

Opinion **New Technology Policy Forum**

Goodbye, Macroeconomics

Eli Noam OCTOBER 13 2009

We are in the midst of a severe economic crisis, the second in about a decade, and the third for Latin America and Asia. It appears that information based economies are volatile. This is partly due to the fundamental price deflation in some of the core information services and products, and partly due to the much greater speed of transactions that outpace the ability of traditional institutions to cope. Information technology contributes to the volatility. But can the same technology also provide new tools for stabilisation?

Cyclical swings in the economy are as old as mankind. The Bible tells us about seven fat years in Egypt followed by seven lean years. Each economic system has its economic policy instruments to deal with swings. In ancient Egypt, Joseph's warnings led to the creation of granaries. In feudal ages, the tools were control over the composition of coins, and severe restrictions on land and its workforce. These policies, in turn, became outdated for the industrial age, which pursued aggregate demand enhancement by governmental spending and taxation, control of the money supply, and manipulations of interest rates.

So when the present economic crisis hit, governments dealt with it in a traditional way through broad-based stimulus spending and through interest rates. But it is unclear whether the remedies of the industrial age apply. Demand is not the main problem of the information economy. People consume more bits and minutes than ever. The problem is prices, together with the inability to monetise many information activities. This leads to early over-expansions to gain market share, and subsequent contractions.

Nor is the pace of these macro-responses adequate for the accelerating speed of the information economy. By the time the emergency moneys have been actually spent, we are likely to be out of the recession and they might stimulate inflation.

The new type of problem, in contrast, is the enormous flow of computer-based economic activity that is increasingly impenetrable to interpret or respond to. Yet proponents of the traditional tools mostly got upset when the new elements of the economy undermined their traditional tools.

As e-money emerged, symposia were full of professors of macroeconomics and central bankers lamenting the difficulty of controlling this new supply of money. In other words, the efficiency of the advanced economy had to serve the efficiency of monetary policy, not the other way around.

Instead of suppression, how could the new technologies create new tools for government?

The most important aspect is the ability of the new technology to differentiate and customize. On the internet, each packet is identified as to sender and receiver. Which means that one can identify users, and uses. And if we can identify, we can differentiate.

This is very powerful. Traditional macroeconomics was very aggregate. It was their essence. The reasons were two: for theorists, it was easier to write equations that way. And for policy implementation, it was difficult, in very practical administrative terms, to disaggregate the many economic agents in a society.

But now, we have tools that can differentiate. With proper legal authorization, a central bank could charge different overnight rates to different banks or vary reserve requirements. Sales and other taxes could be varied selectively for different products, regions, or users. Tax credits could be tied to spending for particular uses. Stimulus money could go towards spending or investments that are above the level of last year.

To give a close analogy: In the past, toll roads could charge motorists only in a very undifferentiated way. But now, with automated billing and stored payment systems, we can charge different prices by time of day, by frequency of use, by the characteristics of the driver, by the characteristics of the car, and by the proximity of a driver's residence to public transportation alternatives. In sum, we possess a much finer tool than before to stimulate and to depress demand for transportation, and to do so at a lower cost due to the ability to pin-point incentives.

We need, of course, to deal with some implications. One is on individual privacy. To differentiate one needs to know a lot. But this problem could be resolved through a system of pseudonyms and trusted intermediaries. A second problem is international trade. Basically, could a government differentiate in favour of its own people? The World Trade Organisation rules say no. But that is likely to become a relic of the industrial age.

The industrial age was the age of massification. Mass production. Mass consumption. Mass media. Mass advertising. But not any more. All around, we see customisation and individualization. Macroeconomic activity by government will eventually follow, and become a sub-aggregated 'mezzo' economic policy. Economists, technologists, and policy analysts should work to develop these tools.

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