

Post-Macroeconomics

Reflections on the Crisis and Strategic Directions Ahead

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The World Bank
Development Economics
Policy Review Unit
July 2009



Abstract

For decades, many researchers argued that economics had nothing to fear from enriching itself with lessons and advances from other disciplines. Unfortunately, these suggestions were either neglected or dismissed upfront in what was then arbitrarily considered mainstream economics. The global crisis has led even Nobel Prize winners to acknowledge that the problem facing economists and policy makers today is mostly intellectual—it is the need to confront the systematic failure of thinking, especially on the part of macroeconomists. Despite its unprecedented magnitude and heavy financial, human, and intellectual cost, the crisis certainly does not invalidate everything that has been learned about macroeconomics. However, the costs

highlight some of mistakes of the dominant intellectual macroeconomic framework. Post-macroeconomics should not be understood as another *metanarrative* of the end of *metanarratives*. The use of the prefix post here suggests and emphasizes much more than temporal posterity. Post-macroeconomics should follow *from* macroeconomics more than it follows *after* macroeconomics. The theorizing of post-macroeconomics is therefore neither systematically oppositional nor hegemonic. It does not advocate a “dialectic opposition” between macroeconomics and post-macroeconomics. Rather, it suggests that the latter builds on the former and goes beyond it.

This paper—a product of the Policy Review Unit, Development Economics—is part of a larger effort in the department to better understand the global economic crisis and its implications for development thinking. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at cmonga@worldbank.org.

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I wish to thank without implicating Justin Lin, Olivier Blanchard, François Bourguignon, Luis Servén, Alan Gelb, Luiz Perreira Da Silva, Mustapha Nabli and Faruk Khan for many conversations, exchanges and insights on various topics discussed in this paper.

“Theory is when you know everything but nothing works.
 Practice is when everything works but nobody knows why.
 We have put together theory and practice:
 nothing is working... and nobody knows why!”
Albert Einstein

1. INTRODUCTION

At a recent annual conference of the African Literature Association in Burlington, Vermont, I was teased by some eminent professors of letters who seemed surprised to see an economist sauntering serenely in such a noble gathering, at a time when his own discipline was being discredited in newspaper headlines. None of these critics had personally lost their job or retirement pension in the financial debacle that has rocked the world since 2007. In fact, these academics, who sometimes occupy tenure-track faculty positions, had gathered in peaceful Vermont to discuss esoteric topics like “The Intersubjective Dialogue in the Age of Globalization” or “Postcolonialism and Postcoloniality in Relation to Africa and Blackness”. The incongruous presence at this precious assembly of an intruder like me, a representative of a discipline battered and bruised by prevailing global turmoil, seemed to offer a surplus of gracious solemnity and dignity to their irritation. Listening to them, I was impressed with the admirable empathy these researchers in the humanities felt for the poor citizens of the planet. Their compassion for world victims of economics was such that some of them suggested to me, in a hardly facetious tone, to initiate a petition urging the Nobel Foundation to stop giving a prize in economic sciences.

The teasing was perhaps partly due the fact that the Nobel Prize, which rewards one or more people “for their exceptional contribution to economic sciences”, has suffered from a severe legitimacy deficit since its inception. It is the only prize that was not in the will of Alfred Nobel. While it is awarded by the Royal Swedish Academy of Sciences like the others, it has been granted only since 1968 (1900 for the others) and is endowed by the Bank of Sweden. In truth, some of its laureates were distinguished for rather approximate and untested theories. Others who were hailed as infallible geniuses found themselves in the midst of resounding bankruptcies when they tried to put their ideas into practice. A few others never studied nor practiced economics.¹ But were these sufficient reasons to question the legitimacy of the highest distinction bestowed on economic science? I could have fired back by reminding my interlocutors that literature is probably the field where the award of the Nobel Prize has been the most controversial! But our exchange would have probably veered towards a vain polemic.

¹ Robert Merton and Myron Scholes were associated with the hedge fund Long Term Capital Management whose quasi-bankruptcy in 1988 subjected the international banking system to the greatest financial risks. Daniel Kahneman and Robert Aumann, Nobel Prize laureates in 2002 and 2005, are respectively psychologist and mathematician.

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The global financial and economic crisis—which “officially” started in the middle of 2007— has been a major source of the renewed distrust towards economics. Its severity has added to the confusion in the identification of its causes, and to the validity of a lot of the economic knowledge. In fact, by claiming to know precisely when the crisis started, economists implicitly assume to have understood its origins and implications. Yet, things are less obvious than the conventional economic wisdom would like to admit.

There is another way of analyzing the origins of the current global crisis. It requires that one avoids two pitfalls, namely: the defensive attitude of free market fundamentalists who maintain that there is basically nothing wrong with the way the capitalist system has been functioning, and the rigidity in judgment of certain altermondialist activists who believe their long-awaited moment for taking revenge on capitalism has finally come. It is obviously not easy to position oneself at equidistance of the mostly ideological wrangling and suspicious unanimity that characterize these two camps. Yet, it is an imperative if one wants to escape both the deterministic trap of free market fundamentalists and the catastrophist stance of altermondialist activists.

The crisis has often been presented as a direct consequence of the unfortunate decisions made by a few misguided American bankers taking advantage of a poorly regulated capitalist system. This paper suggests instead that its fundamental cause goes well beyond that. Looking at the first-order conditions to the crisis, it points to the failure of macroeconomic thought and its humility deficit. Despite its important progress in many areas, macroeconomics became so satisfied with its own rigid methodology that it underestimated or neglected the advantages it could draw from other disciplines, notably from microeconomics, its closest neighbor. A dominant, minimalist macroeconomic model encouraged the emergence of a rigid analytical framework which has been used by most public policy designers and central bank managers around the world. Unfortunately, this framework proved ineffective in predicting the inevitable spirals of a globalized and unregulated system of market economy, a system prone to excesses, and that triggered off a Darwinian effect of planetary proportions.

This is not the moment to point accusing fingers or to defend selfish ideological ambitions. It is time to celebrate the funeral of this form of restrictive and ineffective macroeconomics, and to recreate another from it. This paper suggests that the time has come to develop post-macroeconomics, which would be analytical frameworks that are enriched by findings from microeconomics, psychology, sociology or political science. Section 2 sets the stage for such a transformation by describing the root cause of the current crisis and the analytical arrogance which guided economic thought and modeling during the preceding decades. Section 3 explains how the intellectual consensus model generated the myth of the so-called Great Moderation, which misled central bank executives and encouraged the development of securitization. Section 4 outlines the paths to a new approach towards post-macroeconomics. Section 5 summarizes the argument and offers concluding thoughts.

2. ANALYTICAL ARROGANCE

The Initial Theoretical Delusion

The current crisis is primarily one of economic thought and of the way public policies have been designed, legitimized and implemented in much of central banks in the West for much of the past half-century. To understand it, it is necessary to revisit the early part of the 1960s when macroeconomists were quick to draw very optimistic lessons from what they believed to have learned from the Great Depression and from the boom of the post-war period. Infatuated by the sovereignty of their knowledge, they only could see the obvious before their eyes: economists appeared to themselves to be geniuses and demigods who could manufacture prosperity at will, create customized wealth, and distribute it to various social groups of each country on the basis of ideological preferences and socio-political considerations. The only objective of macroeconomic policy was the management business cycles, so they thought. John Maynard Keynes, the most influential English economist of the twentieth century, was celebrated as a guru whose prescriptions on matters of public policy were to be endorsed without the least hesitation or questioning.

Keynesian economics had yielded a very straightforward conclusion: in market economies, central banks and governments could use the two main macroeconomic instruments - monetary policy and budgetary policy - to freely set the unemployment rate at a desired level, providing that a certain rate of inflation is factored in. In short, macroeconomic management boiled down to an inflation-unemployment trade-off exercise guided by the ideological, social or policy preferences of the authorities.

This initial consensus led to the establishment of a quasi-stable relationship between the nominal wage growth rate and the unemployment rate. The relationship was diagnosed in a famous curve (Philips, 1958). It complemented and reinforced the fixed-price Keynesian model. Almost everyone was ecstatic about such a simple and elegant idea: the authoritative curve made it possible to explain inflation in a clear manner. The curve seemed rather convincing and showed visually that when the unemployment rate decreases, nominal wages increase and impacted general price levels. Wage inflation explained the increase in the general level of prices. Like an infallible oracle, the curve showed that one could only decrease unemployment at the cost of an increase in inflation. Conversely, if one chose to reduce inflation, it would be necessary to put up with a rise in unemployment. Eureka!, the community of macroeconomists proclaimed. Finance Ministers worldwide had found the secret equation of economic management. It was just a matter of trading off two priorities, resolving the dilemma between inflation and unemployment.

It was however the first serious mistake in economic thinking. Although the general intuition of Philips (the author of the famous curve) and Keynes's analysis were reasonable, they both rested on shaky assumptions, especially the idea that public policymakers can manipulate at will economic agents. Such a postulate was oblivious of the fact that nothing is permanent, and that nothing is stable. The schematic reasoning

underlying the presumed stable relationship between inflation and unemployment was the slow adjustment of nominal wages. Yes, of course: if the latter are constant while the rate of inflation is positive, it means that real wages are down and that the demand for labor demand is up. More jobs are therefore available and there is less unemployment.

But this reasoning is valid only if workers agree to work more because they expect real wages to rise. This is why they contend themselves with nominal wages that increase in practice, albeit less rapidly than inflation. Keynesian theory thus assumed that workers are actually ensnared by the relative rigidity of nominal wages² and by their own monetary illusions—they confuse an increase in nominal wage with an increase in their purchasing power.

Was this initial basic macroeconomics credible? No, because its relationship with economic policy was based on rigid and exogenous behavioral assumptions (i.e. it considered the behavior of agents to be fixed). Yet what can be true in the short-term is not always in the medium or long term. The idea that public policymakers could manipulate agents at will was naive. “You may fool all the people some of the time, you can even fool some of the people all of the time, but you cannot fool all of the people all the time.” (A. Lincoln). Satisfied with the coherence of the rather simplistic reasoning on which the analytical framework of their science was founded, macroeconomists believed for several decades they had elevated their discipline to the status “hard” science like physics or chemistry. Yet, the idea behind the Philips curve was quite simplistic. Economic policymakers could fool the agents by faulting their expectations. At no time did the emerging macroeconomic science consider that agents can react to or even anticipate on circumstances and policies, and adopt unanticipated behaviors.

Careful studies of how markets actually function around the world and analyses of decision-making processes by investors and consumers would have been enough to invalidate such a rigid theory. Economic historians and sociologists have long documented cases of thriving peasants and illiterate African entrepreneurs who, despite their limited access to institutional credit systems, were able to invalidate the macroeconomic strategies of colonial administrations, challenge successfully hegemonic companies and powerful business networks, including in places believed to be captive markets (see for example Y. Monga, 1996 and Ela, 2006).

Macroeconomists went off track, but some of them who studied African markets quickly realized their mistake³: it is illusory to imagine any economic policy which would not take into account the behavior of agents in an endogenous way. Households and firms understand all too well the objectives of the economic policies implemented in their environments and, oftentimes, react to them quickly. It is therefore naive to achieve an

² It is true that in some countries, wage increases depend on the revision of collective agreements codified by the legislation in force and the outcome of negotiations between management and labor (trade unions, employers' associations).

³ The cases in particular of future Nobel Prize laureates Joseph Stiglitz and James Tobin and other prominent economists like Peter Diamond, Michael Todaro, John Harris and some others, who made a name for themselves at the Institute of Development Studies of Nairobi (Kenya) in the 1960s.

optimal economic policy based a model wherein the behavior of agents is held constant. The effectiveness of economic policy depends on the behavior of agents, and such behavior takes into account government decisions.

The conservative revolution of the 1960s and 1970s and the study of anticipations invalidated key Keynesian assumptions and showed that the famous trade-off between unemployment and inflation was actually an illusion. One obvious reason is the fact that the unemployment rate in a market economy cannot drop below a “natural rate”⁴ which reflects the fraction of the labor force that is unable to work at any given time for various reasons. That rate depends on many factors including human capital obsolescence or the loss of job skills that worsens unemployment, the fact that some jobseekers may drop out of the labor force, the reinforcement of the bargaining power of unionized workers against new recruitment, the existence of a generous social protection system, etc.

Having understood that economic agents form their anticipations, not only on the basis of observation of past experience, but also on an intuitive and often sophisticated appraisal of the manner in which the economy operates, macroeconomists took a bold step forward. They understood that the short-term unemployment-inflation trade-off reflected in the famous Philips curve was not sustainable in the long term; and that a non-accelerating inflation rate of unemployment actually transforms the curve into a straight line. In the Democratic Republic of Congo, Argentina or Paris, when the central bank embarks on an expansionist monetary policy to help the government create the feeling of artificial wealth, workers anticipate quite well the future implications of such decision on the economy. Having some knowledge on how the central bank acts to control the money supply and run an optimal monetary policy, these agents are capable of observing and analyzing the decisions of the technocrats—who believe they are infallible—and in so doing, can predict the purchasing power risk they could face in the future. In countries with powerful trade unions for example, workers immediately incorporate in their salary demands the effects of inevitable price increases. Consequently, the monetary policy decisions carefully prepared by the authorities do not ultimately have any impact on the real economy.

In other words, monetary policy, as an instrument used for stimulating aggregate demand and economic growth, even in the short term, is no more than an illusion. It does not even help gain in job creation what is lost in the fight against inflation. The constant and rational anticipations formed by economic agents have a clear implication: money can never seriously influence the general level of economic activity. Any attempt at increasing money supply is neutralized immediately by a rise in inflation. When money growth has no effect on real economy (or real equilibrium), it is said to be super-neutral (Sargent, 1987). The logical conclusion is obvious: the responsibility of the central bank must be limited to contain inflation, and thus to hold back the progression of money supply.

⁴ This rate is also called long-run equilibrium unemployment rate or structural unemployment rate or Non-Accelerating Inflation Rate of Unemployment (NAIRU). The natural unemployment rate is not constant. It is influenced by technological progress, consumer choices and preferences and, especially, the hysteresis phenomena.

Neoclassical economists became quite proud of their findings and very dismissive of Keynesian theories or any other approach to economics. Lucas famously wrote: “One cannot find good, under-forty economists who identify themselves or their work as ‘Keynesian’. Indeed, people even take offense if referred to as ‘Keynesians’. At research seminars, people don’t take Keynesian theorizing seriously anymore; the audience starts to whisper and giggle to one another.” (1980). In response, leading Keynesian economists were condescending. Explaining why he would not even dignify Lucas and his other critics with an intellectual argument, Solow once said to an interviewer: “Suppose someone sits down where you are sitting right now and announces to me that he is Napoleon Bonaparte. The last thing I want to do with him is to get involved in a technical discussion on cavalry tactics at the Battle of Austerlitz. If I do that, I’m getting tacitly drawn into the game that he is Napoleon Bonaparte.”⁵

The battle between Keynesian and neoclassical economists eventually led to some sort of truce, with each side painfully accepting a compromise. A dominant synthesis—what is currently defined as mainstream macroeconomics—emerged an attempt to mediate the methodological battles that have shaken the discipline of economics in the past fifty years.⁶ It therefore tried to reconcile the strengths of the neoclassical and new-Keynesian frameworks. On the one hand, it used the tools of dynamic stochastic general equilibrium theory, taking preferences, constraints, and optimization as a starting point and then building on these microeconomic foundations. This has made free market theoreticians happy. On the other hand, it validated the idea of nominal rigidities, which helps explain why monetary policy can have real effects in the short run. That consensus framework generally assumed that the economy is dominated by monopolistically competitive firms that change prices only intermittently, which creates price dynamics and the so-called new Keynesian Philips curve.

The elegance of the new, synthetic model did not compensate its most obvious flaw: at the core, it considers the economy—any economy—to be a dynamic general equilibrium system that deviates from Pareto optimum mainly because of sticky prices. The truth of the matter is that there are a number of other market imperfections that constantly force the economy to deviate from optimality. Moreover, the key principles for modeling the agents’ expectations, preferences, decisions and behavior in the model are simply too unrealistic and it is too risky to rely solely on them for policy design. The very idea of representative agents, which underlines the current consensus in macroeconomic theory, is inconsistent with the heterogeneity that is the dominant feature in almost all economies.

There is no doubt that strong analytical progress has been made since the days of Adam Smith and John Maynard Keynes. However, most of the existing mathematical models of economic systems and even business cycles are only remotely reflective of the behavior of households, firms, and governments. Their use of microeconomic tools has often remained rudimentary, and their neglect of lessons from other disciplines has been a

⁵ Interview with A. Klammer, quoted in Mankiw (2006).

⁶ See Woodford (2003) for a comprehensive exposition.

mistake. In fact, progress in macroeconomics may have been inversely proportional to the intellectual investment in macroeconomic modeling. Mankiw has observed that “while the early macroeconomists were engineers trying to solve practical problems, the macroeconomists of the past several decades have been more interested in developing analytical tools and establishing theoretical principles.” (2006, p. 30)

Wizards at the Central Banks

Having arrived at this second major watershed moment of their discipline’s history, macroeconomists could have paused a moment to display a minimum degree of modesty. They could have realized that the incautious zeal they had shown total reliance on either Keynesian or neoclassical principles had misled them too long, and that it was advisable henceforth to exhibit some intellectual humility with regard to the complexities, rationalities and irrationalities of economic agents. They could have questioned the rigidity of certain postulates and the inflexibility of the dominant methodology of their discipline. They could have shown interest in the rigorous lessons of the “hard” sciences like physics, and in the possible gains they could derive from observing other disciplines of the social sciences and even of the humanities.

That was not the case. Having understood that some of the truths - long believed to be absolute and used in determining key aspects of macroeconomic policies - were erroneous, researchers embraced as an alternative a new dogma, mostly based on anticipations theory. They believed they had discovered the Holy Grail. The requirement of prudence which should have guided their projections was replaced by scientific certainty and even an unprecedented analytical arrogance: they thought they understood everything and did not need to know anything new. Policymakers could rest on their laurels and rely on their advice.

Confident in their ability to design, implement and manage a monetary stabilization policy, central bank authorities embarked upon a set of macroeconomic engineering techniques aiming at the “Great Moderation”. The idea was to use in a deliberate manner the most powerful weapon in their possession - short-term interest rates - not to stimulate economic activity and trigger inflation, but to maintain a general level of prices (or to control money supply growth). Even if they acknowledged the existence of a natural unemployment rate against which their monetary policy could do nothing, they confidently relied on statistical analysis to determine the business cycles and structural changes in the economy. They thought a sophisticated monitoring of the various household and company indices and survey results would allow them to raise or cut interest rates without having to worry too much about inflation. In the event of growth deceleration, the new recipe derived of the Great Moderation era would consist in cutting interest rates, while keeping a close watch on the evolution of production and consumption indices, which underlie price trends.

This approach, adopted by almost all central banks, was implemented with a certain degree of success to fight the recessions that occurred almost every decade (1981-82,

1991-92, and 2001-02). The permanent stabilization of economies became a leitmotiv and the journey to prosperity seemed inevitable. The collapse of the New York stock exchange in 2000-2001, a crash triggered mainly by the fall of dot-com ventures, was a turning point. In an attempt to shield the United States from the type of recession and deflation observed in Japan during the 1980s, the Federal Reserve Bank (FED, American central bank) lowered its interest rates in a very aggressive way. Between January 2001 and June 2003, the federal funds rate was lowered twenty-seven times, from 6.5 percent to 1 percent! During that period, most economists saluted the purported ingenuity of FED governor Alan Greenspan, who was projected in the media as an unmatched economic wizard, the greatest artist of the history of finance and macroeconomics.

This loose monetary policy touted as the only means of curbing the recession did not cause the resurgence of inflation, thus confirming the myth that central bank macroeconomists were infallible experts. But it insidiously caused the formation of a new financial bubble, and laid the foundations of the much deeper crisis which today is affecting the world economy. It has spread quickly in an increasingly “globalized” world: savings used to fund economic activity do not come exclusively from domestic sources. They also come from abroad—as a matter of pure accounting, countries with a surplus in their balance of payments must invest in countries with current account deficits. In addition to the incentive they received over the past decade from the expansionist monetary policy of the FED, American investors and bankers could also rely on savings inflow not only from Asian countries (China, Japan, South Korea) where consumer spending was weak and income growth strong, but also from oil exporting countries eager to invest their reserves in lucrative markets. Net foreign savings in the United States, estimated between 1 and 1.25 percent of the GDP in 1995, thus leaped to 6 percent of the GDP in 2006, the equivalent of 825 billion in today’s dollars⁷. American financial markets were flooded with excess liquidity, which was quickly converted into unregulated financial innovations on Wall Street and all major international financial markets. Obsessed with their fear of recession, central banks around the world pursued their strategy of interest rate cuts, all the more so because the indicators at their disposal did not show any risk of inflationary pressures.

In this spiral where credit, investment and consumption were encouraged, there was one last aggravating factor: the aggressive budget policy adopted by the US government, which resulted in a rapid deterioration of the fiscal balance. In its bid to finance the war effort in Iraq and Afghanistan, the administration of President George W. Bush increased military expenditure while lowering taxes at the same time. The budgetary surplus which it had inherited in 2000 quickly turned into a large deficit, financed through Treasury bills purchased mostly by the Asian countries with surplus savings. It is interesting to note that during this same period, Sub-Saharan African countries, the poorest in the world, made efforts to reduce their budget deficits, thus conforming to macroeconomic dogmas no longer in force in the western world.

⁷ Source: Bernanke,(2009).

3. THE MYTH OF THE GREAT MODERATION

Justification for Leveraging

The analytical excitement that swept macroeconomists off their feet caused them to overlook the scope of market imperfections, which are essential features of business and financial environments. Yet even neoclassical theorists—still the dominant force in macroeconomics—would acknowledge that there are often situations where the same product can be exchanged at different prices; that certain prices theoretically fixed by the market can actually be manipulated by major operators who have information that the others do not possess; that on certain markets, much time is needed for supply and demand to be in equilibrium; and that in financial markets, the most influential financial institutions have the capacity to contract high levels of debt which can, in the event of difficulty, trigger systemic effects for which nobody takes responsibility (Solow 2009). These imperfections were ignored by mainstream economics, which believed it knew all that needed to be known. True, markets around the world have suffered crisis after crisis, and economic thought had been enriched by useful lessons from them. Still, the lessons drawn from the policy mistakes of the 1930s are not necessarily relevant in the 2000s.

Focusing on what they thought was “optimal” monetary policy, policymakers took a bet on the effectiveness of the tools at their disposal. They worshiped the use of interest rates that could be used to control money supply and stimulate short-term economic activity. To fight the 2000-2001 recession that followed the speculative bubble caused by the collapse of Internet (dot.com) stock prices, central bank officials reverted to their traditional toolbox. They aggressively reduced interest rates and injected more than enough liquidity in the economic system in order to spur consumption and investment. That decision, initiated by the FED and implemented in a coordinated manner by many other central banks, actually made it possible to reduce the shocks of economic deceleration. But it also caused an increase in money supply that could only be controlled by a sustained increase in economic activity in various sectors of industry. For many agents (firms, households), low interest rates quickly meant more than easy access to financial resources: in market economies where risk-taking, inventiveness and innovation (Schumpeter, 1982), it also caused a change in the lifestyles of households and in the methods of financing of companies.

Economic agents were daring and creative as they accessed and used the liquidity made available by the central banks. They cleverly indulged in leveraging by investing little sums of money while borrowing larger amounts; in so doing they increased their debt to unprecedented levels. Under certain conditions, debt can obviously sustain growth and profitability—especially when it funds investment opportunities that meet the market test. One can therefore understand why so many investors would get caught up in the excitement. Leverage allows investors to bet to the maximum at the beginning of their investment horizon. There is no need to wait until having saved a required amount of money over a given period of time before taking large bets. Stock markets record their highest profits in relatively few days in one year and it is impossible to predict such days.

Maximum investments therefore guarantee investors to make profits when the opportunity arises. In addition, in many countries, leveraged investment also offers tax advantages: interests on money borrowed for investment (in an unregistered portfolio) can be deductible against taxable income. As a consequence, the true borrowing costs are kept low. By reinvesting a tax refund, investors or speculators can further accelerate the growth of their mutual funds portfolio.

Leverage can therefore constitute an effective long-term strategy to increase the value of a portfolio, since it basically entails getting loans with the hope that investment returns will be higher than borrowing costs. But if the economic return on investment is lower than borrowing costs, leverage becomes harmful. It then creates a snowball effect on the balance sheet. In the final analysis and simply put, leveraging is a risk transfer instrument; it is a sword of Damocles with the potential to hurt the risk-taking firm. In the event of bad investment, corporate equity, which normally acts like a safety feature for most firms, becomes useless. In such situations, the only way out is either a buyout by another firm in better financial standing or government intervention or bankruptcy. When used excessively, leveraging can threaten, via domino effect, the stability of a whole sector or industry.

That is what happened on Wall Street in September 2008 when Lehman Brothers went bankrupt. Money had been supplied to financial investors in very large amounts and for a protracted period of time, because central bank authorities believed they could fight the 2001-2002 recession by adopting a loose monetary policy under the general macroeconomic strategy of the Great Moderation. Many investors had engaged in leveraging with the goal of boosting rapidly the growth rate of their portfolios. The inaction of regulation agencies and independent rating agencies—that had yielded to the illusions of the effectiveness of monetary policy—encouraged the spectacular development of new, complex and minimally regulated financial products. The intensive recourse to increasingly sophisticated innovations as well as the dissemination of financial instruments which with time became incomprehensible to users – including workers of the regulation and rating agencies - cost the international financial system what was supposed to be its most important or precious asset: transparency.

Frankenstein on Wall Street: The Russian Roulette of Securitization

Many financial market agents throughout the world took advantage of low interest rates and embarked on a race to explore avenues for quick enrichment. Major economic operators (especially institutional investors like the large banks, insurance companies, mutual funds, hedge funds etc.) borrowed to secure the sizable capital that will enable them make substantial profits. An investor who had, say 1 million dollars, and who wanted to make a 10 million dollar investment with a potential return of 10 percent could borrow the 9 million he needed at 5 percent interest rate. If everything went ahead as he envisaged, the investment would yield a return of 1 million dollars, on which he would pay 450,000 as interest on his debt. He would pocket the rest, that is, 550,000 dollars. This would be a great rate of return: 55 percent of his initial stake of 1 million. The ratio

of the full stake of 10 million dollars to the equity of 1 million was then expressed as 10-to-1 leverage.

Of course, if the operation did not yield any return or if it failed, it would still be necessary nevertheless to reimburse the initial borrowed amount and the interest. But in financial mathematics, nothing of all that is dramatic: the probability of failure is only one the several probabilities that are included in the calculation of expected returns. The prospect for spectacular yields is the real motivation for investors, and the main determinant of their decisions and behavior. The investor who possessed a start-up capital of 1 million dollars had the following reasoning: why stop with a loan of 9 million? Why not engage in an even more sizeable transaction if one can raise an even larger amount of capital to finance it? It was obviously always a risky path. But isn't risk an important aspect of profit, and a key ingredient of entrepreneurship in the context of market economy? At any rate, that was the reasoning adopted by a host of investors and speculators on major financial markets in North America, Europe and Asia in the 2000s. Very quickly, financial and speculative transactions gained momentum, reaching 30-to-1 leverage!

From the perspective of bankers, the use of leverage, as one would expect, led them to increase lending and to invent a technique to pass on bad risks to others, at least partially. To understand this, it should be known that in almost all the countries of the world, banks are allowed to issue credit only to a certain limit, usually a specific fraction of their own resources. But credit is their business, their "merchandise". The more they "sell", the more they are likely to make profits. To ensure the distribution of large amounts of credit, US banks began in the 1970s to re-sell of some of the items in their credit portfolios, usually not the best ones. This practice gave them renewed possibilities to open fresh lines of credit while respecting the authorized limits, and to clear up their balance sheets.

The process became to be known as securitization. It consists in transforming less liquid assets (i.e. assets for which there is no market because everyone believes that they are very risky) into easily negotiable and transferable securities. These assets are said to be "toxic" because of their doubtful profitability or the shaky nature of their underlying guarantee. The general principle of securitization is simple: a portfolio of these doubtful debts (bad loans) is sold to an intermediary who bundles them together with other more advantageous securities into an investment vehicle and issues new securities which are then sold in secondary markets. These new products are therefore a collection of various types of debt: toxic assets mixed with good quality assets. Securitization operations differ and are classified according to their relevant underlying assets (asset-backed securities).⁸

In the beginning, it was limited to mortgage loans. It was subsequently extended to consumer and commercial loans. Everything then became "securitizable": ordinary credit issued by the primary banks, commercial debt, revenue on financial assets or properties and royalties. In short, all assets that people could anticipate future fund flows became

⁸ Depending on the content of securitization vehicles, these new products have compound names like CBO (*Collateralised Bond Obligation*, a derivative security backed by a pool of bonds with various risk levels), CLO (*Collateralized Loan Obligation*, a derivative security backed by corporate loans), etc.

“securitizable”. Stakeholders in financial markets knew that transferable loan portfolios being traded contained both good loans and bad loans. But that did not bother anybody because new financial activities aiming at mitigating or transferring risks were created at the same time—vulture funds for example, which specialize in the acquisition of risky debt at very low prices. The aggregate amount of securities issued in Europe which stood at 78 billion Euros in 2000 thus soared to 452 billion Euros in 2006. As for American emissions, they represented roughly twice these amounts.

Securitization quickly became for banks and insurance companies, but also for non-financial issuers, a useful tool for balance sheet management (an instrument for altering statements of financial position). Not only did it ease the transformation of low-risk assets into liquidity, it also facilitated the disposal of high-risk assets, thereby enabling companies to limit possible losses and to maintain a sound balance sheet. In the world of securitization, financial institutions “originated and distributed” the credit risk rather than holding it on their balance sheet. This provided profitable fees and commissions, and an increasingly large fraction of their income. The process of generating fees and commissions through securitization now appears to be broken and a major source of revenues for financial institutions has dried up. One example is that of securitization of mortgages, which was running at the annual rate of \$1,000 billion in January of 2007, and was down 95 percent to an annual rate of \$50 billion by January of 2008 (Roubini, 2009).

The main toxic asset that was subject of bank transactions within the framework of securitization was the subprime loans. These loans have been the immediate manifestation of the current financial and economic crisis, which started in mid-2007 in the United States before spreading to Europe and throughout the world. Subprime loans were issued to borrowers who presented a higher risk of default, the normal level of risk being the “prime”. For the most part, these were mortgages loans with very high variable interest rates. But they also included consumptions loans such as credit card loans or car loans. Charmed with the real estate boom that was sustained by lenient central bank monetary policies, credit institutions impetuously granted loans to households with very modest incomes and weak financial situations by calculating their borrowing capacity on the basis of the rising value of the acquired homes. The issuance of credit to these subprime borrowers was encouraged in the United States by political authorities. A 1997 law that seeks to promote social equality (Community Reinvestment Act) requires deposit banks to lend to people with modest incomes, even if they have weak credit scores, i.e. below the “prime rate”⁹. Some credit companies even specialized in this type of transaction.

As real estate prices increased, bankers and their customers believed they had struck good deals, because the sale of a mortgaged house made it possible to repay a loan, regardless of its high interest rate. The system functioned artificially on the assumption of a

⁹ There is no clear-cut definition of what “subprime borrower” means. But bankers generally consider as such any borrower who on the basis of his/her FICO credit score rating represents a very high risk, that is to say they possess a credit score of between 500 and 620, scores ranging from 300 to 850, with 678 being the median score. A “prime borrower” designates an individual with a good credit score, not carrying a debt burden higher than 75 percent and not financing more than 90 percent of the value of his/her mortgage.

continuous rise in the value of real estate, which offered a profit margin to each stakeholder. When the real estate bubble busted in the United States in 2007 and home prices started to fall, the fictitious nature of this enrichment process became clear to everyone. Imprudent households and speculators could no longer repay their loans, and lending institutions which had granted these subprime loans found themselves saddled with toxic assets which they did not know how to manage or sell because nobody wanted to acquire them within the securitization process. Some companies that had taken on excessive amounts of debt in their greedy quest for growth at any cost realized that the risk had become too much to bear and that they should start deleveraging by paying off debt. This reverse process of deleveraging—with many financial agents rushing to get out of credit contracts—amplified the financial crisis, transmitting it from investor to investor, bank to bank, and country to country. The macroeconomist, the banker, the trader and the broker on the financial markets, each in their sphere of influence, proved to be modern Frankensteins.

The crisis exploded and became extremely costly. In the US, the FED reports that household wealth, which peaked at 64 trillion dollars in mid-2007, plummeted to 51.5 trillion at the end of 2008. In other words, 13 trillion dollars of perceived wealth had vanished in about one year. As Solow observes, “nothing concrete had changed. Buildings still stood; factories were still just as capable of functioning; people had not lost their ability to work or their skills or their knowledge of technology. But a population that had \$64.4 trillion with which to plan their lives discovered in 2008 that they had lost 20 percent of that.” (2009, 6). To understand the implications of such a large loss of wealth, one must remember that an empirically tested rule of thumb is that an additional dollar of wealth induces the average US consumer to increase annual spending by an amount between 4 and 6 cents. So, the crisis may lead to a potential drop in consumer spending in the US in the range of 520-780 billion a year! For developing countries, especially for the poorest of them, mistakes made by economists and policymakers in the West might be even costlier.

The Cost of the Crisis in Africa

The global crisis will aggravate economic, social and political difficulties in Africa. Despite its limited integration into international markets, the continent will experience the ripple effects of bank bankruptcies and of the distressed western financial systems where many of the mother companies of African banks operate. To function optimally, a commercial bank in Dakar, Lomé or Nairobi needs to keep a stable business relationship with correspondent banks in Paris, London or New York. It must hold a business account in these western banks to be able to run for example documentary credit operations for its African customers who buy or sell goods to suppliers or customers abroad. It is through these correspondent banks that exchange transactions are conducted and facilitated. Even though the majority of African banks have excess liquidity and are fairly well funded, they could not remain unscathed in an international crisis which has weakened their correspondents throughout the world.

A deceleration in banking activity in Africa would negatively impact the rate of economic growth—whose current level cannot significantly help reduce poverty. The World Bank (2009) predicts that the GDP growth rate in Saharan Africa will drop from 4.9 percent in 2008 to 1.7 percent in 2009. Taking an average population growth rate of 2.5 percent, this would represent a negative growth rate of GDP per capita. This will also mean a drop in tax revenues as well as other forms of government revenue, notwithstanding the fact that such revenues are needed to finance public expenditure, especially in social sectors like education, health and social protection.

That negative spiral could be aggravated by the drop in African exports, which constitute the main source of growth for all the small open economies of the continent. Recession in the west—the main customer for African economies—certainly implies weaker demand for African oil, diamond, copper, cotton, coffee, cocoa, wood, and other commodities. Moreover, Africa's share of the world exports has declined during the last half-century, sliding from about 6 percent in 1960 to 3 percent in 2006.

The loss of foreign exchange will be compounded by the decline of private transfers (funds flow of nongovernmental organizations for example) and of remittances from migrant workers, which constitute an important funding source for household consumption and public investment across the continent. In 2008, Africa had approximately 15 million migrant workers (of whom two-thirds were on the continent), who contributed about 20 billion dollars of transfers to their countries of origin.

Another transmission channel of the effects of the crisis is the likely decrease in development assistance, on which many countries depend for their investments and their welfare expenditures. Admittedly, recent statistics indicate that the total net volume of government aid to development increased by more than 10 percent in real terms in 2008, amounting to 119.8 billion dollars. But these figures, which take into account foreign debt reductions, fall short of the targets set in 2005 by the industrialized countries at their G-8 summit in Gleneagles (Scotland).

Last but not least, direct foreign investment, which is a good funding source for balance of payments deficits, will decrease considerably in the years to come. Already, net private capital flows to developing countries fell almost 50 percent, slipping from 1,200 billion dollars in 2007 to 686.4 billion dollars in 2008 (World Bank, 2009).

The crisis will also generate social and political costs which are difficult to predict or estimate for the time being. An average growth rate lower than the population growth rate means a negative per capita rate; this would imply an aggravation of poverty, which already affects more than 51 percent of the African population or 390.6 million people.¹⁰ Even though poverty does not inevitably result in conflicts, one could expect more uncertain and unstable times in many African countries.

¹⁰ Source : Chen and Ravallion (2008, Table 6, p. 32). The poverty line here is \$ 1.25 per day based on statistical data collected in 2005.

Clearly, the global crisis has revealed the deficiencies of the dominant macroeconomic model. It is urgent to rebuild a new framework for macroeconomic thinking, one that will take into account the lessons of the current crisis. This will not be achieved simply by proposing a hasty patch of the intellectual framework that legitimized for the Great Moderation. It can only be done by finding new answers to difficult policy questions, and tackling the theoretical deficit in macroeconomics.

4. FROM MACRO TO POST-MACROECONOMICS

Policy Rationale for Post-macroeconomic Thinking

The validity of the dominant macroeconomic framework is not an abstract problem of interest only to academics. It is an issue with application to the global economic crisis. Governments around the world have mostly reacted quickly to the emergency. As a consequence, changes in economic policies have taken place at a much faster pace than change in real macroeconomic thinking. David Blanchflower, a preeminent economist turned into a member of the Bank of England's monetary policy committee observed recently: "As a policymaker I have found the 'cutting edge' of current macroeconomic research totally inadequate in helping to resolve the problems we currently face."¹¹ This makes it urgent to carefully examine the intellectual foundations of the meltdown of some of the pillars of traditional macroeconomics, and to draw theoretical and epistemological lessons from the failure. That would help enrich economic knowledge and better inform policies which are already being implemented.

The rush to avoid an economic and social disaster has led to the adoption of a fairly broad set of new-Keynesian policies summarized in the communiqués from recent G-20 meetings. They reaffirm the consensus among policymakers in industrial countries—regardless of the ideological stance of their ruling coalitions—that the current crisis reflects market failures that can be easily corrected by strong Government (and not always carefully designed) actions in the economy, and that long-term costs and consequences of such actions can be addressed at a later time.

The urgency of rigorous new macroeconomic thinking is made all the more obvious by the fact that some of the policies being promoted to deal with the global crisis can be seen as politically motivated. Case in point: the decision by the US government to pass legislation that would make it easier for workers to unionize, despite little evidence that the flexibility of the labor market had anything to do with the crisis.¹² The resurgence of rampant protectionism—under such slogans as the "Buy America" clause in the US fiscal stimulus package, which has led to similar responses abroad—threatens the progress made in international trade negotiations in recent decades. More generally, the rush to cure the excesses of capitalism is leading many policymakers to forget its achievements (Becker and Murphy, 2009).

¹¹ Blanchflower, 2009.

¹² With union membership in the US at about 7.5 percent of the private-sector work force, one-third the rate in 1983, the enactment of a bill has been criticized by business groups as a political tool for reversing the unions' loss of membership and power.

Almost everywhere, swift changes can be observed in monetary policy without clear discussion of the corresponding changes in thinking. Central banks are abandoning the intellectual consensus of “one tool [*short-term interest rates*], one target [*price stability*]” that dictated their work for so long.¹³ The idea that global financial markets working under the supervision of regulatory agencies and monitored by private rating agencies concerned with their reputation could price risk and organize financial intermediation efficiently has been discredited. The new consensus is that there is no such thing as the Great Moderation, and that central banks can no longer focus on the calibration of their interest rate tools with the naïve expectation that all other markets would automatically adjust. The business cycle had not been subdued and markets are never rational and efficient.

This has brought several new questions on the monetary policy agenda: First, what is the proper role of central banks in a new world where they can no longer sit on the sidelines and focus on one single objective? The global recession occurred against a backdrop of price stability, which is supposed to be the cornerstone of macroeconomic policy. Japan’s recession of the 1990s also started in a very low inflation environment. It then seems obvious that inflation targeting, which has been the main preoccupation of almost all major central banks, failed to prevent the build-up of the macroeconomic imbalances that led to the crisis. The traditional focus on low and stable inflation was clearly insufficient to prevent bank failures and financial contagion.

Because the relationships in financial markets have become very unstable, the private sector can no longer be trusted to make all the right decisions necessary for market discipline. Central banks are being forced to become lenders of first resort, and to venture in new territories where they have no clear comparative advantage. The US FED, for instance, has “stepped in to fill the lending vacuum left by banks and Wall Street firms, officials have been dragged into murky battles over the creditworthiness of narrow-bore industries like motor homes, rental cars, snowmobiles, recreational boats and farm equipment — far removed from the central bank’s expertise.” (Andrews, 2009). This poses the risk that the important task of allocating credit could become more political and less subject to rigorous economic analysis. It also weakens the FED’s reputation of political independence and credibility. The US government’s plans to give even more responsibility to its central bank—beyond monetary policy—and to convert it into an institution in charge of macro-prudential regulation raises questions as to whether it can effectively play so many different roles. Moreover, there is legitimate skepticism about the FED’s oversight abilities. As Mark Williams put it, “giving the Fed more responsibility at this point is like a parent giving his son a bigger and faster car right after he crashed the family station wagon” (quoted by Aversa 2009).

Still, there are suggestions that governments should consider whether controlling asset price inflation must be added to the mandate of monetary policy authorities. “Throughout the US dot-com and housing price bubbles, the Federal Reserve continued to adhere to its

¹³ That minimalist formula is generally attributed to David Blanchflower, a member of the Bank of England’s monetary policy committee.

view that its mandate was to pursue price stability and full employment, not to deflate asset price bubbles. But amid the wreckage caused by the second burst bubble in a decade, it is clear that this view needs to be rethought. If the Fed is not able to keep these bubbles from inflating, it will not be able to achieve its other objectives.” (Lin, 2008). However, it is unclear whether monetary authorities could be effective in pursuing multiple and often conflicting objectives. Preventing asset-price bubbles is certainly a noble goal as their bursting raises the risk of deflation in the medium term. But macroeconomics has so far been unable to identify the instruments, timing, and explicit or implicit targets to be monitored in order to reduce asset price volatility.

Second, what are the appropriate tools that central banks should use to steer the economy? Prior to the current crisis, the conventional wisdom followed by almost all central banks was to focus on short-term rates (typically the overnight money-market rates). While it was acknowledged that such rates had less influence on the level of economic activity than those on one-year corporate loans or long-term mortgages, the broadly stable relationship between short- and long-term rates provided a framework for central bank actions. The situation has now changed substantially: the global saving glut has led to a decoupling of trends among various interest rates. Moreover, in dealing with the crisis, central banks have gone out of their traditional roles, expanding their lending operations considerably through a diverse set of credit types, extending the maturity, and using instruments that they never used before. The FED has offered credit lines to investment banks; the European Central Bank has guaranteed unlimited funds for up to six months instead of one week; the Swiss National Bank has intervened in currency markets; the Bank of Japan has bought equities; others such as the Bank of Canada have clearly indicated their willingness to go so far as purchasing government or even corporate debt to directly increase the quantity of credit. While these are all considered “emergency measures”, it is uncertain whether clear exit strategies will be adopted to return to “normal” central bank operations.¹⁴

Third, even if the focus of central banks remains on price stability, their ability to stimulate growth could be constrained in some countries by continuous declining prices. It would then be difficult to reduce interest rates below inflation, that is, to make them negative in real terms. It has been argued that the global recession should have already brought negative interest rates in most of the Western world. If deflationary pressures worsen, real interest rates—the difference between negative inflation rates and nominal interest rates—would increase, which would delay the resumption of growth. Faced with that possibility, central bankers and macroeconomists need to reexamine the intellectual framework for monetary policy. The obvious solution would be simply target higher rates of inflation, which gives monetary policy bigger room to maneuver. Another, more radical possibility is to give less priority to inflation in the current context.¹⁵ But

¹⁴ Some analysts believe that when the US economy recovers from the crisis and it is time for the FED to sell its large holdings in mortgage debt, there will be political pressure—including from the American housing lobby—not to do so. History suggests that there can be a bit of hysteresis here: in 1942, the FED agreed to hold down long-term interest rates to help finance the war. It took almost a decade for the US central bank to extract itself from that commitment.

¹⁵ “There are worse things than inflation, says economist N. Greg Mankiw. We have them now.” Quoted in *The Economist*, 2009.

abandoning inflation targets would constitute major strategic changes for central banks, and a credibility risk for their reputation.

On fiscal policy, the global crisis has also raised many old controversies and new challenging questions. First, it has not settled the debate over the effectiveness of government spending or tax cuts as a way of jumpstarting growth (see Perotti 2007 and Blanchard and Perotti 2002). Major fiscal stimulus packages are being implemented around the world to complement monetary policy. But in environments where firms are facing big adverse shifts in demand, some fiscal policy features such as tax cuts and subsidies may have little effect. Moreover, policies to avoid the economic and social costs of liquidations through bailouts to large firms in various industries are costly and can lead to similar measures abroad, the resurgence of protectionism or even trade wars.

Skeptics of the effectiveness of fiscal stimulus packages in industrialized countries usually raise two issues. One is whether a large multiplier from public spending ever exists and one is whether such multipliers are subject to diminishing returns. Contrary to Keynesian theory, proponents of the so-called Ricardian equivalence point to the fact that households tend to adjust their behavior for consumption or saving on the basis of expectations about the future. Any fiscal stimulus package is then perceived as immediate spending or tax cuts which will need to be repaid in the future. In such situation, it is conceivable that the multiplier could be less than 1, in situations where the GDP is given and an increase in government spending does not lead to an equal rise in other parts of GDP (see Barro 2009). In neoclassical theory, it is even possible to have some rare instances of negative multipliers, which points to situations where fiscal contractions become expansionary (see Francesco and Pagano, 1990).

Developing countries might not be in the position of implementing counter-cyclical policies. Many of them currently have both large current account and fiscal deficits. Others have fixed exchange rates (meaning that they cannot freely print money even if faced with deflation). Even in countries where there is scope for discretionary spending, lessons from history suggest that fiscal policy has too often been pro-cyclical. This is partly due to the weaknesses of automatic stabilizers and the pro-cyclical bias that is built in almost all discretionary policies. It is also due to the fact that business cycles in developing countries are generally more pronounced than in rich countries. And because the tax base there is often narrower, creditors are skeptical of bond issuance during bad times. Governments in emerging markets are therefore unable to borrow to smooth the cycle. Instead, their safest policy is to save more during good times.

The way to break the constraint of Ricardian Equivalence in industrialized countries is for them to invest the fiscal stimulus in projects and programs that release bottlenecks to growth in developing countries (Lin, 2009). High-return opportunities may be limited in industrialized countries where a large share of productive investment has already been realized under the market system. By contrast, they tend to abound in developing countries. Creating demand quickly could be done by channeling part of the fiscal stimulus packages to funding productive investments in the developing world. But even if that win-win, global fiscal solution was agreed upon at the level of the international

community, it would face difficult political economy obstacles in its implementation, both in industrialized and developing countries.

The design and timing of exit strategies from fiscal stimulus packages will also be a major policy issue in the years ahead. Most western countries had substantial fiscal deficits prior to the crisis, which they chose to fight with even bigger public spending. They should therefore be concerned with their long term budget situation. It would be too optimistic and even naïve to believe the official justification by politicians, that is, these stimulus packages will mostly fund productive investment that stimulate growth and generate enough revenue to repay the new debt. Even leaving aside the long-term threats associated with worsening deficits (the possibility that of inflation and currency depreciations), there is also uncertainty about the timing for declaring victory over the crisis, and the risks of reversing too quickly to contractionary fiscal and monetary policy.

Beyond the search for policy solutions to the current crisis, it is necessary to deeply reflect on the relevance and effectiveness of macroeconomic knowledge. This requires a new approach to the discipline, one which is both flexible and rigorous, which integrates new knowledge from other disciplines of the social sciences and the humanities to traditional macroeconomics.

Basic Questions on the Growth Mystery

Another important rationale for moving to post-macroeconomics is the need to answer some of the most basic questions in economics, and the observation that the growth agenda, which is key for prosperity and poverty reduction—the first one being the understanding of business cycles—has stalled in recent years. For a long time, economists believed that the growth potential of any given country depended primarily on its volume of natural resources, the quantity and the quality of its human capital or investments, and its use of the technology available. It was the sparkling intuition of Solow growth model. The level of technology available and productivity were considered to be exogenous to the model, and were more or less regarded as public goods. Advances in growth theory especially through the endogeneization of productivity (technology being considered as a private good) have generated a new wave of research that integrates into the models some factors previously identified only intuitively. However, the progress of knowledge has not led to a clear understanding of the specific factors that allow countries to growth at a given point in time—let alone the specific policies to be implemented in order to generate sustained growth. In fact, despite the progress, many respected macroeconomists still come up with doubtful assertions about the reasons for economic failures or successes.

Nowhere is this more evident than in the study of Africa's poor macroeconomic performance, which has been alternately attributed to: the absence or abundance of natural resources; the rather high number of landlocked countries; the brutality of its tropical climate; the narrowness of its market or the weakness of its social and political institutions (Sachs and Warner, 1997).

Lacking natural resources or having too many? Japan has hardly any. Yet, its economic history, which was marked by two atomic bombs, suggests that it never needed them. Compare its endowment in natural resources to the extraordinary geological wealth of the Democratic Republic of Congo, which may have largely contributed to impoverishment and political bankruptcy. Yet, the idea that countries with lots of natural resources suffer a “resource curse” (the paradox of plenty) does not hold and cannot be generalized: Qatar, Dubai, or even Botswana have been able to use their natural resources to kick-start their respective economic development processes.

Being a landlocked country? Switzerland has been one for as long as one can remember. Yet, it exploited that condition to rigorously assess its strategic options and to choose an optimal growth strategy: its geographical location has perhaps forced it to establish good, mutually profitable relations with its neighbors, as its policy makers understood that their country’s economic success is dependent on that of the neighboring states.

Hot and humid climate? Dubai is not in a place known for the gentleness of its temperatures, but this has not prevented capital holders of the world from going there to invest their savings and even build their second homes which often remain unoccupied. Just like Dubai, Gabon, Congo, Angola or Sudan have huge oil reserves yet no retired American or Japanese billionaire will consider going there to settle and enjoy his or her fortune.

Narrow markets? The size of Singapore or the modest population of Costa Rica did not prevent them from positioning themselves as major exporters and from making huge gains from their policy choices. With reduced transportation costs, major technological progress and a greater coordination of trade policies facilitating exchanges, the potential market of any small African country is no longer limited to its borders. The Chadian market or the Burundian market is actually the world market, provided that they are able to improve their business environment.

Weak and ineffective political institutions? While there is a lot of empirical research pointing to large macro effects of “governance” on growth (Acemoglu and Robinson, 2002), it is still unclear what that concept means precisely. In fact, it is extremely difficult to identify specific quantitative measures of institutional quality that are really significant in statistical models of growth. The typical measures of institutional quality such as “government effectiveness” that are often used in empirical growth investigations rely on surveys of perceptions by the private sector of the government’s behavior, not on the well-established and sustainable institutional features for which they are proxies (property rights, enforcement of contracts, etc.). It is puzzling that some countries that have been praised for economic successes and poverty reduction often perform poorly on governance indicators (i. e., China or South Korea prior to 1980). Many drivers of growth such as trade, education, or even governance, are endogenous and the empirical literature has not convincingly disentangled their effects. Moreover, most institutional factors associated with growth such as property rights are not easy to establish (in some countries, they have resulted from decades or even centuries of sociopolitical changes).

This has led some researchers to conclude that “there is no relationship between growth and constitutional measures of institutions” (Glaeser et al. 2004).

All these paradoxes confirm at least one thing: macroeconomics is in need of repair. One can no longer say, as C. Romer once did, that “Better policy, particularly on the part of the Federal Reserve, is directly responsible for the low inflation and the virtual disappearance of the business cycle in the last 25 years,” and that the policy mistakes of the 1960s were a painful, but not permanent, detour on the road to excellent economic performance.”¹⁶ To the contrary, Solow’s words of disappointment about economics: “In fact, ‘modern macro’ has been notable for paying very little attention to data... I am left with the feeling that there is nothing in the empirical performance of these models that could come close to overcoming a modest skepticism. And more certainly, there is nothing to justify reliance on them for serious policy analysis.” (2008).

The Analytics of Humility

An important feature in the approach suggested here as post-macroeconomics is the idea that economics should always drive towards analytical rigor. A major mistake made by the first generation of development economists in the 1950s was to assume that they could build a credible and consistent sub-discipline from some sort of “pragmatist thinking”, and by ignoring the pressures to produce mathematically consistent analyses. That intellectual attitude was largely justified by the difficulty of telling their story of a poverty traps and the impossibility at the time to confront market structure in a formal way. They believed that the aggregate behavior of a whole economy dominated by oligopolistic rather than perfectly competitive industries was the way to go. They were right in their suspicion of having to assume perfectly competitive markets but did not have the analytical tools to prove it. In fact, economists were only able to formalize their intuition in the 1980s and 1990s.¹⁷

Unfortunately, their intellectual strategy of neglecting formal models only generated hostility and contempt from mainstream economics, as it left out the clarity of reasoning and assumptions that underline any given theory. The strict adherence to a discursive style eventually meant that development thinkers had to use parables and metaphors to make complicated points such as economies of scale (which implies imperfect competition), so crucial to their theories. This could only lead to some fuzziness, despite the pertinence of their ideas. The choice of a methodological path should be clear. Modeling is always part of economic thinking, either explicitly, or implicitly. As Krugman pointed out, “the problem is that there is no alternative to models. We all think in simplified models, all the time. The sophisticated thing to do is not to pretend to stop but to be self-conscious—to be aware that your models are maps rather than reality.”

Economics will retain its unique status among the social sciences only if it can use mathematical models and numbers to codify its knowledge and make it easily teachable

¹⁶ C. Romer, quoted by Postrel (2009).

¹⁷ The first successful attempt to translate the key points made by early development economists into a simple, formal model is found in Murphy et al. (1989).

and reproducible. But it will endure and gain even more credibility if it also goes beyond the rigid constraints of simplified modeling to enrich its toolbox with findings and lessons from other disciplines. Economic knowledge benefits enormously from the technical rigor of mathematical models but it needs not be restricted to such models.

Since this may sound rather general, let me now outline more specifically the methodological path ahead through an example. Drawing lessons from recent advances in growth research, here is an exposition of why macroeconomics would be enriched by a clear rehabilitation of microeconomics. At the outset, it must be said that even the most fundamentalist mainstream macroeconomists would acknowledge that the dominant framework for growth analysis has so far yielded little actionable results. For sure, economists have learned a few things about the general conditions that are conducive to growth. Cross-country empirics has highlighted broad differences between high-income countries by identifying three types of variables that are correlated to growth: (i) Structural variables such as productivity, physical capital, labor force or educational attainment; (ii) institutional variables such as the “quality of institutions” (too often arbitrarily defined) or governance; and (iii) policy variables such as macroeconomic stability, investment climate, financial development or trade openness (though the current crisis has shattered the consensus on what these variables should be).

But these lessons are not very helpful as countries vary enormously with regard to conditions under which they can generate and sustain high growth. Over the past decades, China and Chile have adopted very different policies but were able to grow comfortably. Korea and Taiwan have chosen different degrees of government intervention in their economies but have done quite well over a long period of time. Qatar has recorded high growth rates despite its mediocre governance indicators, while other major oil producers such as Gabon or Nigeria have performed poorly.

These puzzling facts have led to new directions in growth research. The existing models of growth in cross-country analyses almost invariably are based on the assumption of representative firms and representative consumers. In real life—and that is the reason why countries with similar conditions and policies may perform quite differently—there is a lot of heterogeneity in behavior for firms and consumers, both within and across countries. From a methodological viewpoint, the study of growth must give more prominence to models where the country is the unit of observation and analysis to one where attention is given to the agent (household or firm).

This can be expressed formally as follows: suppose in a given country that the output of each agent i , indexed by $i = 1, 2, \dots, N$, is q_i .

For simplicity, let's assume that all agents have identical production functions and that each agent's output is

$$(1) \quad q_i = a_i f^i(k_i, l_i)$$

with q representing the agent's endowment in physical capital, l his/her human capital and a productivity.

$$(2) \quad Q = \sum_i q_i; \quad K = \sum_i k_i; \quad \text{and}; \quad L = \sum_i l_i$$

From these macro aggregates, one can write

$$(3) \quad \bar{q} = Q/N \text{ as the average output and the average output is } \bar{a} = (1/N) \sum_i a_i$$

The marginal productivity of capital endowment of type j (physical or human) for agent i is MP_j^i , with

$$(4) \quad \overline{MP_j} = (1/N) \sum MP_j^i$$

We can then write the growth of aggregate output, \hat{Q} , to the sum of the following two components:¹⁸

$$(5) \quad \hat{Q} = \hat{a} + \frac{K}{Q} \overline{MP_k} \hat{K} + \frac{L}{Q} \overline{MP_l} \hat{L}$$

+

$$(6) \quad \sum \frac{(q_i - \hat{q})}{Q} (\hat{a}_i - \hat{a}) + \sum_i \frac{k_i}{Q} (MP_k^i - \overline{MP_k}) \hat{k}_i + \sum_i \frac{l_i}{Q} (MP_l^i - \overline{MP_l}) \hat{l}_i$$

Equation (5) expresses the fact that growth is the result of aggregates and averages, while equation (6) stresses the importance of differences in the levels and growth rates of productivity among agents. The former is about microeconomic heterogeneity, while the latter is about macro view of growth. This approach recognizes the problem of endogeneity of economic agents and raises issues of aggregation. But it remains perhaps too abstract and a bit too general for operationalization. It therefore needs to be complemented by one that highlights both the difficulty of model specification, and the importance of heterogeneity and productivity behavior of agents.

The treatment I offer here is a streamlined version of the exposition in Bourguignon (2006) and Monga (2007). Starting again from the standard accounting identity of a stylized economy where all agents have the same production function, the growth of output, \hat{Q} , can be attributed to the growth of the capital stock, \hat{K} , the growth of labor supply or possibly human capital, \hat{L} , and total factor productivity growth, \hat{A} . Considering that α is the capital share of income and $(1-\alpha)$ is the share of other factors in national income, that identity can be written:

¹⁸ I have learned this type of formulation from my colleague Luis Servén.

$$(7) \quad \hat{Q} \equiv \alpha \hat{K} + (1 - \alpha) \hat{L} + \hat{A}$$

That identity can then be enriched by introducing behavioral relationships linking growth in each production factor to a set of variables Z (determinants of growth) that describe the initial conditions, policy variables, and institutional environment of the economy. In a reduced form model, aggregate growth, \hat{Q} , would be a function of Z and a set of parameters β . That is the realm of most of growth empirics. But it is generally carried out in a linear and unrealistic way. The more complex and detailed one could be in the specification of the function $f(\beta, Z)$, the closer we would be to understanding the heterogeneity of economic agents in any given country. However, given the data limitation, it is currently difficult if not impossible to estimate such complicated models in a meaningful way. As we take into consideration the fact that economic agents in any given country are heterogeneous and that we need to differentiate them by levels of productivity for instance—not to mention their objective functions, endowment in physical or human capital, access to credit or constraints—then we realize that equation (7) can be made more explicit. Focusing on firms and assuming that they all have the same shares of capital and labor coefficients (α and $1 - \alpha$) with different productivity levels, A_i , Bourguignon (2006) has suggested that we consider the production function for firm i is as:

$$(8) \quad q_i = A_i \cdot k_i^\alpha \cdot l_i^{1-\alpha}$$

That gives us the standard growth accounting identity as

$$(9) \quad \hat{Q} = \alpha \sum_i w_i \cdot \hat{k}_i + (1 - \alpha) \hat{L} + \sum_i w_i \cdot \hat{A}_i$$

where \hat{k}_i is growth in capital stock of firm i , \hat{A}_i is total factor productivity growth for firm i , and w_i is firm i 's share of effective capital (where “effective capital” is capital stock weighted by the productivity term). In this formulation and despite the stringent assumption of firms having identical shares of capital and labor, it is easier to see that the three sources of aggregate growth (the three terms on the right hand side of the equation) display a new dynamics: first term represents overall increase in capital behind which lies the investment behavior of individual firms, with an important role being played by the reallocation of capital across firms; because of the assumption of perfect labor market competition, the second term remains unchanged; and the third term reflects aggregate productivity growth, which is derived from differentiated productivity gains of individual firms weighted by their shares in effective capital. The next logical step is to introduce behavioral relationships that would link Z policy and institutional variables to firm level investment behavior and productivity growth. While this would clearly yield more insights on the heterogeneity of firms and the sources of growth, it would also highlight the complexity of the micro-macro linkages.

The Theoretical Path Ahead

Semantic Clarification

The suggestion to move from macroeconomics to post-macroeconomics is obviously likely to raise semantic controversies or even confusion. So let me try to clarify what I mean what I am suggesting here. The global financial crisis and recession certainly do not invalidate everything we have learned about macroeconomics. However, they highlight some of the most egregious mistakes of the dominant intellectual macroeconomic framework. Post-macroeconomics should not be understood as another *metanarrative* of the end of *metanarratives*¹⁹. It is true that to theorize certain key features of the new macroeconomics as *post*, is, of course, to assume ipso facto another narrative. However, my use of the prefix *post* here suggests and emphasizes much more than temporal posterity. Post-macroeconomics should follow *from* macroeconomics more than it follows *after* macroeconomics. In fact, I do not envisage new macroeconomic theories that will emerge from the current crisis as a complete rejection of all of the previous knowledge of the discipline.

My theorizing of post-macroeconomics is therefore neither systematically oppositional, nor hegemonic. I do not advocate a “dialectic opposition” between macroeconomics and post-macroeconomics. Rather, I suggest that the latter builds on the former and goes beyond it. Post-macroeconomics should not necessarily be against macroeconomics. While there needs to be some repudiation of the founding assumptions that led to the desire for a unique grand theory constrained by its own technical limitations, the goal should be to avoid the kind of dichotomist approaches that have led to the validation of a dominant, if not unique way of thinking about economics. If there is any single lesson from the current global crisis, it is the fact that macroeconomics must be seen as an antecedent analytical framework that laid claim to a certain exclusivity of understanding and led to ineffective, unrealistic policies in areas as diverse as banking supervision, financial regulation, monetary policy, etc. Post-macroeconomics suggests a rejection of that claim of exclusivity, and stresses the importance of enriching economic theory with new methodological assumptions and new knowledge. *Post-* thus should image in macroeconomics the meaning of *meta* in classical metaphysics.

The nuances of the epistemological approach that I propose here might not be fully understood and I still anticipate the objection of some readers in a hurry. Let me be very explicit with a few instances of what post-macroeconomics entails:

- It is the rejection of the analytical consensus that has characterized mainstream macroeconomics for decades, and which assumes that there is a single methodological route to knowledge, comparable to what Appiah called “exclusivism in epistemology, metaphysical realism (there is one truth, which is exclusivism in ontology), each underwritten by a unitary notion of reason”.²⁰

¹⁹ That is the way J.-F. Lyotard (1984) framed postmodernity. See *The Postmodern Condition: A Report on Knowledge*, Minneapolis, University of Minnesota Press.

²⁰ See the discussion of the postcolonial and the postmodern in Appiah (1992, p. 143).

- It is the rejection of monism in the design of analytical frameworks in macroeconomics, and its overthrow by a conception of economics as irreducibly plural, with drawing insights from various perspectives from other disciplines of the social sciences and beyond.
- It reacts against the self-righteousness and the elegant but mathematically simplistic and often misleading models that have been used for public policy around the world since the methodological convergence between new-Keynesians and new-classical economists.

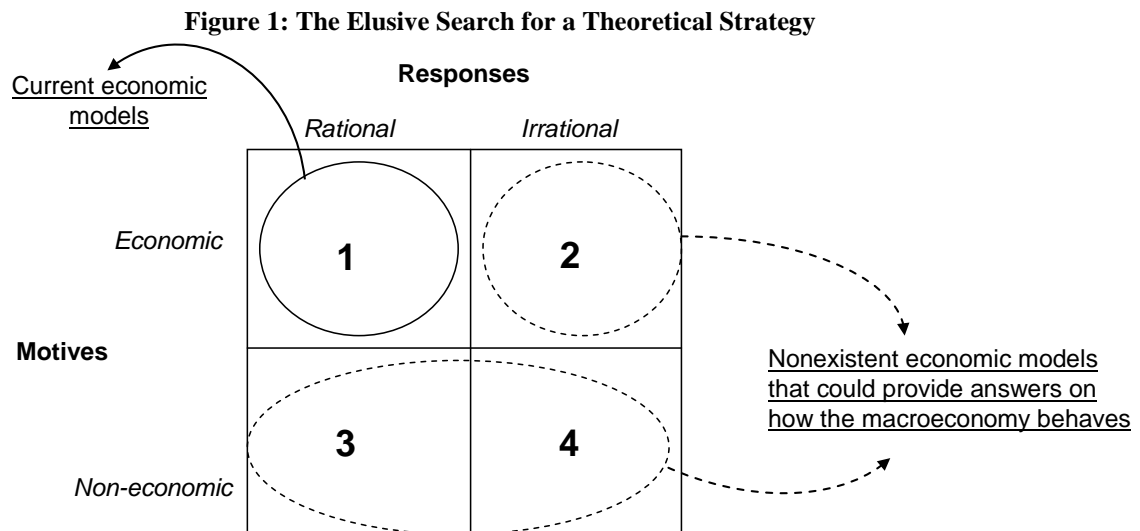
Expository Strategy

For decades, many researchers had argued that economics had nothing to fear from enriching itself with lessons and advances from other disciplines (see for instance Ela, 1990; Galbraith and Monga, 1994; or Mkandawire and Olukoshi, 2002). Unfortunately, these suggestions were either neglected or dismissed upfront within what was then arbitrarily considered mainstream economics. The global crisis has led even Nobel Prize winners to acknowledge that the problem facing economists and policy makers today is mostly intellectual—it is the need to confront the systematic failure of thinking, especially on the part of macroeconomists. Akerlof and Schiller (2009) for instance, identify five elements in what they call “animal spirits”, the omission of which blocks conventional economics from either understanding today’s crisis or providing pertinent solutions to policy makers for dealing with it. They are: confidence or the lack of it in the market place; concern for fairness by economic agents who are often puzzled by the behavior of some people in crisis situations; corruption and other anti-social behavior; “money illusion”, which makes agents susceptible to being misled by purely nominal price movements and not changes in real values; and the reliance on “stories”, which justifies herding behavior.

There is now widespread acknowledgement that conventional economic models fail to fit the facts in almost all aspects of observable economic behavior. To put it bluntly, “the theories economists typically put forth about how the economy works are too simplistic”²¹. What is at stake now is what to incorporate “animal spirits” into economic theory, and to make macroeconomic frameworks more relevant to the analysis of everyday problems. Unfortunately, the analytical strategy suggested by leading theorist still falls short of the needs. After succeeding in highlighting both the rigidity and narrowness of mainstream macroeconomic thinking, and its disastrous implications for policy, Akerlof and Shiller’s attempt to “clean up macroeconomics and make it more scientific” also fails to offer a convincing alternative. The main reason is that they propose an unrealistic approach to the search for a better theoretical strategy. Discussing what is usually included in conventional economic theory and what is not, they basically suggest to start with a square divided into four boxes, denoting motives that are economic or noneconomic, and responses that are rational or irrational. They then observe that current economic models fill only the upper left-hand box, as they only answer the

²¹ Akerlof and Shiller, 2009, p..... See also Acemoglu (2009); Friedman (2009); Colander et al. 2009.

question: how does the economy behave if people only have economic motives and respond to them rationally. To understand exactly what they suggest, I offer below my own visual illustration of their argument, which shows that macroeconomists have so far focused on Box 1 in Figure 1, and neglected Boxes 2, 3, and 4.



The main problem with such a schematic analysis is that it relies on an arbitrary definition of what constitute “economic” or “noneconomic” motives, and what is to be considered “rational” or “irrational” responses. If someone who chooses to buy organic coffee instead of the regular food store brand because it tastes better, that is presumably an “economic” motive. But what if the choice is motivated also by the supposed low impact of organic coffee on the environment and the higher income revenue from coffee farmers? Likewise, poor household heads who take their children out of school after an economic crisis because they have lost a fraction of their already low income and need extra help to compensate for it may be acting “irrationally”: they deprive their children and their society with the opportunity to build a much needed human capital. Still, given their situation, pulling children from school is a “rational” way of getting extra labor at their disposal to cope with negative shocks. These examples show that the distinctions between “economic” and “noneconomic” motives and between “rational” and irrational” responses are not very useful pillars for designing a rigorous theoretical macroeconomic framework. As Friedman pointed out, “an ‘economic’ motive is whatever economists include in their theories of how people behave. And since different economists are always proposing different theories, what constitute and ‘economic’ motive can differ from one theory, and one economist, to another.” (2009: 43)

The reconstruction of the analytical framework for analyzing key macroeconomic questions must also take into account the specific nature of each social environment, and adjust to changing times. Much can be learned from the study of African economies, recent advances in growth research, and lessons from other sub-disciplines of economics and various fields of the social sciences. All this new knowledge can help address the theoretical deficit in economics and outlines the frontiers of post-macroeconomics.

Methodological Insights from the Study of Africa

It is now a well-documented fact that economic problems and the challenges of development are often of a different nature than those observed in the industrialized countries. Yet for decades, African policy makers and central banks governors have simply, but regrettably, replicated in their respective contexts the dominant macroeconomic models used in western economies. The ineffectiveness of this approach sustained the analytical shallowness of economic thinking on Africa. This was compounded by the extreme dominance of the Washington Consensus,²² a rather rigid framework which many economists in the Bretton Woods institutions embraced without reservation.

Basic common sense suggested that the formulation of Africa's macroeconomics takes into account the peculiar nature and structure of the developing countries, and their specific needs. The diversity of successful development experiences also indicated clearly that effective macroeconomics could not be a transplantation of a universal, foreign model built on shaky theoretical knowledge. Even the fact that the continent is made up mostly of small open economies should have invalidated the blind faith that policymakers had in macroeconomic models and policies imported from the United States, France or Germany, and look for lessons and experiences from Australia, Ireland, Sweden or some Asian countries. Unfortunately, it took quite a while to mainstream economists to acknowledge that a suitable macroeconomic model for a typical African economy should address problems caused by the random interventions of the omnipresent yet failing state, and its main corollary -- generalized price controls. In these low-income societies, such intervention paradoxically pushes up the demand of goods, and represses inflation (see Beasley 1988). The situation is often compounded by a widely prevalent system of corruption, which can even be legitimized by beliefs and customs entrenched at all levels of society. Guided by their anticipations, economic agents constantly adjust their savings and investment habits, a move which influences money supply and demand, as well as the effectiveness of public policies. It is therefore not surprising that Africa is the continent where the largest part of private savings is held abroad.²³ These considerations should guide the design of macroeconomic models in Africa.²⁴

On a purely methodological level, the soft consensus underlying mainstream macroeconomics in the western world (and often replicated in many developing

²² Williamson coined the words Washington Consensus in 1989 to describe a set of economic policies initially aiming at helping Latin American countries emerge from underdevelopment and build strong economies. The World Bank and the IMF quickly tied their financial assistance to the implementation of these policies, whose specific goals were to reinforce budgetary discipline, boost financial and commercial liberalization, and promote the privatization of state-owned companies; see Williamson (2005). For a critical analysis, see Monga (2006).

²³ Analyzing a sample of 51 countries, Collier et al. (1999) estimate that the proportion of private wealth held abroad ranges from 3 percent (in South Asia) to 39 percent (in Africa).

²⁴ A few initiatives taken here and there in this direction have not significantly influenced the design of macroeconomic policies. For a brief overview of this literature, see Collier (1999).

countries) must be reconsidered. It relies primarily on the “neo-Keynesian model”, which postulates three relations: (i) an aggregate demand relation, where production is determined by demand, which itself depends on anticipations made by agents regarding future production and future interest rates; (ii) a relation based on the Philips curve, where inflation depends on production as well as on anticipation of future inflation levels; and (iii), a relation of monetary policy, which reflects in the model the idea that monetary policy can be used to influence prevailing real interest rates.

The availability of new powerful software and computers now makes it possible to carry out complex and simultaneous calculations. Macroeconomics is no longer concerned solely or primarily with the resolution of differential equations systems. New methods such as dynamic stochastic programming, which simultaneously integrate some of the lessons of microeconomics (consumer and employee utility maximization, value maximization by companies, rational anticipations, detailed specification of imperfections, etc.) represent a breakthrough in economics.

Macroeconomists working on African economies have shown that the basic neo-Keynesian model, which has been expanded to take into account many imperfections, especially those found in credit or employment markets could be strengthened even further (Collier and Mayer 1989). But some fundamental issues remain: first, the amount of detailed and disaggregated information necessary for the use of these new dynamic stochastic general equilibrium models (DSGE) seldom exists in many poor countries. Also, the meaning of the structural parameters often generated by DSGE models has become so doubtful (Canova and Sala, 2006) that “this may be a case in which technology has run ahead of our ability to use it, or at least to use it best.” (Blanchard, 2008).

In addition, the micro-macro linkages are still ignored in DSGE models, as well as the heterogeneity of households and firms, which are too quickly amalgamated in randomly created global categories. Again, the study of African economies sheds light on the need to explicitly address issues of aggregation. In the African context, the very idea of household (an economic concept that applies to all persons living under the same roof, regardless of whether they are linked by family ties) poses conceptual challenges to statisticians and demographers (van de Walle, 2006). The same is true for firms, a term so general and so broad that it could be quite misleading in economic modeling exercises.

The solution to such difficulties is not for macroeconomists to content themselves with structural parameters generated from industrialized economies but rather, to complement macroeconomic analyses with microeconomic, country studies, and lessons from thematic monographs from other disciplines. Far from weakening the identity of macroeconomics and diluting it, it would enrich it and strengthen the credibility of the entire discipline of economics.

5. CONCLUSION

The subprime mortgage crisis that erupted in the American financial markets in August 2007 caused an unprecedented global recession and generated unorthodox and unexpected policy responses around the world. It was no surprise to see some leftist economists call for an end to the dominance of free market economy. It was, however, a matter of concern to hear some developing country leaders complain about the “betrayal of globalization”—they have by and large managed their economies much better in the past twenty years, only to be hit hard by a crisis that originated in the center of the world economy.

The unprecedented nature of the global financial and economic crisis poses a major challenge to economists. Legitimate questions are being raised about the relevance of some of the most widely used macroeconomic frameworks, and the usefulness of some of the pillars of development thinking—the proper role of the government in the economy in general and in financial systems in particular, the validity of some of the key features of the new-Keynesian framework, which has dominated macroeconomic thinking in recent decades, the proper goals and instruments for monetary policy, the appropriate fiscal stance, the effectiveness of rating and supervision bodies in an increasingly globalized world, and many other important topics.

The debate over whether it is necessary to expand the domain of macroeconomics is an old one. But the heavy financial, human and intellectual costs of the current global turmoil provides the opportunity to reopen that discussion, to go beyond the immediate policy questions and reexamine the intellectual framework of macroeconomics, which are the first-order conditions of the crisis. This obviously poses a serious identity problem for macroeconomics: should the discipline, like other social sciences, venture in distant territories to seek answers to economic problems – even at the risk of drowning in the broad corpus of the social sciences? Or should it continue to limit its aspirations to activities it can handle, quantifying and calculating with elegance and precision – even at the risk of being viewed as an insensitive, sectarian and overly formalized discipline, incapable of rendering a genuine account of reality?

Contrary to Malinvaud, who defined a rather narrow field of investigation for the discipline and advised macroeconomists “not to divert his/her focus towards the explanation of institutional, social or technical evolutions” (1981, p. 30), this paper suggests that macroeconomics should renew itself and update its stock of knowledge. Without throwing away the baby with the bath water, I have argued in this paper that the time has come for macroeconomists to revisit their dominant model—a model founded on the rationality of economic agents and the efficiency of the markets, even in situations involving asymmetric information—and to break loose from the diktat of the single existing methodological approach, and to draw lessons and tools from microeconomics and other disciplines of the social sciences. Moving from macroeconomics to post-macroeconomics requires complementing the analytical rigor of the discipline with a less formal approach to reality, and a healthy dose of humility. That may be the price to pay for relevance.

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