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Facing up to dysfunctional finance products

Financial markets are facing a deeper and more fundamental problem than the current issues surrounding the regulation of prudential standards. This is that savings and loan products are so flawed in their ability to address user needs as to render them 'dysfunctional'. The current and previous financial crises are at least partly due to this dysfunction and, unless addressed, this will also be a factor in future crises, regardless of the regulatory reforms that are introduced.

GEOFF GLOSTER was a banker with National Australia Bank for over 30 years and is now a retired member of Finsia. Email: geoffrey.gloster@bigpond.com

THE US HOUSING LOAN MARKET has been at the epicentre of the current global financial crisis, with contributing factors identified, ranging from a lack of regulation through to excessive greed.

The widely accepted view is that home loans have been marketed to individuals who were ultimately unable to afford to service them. While this view is not being disputed, our understanding of the problems may have been enhanced, and more profound solutions have presented themselves, if the focus of the debate had moved to the products themselves.

Key questions relating to the home loan products have yet to be asked, let alone answered.

Are the initial and subsequent loan servicing obligations on a standard home loan calculated in a manner appropriate to both the viability of the debt and the capacity of the borrower to pay? Were the ultimate servicing obligations of the borrower predictable at the time most loans were taken up? Were there hidden or obscure features likely to mislead the borrower as to the repayment obligations?

And, what of the manner in which the industry handled the debt and its associated risks? Many institutions both within and far beyond the United States lost money or faced diminished asset valuations on a range of financial instruments that were derived from or supported by problem housing loans. These were typically, but not entirely, domiciled in the United States. This, in turn, raises questions concerning the apparent need to link housing loan products to complex derivative instruments on such a vast scale. Why is it that so few home loan products could be safely linked to deposits of similar maturity periods residing on the liability side of the lending institution's own balance sheet?

The clue is not so far away. The last major crisis in the US home loan markets occurred around 30 years ago when Savings and Loan institutions were forced to match rising interest rates on demand and short-term deposits to support their longer-term fixed-rate loan products, and many became non-viable in the attempt. Since this period, only limited success has been achieved in moving home loans to variable or shorter-term rates, while a complex system involving securitisation, hedging, loan insurance deals and the like has been put into place to shift risk away from the institutions. But, as the mismatched maturity risk does not seem to have been neutralised by the 'discovery' of a sufficient supply of suitable offsetting longer-term debt, the risk had to wind up somewhere. The rapid spread of the consequences of the US home loan crisis is now revealing not only how far this risk travelled, but how little was known of its nature by many of its ultimate owners.

So again, we need to ask a crucial question: how much did product design, associated with housing lending and deposit gathering, contribute to this inability to match maturity risk across balance sheets and, hence, to the need to resort to complex and apparently flawed schemes to deal with it?

The home loan product

To test this product for consumer functionality we need to take an approach that may not be familiar to the finance professional. We need to assess consumer needs without reference to money except as a means of achieving those needs. Many other suppliers of goods and services have learnt in the past of the danger of defining customer needs using the yardstick of their craft. Why else did so many horse handlers and suppliers fail to take account of the arrival of the railways, and why did so many railway companies fail, in turn, as the motor car and aeroplane materialised? Could they have overlooked that their business was to move people and goods between geographic locations?

Savings and loan products allow consumers to shift value over time. The housing loan provides the consumer with the means of purchasing a house out of future income.

Of course, the way this is done is to supply a certain sum of money with which to purchase the house, and to require money repayments at regular intervals until the debt is repaid. These are the mechanics. But, in functional terms, it is the purchase of the house and the subsequent repayment obligations relative to continuing earning capacity that matters.

So what is the most basic issue? It must surely be to know how much value it will cost the borrower in debt repayment relative to the initial value received. Yet no commonly available loan product is currently able to provide an even approximate answer to this most basic of questions.

Two distinct systems prevail, although many loan products employ a hybrid of both. The money value of the debt can escalate over time according to a pre-determined fixed rate of interest, or the interest rate can be made variable by linking it, formally or otherwise, to market-determined interest rates over the passage of time.

To the extent that fixed rates apply, the debt and therefore repayment obligations can be predicted in currency units. But these loans are typically designed to be repaid over periods as long as 20, 25 or even 30 years, during which currency values will almost certainly change in ways beyond our abilities to anticipate.

To the extent that variable rates apply, debt and repayment obligations obviously cannot be predicted in currency unit terms. Given the link between market interest rates and inflation, it is debatable as to whether outcomes in real value terms are more certain under this system relative to fixed rates.

So, at the most basic level of functionality, the housing loan fails to deliver. A profound lack of certainty as to outcome exists. There is no way that its consumers will be able to pre-determine the cost of the service on offer – at any rate, not in a way that is truly meaningful.

Possibly the next most important issue to the consumer will be the immediate repayment obligations on taking out the loan, followed by the nature of the continuing obligations. In reality, most consumers probably focus on immediate debt servicing requirements and are inclined to let an uncertain future take care of itself.

We need to ask a crucial question: how much did product design, associated with housing lending and deposit gathering, contribute to this inability to match maturity risk across balance sheets and, hence, to the need to resort to complex and apparently flawed schemes to deal with it?

Fixed rate loans offer greater certainty insofar as the periodic repayment obligation remains fixed over the life of the loan in currency terms. The only uncertainty is the pace at which it will diminish in real value over time. Of course, there will be penalty issues surrounding early repayment.

Variable rate loans, by far the commonest system in use in Australia and increasingly elsewhere, present the consumer with a potential nightmare. Basic to both systems of interest rate determination is a method of periodic repayment determination in widespread usage, known as the 'credit foncier formula'. Quite simply, it uses the prevailing rate of interest, the amount of outstanding debt and the number and frequency of repayments, to calculate the units of currency needed for each repayment to ensure the debt is repaid on time. In the case of the fixed rate, this repayment rate remains unchanged for the life of the loan (other things being equal); in the case of the variable rate, it is re-worked and re-applied each time the interest rate is changed. The instability and consumer anguish this system can create, particularly in the early years of the loan, is legendary.

A simple exercise tracing the course of typical variable rate loans over the initial five years of their existence under Australian interest rates and inflation, over the years 1963 to 2008, bears eloquent witness to the product's inherent dysfunctionality (see Table 1).

As many as six out of the 10 loans depicted required the borrower to make repayments greater in real value that those originally contracted during the period, many at a level high enough to constitute affordability problems to many borrowers. Notwithstanding that the credit foncier approach theoretically defers principal clearance until late in the life of the loan when interest costs are low, four of the loans paid off a quarter or more of the debt during the initial fifth of their effective life.

The real cost of the finance during the initial five years varied widely, but with little correlation with the initial repayment.

The most remarkable loan was that taken out in January 1973. During the first five years, its real cost was strongly negative – borrowers were paid to borrow, albeit under official regulated interest rates! Most intriguing was that, negative cost notwithstanding, during this period there was an unprecedented level of protest against the

TABLE 1. **Behaviour of a variable rate $200,000 loan with monthly repayments – first five years**

Drawdown	Rate range	Init. repay	Max. repay*	Min. repay*	Cost*– $, % p.a.	% repaid*
Jan 1963	5.0–5.5	$614.09	100.00%	85.86%	$11,229 (2.40%)	22.23%
Jan 1968	5.38–7.25	$606.94	109.88%	93.43%	$9,976 (2.18%)	26.58%
Jan 1973	7.0–10.38	$706.78	107.62%	67.99%	-$12,365 (-3.73%)	49.66%
Jan 1978	9.13–13.5	$882.75	100.00%	80.23%	$5,418 (1.33%)	40.42%
Jan 1983	11.5–15.5	$1165.64	100.00%	73.06%	$26,911 (5.70%)	31.42%
Jan 1988	10.0–17.0	$1203.76	107.65%	61.72%	$40,657 (8.11%)	22.81%
Jan 1993	6.7–10.5	$908.70	100.00%	70.15%	$32,448 (6.27%)	15.50%
Jan 1998	6.05–8.05	$687.76	104.62%	83.35%	$17,452 (3.61%)	21.39%
Jan 2003	6.55–8.55	$678.33	103.21%	97.97%	$21,020 (4.28%)	19.62%
Jan 2004	6.85–9.45	$709.97	105.96%	85.74%	$21,624 (4.41%)	20.26%

Source: http://www.loansense.com.au/historical-rates.html (Reserve Bank 'Standard variable home loan interest rates');
Commonwealth Government Consumer Price Index: All states.

* All currency values have been adjusted to purchasing power value as at loan drawdown.

'high cost of housing finance', as witnessed by numerous petitions to the Federal Parliament.

Yet it is not hard to see why this was so. Initial repayment levels were high relative to earlier loans, and borrowers in January 1973 were subsequently asked to increase their repayments by 7.6% above the intervening rate of inflation – a demand many of them were unable to comply with. Those who met the theoretical loan requirements (many lenders made informal arrangements to bend the rules somewhat) actually repaid virtually half their real debt over the initial five years of a 25-year loan.

The wider picture of savings and loan products

As can be readily appreciated from focusing on housing loan products, a fundamental flaw runs through these and through the wider range of savings and loan products. They are all designed, priced and presented as if the currency used to deliver and redeem the debt is fixed in value over the entire life of the product. No one believes this, of course – not, at least, if it is stated as baldly as that. And yet there is no other way to make sense of our financial products, our accounting standards or our taxation system unless we suspend our disbelief and pretend that money retains its value over time. How else can we believe that all interest is income subject to taxation, or that an expense can be fully offset against current profits? We even call the process by which money looses value over time 'inflation' – we prefer to pretend that our goods and services are inflating in value!

Of course this does not mean that we are unaware of the effects of inflation. Our politicians know that they will be judged partly on their ability to restrain inflation, the market places upward pressure on interest rates to compensate for the effect of inflation on debt values, and we are prone to overcommit on loan repayments in the belief that inflation will eventually take care of the repayments and of the value of the real asset security.

But so far, with a few unsuccessful exceptions, we have failed to see the changing value of money over time as being a factor needing to be incorporated into our financial products. It is usually treated as a separate issue. The finance industry retains an incredibly mechanistic view of its valid role. It rarely sees beyond the cash it handles daily, and regards the goods and services associated with that cash as being 'outside its world'. It has forgotten the dealers in horses and trains who failed to fully appreciate the business of transport.

We have seen the dysfunctional results of this thinking on housing finance. They are no less evident in savings products. The saver also faces the 'fixed versus variable rate' option, neither of which is capable of delivering certainty of outcome in terms of the only thing that matters, the ability to purchase future goods and services. The saver faces a further obstacle insofar as interest credited to savings is subject to income tax, typically at the full rate. Even when, as often happens, interest is insufficient to cover the falling value of the debt on which it is based, income tax is imposed!

The saver has become aware of the uncertainties and poor real returns associated with interest-based saving. At the same time, non-interest forms of savings, typically with less onerous income tax liability, have increasingly attracted retail saving, at least until the recent crisis, with access to equity markets via the internet and wider interest in property investment all playing their part.

As a consequence, the availability of long-term fixed-rate savings has diminished over the past 30 to 40 years. This, in turn, has made it increasingly difficult to supply fixed-rate home loans without encountering maturity mismatching.

Towards resolution

The barriers to reform should not be underestimated. It is not simply a matter of waiting for a lateral thinking entrepreneur to come up with a real-value housing loan product and successfully market it by 'educating' potential consumers. Loans need to be matched to saving products with similar risk profiles; they need to contend with current accounting standards and taxation practice not to mention regulatory standards, which naturally reflect current financial practice.

In order to create a savings or loan product reflecting real values over time, a trusted system needs to be in place enabling currency units prevailing at one period of time to be translated into the equivalent currency units of another time. Current price indexes are published too infrequently and too long after the date to which they apply to be used as they are. A system capable of handling modern savings and loan transactions must produce daily indices available at no lag – preferably available a week or two before the target dates. This involves interpolation of a current price index, short-term projections of the index, and a smooth and non-disruptive system of handling revisions to past projections. Above all, such a system needs to have integrity, be free from manipulation, and be widely respected and accepted.

To date, the mind sets of both suppliers and consumers have not so much resisted reform as failed to see its potential altogether. And yet the current global financial crisis must at least partly reflect the dysfunctional financial products at its core, together with the obvious lack of symmetry between savings and loan products. Perhaps the time has come when we are able to deal with these issues, in conjunction with known issues such as more effective regulation, to try to build a system more relevant to user needs, more transparent to users and regulators, and less susceptible to destabilising forces.

I believe that the way to do this involves interventionist action by governments, including a degree of initial artificial incentive. However, it will almost certainly be controversial.

Step One: Set up the necessary legislative and regulatory framework to accommodate and protect real-value savings and lending products, including revision of income tax legislation to remove over-taxation of interest income (removing part of interest expenses is probably not justified in the absence of wider tax reform involving depreciation and stock-valuation issues).

Step Two: Set up an officially sanctioned table of daily relative currency values based on one or more price indexes, with projected values systematically revised in the light of subsequent price index releases.

Step Three: Set up a legal framework to accommodate the creation and trading of electronic promissory notes and the guaranteeing of debtors by approved financial institutions, with resultant financial instruments defined and protected in such a way as to allow full tradability across all approved electronic systems within each currency area.

Step Four: Support the new approach with an adequate public awareness campaign, and encourage the market to develop compliant products.

Establishing an electronic promissory note system

No mention has been made of electronic promissory notes until now. That they do not exist on any scale today may well reflect the current absence of symmetry between savings and loan products at least as much as the innate conservatism of the industry.

The bill market has long been the province of the wholesale operator within financial markets. Due to the simplicity, transparency, low cost and absence of saver–borrower mismatch risk inherent in the financial bill, it is able to meet the complexity of modern retail needs, both more flexibly and with less effort, artifice and cost than conventional modern products. The key to this potential revolution in savings and loan product delivery lies in the internet and its associated cheap, reliable and fast computing power.

It is now possible to arrange for any potential saver or borrower, or suitable agent acting on the ultimate consumer's behalf, to enter the details of the loan or deposit required, including price limits and debt discharge arrangements, and to have the system match those requirements with offers from other users. And, it is also possible to create a series of electronic promissory notes reflecting those instructions. Borrowers would need to have a separate contract with an approved institution willing to guarantee their repayments.

The system would be cheap, far more transparent than current savings and loan products, and easily able to trade notes to effect early loan repayments, early savings withdrawal and the like. Pricing would be market-determined, and therefore equitable and transparent.

But, of particular interest to us, real-value financial products would be supported by and sit easily in such a system, with savings and loan product maturity risk perfectly offset at all times. Technically, the 'face value' of the bill would still be recorded in its relevant currency, but an indicator would ensure that the amount liable on the bill was subject to the price index movement between the date the bill was created and the date it was discharged. Users would be able to view their debt according to whatever currently available index date they wished.

The extent to which saver and borrower needs could be successfully matched across such a system could, of course, only become apparent as the market developed and matured, which would take time. Obviously real-value finance and electronic promissory note markets offer no quick fix to the current crisis, and nothing will remove the need to control financial markets to avoid the excessive marketing behavior of the past. However, if the products themselves remain dysfunctional, non-transparent, unstable and overpriced, it will be virtually impossible to claim complete victory in stabilising the market.