higher wages. Therefore, these high wage countries had to migrate production to a lower wage country. 4) China followed the Asian Growth Model of high savings, high manufactured exports, and a positive external balance, which was well known to other countries, like Hong Kong and Japan, which therefore were willing to invest in China. 5) Three other countries lead by Chinese population had become developed following the Asian Growth Model – Taiwan, Singapore, and Hong Kong. 6) Honk Kong was key in the process for two reasons: its wealthy investors and its critical trading experience. 7) Chinese leaders had decided to be very pragmatic and to offer foreign investors whatever conditions were necessary to attract them. This is how it began, and then the process itself, as time passed by, produced economies of scale, which made China even more attractive.

THE SOURCES OF GROWTH

There have been several generations of economic growth models trying to explain: what produces economic growth? They are part of the general economic thinking that defines the three generations of economic development theories[127]. The first generation of theories was built in the spirit of Keynesianism. The growth model that dominated this generation was Solow's – the laureate Nobel Prize winner. In this model, technology is exogenous, and the long-term Stationary State (sustainable) growth – as-

[127] A good summary of the diverse economic growth models in the literature and its implications for the three generations of economic development theories is found in Obregon, C; 2008. *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.

suming a given technology – is given by the rate of population growth. An exogenous positive technological shock increases the long-term Per Capita output. Short-term growth depends on the savings rate; it moves the economy from one growth path to another. If an economy increases its saving rate, it will move from a Stationary State with less Per Capita output to another with a higher one. Solow's model, in the spirit of the Keynesian models, suggest a role for the government: to increase savings. The policy recommendation was clear; an economy must increase its saving rate as much as possible until it reaches the maximum possible consumption Per Capita – which was called the golden rule. An interesting feature in this model is that savings are always equal to productive investment – investment that produces with the given technology – which implicitly is the best available in the frontier. The notion that savings are always productive is inherited from classic and neoclassical economists, and in fact, if we are only concerned with the history of Western economic development, it is a good assumption, because by definition the technology used is at the frontier – the West includes the most advanced economies of its time. This assumption, however, is not optimal to understand the economic history of less developed economies. The failure of the USSR was precisely that it did not produce with the frontier technology, which was the one used by the West. It was also a problem with the Import Substitution Model, which focused only in the saving rate and not in the quality of the technology used.

The second generation of economic development theories was built in the spirit of the Keynesianism's failure, epitomize by the rise in the developed economies' inflation rate in the seventies and the LA debt crisis in the eighties. And it represented the triumph of Monetarism and Neoclassical Economics. The main idea was to explain economic growth as endogenous, as consequence of the markets without government intervention. If capital moves freely between countries, and with global technology given and defining the same growth path for all the countries, given diminishing returns, one should expect economic convergence between all the countries of the world – as capital moves to those countries with higher returns, given their relative labor abundance and low wages. Empirically, absolute convergence does happen between developed economies, and within regions in a given develop economy; but not with developing economies, with the exception of a selected group

of Asian economies. Endogenous human capital models were built to explain Why? The reason given by these models (by Lucas, the Nobel Prize winner) was that developing countries do not have the quality of labor required[128]. This of course does not explain: Why the good quality labor does not migrate to the developing countries, if theoretically it could get higher remuneration there (because it will be more productive due to the availability of low-quality labor at low wages)?. Moreover, empirical studies have shown that the years of schooling only explains around 25% of the difference in per Per Capita GDP. And since only 16% is explained by fixed capital, then around 60% must be explained by institutional differences[129].

Lucas' response to this empirical reality was to argue that human capital is not only education, that there is something that he calls social human capital, which enriches the productivity of a given worker in developed countries. However, if to calculate this human social capital one uses the difference of migrant's salaries *versus* their own countries, we still only explain 33% of the previously mentioned difference. Therefore, still 50% is explained by institutional differences[130].

Finally, Lucas argued that the Asian countries development must be understood as an increase in human capital through learning-by-doing, due the production of international competitive goods. But then, how do we measure labor? Lucas' response is that through its value added – using international prices, but this is a tautological definition. Lucas ended where Marx did, because if labor quantity (or quality) is to be defined by the market value added, then really there is no way to measure labor *ex ante* – and to argue that labor is the cause of the value added by which it is measure is a tautology of not much significance.

The Asian economic growth is explained by the Asian Growth Model, and there is no sense in arguing that it is due to more human capital. It happened in Korea, which started with much less human capital than Philip-

[128] Lucas, R.E., Jr. (1988): "On the Mechanics of Economic Development", *Journal of Monetary Economics* 22-1, pp. 3-42.

[129] Hall, R.E., y Jones, C.I. (1999): "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics*, February 1999, pp. 83-116.

[130] Klenow, P.J., Rodriguez-Clare, A. (1997): "The Neoclassical Revival in Growth Economics: Has Gone Too Far?", *NBER Macroeconomics Annual* 12, pp. 73-103.

pines. The problem with human capital in the second generation is exactly the same as with savings in the first generation: *ex ante* we do not know if they are going to be productive or not. In the case of physical capital, it depends upon whether it uses or not the technology at the frontier, and the same happens with human capital. What counts is not education in general: Argentina, Eastern Europe, and Russia had it, and they did not grow. Korea or Singapore did not have it, and they did grow. What counts is labor training related to the frontier technology. What counts is the technology at the frontier, be it for physical or human capital, and this signals the importance of exporting to the developed economies' middle class of the developed economies – because in order to be able to promote such exports a country has to learn to use frontier technology.

As the third generation of economist has explicitly acknowledged, there is no way out of the fact that the divergence or convergence of a given developing country towards the developed economies depends upon its institutional characteristics. Hall and Jones have shown that the social infrastructure is an important element to explain economic growth[131]. They define social infrastructure as the institutional arrangement that promotes production and investment, instead of consumption and enjoyment. Countries with otherwise similar cultures like South Korea and North Korea, communist China under Mao versus Taiwan or Hong Kong, East Germany versus West Germany – show huge GDP Per Capita differences that are in the 2.5 to 10 times range[132].

Institutional models have been very useful to show the importance of the institutional differences among countries, but in general, have been bias towards arguing that what causes development is to adapt and redesign the local institutions so that they resemble the western institutions. Since worldwide regressions always involved the West, and it has great weight on them due the size of its GDP, it is no surprise that the Western institutions ended up correlating well with higher economic growth.

One of the institutional features argued by the third generation, as required for economic growth, is democracy. Most of Asia, however, developed being non-democratic. But then, it it true that, many countries latter

[131] Hall and Jones 1999, op.cit.

[132] Olson, M. Jr. 1996. "Big Bills Left On the Side Walk: Why Some Countries Are Rich, And Other Are Poor", *Journal of Economic Perspectives*, 10 (2), 3 – 24. DOI: 10-1257/jep. 10. 2. 3.

on did become democratic. Therefore, there is ground for discussion. But China not only is not democratic, it is communist –and who can deny its success. The undeniable fact is that the only countries that had been successful to converge are a selected group of Asian countries – which construed a specific institutional arrangement that does not resemble the West's institutions. Not only they did not follow the recommendations of the western economists, they based their success in an alternative: The Asian Growth Model.

In Solow's model, Per Capita economic growth without technological change tends to zero. Therefore, it was necessary to explain: Why does technology change? Endogenous growth models offered four explanations: 1) science; 2) talented individuals; 3) learning by doing; and 4) firms' research and development[133]. All of these explanations are very useful to understand: Why Per Capita GDP has grown so fast in capitalism?

The benefit of science for mankind is undeniable, and it has everything to do with the long-term growth of capitalism; but, from that does not follow that investing in science will produce economic growth in a given country, as the USSR learned the hard way. Moreover, scientific discoveries always existed, and the critical question is: Why did they accelerate as much in Capitalism? North argues that innovation of free individuals is the key, and to a large extent he is right. However, as Ve-

[133] Science: Phelps 1966, Nordhaus 1967, Shell 1966 and 1967. Talented individuals: Baumol 1990 and Murphy, Shleifer, and Vishny 1991. Learning by doing: Arrow 1962. Research and development: P. M. Romer 1990, Grossman and Helpman 1991, Aghion and Hewitt 1992, D. Romer 2001. Phelps, E.S. (1966): "Models of Technical Progress and the Golden Rule of Research", *Review of Economic Studies* 33, pp. 133-146. Nordhaus, W.D. (1967): "The Optimal Rate and Direction of Technical Change", en Shell, K. (ed.): *Essays on the Theory of Optimal Economic Growth*, MIT Press, Cambridge, pp.53-66. Shell, K. (1966): "Toward a Theory of Inventive Activity and Capital Accumulation", *American Economic Review* 56, pp. 62-68. Shell, K. (1967): "A Model of Inventive Activity and Capital Accumulation", en Shell, K. (ed.): *Essays on the Theory of Optimal Economic Growth*, MIT Press, Cambridge, pp. 67-85. Baumol, W, 1990. "Entrepreneurship: Productive, Unproductive and Destructive". *Journal of Political Economy*, 98 (5 part I) 893-921. DOI: 10.1086/261712. Murphy, K.M., Shleifer, A., and Vishny, R.W. "The Allocation of Talent: Implications for Growth" *Quarterly Journal of Economics*, 106 (2) , 203-530. DOI: 10.2307/2937945. 1991Arrow, K.J. (1962): "The Economic Implications of Learning by Doing", *Review of Economic Studies* 29-3, pp. 115-173. Romer, P.M. (1990). "Endogenous Technological Change", *Journal of Political Economy* 98, pp. S71-S102. Grossman, G.M., y Helpman, E. (1991): *Innovation and Growth in the Global Economy*. MITPress, Cambridge. Aghion, P., Howitt, P. (1992). "A Model of Growth Through Creative Destruction", *Econometrica* 60, pp. 323-351. Romer, D. (2001). *Advanced Macroeconomics*, 2a ed., McGraw Hill, New York.

blen pointed out, science and technology are, for the first time in Capitalism, so closely intertwined that they foster each other developments. And technology, as Smith taught us, is related to the size of the market (mainly defined by two factors: global trade and the size of the middle class's consumption). Research and development precisely shows the power of the interconnection between science, technology, and market size.

Models of research and development explain convergence through technological transfers[134], but human capital differences and particularly institutional asymmetries make such transfer difficult. The ICT revolution made it easier.

The importance of talented entrepreneurs versus rental seekers is undeniable, but it happens in different ways in diverse societies. Old societies were not exempt of these individuals, and they did not grow fast. These individuals operate in Japan in groups, while they do it individually in the West. The same happens with learning-by-doing: its relevance is undeniable, but it happens in all societies and historical times. What is important is learning-by-doing at the technological frontier, to have talented individuals at that frontier, and to have science, technology, firm's research and development, and markets interconnected – all of this was key in the development of the West.

The Asian Growth Model implied learning from the West – through exporting sophisticated goods to the middle class of developed economies. The unique feature of the ICT revolution is that it made easier the transfer of such knowledge, because it allowed for manufacturing service centers in the developed world to be able to coordinate manufacturing production chains offshore. This implies that neither labor has to migrate to the rich countries, nor sophisticated human capital has to migrate to developing economies.

Physical capital migrates and technology is transferred, but under conditions defined to some extent by the service centers in the developed countries. The countries that were able to learn and to receive adequate technological transfers were those who saved to promote their internal

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[134] Jaumott 1999, Caselli and Colman 2001. Jaumott, F. (1999). *Technological Catch-Up, and the Growth Process*. Harvard University, Unedited Manuscript. Caselli, F., & Coleman, W.J. (2001). "Cross-Country Technology Diffusion: The Case of Computers". *American Economic Review*, 91(2), 328-335. DOI: 10.3386/w8130.

growth; those whose savings allowed them to develop an industrial policy of their own to promote world competitive national companies. Let us discuss briefly what are, in general, the three growth sources for a given economy: 1) The value added in exports; 2) the substitution of imports; and 3) the growth of internal productive chains, of which a classic example could be infrastructure development and construction in general, but there are many others including services and primary products.

The first thing to understand is that value creation through GDP growth, as we had been insisting, is not necessarily permanent. Take the case of East Germany (already mentioned) that had been growing at very high rates before it joined in with West Germany. Before they came together, it was argued that the two Germanys were extremely productive because of the German character. When East Germany joined in, it represented around 13% of West Germany's GDP; five years later, it was in the vicinity of 8%[135]. Why? Because most of the goods and services offered by East Germany were not competitive by Western standards. The same happened with the USSR when it opened up in 1990. By 2000 it was producing only 65% of the total GDP that it was producing in 1990.

Therefore, the problem is that if an economy closes itself it may be growing fast, but when it opens up to the world, it may be worth very little – because as soon as foreign competitors arrive and make the technology used obsolete, a lot of the old economy's value disappears. In a competitive international world, value added growth has to be associated with technology at the frontier, at least for significant segments of the economy – that is why exporting to developed economies is so crucial. Later on, other segments of the economy may transform themselves as they get linked more efficiently to the exporting segments.

The difference between the USSR and the successful Asian Growth Model, is that the latter was guided by the dynamic preferences of the middle class in the developed nations, and therefore was always learning technology in the frontier. The USSR invested a lot in science and technology; but was not successful because it did not have a dynamic market guided by the dynamic preferences of the the middle class mass consumption. The fundamental problem of the Communist Growth Model is that

[135] See Obregon 1997, p 260, and Smyser 1993, chapters 7 and 8. Obregon, C; 1997 *Capitalismo hacia el tercer milenio: Una historia cultural de la evolución de las economías del mundo*. Patria, Mexico. Smyser, W.R., (1993). *The German Economy*. St Martin Press, New York.

it did not participate in world markets; it did have a large domestic market, but this market did not have a broad middle class. The USSR model was driven by military and space spending, and was trying to copy the Western capitalist model; it had high levels of savings, scientific development, and high levels of education, but it did not have the most important element: mass production technology guided by the dynamic changing preferences of the middle class.

The Import Substitution Growth Model has the same faults than the Communist Growth Model. The consequence of not participating in the developed countries world-class market was that Latin American technology became obsolete. Pretending to substitute imports of durable consumer goods, and especially capital goods, given the size of the local market, by definition meant the use of obsolete technology.

The problem with economies whose development is based upon "closing the economy" is that they do not resist the pressure of the international competition when they open up. Behind the disastrous performance of the 1990 – 2000 USSR – when the neoclassical policies were implemented – was the incapacity of the old industrial plant to face global competition. The poor performance of Latin America in the lost decade of 1980 – 1990 and afterwards, was not only due to the debt crisis of the 80's; it was also caused by the fact that large part of the industrial plant, built during the years of the Import Substitution Growth Model, was slowly but certainly eroding its economic value due to its incapacity to compete in the global market.

Brazil and Argentina did not join the ICT revolution, and their industry technology is obsolete. Mexico did join the ICT revolution, and large part of its export industry has been modernized. But because of the lack of adequate savings, Mexico has been unable to transfer efficiently this modernization to the rest of the economy, and to promote satisfactory economic growth.

The southern Latin American cone enter a model of growth characterized by the export of commodities. Even Brazil does not export significant manufactures to develop economies. In the long run the productivity increases of this commodities led export mode will be less than the one in manufacturing. However, it is true that each country must use its competitive advantage and some of these countries have a commodities

production advantage. There are only two comments to be made. First in the case of Brazil which is big enough and it had an incipient industry it was a mistake to specialize only in commodities exports, Brazil has the potential to also integrate itself to the ICT revolution. For smaller countries there may be no option. The second comment is that all the countries growing through commodities exports must be sure that they use the technology at the frontier in the production of such commodities. Uruguay for example has understood this very well. Exporting commodities may improve substantially the way of living of a given country, but most likely it will never create enough growth to change a country from under develop to develop.

The Asian model is a dependent model in the sense that it is guided by exports to the developed economies. But, it also uses the import substitution strategy – as all of these countries found ways to restrict their imports. Creating a positive trade balance allowed them to have control over their long-term investment and industrial strategy. Their industrial strategy was not dictated by the bureaucrats like in the USSR. The JETRO, created by the MITI in Japan, and the KOTRA in Korea, were formed with the participation of the private sector[136]. Planning was flexible and always ready to be judged by market success, particularly in exports. In Japan, the computer chip industry was a success story leaded by the bureaucrats; the automobile industry was a success story opposed by the bureaucrats, but that the private sector could successful implement anyway.

The Asian Growth Model is based in huge national savings use for three purposes: 1) Finance a fast growth of internal value chains protected from the competition either by disguised mercantilist policies, or by the exchange rate, or most often a combination of both. 2) Finance a growing interconnection of the internal value chains with the export segments to increase the dissemination of knowledge. 3) Finance a growing exporting national industry, concentrated mainly in manufactures. China had seen the success of the Asian Development Model in other countries, and adopted it to take advantage of its extraordinary position versus the ICT revolution. This was the Key to its success.

[136] KOTRA and JETRO are associations of foreign trade. JETRO was instaurated by the MITI in charge of industrial and trade planning in Japan, and the KOTRA by the ministry of industry and commerce in Korea–which performed similar tasks to the MITI in Japan. See Obregon 1997, p 304.

The key to economic growth is technological innovation, which requires two conditions: a broad market and massive consumption. All human empires were developed based on increasing the market size, but their problem was always that the empire's costs of the military and bureaucratic administration grew exponentially as it expanded, and the provinces were increasingly more distant from the imperial center. The empires of the past grew on the basis of new markets conquests and of adding wealth to the empire, but lacked an internal motor of growth. What distinguishes capitalism from previous productive models is that it is based on the expansion of the middle class mass consumption: which provides an engine of internal growth. It is the middle class that rebels against the upper class in Europe. It is the one that changes the productive model's conditions of consumption; with this begins the great economic expansion that characterizes Capitalism. What was it that changed? Massive production – aimed at meeting the needs of the growing middle class – allowed a brutal expansion in technological development. It is not possible to innovate if a real handicraft is to be produced by hand, but it is possible to innovate when large-scale consumer goods are produced. The relationship between the mass consumption of the middle class and technological development has been, however, traditionally underestimated by the main Western schools of economic development.

The Asian Growth Model recognized that saving is crucial, and in fact, it has shown that it is needed to save substantially more than what the West did. However, it has also shown that savings are not enough. Savings have to be oriented to investments with international frontier technology – here is where the middle class becomes crucial. A savings strategy must be joined by an exports strategy, oriented towards the developed economies middle class's consumption, so that the investments are guided by the proper frontier technology.

Despite Japan's enormous success in the first phase of the Asian Growth Model; with the advent of the ICT revolution, Japan did not change, it continued with its same old strategies, and it lost its primacy, and had nil economic growth. Mexico applied the old neoclassical ideas and did not develop either. Mexico entered the ICT revolution, while other Latin American countries did not, although they benefited indirectly through the commodities boom. Mexico, however, had low savings and did not have an industrial strategy; therefore, despite joining the ICT revolution,

it did not grow. The ICT plus the Asian Growth Model was a success story for certain Asian countries; the ICT plus the neoclassical model was a story of failure for Mexico. China understood the opportunity represented by the ICT revolution and created new institutional arrangements to host the new investors, under the umbrella provided by the adoption of the Asian Growth Model, and was very successful.

The ICT revolution offers the opportunity of a sustained long-term global productivity increase, and the world must reap its benefits. Trying to prevent the ICT revolution from happening – through nationalism and protectionism – will not work; it will occur any how, but a lot of unnecessary damage would be produced to the global economy in the process.

As Capitalism has matured, new technologies had brought markets and people closer together, which had created the fundamental contradiction of this production's mode: the one between global capitalism and national democracies. The ICT revolution has accelerated globalization and has deepened this contradiction.

THE ROLE OF CENTRAL BANKS IN THE ECONOMIC GROWTH OF EE

In the second section we had been insisting that any expansionary monetary policy should only be used for macro-adjustments that had the goal to bring back the economy from very far way economic equilibriums. But, that it should never be used for economic growth purposes because that will destroy the central bank credibility and will bring back inflationary expectations and the menace of stagflation. We do stand with this argument. But there is a caveat in the case of EE that we would like to precise. The Asian Growth Model did have a new role for the central bank consisting in maintaining an undervalued exchange rate and high international reserves. This role is the way in which the central bank can contribute to the economic growth of an EE.

CONCLUSION

NGT has three main contributions: 1) Unveils the role of the middle class to enlarge the market in capitalism, and how its changing preferences guide the expansion of the frontier technology; 2) Auspices the understanding that increased savings directed to obsolete technology will not create durable economic growth. 3) It shows that economic growth, just like the microeconomic equilibrium in the first section, depends on the institutional arrangement; and therefore there cannot be just one model of economic growth that explain the Occidental's, the Asian's, the underdeveloped countries', and the World's economic growth. In each case a careful study of the relevant institutions is required. In what follows to conclude we will briefly mention the key points that NGT highlights in each one of these cases.

NGT AND THE OCCIDENTAL MODEL

Neo-institutionalism has emphasized that the West's success is nor only due to the expansion of the markets as Adam Smith proposed, but it is also consequence of the Institutional Arrangement of the West. It mainly emphasizes how these institutions had unleashed the natural individual creativity, which is the real source of the rapid economic change in the Western societies. Like many other theories of economic growth this is correct. But it is only partially correct. The first point to realize is that like Veblen suggested the natural individual creativity to which Neo-institutionalism refers is in itself a historical institution and not a natural characteristic of the human beings. In Japan for example creativity continues to be a group phenomenon, and it had been very successful. Neo-institutionalism argues that local institutions are very resilient and that it is very difficult to export the West's institutions, but that if it could be done development would happen. Besides being impossible, it is not true as Neo-institutionalism suggest that if could bring the West institutions to an EE it will develop. The Asian Model, has shown that it is possible to develop with institutions quite distinct from the West's. And no country has yet developed by copying the West's institutions. The same fact the

the West did develop change the conditions for other economies to be able to develop themselves, particularly because as we had mentioned before the frontier technology is defined in the West.

The key institution in the West's development was in fact democracy. But democracy was not imposed from outside, not intentionally adopted, it was a historical outcome. As Burgos (cities) grew to allow for mass production to have something to exchange in the growing global commerce of gold and species, the question as to how to govern the cities open up. And as the cities become more powerful, so the citizens, and democracy finally was discussed in the work of such thinkers as Rousseau. Democracy is nationally bounded and it created a powerful middle class that challenge politically the power of the minority elites, and which became more and more capable to foster mass consumption. In fact, what distinguish capitalism is that the mass production is channeled to the large middle classes, this is what expands the market and gives capitalism a motor engine of its own. Capitalism however has globalized itself, while democracy continues nationally bounded and this has created problems at the World's level. But, there is no doubt that it is the changing preferences of the the large middle class what directs a rapid frontier technological change.

Democracy nor only institutionalize economic freedoms, but also creates institutional conditions that foster individual creativity. But it is not just individual creativity what produced economic growth, it is a combination of many factors unleashed by the new Institutional Arrangement. Science for example do requires individual creativity, but it is also closely connected with the technological development guided by the dynamic preferences of the middle classes. R&D is closely related to the market expansion and to the middle class preferences, although there is no doubt that it also benefits from scientific discovery and individual creativity. Education and high quality labor are only meaningful if guided by the market. And learning by doing is also guided by the market. All these endogenous factors get a special meaning in Capitalism because of its new institutional arrangement characterized by enlarge middle class markets. Scientific curiosity, Education, High quality labor, and so on were always there in previous modes of production and they did not create the expansion in production that Capitalism saw. The mass production gives a new perspective to all these efforts. The new rights of the citizens meant the

right to dissent, individuals could have diverse opinions, and this allows for empirical science and a rapid growth of knowledge. Thus unleashing individual creativity was fundamental in the process of economic growth of the West. But this individual creativity is not naturally given, it was the outcome of the whole historical process that implied democracy, Capitalism, large middle classes, enlarge markets and frontier technology guided by the changing middle class preferences. The Occidental Growth Model has to be understood with all its institutional features, and its own historical time. It cannot be copy or reproduced elsewhere.

NGT AND THE ASIAN MODEL

Once the West had developed, the frontier technology is defined by the changing preference of its large middle classes. Savings not channeled to this frontier technology would only produce obsolete technology that cannot create a durable economic growth. This as we had seen was the main cause of the failures of both the Communist Model and the Import Substitutions Model. One of the key features of the success of the Asian Model is that it channeled its savings towards frontier technology by exporting to the West. As we had seen, there are in general three sources of growth for a given economy: A) Exports; b) Import Substitution; and c) Value added production chains like construction and infrastructure all along the economy, including the primary sector, and so on. B) and C) are important and were used in the Asian Growth Model. Imports were protected through administrative measures and undervalue exchange rates protected by huge international reserves. But B) and C) are only sustainable in the long run if they are connected to A) which is connected to the frontier technology. There are two key messages of all this is. 1) *It is not possible to have economic growth if it is not related to frontier technology, modernity is a must.* 2) Economic growth happened historically in the West with its own historical institutions. *For other countries intentional institutional design is required.* There are however many diverse possible Institutional Arrangements that can be adopted, and which have to be adapted to the circumstances of the World' economy at a specific point in time. Japan's failure in the second phase of the Asian Growth Model illustrates this point. The new ICT revolution

implied that Japan relative wages became too high an uncompetitive, and Japan did not adapt properly to the new situation.

NGT AND UNDERDEVELOPED COUNTRIES ECONOMIC GROWTH

Countries that have the possibility of creating its own version of the Asian Growth Model to enter the ICT revolution should do it. But many poor countries cannot follow this path. Their development depends upon decisions taken in the DE. Although today it is a very unlikely event, a Marshall type economic plan will be the only way out for these countries to become develop.

NGT AND THE WORLD'S ECONOMIC GROWTH

The Asian Growth Model is a dependent model. Thus at the end of the day the expansion of the frontier technology has to do with the dynamic preferences of the large international middle class. The enlargement of such international middle class will be the main factor that can speed up the global economic growth. Today most middle classes are in the West, although Asia and other EE incorporate more and more middle classes (those capable to consume frontier technology products) to the international world. No body will benefit more from the enlargement of the global middle classes than the DE. Apple just went beyond two trillion dollars and Amazon is near there, imagine what they will be worth if the whole World was developed. Underdevelopment and poverty are not just a problem of EE; they are a global problem. Which like many others global problems would not be solved given the poor quality of the World's Institutional Arrangement. Capitalism has globalized production, particularly recently through the ICT; yet democracy is nationally bounded, and global governance is of very poor quality. I just had written another book titled *A New Global Order*, in which it is argued that the two major recent crises the 2008 GFC and the 2020 GP are consequence

of poor global governance; and that there are other potential crises in the making in areas such as international trade, transnational crime, and global climate Finances, trade, crime, health, and climate have become global phenomena and they require proper global governance, or we will continue facing expensive global crises.

The World's economic growth depends crucially in the enlargement of the international middle class and this, particularly, requires a serious global governance of which we are still far away. In the meantime, the world's economic growth will be mostly defined by the Occidental and the Asian economic growth and by those countries which will be able to find a way to incorporate themselves efficiently to the ICT revolution.

The key message of NGT for the World economy is: *that the leaders must understand that there is a contra-diction between the ICT revolution which is globalizing the economic production and the actual global governance based in old recalcitrant nationalism.* This contradiction all ready has produce two very major and unacceptable global crises. To prevent other future global crises, world's governance has to be substantially improved. A good quality global governance maybe even opened the door to the possibility of finally solving the problems of underdevelopment and poverty. Which solution will benefit everybody, in particular the DE. An enlarge middle class at the global level, could seriously speed up the economic rate of growth of the world at large.

SECTION IV: THE 2020 GP AND THE FUTURE

The governments and central banks response to the 2020 GP has been more efficiently than in the 2008 GFC. But, as we had been arguing they could have done better. The cost of the adjustment has been a drastic increase in governments debts; large part of which have been financed by central banks. And the low interest rates have made possible the service of such a huge debt. But so much free money, and so large governments debts create potential future risks. Markets are always worry about government's efficiency, and large governments always pose a future risk for the economy. The world economy is at risk of not being able to behave properly if faced by large future shocks. A particular worrisome scenario is a large scale trade war between the US and China. Because it would mean lower productivity and higher inflation, that necessarily would mean higher interest rates; which in turn could create a boom in debt that will question governments' capacity to serve it. In this scenario inflationary expectations may reawake, emerging markets risk may increase and a new global crisis may occur. That is why we had been arguing the need of a more efficient way to confront global crisis. With less intervention from the governments. And with specialize institutions able to channel properly the needed free money to the productive economy.

In the next and last chapter, we will mainly review what has been done, and then briefly reiterate that we could have done better. The risks for the future are highlighted.

CHAPTER TEN: ECONOMIC POLICIES IN THE 2020 GP

The main cost of the 2020 GP (Global Pandemic) has been in human lives. But the economic costs had been also very high. They can be divided in three categories. 1) the foregone economic growth. 2) the additional government's expenditures or foregone revenues above the line. 3) the opportunity cost of the liquidity support given, which could be used otherwise to stimulate key sectors of the economy.

FOREGONE ECONOMIC GROWTH

One way to understand what is the foregone economic growth associated with the 2020 GP is to compare the expected 2020-2025 economic growth with the one in 2014 -2019. Table 10.1 compares for the world, and diverse regions, the average annual real GDP growth rate for six years' periods before and after both the 2008 GFC and the 2020 GP. Using these numbers, we estimate the total accumulated growth cost of each one of these crises, as the difference between growth six years after the crisis versus the six previous years. The cost in all cases is significantly higher in the 2008 GFC, 9% for the world versus 4.7% in the 2020 GP. For advanced economies (AE) the numbers are 11.8% and 6.3%; and for Emerging markets and developing economies (EM-DE) 10% and 4.3%%[137]. Another way to compare is to divide this foregone economic growth in the six years after the crisis by the average annual economic growth in the six years before the crisis, to express the cost in foregone years of growth. For the world the results are 1.9 years in the 2008 GFC versus 1.4 years in the 2020 GP. Several results can be highlighted from this table. The first result,

[137] We are using in here the notation and classification of the IMF since we obtain the data from this organization.

already mentioned, is that in general the 2020 GP is less expensive in terms of economic growth than the 2008 GFC. The second result, is that both crises were more severe for AE than for EM-DE. There are two exceptions worth mentioning. Latin America and the Caribbean actually will grow more in 2020 -2025 than in 2014-2019, because it almost did not grow in 2104-2019. And for the EM Asia and the Asean –5 the 2020 GP was more expensive than the 2008 GFC. These reflect the fact that while the 2008 GFC was a Wall Street crisis, the 2020 GP was a main street crisis involving all the countries.

TABLE 10.1. REAL GDP

	Average	Annual	Growth	Rate
	2002-2007	2008-2013	2014-2019	2020-2025
World	4.8	3.3	3.4	2.6
Adv Econ	2.6	0.7	2.1	1.1
Euro area	1.9	-0.3	1.8	0.8
G7	2.2	0.6	1.9	0.9
Other AE	4.4	2.5	2.6	1.7
Eur. Union	2.4	0.0	2.2	1.1
EM and DE	7.1	5.4	4.4	3.7
EM Asia	9.0	7.7	6.5	5.0
EM Europe	6.6	2.4	2.4	1.8
ASEAN-5	5.7	5.1	5.1	4.1
LA & Car.	4.0	3.1	0.6	0.9
M E and CA	6.8	3.9	2.7	2.1
SSA	6.2	5.3	3.2	2.8

	Total Growth Cost		Years	Cost
	2008 GFC	2020 GP	2008 GFC	2020 GP
World	9.0	4.7	1.9	1.4
Adv Econ	11.8	6.3	4.5	3.0
Euro area	14.0	6.4	7.2	3.5
G7	10.2	6.1	4.6	3.2
Other AE	11.4	5.2	2.6	2.0
Eur. Union	15.3	7.0	6.4	3.2

EM and DE	10.0	4.3	1.4	1.0
EM Asia	7.4	8.5	0.8	1.3
EM Europe	26.9	3.4	4.1	1.4
ASEAN-5	3.0	6.0	0.5	1.2
LA & Car.	5.5	-1.8	1.4	-3.0
M E and CA	18.3	3.5	2.7	1.3
SSA	5.4	2.3	0.9	0.7

Source: IMF WEO Data Base 2020.

FISCAL STIMULUS

In the 2008 crisis the governments learn that their response was too slow, which made the crisis unnecessarily expensive; thus, in the 2020 GP they acted quicker and more decisively. Table 10.2 presents the Government balance over GDP. As it can be seen expenditures minus revenues increased in annual average 3.4 % for AE in 2008-2009 versus 2002-207, but 2020-2021 versus 2014-2019 is expected to increase 7.8%. The corresponding numbers for EM-DE are 0.7% and 5.6%. This partially explains why the recovery is less costly in the 2020 GP versus the 2008 GFC in Table 10.1. 2020 GP reduced growth costs shows that it is highly productive to act quickly and decisively.

For AE, the total additional accumulated fiscal stimulus (difference in the added government balances of the whole period), in the 2008-2013 period versus 2002-2007 is 19.4 % of GDP; and it is 19.3 % of GDP for the period 2020-2025 versus 2014-2019. However, the accumulated economic growth cost in 2008- 2013 (versus 2002-2007) was 11.8 % of GDP versus only an accumulated economic growth cost in 2020-2025 (versus 2014-2019) of 6.8%.

TABLE 10.2. GOVERNMENT BALANCE % GDP

	2002 -2007	2008-2009	2010-2013	2014-2019	2020-2021	2022-2025
Adv Econ	2.7	6.1	5.8	2.8	10.5	3.7
Major AE	3.5	7.2	6.8	3.5	11.9	4.3
EM and DE	0.8	1.4	1.5	4.0	9.6	6.9

	2008	2009	2020	2021
Adv Econ	3.5	8.7	14.2	6.8
Major AE	4.5	9.9	16.2	7.6
EM and DE	-0.8	3.7	10.4	8.8

Source: IMF WEO data base 2020. Expenditures minus revenues.

In the case of EM-DE the additional fiscal stimulus in 2020-2025 versus 2014-2019 is 22.6 % GDP; much higher than the one of 2008 -2013 versus 2202-2207 which was only 4.2%. These numbers reflect the fact that, distinctly than the 2008 GFC, the 2020 GP affected directly the EM-DE. As a consequence, as we saw in table 10.1, the accumulated economic growth cost was substantially lower in 2020-2025 versus 2014-2019, than in 2008-2013 versus 2202-2007.

To finalize this section is worth analyzing what happens with the countries that do not respond to the 2020 GP with a proper fiscal stimulus, like Mexico did. In order to do this Table 10.3 compares key indicators between Brazil, Chile and Mexico. Brazil had a very high fiscal stimulus over GDP of 16.8% in 2020, versus 8.7% for Chile and only 5.8% for Mexico. The total added up fiscal stimulus for Brazil 2020- 2025 is forecasted to be 46.3%; which is very high, but similar to the one in 2014-2019 in which Brazil had a negative accumulated economic growth due to the lack of credibility in the government. Despite the background of low credibility; by responding fiscally aggressively to the 2020 GP, Brazil is able to have a positive accumulated growth of 5.8%. Chile has in 2020- 2025 a total fiscal stimulus of 23.4% of GDP; substantially higher than the one in 2014-2019 of 13%. Due to this, Chile is able to have an accumulated growth of 9.9 %, despite the 2020 GP. Mexico have not responded properly to the crisis; of the three countries, is the one with less aggregated fiscal stimulus 2020-2025, only 19.3%. And as a consequence

it has the less accumulated economic growth during the period, only 2.7%. This bad result contrast with the fact that of the three countries Mexico had the highest accumulated growth in 2014 -2019.

TABLE 10.3. LA KEY COUNTRIES COMPARISON

	I	II	II	IV	V
Brazil	46.3	46.3	-2.6	5.8	16.8
Chile	13.0	23.4	12.6	9.9	8.7
Mexico	16.9	19.3	13.4	2.7	5.8

I= % GDP Accumulated fiscal stimulus 2014-2019

II= Same as I, for 2020-2025

III= Accumulated Economic Growth 2014-2019

IV= Same as III, for 2020-2025

V= 2020 Fiscal Stimulus % GDP

THE OPPORTUNITY COST

As of September 11, 2020 fiscal actions amounted to $11.7 trillion, or close to 12 percent of global GDP[138]. Half of the fiscal actions consisted of additional spending or forgone revenue, which we had already discuss in the previous section. The other half amounted to liquidity support, including loans, guarantees, and capital injections by the public sector. This second half does not imply a real cost because in principle it does not impact directly government revenue or expenses. However, it implies an opportunity cost in the sense that the liquidity support could have been used for other purposes, such as promoting a green economy for example.

Of the 5953 global billion that represent above the line stimulus 41% is explained by the US alone, 24% by rest of the developed countries presented in Table 10.4, and another 16% by the emerging markets in the same table. Thus, 81% is explained by countries in the table. As GDP % the two cases in the high end are US with 11.8% and Japan with 11.3%. In the low end is Mexico with only 0.6% of GDP.

[138] IMF Fiscal Monitor 2020.

Of the 5791 billion dollars of liquidity support, 40% is explained only by Germany and Japan. The developed countries in the table 10.4 represent 80%, and the underdeveloped another 8%, for a total of 88%. As GDP % in the high end is Italy with 33% and Germany with 30.8%, followed by Japan with 23.7%. In the low end we find Mexico again with 0.5%

TABLE 10.4. SUMMARY OF COUNTRY FISCAL MEASURES

	Fiscal	GDP %	Liquidity	GDP %
France	134	5.2	402	15.7
Germany	316	8.3	1166	30.8
Italy	91	4.9	610	33.0
Japan	555	11.3	1163	23.7
Korea	55	3.5	164	10.3
Spain	44	3.5	177	14.2
United Kingdom	241	9.2	437	16.6
United States	2449	11.8	510	2.5
Selected Emerging Markets				
Argentina	15	3.9	8	2.1
Brazil	113	8.3	86	6.3
China	707	4.6	198	1.3
India	46	1.8	135	5.2
Indonesia	29	2.7	13	1.2
Mexico	7	0.6	5	0.5
Russia	35	2.4	15	1.0
Global	5,953	5.9	5,791	6.0

Source: Fiscal Monitor 2020.

Table 10.5 decomposes the liquidity support as GDP % in contingent liabilities (guarantees and quasi-fiscal operations) and other categories (equity injections, loans, asset purchase or debt assumptions). As can be seen most of the liquidity support is in guarantees, followed by quasi-fiscal operations and only a very minor part in other categories. However, in few countries like Japan, Korea, China, Brazil and Mexico the quasi-fiscal operations are particularly relevant.

TABLE 10.5. LIQUIDITY SUPPORT

	GDP %	Contingent Liabilities		Other
	Liq. Supp.	Guarantees	Quasi Fis	
France	15.7	14.8		0.9
Germany	30.8	24.8		6.0
Italy	33.0	32.8		0.2
Japan	23.7	3.0	20.7	
Korea	10.3	3.7	6.6	
Spain	14.2	13.2	0.9	0.1
United Kingdom	16.6	16.5		0.0
United States	2.5	2.2		0.3
Selected Emerging Markets				
Argentina	2.1	2.1		
Brazil	6.3		5.3	1.0
China	1.3	0.4	0.9	
India	5.2	4.5	0.5	0.3
Indonesia	1.2	0.9		0.2
Mexico	0.5		0.3	0.2
Russia	1.0	0.5	0.5	0.1
Global	6.0	4.1	1.4	0.5

Source: Fiscal Monitor 2020.

MONETARY POLICY

The un-precedent fiscal stimulus and liquidity support that we have documented so far was only possible due to an environment of low inflation. Which has been consequence of: 1) the high global productivity due to the ICT revolution, and 2) confidence gained due to the successful central banks actions in the 2008 GFC, that has maintained inflationary expectations subdued. Table 10 .6 shows that inflation has been low and it is expected to remain so until 2025.

TABLE 10.6. INFLATION, AVERAGE CONSUMER PRICES

	2019	2020	2021	2022	2023	2024	2025
World	3.5	3.2	3.4	3.2	3.1	3.1	3.2
Adv. Econ.	1.4	0.8	1.6	1.6	1.7	1.8	1.9
EM and DE	5.1	5.0	4.7	4.3	4.2	4.1	4.0

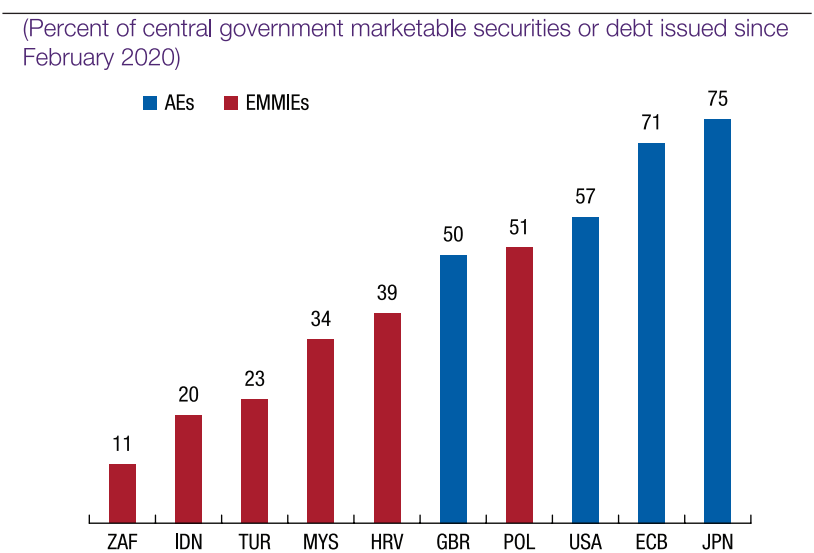
Source: International Monetary Fund, World Economic Outlook Database, October 2020

In this environment of low inflation and subdued inflationary expectations central banks have maintained very low interest rates, and in some cases with stimulus to the private banks to increase their credit balances that in fact mimic highly negative interest rates. Federal funds rate were lowered by 150bp in March to 0-0.25bp. The Bank of England reduced the Bank Rate by 65 basis points to 0.1 percent. The ECB had before Covid already the deposit rate at -0.5%. But negative interest rate has a limit in which they will discourage deposits. Therefore, in instead of increasing the negativity of interest rate the ECB has introduced a dual scheme of interest rates. By decoupling the repo loan rate from the ECB's targeted interest rates, the ECB is actually paying money for the Banks to extend credit to the economy, the more they lend the higher the subsidy. Most of the ECB's stimulus as we will see has come from lending at subsidizes rates to the Banks, the subsidy can be as much as 50bp. The Bank of Japan main stimulus came provided lending support through the special funds-supplying operation, and made purchases of Japanese government securities, commercial paper, corporate bonds, and exchange-traded funds. The government expanded the volume of concessional loan facilities (interest free without collateral) primarily for micro, small and medium-sized businesses affected by COVID-19 through the Japan Finance Corporation and other institutions. The special funds-supplying operations have been scaled up by expanding the range of eligible counterparties and collateral to private debt (including household debt), as well as by applying a positive interest rate of 0.1 percent to the outstanding balances of current accounts held by financial institutions at the BoJ, that correspond to the amounts outstanding of loans provided through this operation.

The low interest rates have allowed the governments to increase their debts at an acceptable service cost. Moreover, the central banks them-

selves have increase their balance sheets a lot and have bought a high percentage of the new debt issue by the governments. Figure 10.1 shows that of the total government debt issued since February 2020 in Japan 75% was bought by the Japanese central bank, the numbers for other advance countries are 71% for the ECB, 57% for US and 50% for Great Britain.

FIGURE 10.1. CENTRAL BANK PURCHASES OF GOVERNMENT DEBT



Sources: Country authorities; US Federal Reserve Economic Data; Haver Analytics; and IMF staff calculations.
Note: Data labels use International Organization for Standardization country codes.
AEs = advanced economies; EMMIEs = emerging market and middle-income economies.
In what follows we will concentrate in the behavior of four Central Banks to describe what has been their role in the 2020 GP.

The Federal Reserve

Table 10.7 presents the balance sheet of the Federal Reserve for Jan 1st and October 15th of 2020 (based in a preliminary financial statement). As it can be seen 73% of the balance sheet increase is due to new holdings in treasury securities. By December the expected net new debt

over GDP is 22.7%; of which the Fed's treasury holdings will likely be around 11.4% (around half). In October 15th the federal Reserve holdings of treasury securities were already 10.3% of GDP, while the financing to the private Sector (the sum of Mortgage Back Securities, Loans, Swaps and Net Portfolio holdings private sector) represented only 3.7%. Of this 3.7%, 2.8% is explained by the increased in MBS (Mortgage Back Securities); mostly related to commercial Real Estate in order to avoided a crash in this market, that could had jeopardized the financial stability of the economy. Thus, there is almost no direct support from the Fed to the private sector. Most money passes through the government. QE is only used when it is needed to prevent a collapse in a Real Estate markets (which could jeopardize the financial health of the economy, a lesson learned from the 2008 GFC).

TABLE 10.7. FEDERAL RESERVE BALANCE BILLION DOLLARS

	Ja,1,20	Oc,15,20	% Explained Total Increa.	Increase as % 2020 GDP
TREASURY SECURITIES	2328.9	4476.8	73.4	10.32
MBS	1408.7	1992.0	19.9	2.80
REPURCHASE AGREEMENTS AGREEM.	242.2	1.0	-8.2	
LOANS	0.0	74.8	2.6	0.36
SWAPS	3.7	8.1	0.2	0.02
NET PORT PRIV SECTOR	0.0	105.8	3.6	0.51
NET PORT PUB SECTOR	0.0	16.5	0.6	
OTHERS	224.9	458.7	8.0	
TOTAL	4208.5	7133.7	100.0	

Source: Federal Reserve and IMF WEO Data Base-

But as we had been discussing before, the use of the fiscal policy for the whole of the economic adjustment is highly inefficient; because the resources can be use with political purposes, and in addition the government officials do not have the necessary skills to properly channel the resources to the productive economy.

Thus, while a large adjustment program was needed, and in this the 2020 GP did much better than the 2008 GFC. It is still the case, that much can be done to improve the quality of the adjustment program. A specialize institute as the one we had been proposing in this text will highly improve the channeling of the resources to the productive economy.

The ECB

Table 10.8 presents the consolidated Euro System financial statement. As it can be appreciated all of the increase is defined in three lines: gold and gold receivables which is of no interest, lending to euro area credit institutions, and securities of euro area residents. The second line goes to the private sector and consists of long term refinancing, and of the third line categories 13,14 and 17 go to the private sector. Thus as % of GDP a total of 10.16% goes to the private sector. A number much higher than the 3.7% for the Federal Reserve.

TABLE 10.8. CONSOLIDATED EURO SYSTEM BILLION EURO

	3 JA	9 OC	Increase % Total Inc.	Increase % GDP 2020
1	470.74	559.28	4.28	0.51
2	344.18	350.76	0.32	0.04
3	19.47	22.95	0.17	0.02
4	16.71	12.76	-0.19	-0.02
5	617.31	1754.29	54.93	6.51
6	25.10	29.20	0.20	0.02
7	2850.71	3678.35	39.98	4.74
8	23.38	22.74	-0.03	0.00
10	288.15	295.55	0.36	0.04
11	4655.77	6725.70	100.00	11.85
Decomposing 7				
7	2850.71	3678.35		4.74

Off Which: SECURITIES HELD FOR MONETARY PURPOSES			
12	268.30	290.10	0.12
13	28.40	29.20	0.00
14	184.30	237.20	0.30
15	2102.90	2304.90	1.16
16	47.90	32.60	-0.09
17		584.70	3.35
18	2631.80	3478.70	4.85

1	GOLD AND GOLD RECEIVABLES
2	CLAIMS ON NON EURO RESIDENTS F. CURRENCY
3	CLAIMS ON EURO AREA RESIDENTS F. CURRENCY
4	CLAIMS ON NON EURO RESIDENTS EURO
5	LENDING TO EURO AREA CREDIT INSTITUTIONS
6	OTHER CLAIMS ON EURO AREA CRE. INSTITUTIONS
7	SECURITIES OF EURO AREA RESIDENTS
8	GENERAL GOVERNMENT DEBT EURO
10	OTHER ASSETS
11	TOTAL ASSETS
12	COVERED BOND PURCHASE
13	ASSET BACKED SECURITIES PURCHASE
14	CORPORATE SECTOR PURCHASE
15	PUBLIC SECTOR PURCHASE
16	SECURITIES MARKETS
17	PANDEMIC EMERGENCY PURCHASE
18	TOTAL

Source: ECB

The Bank of Japan

Table 10.9 presents the financial Statements for the Japanese Central Bank. It is the most aggressive of the central banks under analysis in here. The total change in the balance sheet is of 21.7% of the expected

2020 GDP. Of these 9% goes to government securities, and 12.7 % to the private sector. Of the four central banks discussed in this section the Japanese is the one that has more experience in relationship to the financial needs of the private sector, then it follows the ECB; and at at the end the Federal Reserve and the Bank of England. Thus it is not surprise the the highest financing to the private sector as % of the 2020 GDP is the Japanese 12.7%, followed by the ECU 10.16%, and at the end by the FED with a much lower number of 3.7%, and the Bank of England with 1.7%

TABLE 10.9. BANK OF JAPAN ASSETS TRILLION YEN 2020

	Jan 15	OCT !3	% inc.	
GOVT SECURITIES	481.6	528.9	41.4	9.0
COMM PAPER	2.1	4.1	1.7	0.4
CORPORATE BONDS	3.2	5.7	2.2	0.5
LOANS	48.7	104.8	49.0	10.7
OTHERS	37.7	44.2	5.7	1.2
TOTAL	573.2	687.6	100.0	21.7
Loans exclude those of the Deposit Insurance Corporation				

Source: Japanese Central Bank

The Bank of England

Table 10.10 presents The Bank of England financial statements. The increase is in two lines: the loans to assets purchase facility which mostly buys government debt and which increase 12.9% of the expected 2020 GDP, of which around .9% goes to the private sector[139], and the loan to Covid financial facility with a corresponding increase of 0.8% . Thus, around 1.7% of the expected 2020 GDP goes to the private sector, even less than in the US which as we saw is 3.7%.

139 Based in our own forecast using the second quarter financial report of the loan to asset purchase facility, the third one was not yet out when this book was written.

TABLE 10.10. BANK OF ENGLAND ASSETS

	Billion Sterling			
	Ja 8	Oc 7	Increase % of Total	Increase % GDP 2020
Index. Long Term Repo	8.5	9.9	0.6	0.1
TERM FUNDING SCHEME	108.2	72.5	-14.5	-1.7
BOND HOLDINGS	14.1	13.7	-0.2	0.0
LOAN TO ASSE. PUR. FAC	445.0	710.0	107.6	12.9
LOAN TO COVID FIN FAC	0.0	15.8	6.4	0.8
TOTAL	575.8	822.0	100.0	12.0

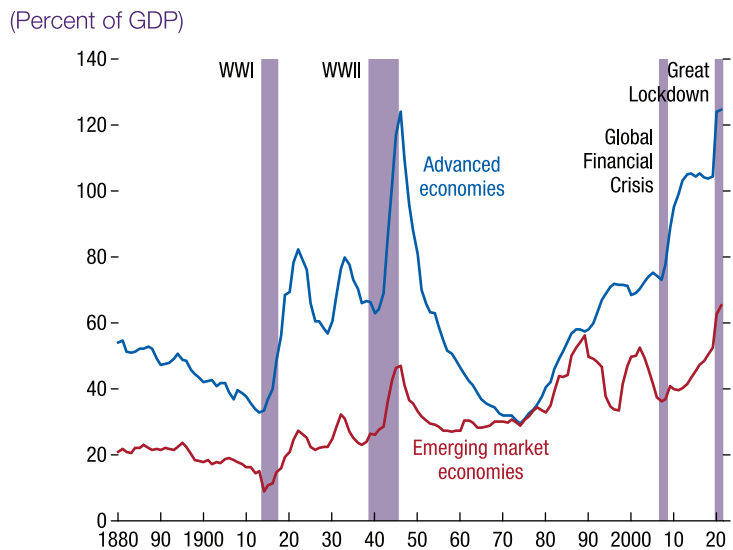
Source: Bank of England

The main Central Banks of the world have had a huge balance sheet expansion. Amounting to around 6.7 trillion dollars, 2.9 correspond to the Fed, 2.4 to the ECB, 1.1 to the Bank of Japan, and 0.3 to the Bank of England. In addition, about 20 emerging market central banks had deployed asset purchases for the first time. Moreover, the post-2008 regulatory framework has been largely successful, as the global banking system entered the crisis with relatively high capital and liquidity buffers.

In Summary: The aggressive economic policy response to the 2020 GP, both fiscal and monetary, has provided a bridge to recovery. The global fiscal policy response of around 11.7 trillion dollars has provided substantial support to households and firms. Central banks have eased monetary policy across the globe. The balance of the four most important central banks of the world have expanded around 6.7 trillion dollars. As a result of these policy actions, the adverse macro-financial feedback loops that characterized the 2008 GFC have largely been contained. As a consequence, the economic growth costs in the 2020 GP are forecasted to be smaller than the ones in the 2008 GFC.

The above the line fiscal stimulus globally had been around half of the total 11.7 trillion dollars fiscal policy response. And this has implied that general government debt in advanced economies has increased in 2020 as percentage of GDP to record highs not seen since the second world war, and for emerging markets since the crisis of the eighties see figure 10.2. And as we had seen a very high percentage of this increased debt has been finance by the central banks, particularly in advanced economies.

FIGURE 10.2. HISTORICAL PATTERNS OF GENERAL GOVERNMENT DEBT



Sources: IMF, Historical Public Debt Database; IMF, World Economic Outlook database; Maddison Database Project; and IMF staff calculations.
Note: The aggregate public-debt-to-GDP series for advanced economies and emerging market economies is based on a constant sample of 25 and 27 countries, respectively, weighted by GDP in purchasing-power-parity terms. WWI = World War I; WWII = World War II.

It is expected that general government gross and net debt as a GDP % will remain high, in 2025. For AE net debt as % of GDP jump from 76% in 2019 to 95% in 2020 and is expected to be 97% in 2025. The numbers for general government gross debt as % of GDP are 104% in 2019, 124% in 2020, and 124% in 2025. For EM-DE we only have data about government gross debt as % of GDP, and the corresponding numbers are 52% in 2019, 61% in 2020, and 69% in 2025. What this scenario means, is that both fiscal and monetary policies have huge constrains for the future. In particular low inflation and low inflationary expectations will be required, so that central banks can maintain low interest rates, and an unserviceable booming of the general government debt can be avoided. This implies that the high productivity of the ICT revolution will be required more than ever, and that free global trade is a must for the healthy recovery of the global economy.

WHAT SHOULD HAD BEEN DONE

As we had been discussing there is not proper theory to address crises that move the economy far away from the full employment equilibrium, such as the 2008 GFC and the 2020 GP. What was done in the 2008 was insufficient and was done too late. After many mistakes; the QE was a success story, and highly contributed to end up the crisis. However, QE was used to repair, no to prevent the crisis, and repairing is always much more expensive. In the 2020 GP most governments did understand the need to act rapidly and decisively. Therefore, the economic growth costs of the 2020 GP had been reduced as compare with the ones of the 2008 GFC. However, the adjustment has been mostly done through governments' fiscal policy, with central banks playing a secondary role, mostly as financiers of the governments. This, as we had been discussing makes the adjustment unnecessarily costly and inefficient. Governments are in general ill suited to guide the economic recovery. We had been proposing the creation of a specialized institute, which only tasks would be to properly channel the massive resources of the economic adjustment program to the productive economy.

The lesson that has to be learned from the 2008 GFC and the 2020 GP, is that global crises do happen, and we need to be prepare to confront them. The theory and the institutions that we have had so far are not well suited for this purpose. Governments are institutions with their own short term political interests, and are usually not well connected to the productive economy. And central banks have been designed for traditional monetary policy, and only recently had been entering the realm of QE which connects them with the productive economy. But QE has had a very secondary role in the adjustment program in the 2020 GP, mainly because the central banks are not prepared as institutions to manage directly huge amounts of financing to the productive economy. This is why we believe that the idea that we had been proposing of a specialized institute is worth considering.

If we had recognized on time the theoretical warnings that markets do not define by themselves the economic equilibrium, because they are constrained to operate in a given institutional arrangement; we would of lend more attention to the design of such institutional arrangement.

Which would have had contributed both to avoid mistakes as the one which created the 2008 GFC, and to confront more efficiently external shocks like the one that produced the 2020 GP. In particular Trump's economics is a serious menace for the future stability of the global economy, because it threatens the future of global commerce and the required productivity of the ICT revolution; without which it will be very difficult to maintain low inflation and low interest rates. And higher interest rates may render the large governments debt unmanageable, and inflationary expectations may reborn.

As we had discussed, there is no reason why the government appears as the owner of the new money issued. In fact, the task of the central banks must be to maintain low inflation and good economic growth; and to this effect channeling most of the money to the government is, by far, not the optimal strategy. The recovery of the productive economy can be done much more efficiently by the specialized institute that we had been proposing. Moreover, channeling most of the new money through the government has the negative implication that may jeopardize the future; because, it always makes economic agents wonder whether the government will have or not the capacity to repay. And a negative answer is the main reason of the generation of inflationary expectations. If instead the central bank channels the money to an institute that lends directly to the productive economy, the question of inflationary expectation goes away; because by the definition the productive economy would be able to repay, particularly because the specialized institute will only lend to those economic agents with repayment capacity. Putting the government as an intermediary between the central bank and the productive economy is inefficient and highly costly. In the case of AE, it may raise inflationary expectations; and in the case of EM-DE, it may unnecessarily constrain the resources used for the economic adjustment. An extreme case that illustrates this last point is the example of Mexico, which to maintain its public finances healthy has had an insignificant adjustment program – a huge mistake that will be paid with an important reduction of the future economic growth. Table 11.1 shows that Per Capita GDP is expected to grow a total of 6% in 2018-2025 in AE, and 18% in EM-DE, while in Mexico it will loose 5%. And while EM-DE will gain 7% of global share in 2025 versus the one they had in 2018 against the AE which will loose 9%; Mexico will loose more share than even the AE, -14%.

TABLE 10.11. MEXICO FUTURE

	GDP PC			Global Share		
	2018	2025	2025/ 2018	2018	2025	2025/ 2018
Adv Econ.	51262.07	54378.93	1.06	43.54	39.51	0.91
Emerging M.	11037.76	13041.66	1.18	56.46	60.49	1.07
Mexico	20025.50	19117.05	0.95	2.01	1.73	0.86

GDP = Gross Domestic Product Per Capita
Purchasing power parity
2017 international dollars.

Global share in
Purchasing power parity
2017 international dollars.

Source: IMF WEO 2020 Data Base.

Therefore, it is clear that to remain fiscal healthy is a very expensive and inadequate economic path for en emergent economy. The world at large has done well by being aggressive in the adjustment program at the expense of less healthy public finances. But there is a downside. If the future is not managed well, and there is for example a trade war consequence of Trump's economics, as we said, productivity will go down, inflation and interest rates will go up, and for AE there is the risk of renew inflationary expectations and stagflation; and for EM-DE there is a risk of another crisis like the one of the eighties.

In a crisis like the 2020 GP there was ample space for monetary expansion that did not necessarily had to pass though the government's finances; which increased debts create inflationary expectations risks in AE, and unnecessarily constrains the size of the adjustment program in EM-DE.

There are however significant differences, in the size of the adjustment and in the way the adjustment was handle; both amongst AE, as well as between EM-DE. In Japan and the European Union, as we had seen, a larger part of the expansion in the central bank balance sheet went directly to the private sector versus the case in the US and the UK. This reflects a much longer tradition both in Japan and in Europe of a closer connection of the central banks with the productive sector. In Emerging Markets, we find a spectrum that goes from countries that had borrow significantly from abroad and started to experienced with QE, to a country like Mexico in the other extreme, which mistaken priority

was to maintained healthy public finances. In general, in Asian and European countries, given the traditional connection between governments and central banks with the productive economy, it will be easier to instrument the idea of a specialized institute to channel money directly from the central bank to the productive economy.

CONCLUSION

The 2020 GP has started a new economic era, which requires a new economic theory and new institutions. With two global crises in only fifteen years, it has become obvious that the proposal of the Rational Expectations School that microeconomic relations based on individual preferences, endowments and technology define a full employment stable equilibrium is incorrect. Markets do not generate a unique stable equilibrium that optimize economic welfare. The final economic equilibrium depends also upon the settings, as it has been shown by diverse schools of thought such as: Game Theory, Information Economics, Uncertainty Economics, and Institutional Economics. Therefore, both a proper macroeconomic policy, as well as an adequate model of economic growth are required.

None of the known macroeconomic theories are adequate to understand what to do in a global crisis like the 2020 GP. Rational Expectations and monetarism cannot even explain how is that a global crisis like this happens. The IS-LM model was designed to manage business cycles, but no to confront major crises. And Keynes economics was written many years ago, based in volatile investors expectations that do not describe the present situation. There is a need of a new economic theory. This book has attempted to delineate such a theory. The most relevant conclusions are: 1) Economic growth is the main problem of an economy, and cannot be obtained neither from the microeconomic equilibrium defined by free markets, nor by macroeconomic fiscal and monetary policies. There is a need to have a proper model of economic growth. 2) There had been only two successful models of economic growth. The Occidental, which key feature is the rapid technological change due to the enlargement of the market, defined mainly by the dynamic changing preferences of the middle class. And the Asian, which success is due to the fact that it has develop with frontier technology due to its exports to the Western middle class. There had been three failed models of economic growth: The Communist, The Import Substitution, and the Neoclassical. All of them ended up with obsolete technology, which is incapable to confront

the outward frontier technology once the economy opens up; and therefore, the accumulated apparent growth disappears. Thus, we reiterate the critical decision of any economy is to chose correctly its model of economic growth. 3) Normally markets work well within an established Institutional Arrangement, and a neoclassical economic approach in which economic policy only accompanies the business cycle is adequate. 4) But once a major crisis occurs the microeconomics homeostasis of the system does not longer work, and large scale macroeconomic fiscal and monetary polices are required 5) Keynes did show why traditional monetary policy does not work in major crisis, but as we had seen non traditional monetary theory like QE does work. 6) we had proposed an extended and modified version of QE, which to work properly requires the creation of a new institution in charge of channeling the free money to the productive economy through long term preferential lending. 7) we had argued that through this new institution monetary theory becomes a key instrument to confront major economic crises. This approach has the virtue to focus directly into the recovery of the productive economy, avoiding the problems usually associated with fiscal policy.

We are entering a new era characterized by lots of free money, low interest rates, and highly indebted governments. The key to the future is for interest rates to remain low for a very long period, so that government can finance their debts. The low level of interest rates depends in two factors: high productivity, and large real savings. Both of which are associated to the ICT revolution; which to work properly requires free trade to occur. Any attempt to create international trade wars between countries, particularly between the US and China will be fatal. Because it would precisely reduce drastically global productivity and the level of real savings. And under this scenario, any attempt by the central banks to maintain artificially low the interest rates, will make them loose credibility. And will result in renew inflationary expectations, stagflation and finally and abrupt increase in interest rates. Which in turn will create a new wave of financial crises in emerging markets, and maybe even a new global economic crisis. There is no way out from the present situation only with macroeconomic policies. They had been fine to stimulate back the economies to full employment equilibrium; but going forward the world has to have the correct model of economic growth – and that means free trade to let the ICT revolution operate as it should. So much

free money, and so highly indebted governments, are a huge risk that could of have been greatly reduced if the NMa that we had being proposed in here would of have been used.

Finally, the ICT revolution is a great promise for the world economy; but it will not be able to solve the economic growth problems of the small economies, which to develop would need abundant assistance from abroad.

The main problem of traditional economy is that it has not taken seriously the need to explore the characteristics that the institutional arrangement must have for markets to operate properly. The idea that free markets work by themselves, have perniciously enter into microeconomics, macroeconomics and economic growth theory. And as a consequence we do not have today solid microeconomic foundations for the required macroeconomic policies to confront major crises; and neither for adequate models of economic growth for the world at large, nor for underdeveloped economies. We need a new economic theory. The main purpose of this manuscript has been to delineate the route towards the consolidation of such a new theory.

BIBLIOGRAPHY

Aghion, P., Howitt, P. (1992). *"A Model of Growth Through Creative Destruction",* Econometrica 60, pp. 323-351.

Akerlof, G.A., Shiller, R.J. (2009). *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*. Princeton University Press. Princeton, New jersey.

Arrow, K.J. (1962): *"The Economic Implications of Learning by Doing",* Review of Economic Studies 29-3, pp. 115-173.

Arnott, R., Stiglitz, J.E. (1991). *"Moral Hazard and Nonmarket Institution: Dysfunctional Crowding Out or Peer Monitoring?",* American Economic Review 81-1, pp. 179-190.

Baddeley, M. (2017). *Behavioral economics. A Very Short Introduction*. Oxford University press.UK.

Baumol, W, 1990. *"Entrepreneurship: Productive, Unproductive and Destructive".* Journal of Political Economy, 98 (5 part I) 893-921. DOI: 10.1086/261712.

Cartwright, E. (2018). *Behavioral economics. Routledge,* New York.

Caselli, F., & Coleman, W.J. (2001). *"Cross-Country Technology Diffusion: The Case of Computers".* American Economic Review, 91(2), 328-335. DOI: 10.3386/w8130.

Coase, R.H. (1937). *"The Nature of the Firm",* Economica 4, pp. 386-405. In Stigler, G.J., y Boulding, K.E. (eds.): *Readings in Price Theory,* Richard D. Irwin, Homewood, 1952.

Commons, 1934, p.69. *Institutional Economics: Its Place in Political Economy,* University of Wisconsin Press, Madison/MacMillan, New York.

Dhami, S. (2016). *The Foundations of Behavioral Economics.* Oxford University Press. Oxford, UK.

Engerman, S.L., y Sokoloff, K.L. (1997): *"Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies: A View from Economic Historians of the United States".*

Furubotn, E.G., y Richter, R. (2003). *Institutions and Economic Theory. The Contribution of the New Institutional Economics,* University of Michigan Press, Ann Arbor.

Greenwald, B., Stiglitz, J.E., (2003): *Towards a New Paradigm in Monetary Economics*. Cambridge University Press. Cambridge.

Grossman, G.M., y Helpman, E. (1991): *Innovation and Growth in the Global Economy*. MIT-Press, Cambridge.

Haber, S. (ed.): *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and México, 1800-1914,* Stanford University Press, Stanford, pp. 260-304.

Hall, R.E., y Jones, C.I. (1999): *"Why Do Some Countries Produce So Much More Output per Worker than Others?",* Quarterly Journal of Economics, February 1999, pp. 83-116.

Hirschman, A.O., 1970. *Exit, Voice and Loyalty, Responses to Decline in Firms, Organizations, and States*. Cambridge, MA; Harvard University Press.

Hoff, K. (1994): *"The Second Theorem of the Second Best",* Journal of Public Economics 54, pp. 223-242.

---- (2000): *"Beyond Rosenstein-Rodan: The Modern Theory of Coordination Problems in Development",* en Pleskovic, B. (ed.): *Proceedings of the XII Annual World Bank Conference on Development Economics,* World Bank, Washington.

Hoff, K., Stiglitz, J.E. (2002): *"Modern Economic Theory and Development",* en Meier, G.M., y Stiglitz, J.E. (eds.): *Frontiers of Development Economics. The Future in Perspective, 3a ed., World Bank/Oxford University Press,* Washington, pp. 389-485.

Jaumott, F. (1999). *Technological Catch-Up, and the Growth Process*. Harvard University, Unedited Manuscript.

Klenow, P.J., Rodriguez-Clare, A. (1997): *"The Neoclassical Revival in Growth Economics: Has Gone Too Far?",* NBER Macroeconomics Annual 12, pp. 73-103.

Kranton, R.E. (1996). *"Reciprocal Exchange: A Self-Sustaining System",* American Economic Review 86-4, pp. 830-851.

Lucas, R.E., Jr. (1988): *"On the Mechanics of Economic Development"*, Journal of Monetary Economics 22-1, pp. 3-42.

Minsky, H.P. (1975). *John Maynard Keynes*. Columbia University Press. New York.

Mookherjee, D., Debraj, R. (1999): *Contractual Structure and Wealth Accumulation,* Boston University,inedited manuscript.

Murphy, K.M., Shleifer, A., and Vishny, R.W, 1991. *"The Allocation of Talent: Implications for Growth"* Quarterly Journal of Economics, 106 (2) , 203-530. DOI: 10.2307/2937945.

Nordhaus, W.D. (1967): *"The Optimal Rate and Direction of Technical Change",* en Shell, K. (ed.): *Essays on the Theory of Optimal Economic Growth,* MIT Press, Cambridge, pp.53-66.

North, D.C. (1994): *"Economic Performance Through Time",* American Economic Review 84, pp. 359-368. Alfred Nobel Memorial Prize, Lecture in Economic Science.

Olson, M. Jr. 1996. *"Big Bills Left On the Side Walk: Why Some Countries Are Rich, And Other Are Poor"*, Journal of Economic Perspectives, 10 (2), 3 – 24. DOI: 10-1257/jep. 10. 2. 3.

Phelps, E.S. (1966): *"Models of Technical Progress and the Golden Rule of Research",* Review of Economic Studies 33, pp. 133-146.

Rodrik, D; 1999, p.148. *The New Global Economy and Developing Countries: Making Openness Work,* John Hopkins University Press, Baltimore.

–––– (2001). *Advanced Macroeconomics, 2a ed*., McGraw Hill, New York.

Romer, P.M. (1990). *"Endogenous Technological Change",* Journal of Political Economy 98, pp. S71-S102.

Sen, A. 2002, p.77. *Rationality and Freedom*. Bellknap Press/Harvard University Press, Cambridge, London.

Shell, K. (1966): *"Toward a Theory of Inventive Activity and Capital Accumulation",* American Economic Review 56, pp. 62-68.

–––– (1967): *"A Model of Inventive Activity and Capital Accumulation"*

–––– (1967): *Essays on the Theory of Optimal Economic Growth,* MIT Press, Cambridge, pp. 67-85.

Smyser, W.R., (1993). *The German Economy*. St Martin Press, New York.

Tirole, J. (1996). *"A Theory of Collective Reputations (with Applications to the Persistence of Corruption and to Firm Quality)"*, Review of Economic Studies 63-1, pp. 1-22.

Obregón, C; 1984. *De la filosofía a la economía*. Historia de la armonía social, Trillas, México.

–––– (1989). *Controversias macroeconómicas contemporáneas (un tratado sobre la macroeconomía de Keynes en la controversia contemporánea)*. Trillas, México. Available in Research gate.com

–––– (1997). *Capitalismo hacia el tercer milenio: Una historia cultural de la evolución de las economías del mundo*. Patria, Mexico.

–––– (2008). *Globalización y subdesarrollo*. PUI, México. Available in Amazon.com and in Research Gate.

–––– (2008). *Institucionalismo y Desarrollo*. PUI, México. Available at Amazon.com and Research gate.com

–––– (2008). *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.

–––– (2009), *La soledad y el amor*. PUI, México. Available in Research Gate.

–––– (2011). *La crisis financiera mundial: Perspectivas para México y América Latina*. Siglo XXI, México.

–––– (2013). *El Camino a la libertad*. PUI, México. Available in Research Gate.

---- (2013). *La libertad y sus consecuencias: Preconcepciones filosóficas de Occidente sobre la libertad política y económica*. PUI, México. Available in Research Gate.
---- (2014). *Existence and Time: Philosophical and Scientific Inquiry*. Amazon.com. Also available at Research gate.com
---- (2017). *¿Quienes somos realmente?: La historia del yo*. EU, México. Available in Research Gate.
---- (2018), *Globalization: Misguided Views*. Amazon.com, also available at Research gate.com
---- (2019), *Beyond Behavioral Economics: Who is the Economic Man*. Amazon.com, also available at Research gate.com
---- (2020). *Three Lessons from Economists: That policy Makers Should Never Forget*. Amazon.com, also available at Research Gate.com
---- (2020). *A New Global Order*. Amazon.com. Also available at Research gate.com
Obregon, C; and Mariscal, J; 2020. *Emerging Markets Can and Should Use Non Conventional Monetary Policy Too*. Available at Research Gate.com