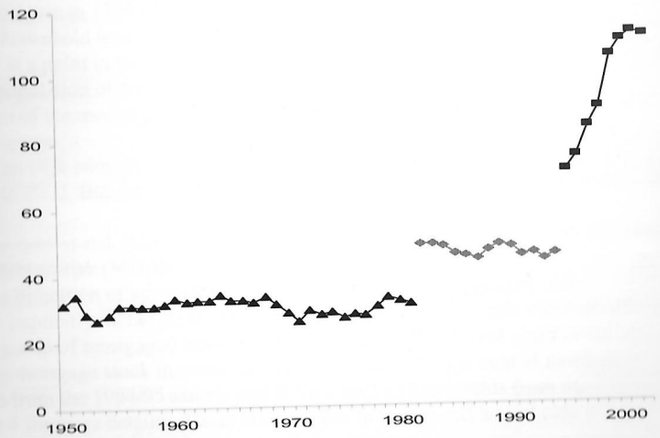
DISCUSSION

Dr. Patrick Honohan: Allan Kearns's fine analysis underlines the need for further data to make it possible to carry out macroprudential programmes of this type with greater confidence. Nevertheless, it is important to keep the limitations of such analysis in mind. The joint IMF-World Bank Financial Sector Assessment Programme was established in part to act as an early warning of crises, but in practice forecasting is impossible. This has been shown by several studies which attempted to establish a statistically-based early warning system (cf. Honohan, 2000). Even the best of these have an unacceptably low power. The problem is one of multiple equilibria driven by self-fulfilling confidence factors. All we can hope to do is identify whether a country is within or outside a 'zone of vulnerability', where a crisis equilibrium could arise if confidence were to falter.

So is Ireland in such a zone? I think that the answer must be yes. Certainly the rate of credit expansion— the classic indicator which I am just one of many to have employed in the past—is a waving red flag at present. Of course there are special factors in Ireland, not least the membership in the currency union. I don't think that it has been previously noted in the literature how such membership limits the potential for a debt-deflation spiral in an isolated country.

Figure 1: Ratio of Ireland's Non-government Domestic Credit to GDP



Source: Author's calculations.

I would also remark that the raw data, presented by Allan, tends to exaggerate the true rate of credit expansion that has occurred in Ireland over the years. The problem is that the inclusiveness of the definition of credit as presented in *International Financial Statistics* (the International Monetary Fund's statistical almanac, from which the longer time series of Allan's Table 1 are drawn) has increased over the years. In fact there is a marked break in the series at 1982, before which only data for the Associated Banks is shown, and then again at 1995, when nonbank credit institutions were included for the first time (see my figure 1).

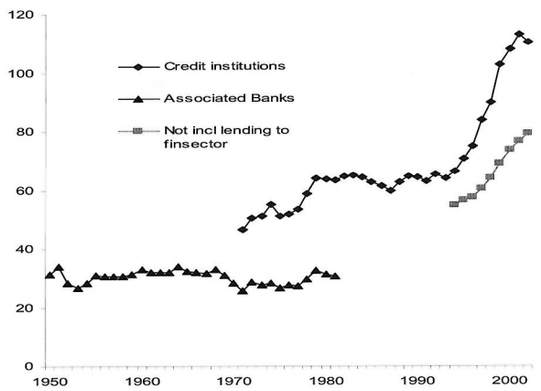
I think that it is also reasonable to exclude lending to other financial sector entities. If we do that also, and work with the credit institutions data for as long as it is available, what appears in Allan's figures to be a jump from 45 to 110 per cent of GDP since the early 1970s become a more modest increase from 56 to 79 per cent (my figure 2). The OECD median increase was from 65 to 95 per cent, so my adjusted figures put Ireland close to that international norm. Brendan Dowling pioneered the development of flow of funds accounts for Ireland in a paper to this Society in 1974, but this work has not been updated since the ESRI *Medium Term Review* in 1997.

Allan's microeconomic analysis of debt exposure is an extremely useful step forward. It both makes innovative use of available data and underlines the potential value of further data collection in this area. Given the limited amount of data he had to deal with, I suspect that there are issues of a lack of statistical significance for many of the comparisons shown, and this needs to be borne in mind when reading the results. Given more data, not only could the problems of significance be overcome, but the analysis could also be conditioned on macroeconomic developments.

The business sector microanalysis is also most interesting, though I was not fully convinced that the bottom 40% of all firms can be taken as "at risk" at all times— surely the appropriate percentage would change from time to time with the state of the business cycle.

The paper largely skirts over the most important factor in household indebtedness and the fear of loan delinquency, namely the rapid rise in house prices in recent years. This underlies much of what is going on in the data. For instance, it is interesting to find that the distribution of mortgages is more concentrated now than it was in the past. I suspect that this is largely because of the rapid growth in house prices. Not only do recent borrowers have a higher indebtedness simply because they have not started to pay down the initial capital sum, but that initial capital sum is much higher than it was for the older mortgage holders. An increase in overall concentration would result from this intergenerational factor, even if the concentration of new mortgages was unchanged from year to year.

Figure 2: Ratio of Ireland's Non-government Domestic Credit to GDP



Source: Author's calculations.

Why did house prices rise so much? Was it driven by credit? The timing seems wrong when credit growth and house prices are plotted together. Was it the fall in interest rates as EMU approached? Here the timing seems right: the big surge in prices was in mid-1998 just when the fall in interest rates seemed assured and indeed
could not be postponed much longer.[1] Nevertheless, it cannot be excluded that prices contain an irrational bubble component. Recently publishes analyses purporting to reject the existence of a bubble in house prices are unconvincing here, inasmuch as they have been carried out conditional on land prices—of course that merely pushes the question back one step: Does residential land contain a bubble? These questions will continue to exercise policy makers as well as bankers, and their consideration of such matters will be greatly assisted by work of the style and calibre which has been presented by Allan Kearns, a worthy winner of the Barrington prize.

[1] A conventional valuation formula would yield $P_0 = \sum_{t=0}^{T} \frac{benefit_t}{(1+r)^t} + \frac{P_T}{(1+r)^T}$; where P is the asset price, r the rate of discount, assumed constant, and T the maturity. If T is large, as it will be with a mortgage, the ratio of prices at two different steady interest rates can be written: $\frac{P_0(r)}{P_0(r')} \xrightarrow{T \to \infty} \frac{r'(1+r)}{r(1+r')}$.
The collapse of Irish real interest rates from over 7 per cent in the last 10 years of the narrow-band ERM period 1983-93 would, on this formula, easily justify a large increase in asset prices.

References

Dowling, B., 1974. "The Development of the Financial Sector in Ireland 1949-72 *Journal of the Statistical and Social Inquiry Society of Ireland*, 23(1): 57-107.
Honohan, P., 2000. "Banking System Failures in Developing and Transitic Countries: Diagnosis and Prediction", *Economic Notes*, 29(1): 83-109.