

Copenhagen 2008

Keynes and the Crisis¹

Axel Leijonhufvud

University of Trento

I. Introduction

In working on Keynes more than 40 years ago, when the *General Theory* seemed already ancient but was only 30 years old, I was fortunate in not having to cope with Keynes's *Collected Works* which had not yet begun to appear. Since then Keynes scholarship has become perhaps easier in some respects but overall a more formidable challenge. No doubt we have learned a great deal but I am not prepared to take stock of it all. Instead, I take the liberty of changing the question and to ask: What *should* we have learned from Keynes?

The most important lesson from his life and work may be that the macroeconomist should start from the important problems of the day and should face the following questions: (1) How are we to understand what is happening right now? (2) What can be done about it? What is the best policy to follow? (3) Do recent events force us to modify what is today widely accepted economic theory? If so, what is wrong and how might we go about arriving at a more satisfying theory?

There are some things that Keynes would *not* have us do. He would not have us try to *deduce* how the world works from a small set of doubtful "axioms" about tastes and technologies². And he would not approve of strenuous attempts to squeeze every current issue into some such preconceived framework. Neither would he be happy to see economists get absorbed in scholastic disputes over the economic thought of seventy years ago.

II. The Credit Crisis

The important economic problem of today is the current financial crisis centered in the United States. What might we learn from Keynes about it?

The current situation is almost the opposite of the one that Keynes dealt with in the *General Theory*.

¹ Invited Lecture at the conference "Keynes 125 Years – What Have We Learned?," Copenhagen-Roskilde April 23-24, 2008.

² The kind of theory which makes one recall a great line by a great Dane: "But you are not thinking. You're just being logical!" (Niels Bohr)

The background to the Great Depression in Britain, as Keynes saw it, was the declining trend in the return to investment since the end of World War I (at which time it had been exceptionally high). Britain had returned to gold at an overvalued parity and the imperative of defending the exchange rate had caused it to maintain too high a level of interest rates. The combination of a declining marginal efficiency of capital and interest rates that did not decline propelled the country into a recession that was deep even before the United States slipped into depression.

The process leading up to today's American financial crisis had the dollar exchange rate supported by foreign central banks exporting capital to the United States. This capital inflow was not even to be discouraged by a Federal Reserve policy of extremely low interest rates. The price elasticity of exports from the countries which prevented the appreciation of their own currencies in this way kept US consumer goods prices from rising. Operating an interest targeting regime keying on the CPI, the Fed was lured into keeping interest rates far too low far too long. The result was inflation of asset prices combined with a general deterioration of credit quality (Leijonhufvud 2007a). This, of course, does not make a Keynesian story. It is rather a variation on the Austrian overinvestment theme.

III. Keynes and the Financial Side of Recessions

What then can we learn from Keynes that is relevant to our current troubles? The *General Theory* I do not find particularly helpful. The warning not to allow the real economy to be governed by the machinations of a casino may be well taken but, once you have ignored it to your peril, what do you do then? His various papers from the early thirties are more focused on the financial crisis than the *General Theory* where the notion has taken over that the real nexus of the problem is the coordination of household saving and business investment.

The *Treatise on Money* contains a piece of analysis that I have found illuminating. It deals with the financial side of a business downturn. Keynes assumes an initial equilibrium disturbed by a decline in expected future revenues from present capital accumulation. Firms cut back on investment and as activity levels decline direct some part of cash flow to the repayment of trade credit and of bank loans. As short rates decline, banks choose not to relend all these funds but instead to improve their own reserve positions. Thus the system as a whole shows an increased demand for high-powered money and simultaneously a decrease in the volume of bank money held by the non-bank sector. Keynes's preference for speaking of "liquidity preference" rather than "demand for money" becomes understandable in this context since while an increase in liquidity

preference does constitute an increase in the demand for outside money it also leads to a decrease in the volume of inside money.

What makes this analysis relevant in today's context is that it describes a process of general *deleveraging* as part of a business downturn. Causally, it is the decline of investment expectations and the consequent contraction of output that prompts deleveraging. Today, we are faced with the converse question of whether or not the deleveraging that the financial sector is rather desperately trying to carry through will of necessity bring about a serious recession. For many months now, we have been treated to brave protestations from all sorts of sources that the real economy is strong and will not be much affected by the credit crisis. Yet, it is quite clear that, in a closed system, it is a fallacy of composition to suppose that general deleveraging can take place without a decline in asset prices and excess supply of goods and services in general (Leijonhufvud 2007c).

Of course, the U.S. private sector is not a closed system. Leverage can be reduced and liquidity improved by inducing sovereign wealth funds or other foreign entities to assume an equity interest in domestic enterprises as some American banks have done. Similarly, the government can guarantee certain private sector debts and/or swap safe and liquid government debt for risky and illiquid private debt. This too has been done. But there are limits to both these safety valves³ and it remains a serious question whether they will suffice to stave off a serious and long-lasting recession.

IV. Policies to Deal with a Credit Crunch

Should Keynesian policies be used in the kind of recession that we are now threatened with?

Consider the case of Japan. Eighteen years after its big crash Japan has still not completely emerged from its aftermath. One should remember, however, that Japan had two enormous bubbles bursting at the same time -- one in the stock market, the other one in real estate -- and that its banking system was heavily engaged in both. In the present instance, we have to cope with the bursting of just one bubble, albeit a *really* big one, and the United States also has a small advantage over Japan in that some part of the financial damage has to be absorbed by foreign interests, be they German banks or small Norwegian communities.

Japan tried policies inspired by Keynesian economics of the variety propounded in macro textbooks of some decades ago. Enormous amounts of money were spent on 'bridges to nowhere' and other, hopefully better motivated, projects until Japan's national debt grew to a size that discouraged any continuation of the policy. All to little apparent avail.

³ Standard & Poor recently warned the U.S. government that its contingent liabilities for Fanny Mae and Freddy Mac added to those created in the Bear Stearns affair, if triggered, could lead to a downgrading of the Federal government's credit rating!

Why so? Recall that, in the Keynesian theory, public works spending is supposed to work and have a strong multiplier effect when unemployed labor is cash constrained and unable to exercise effective demand for consumer goods. That was not Japan's problem. The effective demand failure that plagued Japan rather was that business firms could not and later would not do the intertemporal trade of expected revenues from future output for the factor services in the present needed to produce that output, that is, they could not or would not borrow to finance investment. In the early post-crash years, the state of the banks was such that they would not lend. Even when the Japanese banks eventually got into healthier shape, many business firms still had balance sheets in such condition that they were loath to borrow (Koo, 2003). So Japan was unable to resume the growth rates that it had achieved before the bubbles burst.

The other lesson to draw from the Japanese experience is that once the credit system had crashed a central bank policy of low interest rates could not counteract this intertemporal effective demand failure. Year after year after year, the Bank of Japan kept Bank rate as close to zero as makes no difference and even so the economy was under steady deflationary pressure and healthy growth did not resume. The low interest policy served as a subsidy which enabled the banks eventually to earn their way back into the black but this took a very long time.

Contrast this experience with that of Sweden or Finland in the wake of their real estate bubbles (and in Finland's case the loss of its Soviet Union export markets) in the early 1990's. Both the Nordic countries fell into depressions deeper than what they had experienced in the 1930's. Both had to devalue and Sweden in particular had to climb far down from its lofty perch in the world ranking of per capita real income. But, in contrast to the Japanese case, the governments intervened quickly and drastically to clean up the messes in their banking systems (Jonung 2008).

Both Sweden and Finland took some three years to overcome the crisis but have shown what is by European standards strong growth since. The devaluations that aided their export industries were no doubt of great importance for this growth record but it is extremely unlikely that anything like it could have been achieved without the policy of "quarantining" and then settling the credit problems resulting from the crash.

V. Central Banking Doctrine in Light of the Crisis

On April 8 of this year, Paul Volcker, addressed the Economic Club of New York about the current crisis. The Federal Reserve, he noted, has gone to "the very edge" of its legal authority. "Out of necessity," said Volcker, "sweeping powers have been exercised in a manner that is neither

natural nor comfortable for a central bank”.⁴ He was referring to the 29 billion dollars guarantee of Bear Stearns assets that had been extended to JP Morgan and the subsequent offer to swap 100 billion dollars of Treasuries for illiquid bank assets. The Bear Stearns “rescue” was aimed at averting a dangerous situation in the default risk derivative market and the swap operation at restoring some liquidity to “frozen” markets. These were indeed unconventional measures but ones without which more conventional interest rate policy could not be expected to have much effect in the current situation.

It is probably fortunate that the Fed had at its helm the most distinguished student in his generation of the Great Depression and someone, therefore, able to perceive the “necessity” more or less correctly. As in the Japanese case, the lesson of the depression is that a collapse of credit cannot be reversed and that the consequences linger for a very long time. It is also true, however, that until only a year or two ago Bernanke was a consistent and outspoken advocate of a monetary policy of strict inflation targeting, which is to say, of a central banking doctrine that required an exclusive concentration on keeping consumer prices within a narrow range with no attention to asset prices, exchange rates, credit quality or (of course) unemployment..

Bear Stearns, Northern Rock, Landesbank Sachsen are the best known institutional victims of the current crisis – so far. But the damage is of course far more extensive and a great many CEO’s have had to go into ignominious retirement with only a few million⁵ dollars as plaster on their wounded reputations. It is the rule of efficient capitalism that you must pay for your mistakes alas!

There are two aspects of the wreckage from the current crisis which have not attracted much attention so far. One is the wreck of what was until a year ago the widely accepted central banking doctrine. The other is the damage to the macroeconomic theory that underpinned that doctrine.

Critical to the central banking doctrine was the proposition that monetary policy is fundamentally only about controlling the price level⁶. Using the bank’s power over nominal values to try to manipulate such real magnitudes as output and employment would have only transitory and on balance undesirable effects. The goal of monetary policy, therefore, could only be to stabilize the price level (or its rate of change). This would be most efficaciously accomplished by inflation targeting, an adaptive strategy that requires the bank to respond to any deviation of the price level from target by moving the interest rate in the opposite direction.

⁴ Quoted as delivered orally www.youtube.com/watch?v=ticXF2h3ypc. New York Times, April 9, has slightly different wording.

⁵ In one case apparently not all that few (reportedly 190 million!)

⁶ This focus is one of the legacies of Monetarism. Historically, central banks developed in order to secure the stability of credit.

This strategy failed in the United States. The Federal Reserve lowered the federal funds rate drastically in an effort to counter the effects of the dot.com crash. In this the Fed was successful. But it then maintained the rate at an extremely low level *because* inflation, measured by various variants of the CPI, stayed low and constant. In an inflation targeting regime this is taken to be feedback confirming that the interest rate is “right”. In the present instance, however, US consumer goods prices were being stabilized by competition from imports and the exchange rate policies of the countries of origin of those imports. American monetary policy was far too easy and led to the build-up of a serious asset price bubble, mainly in real estate, and an associated general deterioration in the quality of credit. The problems we now face are in large part due to this policy failure.

A second tenet of the doctrine was *central bank independence*. Since using the bank’s powers to effect temporary changes in real variables was deemed dysfunctional, the central bank needed to be insulated from political pressures. This tenet was predicated on the twin ideas that a policy of stabilizing nominal values would be politically neutral and that this could be achieved by inflation targeting. Monetary policy would then be a purely technical matter and the technicians would best be able to perform their task free from the interference of politicians.

Transparency of central banking was a minor lemma of the doctrine. If monetary policy is a purely technical matter, it does not hurt to have the public listen in on what the technicians are talking about doing. On the contrary, it will be a benefit all around since it allows the private sector to form more accurate expectations and to plan ahead more efficiently. But if the decisions to be taken are inherently political in the sense of having inescapable redistributive consequences, having the public listen in on all deliberations may make it all but impossible to make decisions in a timely manner.

When monetary policy comes to involve choices of inflating or deflating, of favoring debtors or creditors, of selectively bailing out some and not others, of allowing or preventing banks to collude, no democratic country can leave these decisions to unelected technicians. *The independence doctrine becomes impossible to uphold.*

Consider as examples two columns which have appeared in the Wall Street Journal in recent weeks. One, by John Makin (WSJ April 14) argued that leaving house prices to find their own level in the present situation would lead to a disastrous depression. Policy, therefore, should be to inflate so as to stabilize them somewhere near present levels. If the Fed were to succeed in this it might not find it easy to regain control of the inflation once it had gotten underway, particularly since some of the support of the dollar by other countries would surely be withdrawn. But in any case, the distributive consequences of Makin’s proposal are obvious to all who (like myself) are on more

or less fixed pensions. The other column, by Martin Feldstein (WSJ April 15) argues that the Fed had already gone too far in lowering interest rates and is courting inflation. He was in favour of the Fed's attempts to unfreeze the blocked markets and restore liquidity by the unorthodox means which Volcker had mentioned.

The likely prospect for the United States in any case is a period of *stagflation*. The issue is going to be how much inflation and how much unemployment and stagnation are we going to have. To the extent that this can be determined or at least influenced by policy, the choices that will have to be made are obviously not of the sort to be left to unelected technicians.

VI. The State of Macrotheory

So far I have argued that recent events should force us to re-examine recent monetary policy doctrine. Do we also need to reconsider modern macrotheory in general.? I should think so. Consider briefly a few of the issues.

The real interest rate. In the old monetarism of Milton Friedman, the real interest rate was determined by real factors and could not be manipulated by the Central Bank. Any attempt to do so would quickly destabilize the price level in Wicksellian fashion. This property was carried over into rational expectations monetarism and then into real business cycle theory and DSGE theory in general. The Federal Reserve System under Greenspan put this proposition to the test in the years following the dot.com crash, pursuing an extreme low interest policy. The result was more Keynesian than Monetarist and, as I have already noted, more Austrian than Keynesian: virtually no CPI inflation, but drastic asset price inflation and very serious deterioration of credit standards (Leijonhufvud 2007c).

The problem is that the *real* interest rate does not exist in *reality* but is a constructed variable. What does exist is the money rate of interest from which one may construct a distribution of perceived "real" interest rates given some distribution over agents of inflation expectations.. Intertemporal non-monetary general equilibrium (or finance) models deal in variables which have no real world counterparts. Central banks have considerable influence over money rates of interest as demonstrated, for example, by the Bank of Japan and now more recently by the Federal Reserve.

Ricardian equivalence was another property of rational expectations Monetarism. It was in effect tested by the Bush administration which swung the federal budget into large deficit. The increase in the deficit was not compensated by increased private saving. Instead, American households decreased their saving to basically nothing. The violation of Ricardian equivalence suggests that the transversality condition imposed in intertemporal general equilibrium models has

no empirical counterpart. Without such a condition consistency of all decisions is no longer guaranteed in intertemporal models. But bubbles and crashes are admitted.

Modern financial theory is incorporated as a component of dynamic stochastic general equilibrium theories. Its core assumption that future returns are normally distributed fits neatly into rational expectations models but has been proven false innumerable times. The repeated occurrence of financial crashes or crises hardly seems consistent with intertemporal equilibrium theory. A list covering only the last twenty years would include the October 1987 stock-market crash on Wall Street and the Norway banking crisis in the same year, followed by Japan (1990), Sweden and Finland (1991), the East Asian crises (1997), Russia (1998) and Brasil (1999), the US dotcom crash (2000), Argentina (2001), with the latest instalment being the on-going credit crisis centered in the United States (2007-?).⁷

The representative agent. If all agents are supposed to have rational expectations, it becomes convenient to assume also that they all have the same expectation and thence tempting to jump to the conclusion that the collective of agents behaves as one. The usual objection to representative agent models has been that it fails to take into account well-documented systematic differences in behavior between age-groups, income classes, etc. In the financial crisis context, however, the objection is rather that these models are blind to the consequences of *too many* people doing the *same* thing at the *same* time, for example, trying to liquidate very similar positions at the same time. Representative agent models are peculiarly subject to fallacies of composition. The representative lemming is not a rational expectations intertemporal optimizing creature. But he is responsible for the *fat tail* problem that macroeconomists have the most reason to care about.

VII New Keynesianism?

For many years now the main alternative to Real Business Cycle Theory has been a somewhat loose cluster of models given the label of New Keynesian theory. New Keynesians adhere on the whole to the same DSGE modeling technology as RBC macroeconomists but differ in the extent to which they emphasize inflexibilities of prices or other contract terms as sources of short-term adjustment problems in the economy. The “New Keynesian” label refers back to the “rigid wages” brand of Keynesian theory of 40 or 50 years ago. Except for this stress on inflexibilities this brand of contemporary macrotheory has basically nothing Keynesian about it.

The obvious objection to this kind of return to an earlier way of thinking about macroproblems is that the major problems which have had to be confronted in the last twenty or so

⁷ Events in faraway countries tend to have little impact on macroeconomics in America. This lack of interest overlooks the fact that American financial institutions played important roles in most of the episodes mentioned.

years have originated in the financial markets -- and prices in those markets are anything but “inflexible”. But there is also a general theoretical problem that has been festering for decades with very little in the way of attempts to tackle it. Economists talk freely about “inflexible” or “rigid” prices all the time, despite the fact that we do not have a shred of theory that could provide criteria for judging whether a particular price is more or less flexible than appropriate to the proper functioning of the larger system. More than seventy years ago, Keynes already knew that a high degree of downward price flexibility in a recession could entirely wreck the financial system and make the situation infinitely worse. But the point of his argument has never come fully to inform the way economists think about price inflexibilities.

What matters for the dynamic behavior of a system are *relative* speeds of adjustment. A pertinent example of this point is given in Bookstaber’s (2007) account of how the October 1987 market crash was triggered. The stock market had gone through three consecutive days of big declines in the week ending Friday, October 16. The managers of portfolio insurance programs started out to reset their dynamic hedges first thing on Monday morning, October 19. This required selling S&P futures. A massive amount of sell orders flowed in to the Chicago futures market and the price of futures fell rapidly. Induced by the widening gap between the current futures price and the Friday stock closing prices, cash-futures arbitrageurs stepped in to buy futures with the intention of shorting the stocks underlying the S&P index. However, at this point the New York Stock Exchange had not yet opened. When half-an-hour later NYSE did open it was hit by a surge of sell orders. The wave hit a wall. The volume was too large for the specialists to add to inventory so they tried to find buyers by dropping prices. But the equity investors initially were not ready to reevaluate their positions that quickly and later on were frightened off by the very speed with which prices were falling. Thus, concludes Bookstaber, there was “a dislocation between the hair-trigger execution of the futures and the ponderous decision making on the cash-equity side, compounded by the insufficient capital of the specialist to bridge the gap...”(p. 22). Rephrasing the point, the specialists did not have the *buffer stock capacity* to keep the process orderly -- to keep it within its “corridor”. The deviation-amplifying process gathered ever more momentum so that “in the last 75 minutes of the trading day, the Dow dropped three times as much ... as it had in any other full trading day in history” (p 25).

The episode is worth telling because, obviously, this disaster was not fashioned by “inflexibility” of prices – at least not “inflexibility” in the sense that economists usually think about it. The story makes two points. First, “the time frame for being able to do transactions in the futures market was substantially different from the time frame in the equity market” (p. 21). Second, price formation in one market will be temporarily dependent on that in one or more other

markets. These matters are completely ignored by GE theory but are something we must study seriously if we are ever going to construct a truly dynamic macrotheory.

VIII DSGE and the High Inflation Evidence

There is another area where empirical evidence runs heavily counter to the dynamic stochastic general equilibrium constructions, namely, the economics of high inflations. The work that Daniel Heymann and I⁸ did years ago resulted in a number of stylized facts which, from the standpoint of DSGE theory, are to be regarded as anomalies. The major anomalies were five⁹. First, the domestic money remains in use even at rates of “inflation tax” amounting to thousands of percentage points per year. Second, the legal unit of account plays a far more important role than recognized by standard theory. When the value of money becomes sufficiently unstable monetary accounting becomes meaningless. But monetary accounting is vital to the monitoring of innumerable principal-agent relationships in a modern economy. So unstable money disrupts economic organization in innumerable ways. Third, almost all intertemporal markets simply disappear. Only a few quite thin markets in ultrashort maturities survive. Fourth, spot markets instead fragment as spatial arbitrage fails even between close locations. Fifth, relative prices become extremely volatile. None of these characteristic high inflation phenomena are predicted by monetary general equilibrium models. In fact they constitute strong evidence against them.

Of these five, I regard numbers 2, 3 and 5 as the most important ones. In the present context, however, the fifth one is the most germane of the lot. The usual interpretation of the excess volatility of relative prices has been that it must be due to the infrequency with which certain prices are adjusted and that this is to be explained by invoking “menu costs.” This, of course, is in line with the New Keynesianism discussed above – it is DSGE with “inflexibilities”. It is taken for granted that “flexible” prices must track the inflation of the “general price level” perfectly but that others (we may call them “menu prices” do so only spasmodically). The “spasms” then give rise to the relative price changes that would not be observed in the absence of inflation. Heymann and I came to believe that this interpretation is very nearly the complete opposite of the truth, that the general price level statistics are largely reflecting the adjustment of “fix-prices” while the “flex-prices” become exceedingly volatile and erratic as stabilizing intertemporal and spatial arbitrage mechanisms are destroyed by the inflation (anomalies 3 and 4).

⁸Heymann and Leijonhufvud (1995). The major anomalies are briefly summarized in Leijonhufvud (1997).

⁹ Summarized in my “Macroeconomics and Complexity: Inflation Theory,” in W. Brian Arthur, Steven N. Durlauf and David A. Lane, **The Economy as an Evolving Complex System II**, New York: Addison-Wesley & Santa Fe Institute, 1997.

IX Conclusion

I began by arguing that there are three things we should learn from Keynes. The first was to take our social responsibilities seriously and focus on the macroproblems of our own day. Today's problem is the ongoing credit crisis and its gradually unfolding consequences. The second was to try to understand what can be done with it. Here I have argued that standard Keynesian policies are not the answer. Neither is the central banking doctrine that has dominated in recent years. Fortunately, Ben Bernanke and in the last few days Mervyn King have shown that they realize that we must move beyond that doctrine. The third was to ask whether events proved that existing theory needed to be revised. On that issue, I conclude that dynamic stochastic general equilibrium theory has shown itself an intellectually bankrupt enterprise. But this does not mean that we should revert to the old Keynesian theory that preceded it (or adopt the New Keynesian theory that has tried to compete with it). What we need to learn from Keynes, instead, are these three lessons about how to view our responsibilities and how to approach our subject.

References

Richard Bookstaber (2007) **A Demon of Our Own Design: Markets, Hedge Funds, and the Perils of Financial Innovation**, Hoboken, NJ: John Wiley & Sons.

Martin Feldstein, "Enough with the Interest Rate Cuts," Wall Street Journal, April 15, 2008.

Lars Jonung (2008) "Lessons from Financial Liberalization and Financial Crises in Scandinavia" DG ECFIN (Brussels) Working Paper.

Richard C. Koo, **Balance Sheet Recession: Japan's Struggle with Uncharted Economics and its Global Implications**, Singapore: Wiley 2003.

Daniel Heymann and Axel Leijonhufvud (1995) **High Inflation**, Oxford: Oxford University Press.

Axel Leijonhufvud (1997) "Macroeconomics and Complexity: Inflation Theory," in W. Brian Arthur, Steven N. Durlauf and David A. Lane, **The Economy as an Evolving Complex System II**, New York: Addison-Wesley & Santa Fe Institute, 1997.

Axel Leijonhufvud (2007a) "The Perils of Inflation Targeting," <VoxEU> June 25.

Axel Leijonhufvud (2007b) "Bubble, Bubble, Toil and Trouble," <VoxEU> October 26.

Axel Leijonhufvud (2007c) "Monetary and Financial Instability," CEPR Policy Insights no. 14, October.

John Makin, "The Inflation Solution to the Housing Mess," Wall Street Journal, April 14, 2008.