

THE RECENT ECONOMIC CRISIS – A MICROECONOMIST'S VIEW

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Two years ago a fire broke out in town. The fire started in a confined area, but the place was full of incendiary material, and given the housing density in town the fire spread rapidly. One way or another, very few buildings remained untouched by the fire. People with long memories said that there hadn't been a fire like that in our town for eighty years. Fortunately, the fire brigade stepped in quickly, and its rapid action caused the flames to subside so that the damage was limited, although some houses suffered from water damage as a result of the huge (some say, excessive) water quantities used. Time will tell.

Now that the fire has died out (although flare-ups occur almost daily) it is time to examine the damage closer to home – what has happened to our house. In a nutshell, the answer is: thank God, it's not too bad! The fire did cause some damage to the construction but it was mainly the neighbors who suffered, while the damage to our apartment was largely secondary (stench, heat, and commotion). In the final event, it was mainly morale that was adversely affected: a demonstration was held in front of the house with people shouting that we had not given them sufficient warning about the fire and had not foreseen the extent of the damage. I would like to devote my talk today to those complaints, as well as to the relations between the neighbors (the Microeconomic and the Macroeconomic families), the disputes among our neighbors following the fire, and whether they or we could have predicted it.

For many years microeconomists and macroeconomists have lived in separate apartments in the same building. While there were some relatives who moved from one apartment to another (Milton Friedman, James Tobin, and Robert Solow are the most prominent, and closer to home – Nissan Liviatan), the mutual visits were generally limited, the narrow corridor between the apartments being the main obstacle to movement.

Don Patinkin was one of the first who tried to introduce greater harmony to our house and widen the corridor, pointing to the natural transition from the microeconomic analysis to the discussion of the macro aggregates. The first seven chapters of his seminal study, *Money, Interest, and Prices* (Patinkin, 1965) are devoted to the microeconomic foundations of the model: the demand for goods in an exchange economy, the household's demand for money, bonds and other assets, and the household's demand for savings. The discussion of household behavior serves as an introduction to the analysis of the behavior of the three markets shaping macro activity: the goods market, the money market, and the bond market.

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As a graduate of the University of Chicago, Patinkin was undoubtedly a great believer in the power of prices to balance markets and reshape the equilibrium of the microeconomic system. Neither, however, could he ignore the existence of involuntary unemployment and the doubts raised by Keynes as to the perfect functioning of the macro markets. His words will undoubtedly sound like heresy to Chicagoan ears: "Thus our first task in studying involuntary unemployment is to free ourselves of the mental habit – long ingrained by the methods of static analysis – of seeing only the points *on* the demand or supply curves. Once we do this, we find ourselves able to give precise expression to many intuitive, common-sense ideas which have all too frequently been unjustifiably rejected as violating the precepts of rigorous economic analysis. First we see that involuntary unemployment can exist even in a system of perfect competition and wage price flexibility."¹

The tension that runs throughout Patinkin's book between the theory on which he grew up in Chicago and his admiration for Keynes' ideas has become a prevalent feature of the macro economic literature of the last fifty years.

In an attempt to clear the corridor between the micro and the macro parts of our building, the youngsters of the micro family, the labor economists, have been called to explain the rigidity of the wage system, a rigidity which plays a crucial role in Keynesian theory. At the same time, labor economists made a great effort to clarify the distinction between the different components of unemployment: frictional unemployment and involuntary unemployment.

According to Stiglitz's and Weiss' Efficiency Wages theory wages are determined in order to stimulate workers' efforts and reduce shirking.² Wage premiums substitute for enforcement costs – an employee who is afraid to lose his job, because his current wage is higher than what he could earn elsewhere, will make a greater effort, the increased effort compensating the employer for the higher wage. Thus, the employer determines the wage irrespective of market conditions so as to maximize the effort per wage unit, and this wage is not sensitive to unemployment conditions. In the same vein, Akerlof pointed out the reciprocal nature of employer-employee relations: an employer who offers his employees a fair wage will gain their trust and reduce their tendency to shirk. The discussion ignores the impact of unemployment on the workers' effort function - at times of serious unemployment the worker is afraid to lose his job even if he does not enjoy a wage premium.

Another group of economists (Azariadis, 1975, and others) focused on the contracts that govern the long-term relationships between employer and employee, and tried to trace wage-rigidity to the low sensitivity of the contractual arrangements to short-run economic conditions, an analysis that has been expanded to discuss the importance of institutions in general to the functioning of the labor market.

The discussion of the role played by labor unions in the labor market is not new and is associated with the one of the forefathers of modern labor economics, Greg H. Lewis.³ The decline in the role of unions in the US led to a temporary slackening of interest in the

¹ Patinkin (1965), p. 323.

² Stiglitz, 1976; Weiss, 1990.

³ Lewis, 1963 and 1986.

subject, but the different patterns of adjustment of the European and American economies in the wake of the oil crisis of 1973 led to its revival.

Lindbeck and Snower placed union leaders' behavior in an economic context when they asked: Whose welfare are the leaders maximizing? Do they care for the welfare of those who are employed (the insiders) or that of the unemployed (the outsiders)?⁴ Their answer will not sound strange to Israeli ears: the unions serve the employed and hence act to preserve (or even raise) the nominal wage at times of distress, even if this means increasing unemployment.

Other economists, followed George Stigler⁵, and subsequently Dale Mortensen⁶, explaining frictional unemployment in terms of the theory of search and the 'matching function' between employers and employees. It was Stigler who defined job search as an investment in human capital – sacrificing resources in the present to gain a higher wage in the future. Mortensen and his pupils defined the optimum search strategy and pointed out the welfare gain to the economy associated with the improved match between the employee and his place of work. According to the analysis, changes in the search strategy will affect the lapsed time between jobs, and, hence, affect frictional unemployment, but at the same time, a better match will contribute to the increased productivity of the worker at his job. Institutional factors such as minimum wage laws, unemployment compensation, dismissal laws and collective wage agreements affect the search strategies of both employers and employees, and, hence, affect frictional unemployment.

A substantial body of literature developed comparing institutional arrangements and labor laws in Europe and the US trying to explain the success of the US in returning to the pre oil crisis unemployment rates, while other OECD economies got 'stuck' at unemployment rates which are almost four times as great as those that existed before the crisis⁷. The discussion of the differences between Europe and the US in institutional arrangements and their implications for employment led to an equally fruitful debate (in intellectual terms): What is the interaction between the state of employment and the institutional rules governing the labor market– which is the cause and which is the effect?

In retrospect, while microeconomists were amusing themselves cleaning and decorating the corridor between the apartments, insufficient attention was paid to the incendiary materials accumulating around the building. This lack of attention was not coincidental and was the result, at least in part, of the tense relations between the occupants of the adjacent apartment. These relations reflected the tension in Don Patinkin's thinking between the neo-classic school, which believed in the omnipotence of the price system as the main instrument for adapting to changes in the economic forces, on the one hand, and the Keynesian and neo-Keynesian economists, who recognized the limitations of the price mechanism in the short term, on the other. The center of the first school of thought was in Chicago and Minnesota, which gained it the nickname of 'clearwater economics,' while the

⁴ Lindbeck and Snower, 1986 and 2002.

⁵ Stigler, 1961 and 1962.

⁶ Mortensen, 1987.

⁷ The unemployment rate in the US in 1973 was 4.8 percent, it rose to 7.4 percent in 1984, and fell to 5.5 percent in 1995; the average of the other OECD countries was 2.4, 8.8, and 9.3 percent, respectively.

center of the other school of thought lay in the universities of the East Coast, hence labeled 'saltwater economists.'

Echoes of the dispute were heard in a symposium on Macroeconomic Lessons held just before the crisis and published in the AEA's *Journal of Economic Perspective*, in the fall of 2006. Two articles presented at the conference presented the two opposing views: V.V. Chari and Patrick Kehoe from the University of Minnesota presented the Chicagoan outlook, while Gregory Mankiw from Harvard represented the standpoint of the East Coast economists.

The article by Chari and Kehoe applauds the achievements of macroeconomic theory in the last three decades.⁸ They begin their article by declaring: "Over the last three decades macroeconomic theory and the practice of macroeconomics by economists have changed significantly – for the better. Macroeconomics is now firmly grounded in the principles of economic theory. These advances have not been restricted to the ivory tower. Over the last several decades, the United States and other countries have undertaken a variety of policy changes that are precisely what macroeconomic theory of the last 30 years suggests."

The choice of 1976 as a critical point in the history of macroeconomics was not coincidental; it referred to the year in which Robert Lucas' published his article 'Economic Policy Evaluation: A Critique'.⁹ Two other milestones mentioned by the authors were the time inconsistency critique and the quantitative dynamic stochastic general equilibrium models developed by Kydland and Prescott.¹⁰

Lucas claimed that it was not possible to formulate economic policy ignoring its implications for the expectations of consumers and firms, as the adaptation of expectations could neutralize the objectives of that policy. The most salient example illustrating this is the Ricardian Equivalence Principle. As Barro argued, the reduction of taxes cannot by itself affect economic activity when the public is aware that at a later point the increase in public debt will make a tax-hike necessary.¹¹ Similarly, the model developed by Kydland and Prescott has direct policy implications: "A regime in which policy makers set state-contingent rules once and for all is better than a discretionary regime in which policy makers sequentially choose policy optimally given their current situation."

The dynamic general equilibrium models attempt to reconstruct the fluctuations in economic activity – GDP, investments, consumption, and the labor market – by means of a set of stylized equations subject to a stochastic productivity shock. The model attempts to describe the 'normal' volatility of business activity due to changes in relative prices originating in a 'technology' shock. The model does not recognize the existence of involuntary unemployment, and regards changes in employment as a natural response to wage changes. As Lucas and Rapping (1969) put it: "Measured unemployment is then viewed as consisting of persons who regard the wage rates at which they could currently be employed as temporarily low and who therefore choose to wait or search for improved conditions rather than to invest in moving or occupational change." In other words, a

⁸ Chari and Kehoe, 2006.

⁹ Lucas, 1976.

¹⁰ Kydland and Prescott, 1977 and 1982.

¹¹ Barro, 1974.

decline in wages leads to substitution between work and leisure, and a recession does not lead to involuntary unemployment but rather to the rational choice of more time devoted to leisure and job search. This formulation led Paul Krugman to wonder: “Was the great depression really the great vacation?”¹²

Lucas’ disciples, who similarly felt uneasy with the association of unemployment with leisure time, tried to explain the cyclical decline in market time in terms of increased demand for work at home in periods of recession. The advantage of the new formulation is that, in the absence of time series data describing the allocation of home time between leisure and work at home, it is hard to refute.

Finally, noticeably missing from the Chari and Kehoe list of policy measures is fiscal policy – the main instrument in Keynesian theory.

Chari and Kehoe’s article aroused the ire of Bob Solow. He disagreed with their conclusion that the economic policy of the last few decades is deeply entrenched in economic theory, claiming that there was no place for self-congratulation on the achievements of macroeconomic theory. He regarded the new formulation as an intellectual game: “The theory is neat, learnable, not terribly difficult, but just technical enough to feel like ‘science.’ Moreover, it is practically guaranteed to give laissez-faire type advice...”¹³

Gregory Mankiw, who has just concluded a two-year term as chairman of the Council of Economic Advisors to the US President in 2005, distinguishes in his article between the macroeconomist as a scientist and the macroeconomist as an engineer whose task it is to solve practical problems, stating: “God put macroeconomists on earth not to propose and test elegant theories but to solve practical problems.”¹⁴

In contrast with his teacher, Robert Solow, Mankiw, one of the foremost new Keynesian economists, adopts a conciliatory tone in describing the development of macroeconomics in the last three decades, stressing the synthesis of the classic approach with the neo-Keynesian approach, as outlined by Michael Woodford in his book *Interest and Prices*¹⁵ – a dynamic stochastic general equilibrium model incorporating deviations from the optimum as a result of wage and price rigidities and other market distortions.

But no less important is the conclusion reached by Mankiw as the outgoing chairman of the President’s advisory committee. It is unequivocal: “The sad truth is that the macroeconomic research of the past three decades had only minor impact on the practical analysis of monetary or fiscal policy.” Mankiw cannot be blamed for lack of awareness of the new theories. As he puts it: “The fact that modern macroeconomic research is not widely used in practical policymaking is *prima facie* evidence that it is of little use for this purpose. The research may have been successful as a matter of science, but it has not contributed significantly to macroeconomic engineering.”

If proof is needed of the irrelevance of the dynamic stochastic general equilibrium model for policy, and specifically at times of crisis, it is worth noting that the word ‘crisis’ never appears in the vocabulary of the proponents of the model. Furthermore, the model

¹² Krugman, 2009. During the Great Depression unemployment in the US reached 30 percent.

¹³ Solow, 2008.

¹⁴ Mankiw, 2006.

¹⁵ Woodford, 2003.

focuses mostly on the labor market, the capital market (savings and investment) being perceived by the Chicago School disciples as the 'neighborhood's good boy' who plays according to the laws of supply and demand, adheres to all the conditions of an efficient market, and is not liable to run amok. Fluctuations in market activity affects investment, but in the long run the gap between the marginal efficiency of capital and the interest rate ('the wedge' in the macroeconomic jargon) is small, and is explained, according to the model, by taxation and other forms of government intrusion.

By the end of the day one cannot expect that a model whose source of motion is a mild random technological shock will be able to reconstruct the events of 2007-2008 (and in particular those of September 2008, following the Lehman Brothers shock) when a 'wedge' of shattered confidence stopped the winding of the wheels of the capital market overnight.

Financial markets play an important role in Patinkin's book. In relating to the financial intermediaries and their significance in the bond market he cites Gurley and Shaw (Gurley and Shaw, 1960) and states that the economies of scale of financial intermediaries (relative to individual households) enable them to diversify and reduce risk, and that the correct distribution of securities' maturity allows them to minimize the danger of financial crises. "These (financial) intermediaries can fruitfully be conceived as processing plants whose effective function is to transform bonds issued by firms into securities which ultimate lenders (i.e., households) consider more suitable for their needs. Intermediaries are able to profit from this transformation process by exploiting 'returns to scale' in lending and borrowing. On the lending side, the intermediaries can invest and manage investments in primary securities at unit costs far below the experience of most individual lenders. The sheer size of its portfolio permits a significant reduction in risks through diversification. It can schedule maturities so that chances of liquidity crises are minimized..." (p. 301).

The words may sound slightly ironic in view of the last two years' events.

The financial crises literature enjoyed a revival in the 1990s, following the recurrent financial crises of that decade. In 2001 two experts on the topic, Michael Bordo and Barry Eichengreen, combined their efforts to obtain a wider perspective of the sources and involvement of financial crises, extending their examination as far back as 1880.¹⁶ Their sample, which included both developed economies and emerging markets, was divided into two sub-samples, one consisting of 21 countries for which data from the nineteenth century was available, and the other consisting of the 56 members of the IMF, for whom the information starts in 1973. The study distinguishes between bank crises and exchange-rate crises, and focuses on three main questions: Has the frequency of crises increased in recent decades? Have crises increased in intensity? Did the period required to recover from them become longer? The authors find that the number of financial crises had doubled since 1973 relative to the period after the Second World War (the Bretton Woods era), and that their frequency are similar to the period of the great crises in the 1920s and 1930s (the increase was due mainly to the change in the frequency of crises in the developing countries). There was a particularly great increase in the frequency of crises which combined bank crises with currency crises. Even if each type of crisis did not in itself involve a greater loss of output than in the past, the increase in frequency of the 'twin crises' and the increase in the

¹⁶ Bordo, Eichengreen, *et al.*, 2001.

recovery period led to greater loss of output in the years following 1973 compared to the Bretton Woods era. ‘Twin crises’ always disrupt economic activity, but it is worth noting that in a quarter of all cases the financial crisis did not give rise to a recession.

Table 1
Duration and Depth of Crises

All countries	1880–1913	1919–1939	1945–1971	1973–1997 21 nations	1973–1997 56 nations
	Average duration of crises in years				
Currency crises	2.6	1.9	1.8	1.9	2.1
Banking crises	2.3	2.4	^a	3.1	2.6
Twin crises	2.2	2.7	1.0	3.7	3.8
All crises	2.4	2.4	1.8	2.6	2.5
	Average crisis depth (cumulative GDP loss in %)				
Currency crises	8.3	14.2	5.2	3.8	5.9
Banking crises	8.4	10.5	^a	7.0	6.2
Twin crises	14.5	15.8	1.7	15.7	18.6
All crises	9.8	13.4	5.2	7.8	8.3

^a indicates no crises.

Source: Bordo, Eichengreen, et al., 2001, pp.59.

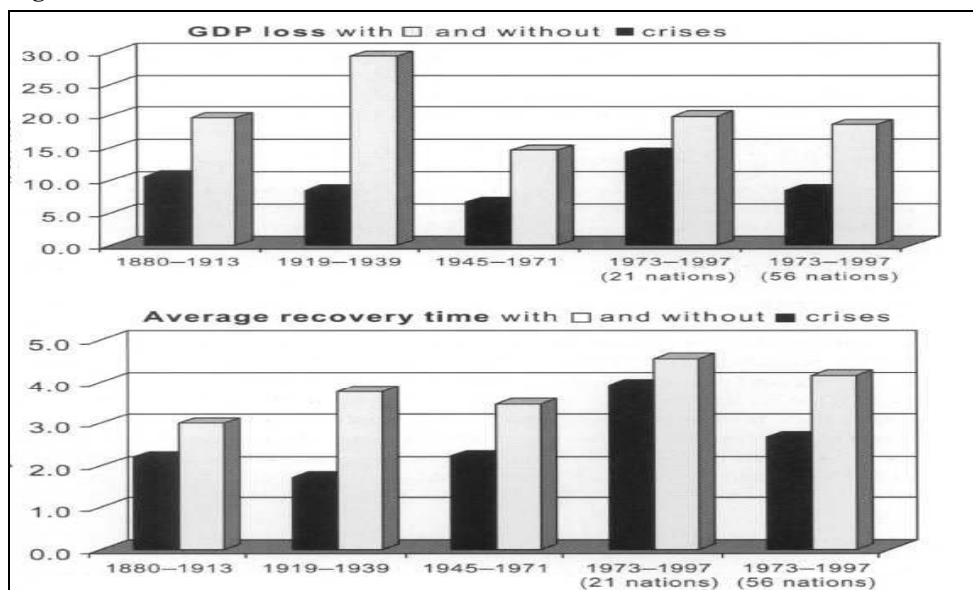
‘What goes up quickly comes down quickly.’ The authors find a positive correlation between the GDP growth rate in the five years preceding the crisis and the loss of output during the crisis, indicating a possible link between a credit expansion prior to the crisis and the depth of the crisis. However, the attempt to identify common causes of the various crises has proven unsuccessful. The coefficient of determination in the regression (a multinomial logit equation), which attempts to explain the frequency of the various types of crisis by the inflation rate, rate of credit exposure, budget surplus, restrictions on capital transfers, per capita GDP, and the growth rate is $R^2 = 0.04$. The heterogeneity in the nature of crises defies any common explanation, and the relation between these causes and the fundamentals shaping economic activity is extremely weak.

Andrew Rose summed up the state of knowledge in this field in his comments on Bordo and Eichengreen paper: “The crisis literature is in crisis. As a profession, we simply do not have a very good understanding of what causes crises (especially currency crises). We are therefore unable to provide policy-makers with good crisis prevention techniques, early warning systems, and so forth. Theory is ahead of empirics in this area of economics, but both are in terrible shape.”¹⁷

A widely-accepted explanation links financial crises with the emergence of a bubble in the asset market (shares, real estate, or other markets). This phenomenon has not gone unnoticed by economists, who addressed it on both the theoretical and the empirical level.

¹⁷ Rose, 2001.

Figure 1



Source :Bordo, Eichengreen, *et al.*, 2001, pp.61.

In contrast with the accepted approach, which regards bubbles as the irrational speculative eruption, the theoreticians have tried to explain bubbles in terms of the dynamics of the dissemination of information and shifts in transaction costs in the relevant markets (Zeira, 1999; Romer, 1993, and others). A central theme in the discussion is the question whether there can be 'rational bubbles'? Blanchard and Watson, who were among the first to ask the question phrased it this way: "Are bubbles consistent with rationality? If they are, do they, like Ponzi games, require the presence of new players forever?"¹⁸ Specifically, given the present value of the return on an asset, could the asset price incorporate a rational bubble element, namely, a component which is equivalent to the present value of future bubble components? If this is the case, the market would appear to be 'efficient' and there is no room for arbitrage which will cause the bubble to burst. The authors reach the conclusion that this possibility cannot be ruled out, pointing to the conditions required for its creation (consumers with a finite horizon, assets whose return it is difficult to estimate, assets whose supply is rigid, etc.). At the same time, the authors are aware of the difficulty in locating a 'rational bubble,' due to the difficulty in identifying the future return on an asset and the information shared by the market players.

Blanchard and Watson's article gave rise to extensive empirical literature proposing empirical tests for the existence of a 'rational bubble.'¹⁹ In a recent summary of this literature by Gurkaynak the author concludes: "This survey of econometric tests of asset

¹⁸ Blanchard and Watson, 1982.

¹⁹ A particularly sophisticated test is that proposed by Kenneth West (West, 1987).

price bubbles shows that, despite recent advances, econometric detection of asset price bubbles cannot be achieved with a satisfactory degree of certainty. For each paper that finds evidence of bubbles, there is another one that fits the data equally well without allowing for a bubble.”²⁰

This result should not come as a surprise. The incendiary material that feeds the bubble consists of expectations of returns and a future rise in the asset price. The outside observer cannot reconstruct, *ex post*, these expectations in all their complexity. The only data available to the researcher refers to past changes in prices and returns. However, it is not possible to determine how these were weighted by investors forming their expectations. The way different pieces of data are weighted during ‘normal’ times is almost certainly different from that at the time of a bubble, and the prices observed by the researcher following the ‘burst’ of the bubble are different, by definition, from the expectations that fed the bubble. Going back to Patinkin, it is worth remembering his warning: "For in introducing these elements [expectations] into the analysis we also introduce many additional "degrees of freedom". Hence as long as these elements are not in some way tied down, we can – by endowing them with the appropriate properties – obtain any conclusion we might desire"²¹ The task of ‘tying down’ expectations in the midst of the financial crisis storm is beyond the power of any economist.

Economists' prowess, whether he is a microeconomist or a macroeconomist, is in analyzing the fundamentals. The power of the explanation (as measured by R^2 or other goodness of fit measures) depends first and foremost on the nature of the data (whether they are aggregate or disaggregate). The microeconomist will associate the unexplained residual with heterogeneity, taste differences, or differences in managerial ability and entrepreneurship, while growth economists will blame changes in productivity and technology for the unexplained residual. The explanatory power of a cross-section regression often falls below 50 percent. Success is therefore measured by significance tests of the different coefficients, disregarding the explanatory power of the regression as a whole.

If this applies to the analysis of static situations, this is especially true of dynamic ones. Despite the progress that has been made in the last three decades in time series analysis, economists are limited in forecasting the pace of adjustment of the economic variables. In giving his interpretation of Keynes, Patinkin wrote: “As already indicated, even if monetary policy could definitely restore the economy to full employment, there would still remain the crucial question of the length of time it would need. There would still remain the very real possibility that it would necessitate subjecting the economy to an intolerable long period of dynamic adjustment: a period during which wages, prices, and interest would continue to fall, and – what is most important – a period during which varying numbers of workers would continue to suffer from involuntary unemployment”²².

It is not only the macroeconomist who fails to define the long run in terms of time. The same applies to the microeconomist who tries to explain the changes in the amount demanded or supplied in response to price changes. If the adjustment process at the level of

²⁰ Gurkaynak, 2008.

²¹ pp. 257.

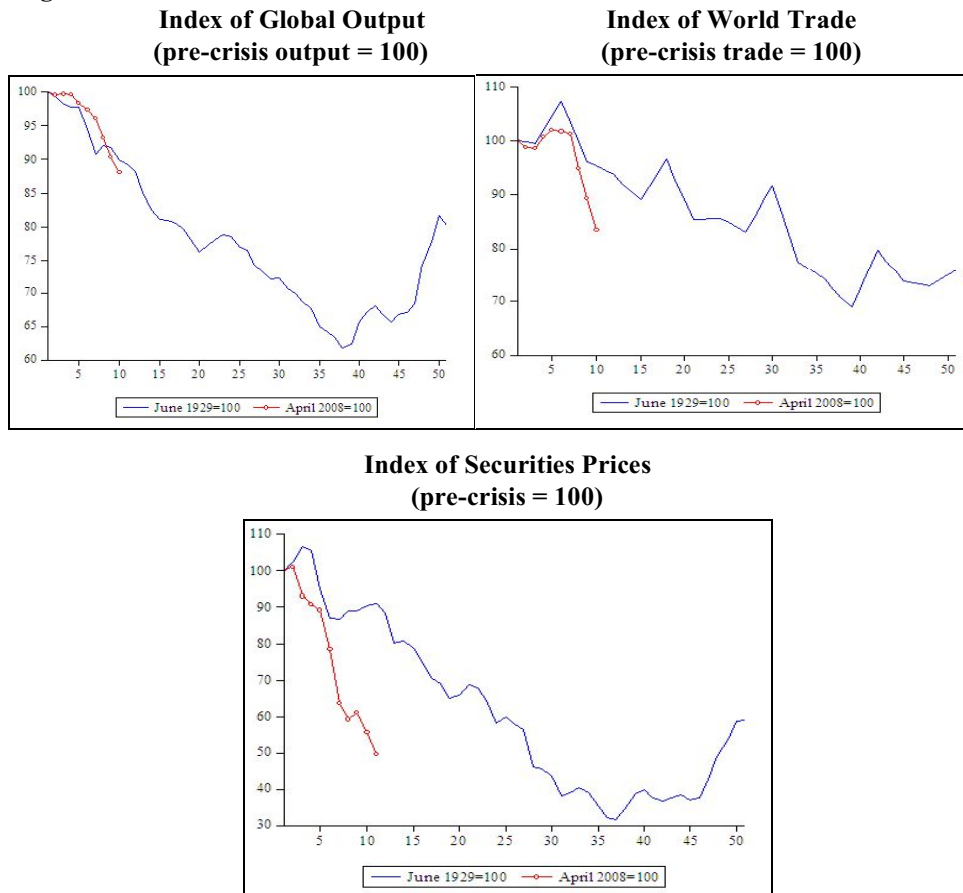
²² pp. 341.

the microeconomic unit (household or firm) can take months, for the economy it may take years. However, as we noticed recently, the time-tables and the pace of events are quite different in times of crisis and in 'normal' times.

There is no better illustration of the inability of the economist to predict the dynamics of a crisis than the development of the current crisis. In the wake of repeated comparisons of the present crisis with the Great Depression, Eichengreen and O'Rourke published comparative data referring to changes in global output, world trade, and the securities markets in the two crises.²³

The data presented in Figure 2 covering the first eleven months after the outbreak of the crisis certainly supported the accepted view at the time that we are witnessing an upheaval of 'Great Depression' proportions.

Figure 2

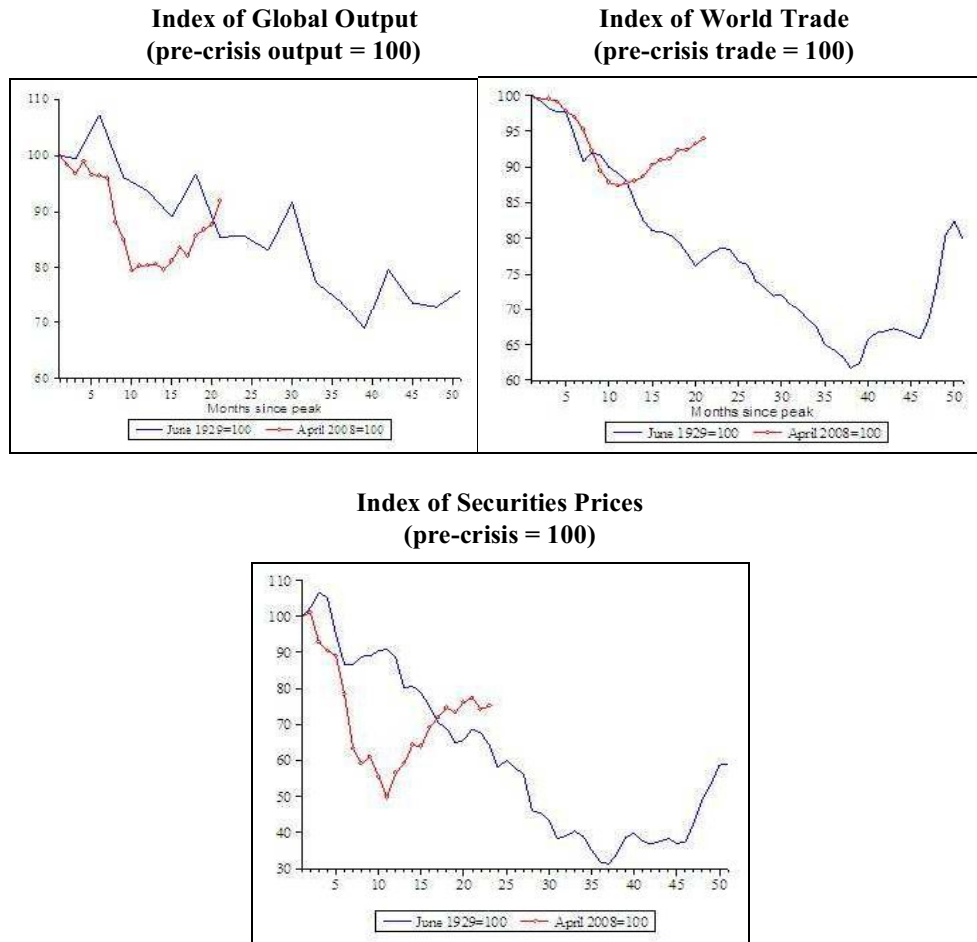


Source: Eichengreen and O'Rourke, April 2009.

²³ Eichengreen and O'Rourke, 2009.

One year later, in March 2010, Eichengreen and O'Rourke updated their data. As Figure 3 indicates, Figure 2 was published at the same time that the crisis hit bottom. All the researchers' expertise in crisis analysis did not help them to identify the turning point in March 2009.

Figure 3

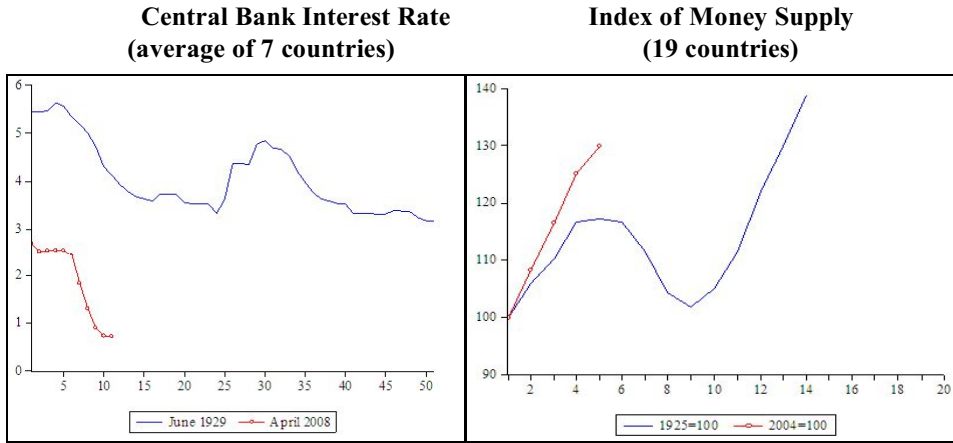


Source: Eichengreen and O'Rourke, March 2010.

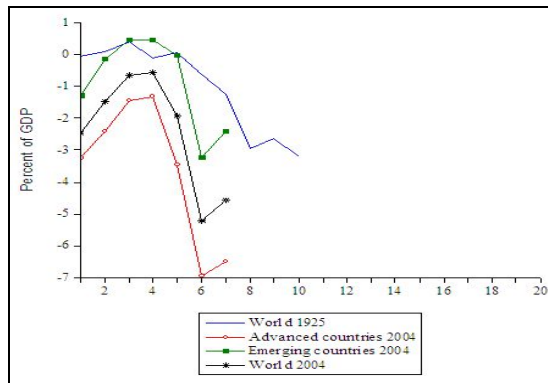
The lesson Rose learned from Bordo and Eichengreen's article about the history of crises in the last 120 years was the economist's inability to predict the timing of crises. This helplessness is not coincidental: the heterogeneity of the crises and the importance of political factors in their creation limits the economist's attempt to forecast the timing of crises. Rose's conclusion was that the situation cannot be expected to improve in the future, and the contribution of the economist must be confined to reducing the damage of the crisis

after it has occurred. This conclusion is borne out by a comparison of the economic policy measures (interest rates, money supply, and fiscal deficit) implemented in the current crisis and the 30's (Figure4).

Figure 4



The Budget Surplus in Developed and Developing Countries (percent of GDP)



Source: Eichengreen and O'Rourke, April 2009.

It is too early to tell whether the mix of policy measures was the right one, but adopting the lesson learned from the Great Depression was undoubtedly one of the main causes for the different paths taken by the two crises.

In summing up his experience as a researcher and decision-maker in the sphere of macroeconomic policy, Mankiw concluded his article in 2006 by saying: "As we look ahead humble and competent remain ideals towards which macroeconomics can aspire"²⁴. This is the legacy Don Patinkin handed to his students fifty years ago.

²⁴ Mankiw, 2006, p.22.

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