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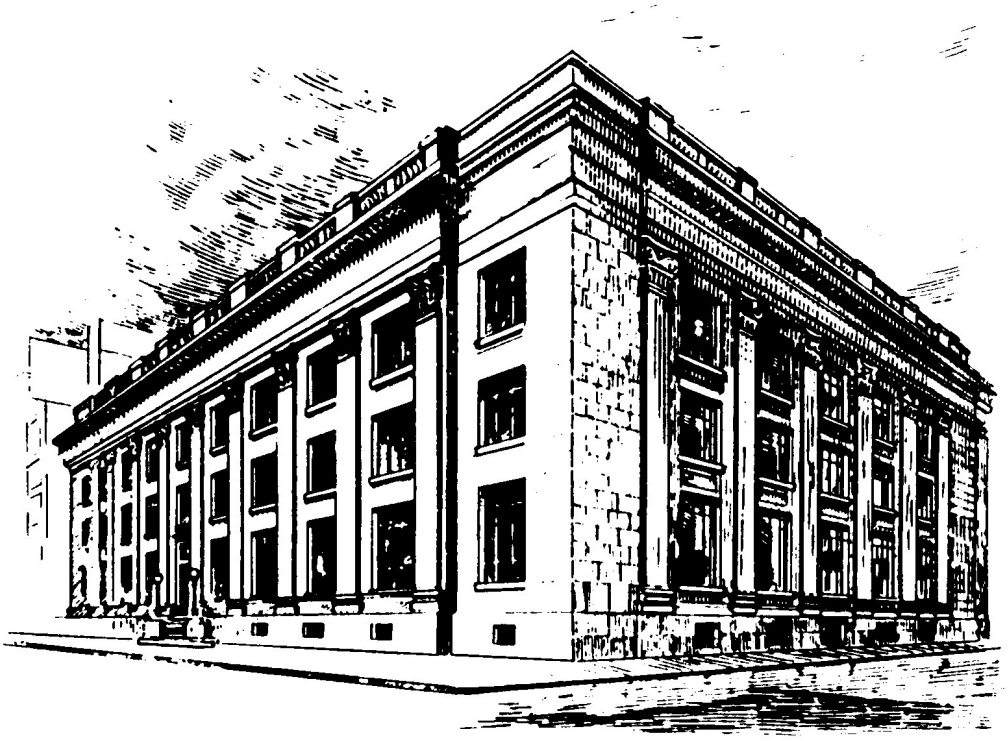

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N.° 33 - October 2009

ECONOMIC POLICY PAPERS

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Documentos de Política Económica del Banco Central de Chile
Economic Policy Papers of the Central Bank of Chile
ISSN 0717 - 7151

Agustinas 1180 - Santiago, Chile
Teléfono: (56-2) 6702475; Fax: (56-2) 6702231

MACROECONOMICS, ECONOMISTS AND THE CRISIS

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Abstract

The current global recession has cast doubts about the work of macroeconomists, the usefulness of their theories and their capacity to anticipate and deal with crises. This paper discusses that, while incapable of dealing with all the complexities of the real world, models do help to interpret the economic reality and propose economic policy recommendations. It also claims that, although crises are unpredictable, it is necessary to continue searching for early warnings and policies to try to prevent them and mitigate their propagation and amplification. Finally, it emphasizes that, although the initial shock of the current crisis was similar to the one of the Great Depression, its subsequent development has been essentially different, in particular in emerging economies. This proves that the economies are much stronger, and the policies applied have gone in the proper direction, which has benefited from important practical lessons and advances in economic research.

This is certainly a great opportunity to speak about a subject that has triggered more than a few reflections in me recently, and that was probably best said by Queen Elizabeth's famous question, made when she was visiting the London School of Economics last year: *Why did nobody notice it?*. As someone who has dedicated his professional life to academic activities and policy making, the question is surely unsettling.

The current global financial crisis and recession, whose depth is unprecedented in recent decades, has cast doubts about the work of macroeconomists, the usefulness of their theories, and their capacity to anticipate and deal with crises. These are the issues discussed in this essay.

Macroeconomics

Over the past few decades, macroeconomic theory has evolved, on the one hand, as a discipline whose purpose is solving problems similar to engineering, and, on the other hand, whose purpose is to explain phenomena embodied in economic reality, similar to science (Mankiw, 2006). In fact, macroeconomics was created to solve the problems of the Great Depression. In its beginnings, it was devoted to building large models to

* Revised version of a presentation at the annual meeting of the Society for the Chilean Economy (SECHI), September 4th, Antofagasta, Chile. I thank Luis Felipe Céspedes, Eduardo Engel, Pablo García, Mariana García and Felipe Zurita for valuable comments.

evaluate macroeconomic policies in the tradition of engineering. It is only in recent decades that its focus has drifted toward its scientific dimension.

In any case, I prefer to think of economics as being closer to medical sciences (Harberger, 1993), as it diagnoses, analyzes evidence and proposes treatments. It is different from physics because physics does not deliver prescriptions, at least not directly. Hence the importance of the interaction between science and practice. Economics has an additional complication, as it is a social science trying to explain human behavior.

The emphasis put on rigor and solid theoretical fundamentals has been a positive development, because making policy recommendations requires a good and accurate diagnosis of reality. Like in the past, we could have extensive, complex models, with many sectoral interrelations, based on statistical estimations and calibrations. But if the models aren't conceptually well-formulated and are based only on statistical patterns, their usefulness is limited. This was the great contribution to economics by the rational expectations revolution and, in the policy field, by the Lucas critique. Only preferences and technology are invariant to policies, while the resulting behavior of agents is not; therefore, policies will ideally be evaluated with models that specify both preferences and technologies.[1] Nonetheless, the current crisis has revealed that models are limited to deal with all complexities of the real world. However, I believe that reduced-form models, with all the caveats regarding their potential misuse, can still help in the design of policy, particularly when more rigorous and, especially, more realistic models are not available.[2] For this reason, there is always a tension between rigor, realism and flexibility.

The tendency to base our models on ever more rigorous grounds has also had undesired effects. The incentives of younger academics —the very ones who are supposed to push the borders of knowledge, and who must *publish or perish*— limit their capabilities for innovation. The required rigor ends up necessarily threatening realism. Nobody expects a model to explain completely the economic reality, but the problem is that it can overlook elements that are crucial to understanding and preventing disasters like the one we face today. It may be more rewarding from an academic standpoint to write an equilibrium model explaining some particular phenomenon, than trying to formulate a model that formalizes all of the distortions of said phenomenon. It is harder and less rewarding for an academic to formulate distortions—of which the real world has plenty—than to use competitive models to explain important stylized facts with a minimum of new ingredients.

Scientific advances and models help us think about and interpret the world; they provide us a way to think about specific problems, but their scope is limited. We must avoid the temptation of thinking that a theoretical simplification is a full description of reality.

[1] This must be interpreted with caution, because productivity, which is part of technology, depends on policy changes, especially over the long term. The central point in Lucas's critique is that one must specify the core characteristics of the economy being studied and not base the research on relationships that change with policies.

[2] In the case of the Central Bank of Chile, two models are mainly used to forecast, both within the tradition of forward looking rational-expectations models. One is built with many econometrically estimated reduced-form equations (MEP, see Central Bank of Chile, 2003), while the other is a general equilibrium intertemporal model (MAS, see Medina and Soto, 2007, for an application). Although the latter has stronger fundamentals, its calibration is less flexible in the analysis of short-term dynamics.

But we must also avoid the other extreme, which totally dismisses what theory teaches because "reality is much more complex". This is true, but it does not imply that all we have learned is just a theoretical exercise without practical use in reality. Models must be taken realistically, recognizing that they capture at most a small portion of reality.

As for the future, the current crisis will certainly provide material for many research studies that will try to figure out what failed and how to avoid making the same mistakes again. Still, I think it will be difficult to develop simple, manageable models that can make substantive progress in having a complete description of reality. Some interesting efforts will most likely be made, but it will not be easy for them to become part of the heart of macroeconomics, since they will be necessarily complex. Many of the models we currently have available are not only mathematically sophisticated, but their results are obtained by computer-based calibrations whose essential mechanisms lack transparency when it comes to revealing how they arrive at their results. Hence, it is difficult to assess their consistency. We have often come across complicated models where an apparently innocuous condition ends up being the determinant of the results.

Complexity also jeopardizes the capacity to move from scientific research to economic policy proposals. For academic ideas to be useful in economic policy, they must be persuasive. Perhaps that was the virtue of the IS-LM model that was used for many years in macroeconomic policy discussions, or of Solow's growth model that to this day remains the cornerstone of economic growth research. Fortunately, this is not a time where prescriptions are taken by policy makers without scrutiny—and are later labeled as orthodox—and therefore, the capacity to intuitively explain a result is essential.

The bulk of theoretical research will continue to proceed in areas where its results have a good chance of being published, often at the expense of realism. It may not be very profitable from the academic point of view to incorporate elements of irrational behavior, confidence crises or other anomalies into general equilibrium models that are used in policy design. Nor is it easy to include elements of political economy, in particular the influence of interest groups, which in the US financial system are relevant to understanding the evolution of regulation and the causes of the crisis.

Emphasis will undoubtedly be placed on the capacity of researchers to explain complex phenomena, but their studies will be as realistic as the degrees of complexity will allow. Therefore, it is important to insist: models are only a part of the reality that allows us to organize our ideas before diagnosing and prescribing. The arguments' logic and a good deal of judgment are also critical when it comes to making economic policy decisions.

General Equilibrium Models and Finance

There are two categories of models that are commonly used in macroeconomics and that require some specific references, namely the Real Business Cycle model (RBC) and the New Keynesian model (NKM). Both share the characteristic of being general equilibrium intertemporal models with complete markets and rational expectations.[3] Under the RBC model in its more traditional versions, the economy is fully flexible and there is no role for macroeconomic policies, whereas under the NKM there are sticky

[3] Due to these similarities, Goodfriend and King (1997) call these general equilibrium models with price rigidities the New Neoclassical Synthesis.

prices that result in money not being neutral, which assigns a role to monetary policy. These provide the conceptual basis for the formulation of inflation-target regimes.

It is important to place both types of models in their right dimension. The strategy of RBC models is to try to replicate economic fluctuations in the simplest, least distorted model possible. It originated in the attempt to use the neoclassical growth model to explain the business cycle as a result of productivity shocks, which is surely an interesting effort with theoretical consistency. These are very elegant models, but the difficulty of solving them analytically results in having to solve them using calibrations. As a result, there are often doubts regarding the values of the parameters, which in general are unobservable. To the extent that these models are free of distortions, there is no role for active monetary policies, since economic fluctuations are socially optimal. Certainly this is an attractive theoretical proposition, but it is absurd to think that this is how the world works. It will be difficult to explain the financial collapse with this type of model, because it has no frictions and provides very limited policy implications.

The New Keynesian model features no realistic frictions in financial markets either, at least to generate problems as severe as the current ones, so it has nothing to say about the origins of the crisis.[4] These models are widely used in central banks to calibrate the monetary policy that is consistent with an inflation target.[5] In that sense, they are a very useful tool for establishing well-specified, well-estimated transmission mechanisms, but they are certainly limited, and it is unrealistic to believe that they can provide a full description of the economy. Economies are exposed to many shocks that cause deviations —sometimes significant deviations— from projection scenarios. However, they help to understand alternative courses of action of monetary policy after the shocks have hit. Actually, the much praised aggressiveness in interest rate cuts around the world, to unprecedented levels in many cases, is largely justified by the sharp drop in inflationary pressures. It is likely that, without the commitment to bringing inflation back up to normal rates, monetary policy actions could have attained only part of the expansion. This is a practical demonstration of a wrong criticism on inflation-targeting central banks, which is that they are not concerned with the level of activity. Drops in activity and downward pressures on costs are the factors that opened room for monetary policy, avoiding to repeat the mistakes made in the 1930s. This is why the NKM will remain useful, while a different type of model will have to be found to address the issue of financial stability, together with extensions that are yet to be formalized.

This brings me to the theory of finance. If there ever was one discipline that should have anticipated the vulnerabilities that were building up in financial markets, it was finance. Had the origin of the problem been inflationary, then the problem would have been macroeconomics, but the origin was financial. The origin of the crisis is closely related to financial innovation and the creation of instruments that should have diversified risks. Low interest rates, search for yields and a monetary policy that promised to rescue after severe falls in asset prices prompted the creation of a housing bubble.[6] Enormous

[4] Significant effort to add financial frictions, particularly the financial accelerator that amplifies the cycle, was made by Bernanke et al. (1999). See also Christiano et al. (2007). Although these models do analyze the financial channel throughout the cycle, they do not originate a financial meltdown like the one observed last year.

[5] For a detailed introduction, see Galí and Gertler (2007).

[6] De Gregorio (2009) argues that low interest rates are not responsible for the bubbles or for the financial meltdown, because a number of countries had neither bubbles nor financial instability (e.g., Canada and Chile), while others had housing bubbles but their financial system was much more resilient (e.g., Spain).

efforts were made to price many extremely complex financial instruments, but even those academic efforts failed to build valuation models that realistically considered the instruments' insolvency probabilities. No evidence is necessary to assert that these methods failed because of an extreme event that struck everything. These failures were exacerbated by severe liquidity shortages and widespread panic in the markets.[7]

Broadly speaking, the theory of finance has two branches: asset price theory and corporate finance theory. It is paradoxical that while asset price theories, and their application to the real world, are based on the existence of full arbitrage and, in general, no distortions (consider, for example, CAPM[8]), corporate finance theories that explain firms' financial decisions are essentially dominated by information asymmetries and are plagued by frictions from principal (owner)-agent (executives) problems. This dichotomy will have to be corrected over time to ensure that more realistic models of how financial markets work become available, models which will shed more light on economic policy recommendations.[9]

Crisis Prevention

As for the current crisis, one pending issue is whether it could have been anticipated. Once again the question arises: "Where was the profession, its academics and authorities, such that it failed to foresee the severity of the problem?" It is tautological to say that crises are unpredictable, or else they would never occur.[10] History is plagued with crises. Moreover, crises have become more frequent in recent decades as compared with the Bretton Woods period, although their severity and duration have not changed significantly (Bordo et al., 2001).

Important efforts have been made to identify early warning indicators that could anticipate a crisis (Berg et al., 2004). The recent episode clearly shows that they have not been very successful, to say the least. In the current crisis it is hard to find clear regularities with respect to early warning indicators (Rose and Spiegel, 2009). Furthermore, in small, open economies, these crises can be triggered by external events on which policy makers have no control.

Crises are very costly, but are also the result of innovation and risk taking, which are important for progress. Obviously we must try to avoid them, especially their propagation and amplification, with good economic policies that cushion the impact of a large global crisis, but certainly they cannot be eliminated altogether. In the extreme, to prevent global financial crisis, the economy would have to be totally isolated from the world, forbid risk-taking completely, and close financial markets altogether. Naturally this is not the best way to progress. Making an analogy with car accidents, the best way

[7] It should be noted that there were some important warnings of the risks that were being incubated. Worth singling out is the work by Raghu Rajan presented in Jackson Hole in 2005 (Rajan, 2006).
[8] The CAPM relates assets prices and individual consumption. In order to use it in a general equilibrium framework, with aggregate consumption as the relevant scale variable, it is necessary to assume complete markets (Cochrane, 2005, ch. 2).
[9] There are many models with financial market frictions, but they are still not part of the core of asset pricing theory. A recent and interesting effort is developed in Vayanos and Woollley (2009). In their model, deviations with respect to the efficient market theory are not based on irrationality or other behavioral assumptions, but on the asymmetric information between investors and asset managers.
[10] For more on crisis unpredictability see Saint-Paul (2009).

to avoid them would be to ban the existence of cars. However, it seems more reasonable to build safer cars, buckle up and drive prudently.

Crises will continue to happen, but the proper way to act is to strengthen the financial system and macroeconomic policies, in order to minimize their consequences and probability of occurrence.

We must not remain in the notion that a crisis cannot be prevented and thus there is nothing we can do about it. Going back to the car analogy, the fact that accidents will always happen does not mean that we must allow driving at any speed and with no regulation. Quite the contrary, we know that crises are especially severe when they affect the financial system, so it is reasonable to improve regulatory mechanisms, particularly to allow financial innovation while keeping vulnerability under control.

Meanwhile, it is necessary to continue devoting efforts to the detection of early alerts, although, as I have already pointed out, unambiguous indicators are impossible to find. But there are symptoms of fragility, very common in emerging economies. High and persistent current-account deficits, misaligned exchange rates, currency mismatches in the financial and corporate sectors, excessive increases in the prices of assets and credit, all signal a potential problem, although they do not result necessarily in a crisis.[11] Therefore, a look at the indicators is not enough, it is important to put them together to detect fragilities. This is precisely what we try to do in our financial stability reports, which allow us to gain an overall vision of vulnerabilities, although, once again, it does not provide a final verdict.

Crisis Management

That this is the worst financial crisis since the Great Depression nobody disputes. Moreover, the initial shock on the global economy does not differ much from the one that hit in the 1930s. There are many similarities in the initial conditions and effects of the two (Eichengreen and O'Rourke, 2009; IMF, 2009). Worth noting are the initial fall in manufacturing output and trade, the collapse of stock prices and credit, and the increase in bond spreads. In their origins there was also the same rapid expansion in credit and financial innovation that increased the leverage of financial intermediaries. These remarkable similarities in the first months of this crisis were alarming.

However, both differ in the subsequent evolution of the global economy.[12] Between 1930 and 1932, world activity (measured at PPP) dropped by an average of 4.8%. In particular, the U.S. experienced an average annual fall of 9.9%. The current situation is very different, and while the pace of the recovery is yet to be seen, forecasts for the three-year period 2009-2011 point at the world economy growing by an average of 2.1% per year, 0.8% for the U.S.[13] In the 1930s, U.S. unemployment soared to 25%, much higher than the 10% projected this time. Also, the world faced a severe deflation

[11] Although the evidence shows that financial development is good for economic growth, excessive credit expansion can exacerbate a crisis, as happened during the debt crisis in Latin America (De Gregorio and Guidotti, 1995).

[12] Evidence provided by Eichengreen and O'Rourke (2009) shows that the first few months of the current crisis are pretty similar to the Great Depression, although in recent months they seem to diverge, because the current episode has begun to show signs of recovery while in the Great Depression the fall continued.

[13] For the 1930s, the data come from Maddison (2009), while current growth projections come from Consensus Forecast and investment banks.

in the early 1930s, in some cases sinking below -10%. We do not see that today, and while inflation has fallen dramatically around the world, it remains far from the levels seen during the Great Depression.

Another aspect making a big difference is the performance of emerging economies. Latin America, excluding Chile, posted an average annual fall of 4.2% between 1930 and 1932, while Chile, where the crisis compounded with the downfall of the nitrate industry, fell an average of 17.6%. For the three-year period 2009-2011, private forecasts indicate that Latin America will grow by an average of 1.2%, while Chile will grow by 2.1%. These are just projections, not definitive figures, but data released so far this year indicates that the effects of the crisis, although far from negligible, are much milder than they were in the 1930s. This is an encouraging fact. Usually, whenever developed countries go into a recession, its effects are amplified into our region. That has not been the case this time; on the contrary, our region today is outperforming the developed economies.

That the current crisis did not turn into a Great Depression proves that lessons have been learned. Economies are much stronger, and also the policies applied have gone in the proper direction of mitigating the tremendous financial shock of last year.

For one thing, the task of stabilizing the financial system was assumed decisively, which prevented its collapse. Uncertainties remain, but are more focused and less dramatic than at the end of last year. Also, the lessons of Friedman and Schwartz (1963) on monetary policy and the role of central banks as lenders of last resort, of Keynes (1935) on the role of expansionary policies, and of Bernanke (1983) on the role of the financial channel for the transmission of policy actions, have been essential in policy decisions adopted since the onset of the current crisis. Many subsequent studies have shed additional light on the characteristics of good policies and have provided the base for the aggressive monetary and fiscal policies that have been applied around the world, and should also illustrate the way in which the stimulus must be withdrawn.

Finally, the use of the gold standard accounted largely for the depth of the Great Depression (Bernanke and James, 1991; Eichengreen, 1992). Moreover, in the midst of the crisis in 1931, the U.S. raised the interest rate to defend the dollar parity, aggravating the crisis and causing deflationary pressures.

In Latin America, thanks to lessons learned from mistakes of the past, it has been understood that macroeconomic stability, in both monetary and fiscal terms, foreign exchange flexibility, and a well regulated financial system are crucial to mitigate the effects of external scenarios as adverse as this one.

This reflects major progress in economic policy, which has benefited from important practical lessons and advances in research following the debt crisis.

Final Remarks

There will be plenty of time to continue analyzing where was the profession such that it did not warn of the magnitude of the crisis. As I have discussed here, this is a multifaceted issue that must consider crisis predictability, management, and the role of research in providing rigorous frameworks —albeit incomplete ones— with which to analyze reality.

Nonetheless, that macroeconomic theory has failed is an overstatement. In particular, the comparatively better performance of emerging economies —with the exception of a few cases such as Eastern Europe that remind us of our mistakes of the past— demonstrate that economic research has taught us something. In particular, the majority of macroeconomic policies have sought not to replicate past mistakes. Now it is necessary to analyze more carefully the role of financial markets, their virtues and, of utmost importance, their vulnerabilities.

This crisis is an admonishment to professional arrogance. We must recognize that the real world is much more complex than what our models can explain. This is why so-called professional orthodoxy is discredited. However, we must also avoid the arrogance that comes from ignorance, which leads to abandoning all we have learned about the fundamentals of good macroeconomic policies.

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