

# THE IMPACT OF SUPERANNUATION INDUSTRY DEVELOPMENTS ON INTEREST RATES

*In this article Keith Lloyd discusses the impact of developments in the superannuation industry in the context of interest rate movements over 1988/89.*

## Executive Summary

The flattening of the yield curve that occurred over the year to June 1989, and in particular the resistance of long bond rates to the 13 per cent barrier, was widely considered to be partly due to developments in the superannuation industry. It was believed that cash flow uncertainty in the industry arising from the removal of tax incentives to save through superannuation (announced in December 1987) had increased demand for short-dated assets and added an uncertainty premium to longer-term government bond rates. The narrowing of the yield gap from around 2.8 to 0.4 percentage points over the period was therefore believed, in part, to reflect increased uncertainty and reduced demand for long bonds in the superannuation industry.

Superannuation premium income fell by 19 per cent in the year to March 1989 and net cash flow turned negative in the September quarter of 1988. The wealth effect of the sharemarket crash in October 1987, the downturn in economic activity, restructuring and company closures were all relevant factors underlying the initial contraction of business in late 1987-early 1988. Subsequently, the removal of the tax incentives combined with high rates of return on competing assets and continued low levels of activity in the economy worked to keep superannuation cash flows at low levels over the latter half of 1988 and into 1989.

While the contraction in cash flow has been significant, and some schemes have been closed, there is apparently little likelihood of large-scale liquidations of established funds. However, there has been a significant shift in the portfolio composition of the funds which has tended to increase the demand for bonds. The introduction of new products, together with the tax changes, have increased the potential portability and encashability of superannuation claims and has led to a portfolio shift towards more liquid assets. This has involved an assessment of all assets and led to increased investment in more liquid securities such as widely traded government stocks, easily liquefied off-shore assets and higher quality domestic assets that are easily saleable. This factor, together with a significant shift in relative risk perceptions in favour of safe and historically high-yielding government securities in the wake of the October 1987 sharemarket and 1988/89 property market collapses, has substantially increased superannuation fund demand for long government securities. Therefore, on balance, there appears to be no identifiable superannuation uncertainty premium and if one does exist it appears to have been dominated by the negative influence of these other factors.

The overall impact of the tax changes alone is difficult to determine as it is difficult to judge how sensitive the level of national savings has been to the existence of the superannuation tax incentives. However, given the observed portfolio restructuring, the influence of recent developments in the superannuation industry appears to have put net downward pressure on government bond rates. This implies that the narrowing of the yield gap during the 1988/89 period was predominately generated by other factors, such as the negative influence on bond interest rates of heavy government and SOE debt funding in long securities, political uncertainty, and general uncertainty surrounding the direction of both fiscal and monetary policy.

## Introduction

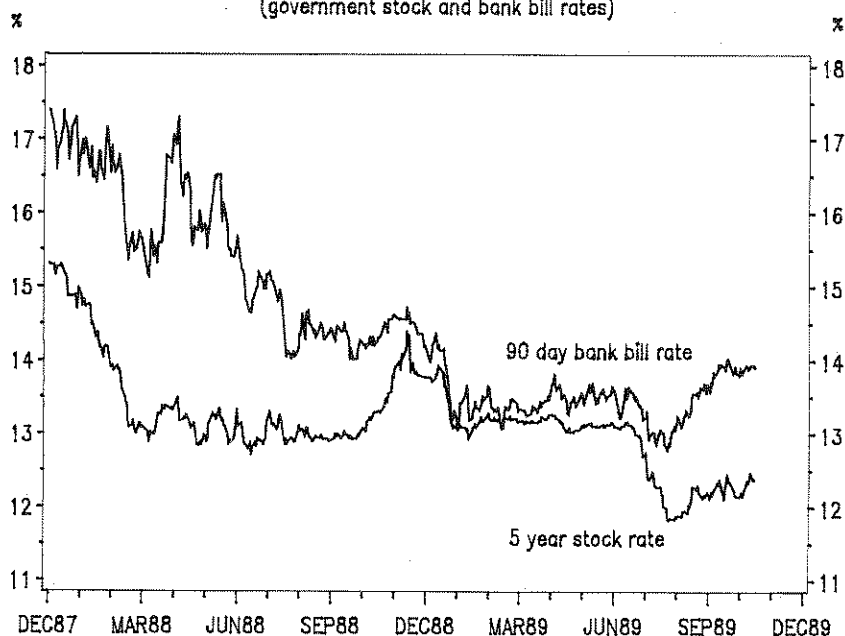
The slope of the interest rate yield curve has been an important monetary policy indicator in recent years. For the yield curve to function usefully in this role it is important to understand the range of factors which influence the gap between short and long term rates. The shape of the yield curve over 1988 and the

first half of 1989 in particular caused considerable difficulties of interpretation.

After falling from around 15 per cent at the end of 1987, five year bond rates fluctuated around 13 per cent from mid-1988 onwards until late July 1989 (refer figure 1) leading to a significant narrowing in the yield gap. This resistance in bond rates was attributed to a number of factors, including the level of gov-

ernment and SOE debt funding, doubts about the Government's commitment to the asset sales programme, political uncertainty, the impact of superannuation and life insurance reforms and more general concerns over fiscal and monetary policy. This article reviews the arguments and evidence regarding the impact of the superannuation and life insurance reforms on the yield gap.

**Figure 1**  
**Interest Rates**  
(government stock and bank bill rates)



## The Hypothesis

The abolition of the tax incentives to save through superannuation was announced on 17 December 1987 and confirmed in the 1988 Budget. Reform of the tax treatment of funds removed the different taxation regimes applying to alternative classes of superannuation schemes and placed all schemes under the same regime. Under this new regime (known as TTE or 'taxed exempt'), both contributions and fund earnings are taxed, but from 1 April 1990 benefits are tax-exempt. Moreover, employer contributions to superannuation funds have been made subject to a withholding tax (in lieu of liability for fringe benefits tax). Superannuation schemes are required to incorporate the impact of the new tax regime in revised rules of association by 1 April 1990.

These changes were far-reaching in effect, altering the very basis on which many people had found it worthwhile to belong to superannuation funds. Accordingly, it was suggested by a number of com-

mentators, including the Bank,<sup>1</sup> that the interim uncertainty surrounding the legal status of superannuation funds had restricted cash flows and discouraged investment in longer-term assets. Uncertainty over future cash flow, together with uncertainty about expected redemption levels (including the possibilities of either widespread closures of schemes by companies or widespread withdrawals by individual members) was believed to have promoted a desire for more liquid portfolios. It was assumed that this involved an increase in demand for short-dated securities and a shift away from long-dated government securities (e.g. 5 year bonds). Such a reduction in the demand for long securities would have added a superannuation uncertainty premium to long bond interest rates. To the extent that such a premium existed, a flatter yield curve could be considered con-

<sup>1</sup> For example, Peter Nicholl and Michael Reddell "Reserve Returns Curve Ball", National Business Review, Friday, 21 April 1989 and Reserve Bank of New Zealand Bulletin, Vol. 52, March Quarter 1989, p.6.

sistent with an unchanged degree of monetary policy pressure.

A further argument suggested that the removal of incentives to save through superannuation had reduced total savings in the economy and thus lowered total asset demand in the economy. In these circumstances, yields on all assets could be expected to increase – helping account for the continuing high level of interest rates. The remainder of this article considers the evidence in support of the various hypothesised influences of the superannuation changes on interest rates and the yield gap.

## Cash Flows

After strong growth in both superannuation and life insurance cash flows up to and during 1987<sup>2</sup>, the industry has been severely constrained over the last two years. Superannuation premium income fell by around 19 per cent in the year to March 1989 and now appears to have stabilised at this lower level<sup>3</sup>, having grown only slowly over the last 12-18 months. There was a sharp decline in new business in late 1987 and early 1988 (down 20.5 per cent on regular contribution schemes and 41.6 per cent on single premium business), a 30 per cent rise in surrenders and a 16.5 per cent fall in total premium income in the year to September 1988 (refer table 1). As a result, net life office cash flow (excluding capital gains) turned negative in the September quarter 1988, before stabilising around \$70 million in the December 1988 and March 1989 quarters and then

<sup>2</sup> Information from the Government Actuary indicates that the amount of funds invested in superannuation schemes grew by 41 per cent in real terms between 1984 and 1989, and that total superannuation funds amounted to \$12.2 billion in March 1989. At that time share market capitalisation totalled \$24.9 billion, and the value of government securities on issues totalled \$21.9 billion.

<sup>3</sup> All data referred to in this section are extracted from either the RBNZ quarterly survey of Life Insurance Companies or from the Life Offices Association of New Zealand quarterly survey.

falling to \$26.2 million<sup>4</sup> in the June quarter 1989 – significantly lower than prior to October 1987 (refer figure 2). Cash flow has since improved from the negative September 1988 position on the back of an increase in new business, an easing in the amount of surrenders and a slight rise in total premium income. As net cash-flow has decreased since late 1987, total assets and hence total superannuation fund demand for investment assets has remained relatively stable at around \$12 billion since late 1987.

Without more formal empirical analysis it is impossible to isolate precisely the impact of various influences on developments in the superannuation and life industries. However, a number of factors appear to have contributed to these developments – not simply the impact of the tax changes. The direct impact of the sharemarket crash in October 1987 on investor wealth appears to have been the dominant factor in the severe cut back in single premium income (from lump-sum or personal investment type superannuation policies) over the December 1987 and March 1988 quarters, with the December 1987 tax change announcement reinforcing this initial shock. Moreover, the downturn in economic activity which began in earnest in the September quarter of 1987, economic restructuring, and the associated company closures appear also to have been major factors in the decline in superannuation activity in late 1987-early 1988.

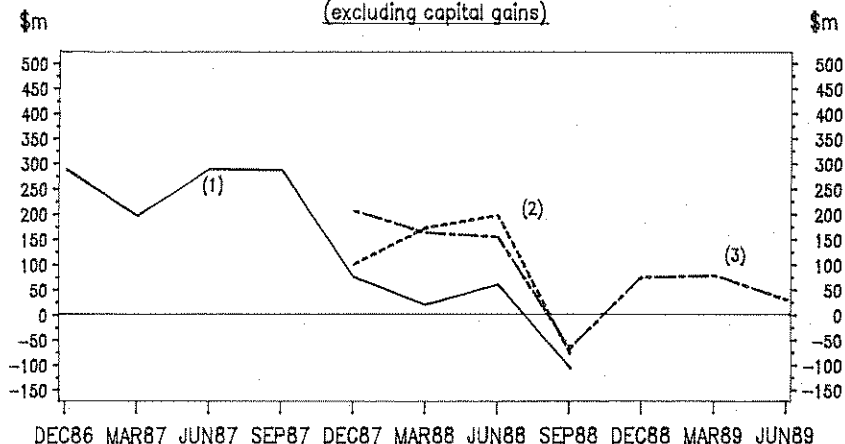
However, the longer-term impact of a major change in relative rates of return cannot be underplayed. The removal of the tax incentives and high rates of return on competing savings instruments in 1988 and 1989 as real after-tax interest rates rose sharply, appear to have prevented a recovery in superannuation

Table 1  
Superannuation New Business, Surrenders and  
Total Premium Income of Life Insurance Companies  
(\$ million)

	Year to September			
	1985	1986	1987	1988
<b>Premium on New Business</b>				
Annual Premium Income	59.6	70.8	111.4	88.6
Annual Percentage Change	73.3	18.8	57.3	-20.5
Single Premium	73.3	64.7	283.6	165.7
Annual Percentage Change	103.0	-11.7	338.3	-41.6
<b>Surrenders</b>				
Total	106.4	167.7	285.9	371.1
Annual Percentage Change	34.9	57.6	70.5	29.8
<b>Total Premium Income</b>				
Total	274.1	265.6	580.4	484.6
Annual Percentage Change	19.2	-3.1	118.5	-16.5

Source: RBNZ Survey of Life Insurance Companies.

Figure 2  
Quarterly Net Cash Flow Position of Life Insurance Companies  
(excluding capital gains)



- (1) Partial RBNZ:— Premium Income (both superannuation and non-superannuation) minus Expenditure (payments to policy holders).  
 (2) RBNZ Net Cash Flow:— Premium Income plus Investment Income (excluding realised capital gain/loss) minus payments to policy holders, taxes and other expenses.  
 (3) Life Office Association Net Cash Flow:— same composition as (2).

<sup>4</sup> Net cash flow information is only available for life offices in aggregate. Therefore the cash flow data reflects both superannuation and non-superannuation business. Just under 30 per cent of all life insurance company funds, which total approximately \$12.8 billion, are attributable to superannuation.

cash flows over the remainder of the period to June 1989. The impact of the tax changes on larger schemes appears likely to be more gradual in nature, as underlying savings preferences and behaviour change. This is highlighted by a 9 per cent decline in total superannuation premium income in the year to June 1989 compared with no change in the amount of non-superannuation income of life offices over the same period.

However, it is clear that the tax changes have led to the closure of a number of small tax-driven schemes. Figures from the Government Actuary indicate that 530 schemes with an average fund membership of six and average fund size of \$120,000 were terminated between December 1987 and March 1989. Total funds wound-up amounted to \$65 million compared with \$9 million (150 schemes) in the equivalent period before the tax change. Discussions with various fund managers indicated that a large proportion, by number, of superannuations have been wound up, but that the amounts involved were small – and that, although many of the schemes were tax-driven, many of the closures were due principally to the failure of small companies.

Looking ahead, discussions with the industry indicated that they were not expecting any major withdrawal of large company support from employee superannuation schemes when the new tax regime is implemented in April next year. Although many existing schemes had been closed to new members it is considered unlikely that such schemes will be liquidated, despite the lack of significant tax advantages to saving through a superannuation fund. This expectation appears to refute suggestions that a sustained positive uncertainty premium had been incorporated into yields on longer-term assets (including the benchmark government bond issues) because of industry fears that large funds may be wound up – although it is not impossible that some such premium did exist in early 1988 amid the uncertainty

about the final form of the new taxation regime and its impact.

### Liquidity and Portfolio Effects

However, the evidence does indicate that fund managers have shifted towards more liquid portfolios over the last two years. Holdings of cash and other short-term deposits/investments had increased to 8 per cent of life insurance company portfolios in the June quarter 1989 (from below 5 per cent in 1987) and investment has also increased in more liquid securities such as liquid government stocks, easily liquefied offshore assets and higher quality domestic assets that are easily saleable. Demand for the widely traded government stock issues, such as, at present, the 11/93 and 2/95 5 year benchmark stocks, has therefore increased.

A number of factors appear to have been at work. The reduction in net cash flows, and some future cash flow uncertainty may have been factors, as also may have been the trend towards products offering greater portability and encashability. However, the liquidity influence of the tax change on the demand for bonds appears to have been relatively small compared with the portfolio shifts induced by changes in asset returns and in risk perceptions over the period since the crash.

The fall-out from the stockmarket crash and commercial property market collapse has led to increased conservatism in the management of portfolios and a fundamental reassessment of the risk attributed to these markets – probably forcing an increase in yields in these markets. It appears that few funds have been making investment decisions solely on ex-ante or expected returns, but rather have been redistributing their portfolios on the basis of the performance of assets over the past 21 months. The slump in the property market and low returns in the domestic equity market (at least until the decrease in wholesale interest rates

in late July-early August prompted renewed buying interest), made these assets unattractive compared with foreign equities and domestic fixed interest securities<sup>5</sup>. This apparently counter-intuitive approach to fund management appears to have been influenced by the concerns of trustees of individual funds.

This partial focus on past returns, and the reassessment of asset risk appears to have increased demand for safe and historically high yielding government securities. The resulting increase in demand for government securities reinforced the liquidity effect and has been a downward influence on long-term interest rates. The increase in superannuation fund demand for government securities is confirmed by RBNZ Registry data. Total pension and benefit holdings (the closest approximation to superannuation fund holdings in the Registry information) of government securities jumped by over \$210 million in December 1987/January 1988, after little reaction to the stockmarket crash in mid-October. The rise was distributed across all maturities with holdings of both medium and long-term government securities increasing by around \$100 million each. Demand from these investors has remained firm at this higher level over the period to the end of June 1989. Discussions with fund managers also indicated that many had moved funds into the more liquid stocks such as the 11/93 and 2/95, 5 year benchmark government stock issues.

Both this portfolio reallocation effect arising from changing relative risk return perceptions, together with the liquidity effect, increased demand for government bonds. The effect of such an increase in demand is to place *downward* pressure on long interest rates. As discussed above, any 'uncertainty' premium

<sup>5</sup> The Barclays share price index for example, fell by 3.3 per cent in the year to the end of June 1989, compared with an average increase in Tokyo, London, Frankfurt and New York of 22.8 per cent. The domestic 5-year government stock rate in contrast traded between 12.7 and 14.4 per cent, offering an estimated real rate of return of between 5 and 7 per cent.

attached to long rates associated with the tax changes is likely to have been small, and appears to have been offset or dominated by these other two factors. While the change in both bond and domestic equity market conditions in late July-August 1989 may have prompted a portfolio revaluation it is likely that the uncertainties associated with the placement of the DFC in statutory management and the October swings in world equity markets would have led to a further increase in institutional demand for government securities. Both factors suggest that the change in risk weightings in favour of government securities which occurred after the 1987 stock-market collapse is likely to continue for the foreseeable future.

### **The Impact of Changes in Savings Behaviour on Asset Prices**

A third strand of argument has suggested that the removal of the tax incentives to save through superannuation reduced total savings and placed downward pressure on all asset prices. The hypothetical additional premium attached to long interest rates arising from the tax changes would then simply reflect the increase in yield applied to all asset classes.

It is difficult to assess this argument without more formal empirical research. The Reserve Bank estimates that the household saving ratio for 1988/89 increased from a low of around 2 per cent in 1987/88 to around 4 per cent of disposable income in the year ended March 1989 and it is not possible to assess adequately the extent to which the removal of superannuation tax incentives slowed this growth in savings and to what extent the removal is simply resulting in a reallocation in the form in which savings are held. A large amount of the increase in savings appears to have been due to households responding to high real after-tax interest rates and other incentives to repay debt. The

depressed outlook for returns on the assets in which superannuation and life offices invest is also likely to have encouraged households to allocate a greater proportion of their savings to other instruments, such as debt repayment.

The failure of superannuation cash flows to recover as aggregates savings have increased and non-superannuation business has picked-up suggests that total savings and superannuation fund asset demands could have been higher (and interest rates lower) had there been no change in the tax rules. However, the potential upward influence on interest rates of the tax change may be offset by the reduction in the fiscal deficit and hence a lower government borrowing requirement. Reduced government demand in the domestic capital market would place downward pressure on interest rates. Furthermore, while savings have been diverted away from superannuation funds this does not necessarily imply a reduction in demand for those assets in which they traditionally invest. As savings may simply have been diverted to other participants in the capital market, the net impact on asset prices of changes in superannuation fund demand could, in principle, potentially be offset by changes in portfolio demands of other domestic and foreign investors.

### **Conclusion**

The removal of tax incentives to save through superannuation appears to have contributed to low growth in superannuation fund portfolios over 1988/89. However, total household savings have increased over the same period and institutional investors have tended to reorient their portfolios towards less risky and more liquid assets. The move to more liquid portfolios in response to new products and a potential rise in the level of surrenders, together with the attractiveness of competing risk-adjusted returns, has led to an increase in sup-

erannuation fund demand for long government securities. Any negative impetus arising from cash flow uncertainty, and the lack of growth in the industry appears to have been outweighed by the relative risk factor, attractive government stock yields and potential liquidity in some stocks (notably the benchmark issues monitored by the Bank in its assessment of the yield curve). The rise in superannuation fund demand for government securities probably placed downward pressure on long interest rates and dominated any potential negative uncertainty premium arising directly from the tax changes. Indeed, it would appear that the narrowing in the yield gap was caused by other factors and that the net contribution of superannuation industry factors was working in the opposite direction. Concerns over the direction of monetary and fiscal policy, political uncertainty and the level of government and SOE debt funding appear to have been far more significant factors underpinning the bond rates at around 13 per cent over the year to June 1989.