

Valuation of Frictional Costs

- The State of Play

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Abstract

In recent years, questions have been raised about certain elements of traditional actuarial appraisal valuation methods for life insurers and alternative methods have been proposed. Market consistent approaches have been talked about for a number of years as providing the solution to the known flaws of traditional methods. However there are fundamental issues still to be resolved, namely the valuation of frictional costs, in order for such alternative methods to be useful. This is particularly so in the context of producing a valuation of a life insurance entity as a whole.

This presentation will consider

- the sources of frictional costs
- why it is important that methods be arrived at to deal with this issue
- consideration of potential methods of valuation



Traditional Actuarial Appraisal Valuation Methods

Traditional actuarial appraisal valuation methods dealt with issues of risk that weren't allowed for in the cash flow models through the risk discount rate adopted.

The range of risks included:

- Agency costs
- Costs of financial distress
- Transaction costs
- Lack of neutrality of taxes

As well as:

- Cash flow risk
- Market risk
- Implicit allowance for COG

Introduces major source of subjectivity to valuation, with many risk factors being rolled up approximately in a combined, opaque manner into the risk discount rate



Alternative Valuation Approaches - EEV, MCV

European Embedded Values (EEV) Key Features

- Risk Discount Rates at a product level, assessed as the risk-free rate plus 'Risk Margin' to reflect risks unaccounted for elsewhere
- Explicit allowance for Guarantees and Options
- Consistency in reporting for European insurers
- More extensive disclosure including methodology, assumptions, required capital and EV profit

The method for setting the risk discount rate must be disclosed but there is limited guidance on the setting of risk margins. There is therefore considerable room for interpretation, and this extra flexibility has, in practice, made comparability between companies more difficult. Market practice is still emerging on this, and over time we may start to see the objectives of 'transparency' and comparability across companies' be achieved.



Alternative Valuation Approaches - EEV, MCV (cont'd)

Market Consistent Values (MCV) Key Features

- Explicit valuation of cost of options and guarantees
 - Does not ascribe value to asset risks
 - No need to determine risk discount rate
 - Focuses on systematic risks (i.e. market risks), on the primary basis that unsystematic risks (e.g. insurance risk, operational risk) are fully diversifiable (i.e. 'pure finance theory')
- however emerging practice in this area recognises that there is a reward/cost for some unsystematic risk, in the form of 'frictional costs'.

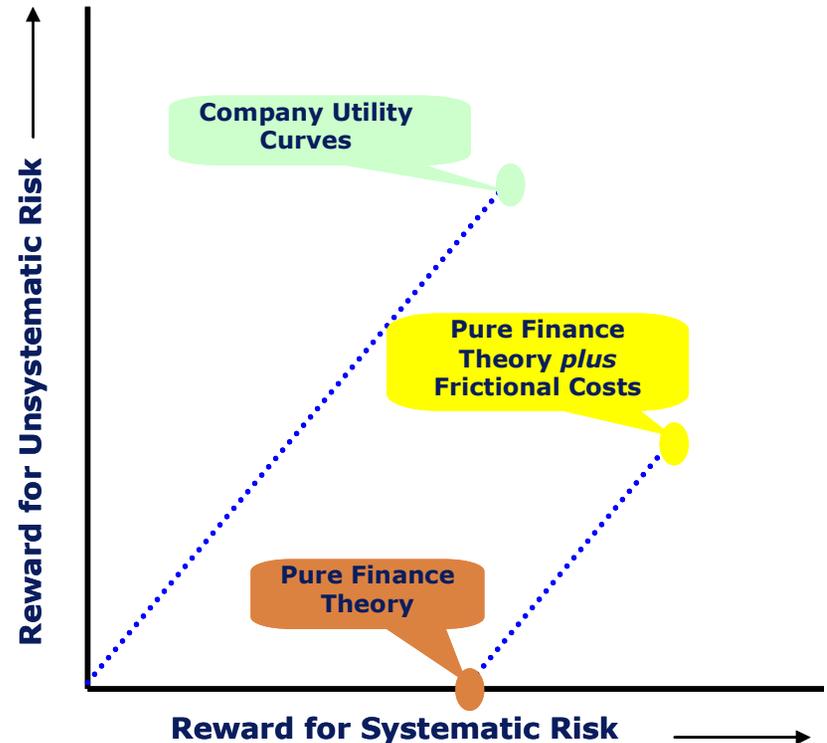
Alternative Valuation Approaches - EEV, MCV (cont'd)

The trend has therefore been to:

- Remove the focus on RDR to allow for risk
- Explicit focus on allowance for risks

However if not all items can be quantified, the outcome may not answer appropriately the questions that users are looking for.

In reality, shareholder valuations are impacted by both rewards for the taking on of systematic and unsystematic risk i.e. unsystematic risk can lead to more volatile profits, which increases frictional costs.



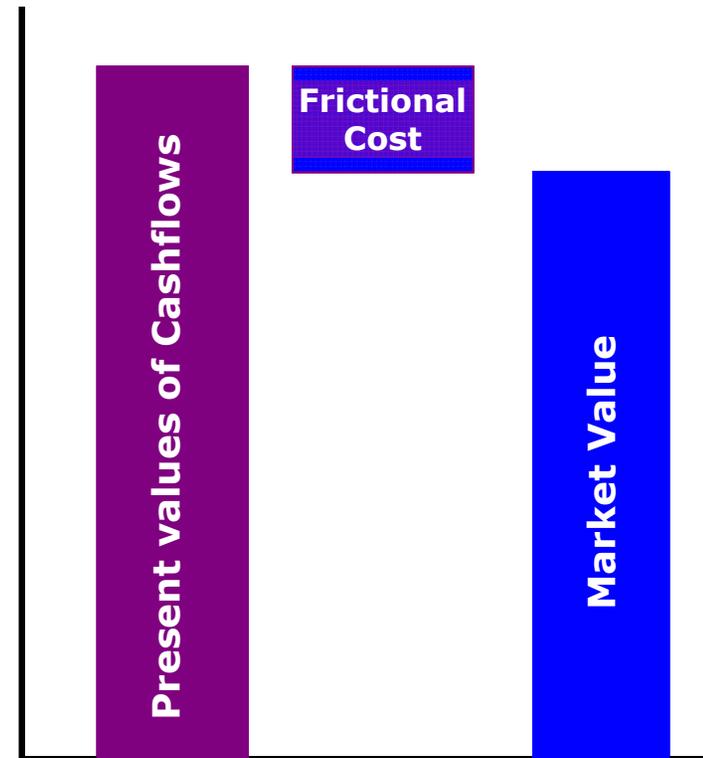
Source: Ng et al (2003)

Without items such as the frictional costs being able to be reliably estimated question remains as to whether approach for Australian businesses is improved

Sources of Frictional Costs

Frictional costs are costs incurred by shareholders or bondholders where cashflows are permanently lost to them and need to be taken into account when considering the economic valuation of a life insurance business.

Ng *et al* (2003) found that valuation of companies using current market consistent techniques (i.e. deflators or other risk neutral approaches) has resulted in valuations higher than that observed in the market. They argued that the gap was explained by items collectively known as 'frictional costs' which are not captured in existing cashflow models.



Ng *et al* (2003) define frictional costs as comprising missing cashflows, model approximations as well as certain management optimism that may exist in a cashflow model.



Sources of Frictional Costs (cont'd)

In the main, the sources of frictional costs are - Agency costs, Costs of financial distress, Transaction costs, Lack of neutrality of taxes

Agency Costs

This is one of the major sources of frictional costs, and relates to value lost to shareholders and bondholders from management decisions that are made which are not in their best interests. Examples are:

- Remuneration schemes that are excessive when profits are high but do not reduce correspondingly when profits are low, or even worse a 'golden handshake' is given
- Loss leading behaviour in pursuit of turnover rather than shareholder value
- Bad acquisitions which erode shareholder value

These costs tend not to be adequately included in cashflow models.



Sources of Frictional Costs (cont'd)

Costs of financial distress

In cases where an insurer becomes financially distressed, or worse insolvent, the costs can include

- Lost business – customers lost to competitors, selling products at a discount
- Administrator and legal costs, including liquidation of assets at loss
- Capital raising costs
- Loss of future income from loss of ownership of the company

These costs can be substantial to shareholders, and are more significant the lower the profits. Ng *et al* (2003) states however that these costs tend to be overlooked in valuation models. An example is where new business levels are modelled at fixed levels, instead of linking these to profitability and credit rating of the insurer.



Sources of Frictional Costs (cont'd)

Transaction Costs

Examples include employee salaries, payments to trading partners (goods, services) and payments to professional partners (consultancy, legal advice). These transaction costs, by their very nature, will tend to increase when the business does well but do not fall proportionately when the profits are falling. Modelling of transaction costs is possible with the use of modern management information systems.

Neutrality of taxes

Taxes are not neutral in reality, so they become a source of frictional costs. For example, taxes will tend to rise with increases in profits but may not fall to the same extent when profits fall. Tax inefficiencies can also arise with legislative change. Recent research argues that these tax effects can be modelled relatively easily.



Why is it important that methods be arrived at to value frictional costs?

- Trend to market consistent valuations means that focus will remain on this area
- Robust method for determining frictional costs needs to be developed, which has credibility with users of valuations and does not appear to be a “black box” factor
- Myriad of current ‘market consistent methods’ in practice, ranging from no allowance at all, to crude loadings for frictional costs to risk margin loadings on different blocks of business under some applications of European EV methodologies, may result in confusion and lack of transparency for the analyst and management community.



Why is it important that methods be arrived at to value frictional costs? (cont'd)

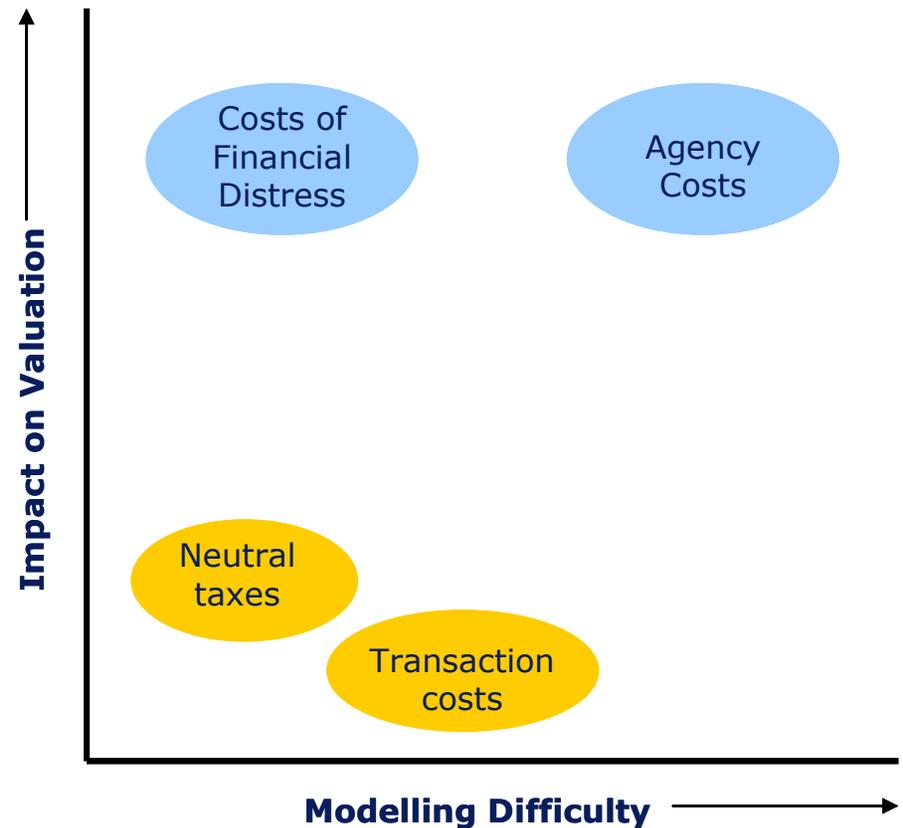
Allen and Varnell (2004) discuss some of the motivations for using a market consistent valuation

- To understand the behaviour of a company's share price and hence to maximise shareholder value i.e. what strategies are value-adding for the risk being taken on?
- To produce a company valuation that reduces the need for subjective judgements
- To improve communication with investors

There is currently no practical and robust way to measure frictional costs, and this is a major stumbling block in setting an economic value for a whole entity. More importantly, methods need to be arrived at that can be communicated to its users.

Relative Contribution to Valuation

- The major value impacting sources of frictional costs are agency costs and costs of financial distress. In particular it is widely acknowledged that modelling agency costs is very subjective and therefore difficult.
- As there is currently no robust way to quantify this - market practice, particularly coming from the European life insurance community, has been little more than guesses.



Source: Ng *et al* (2003)

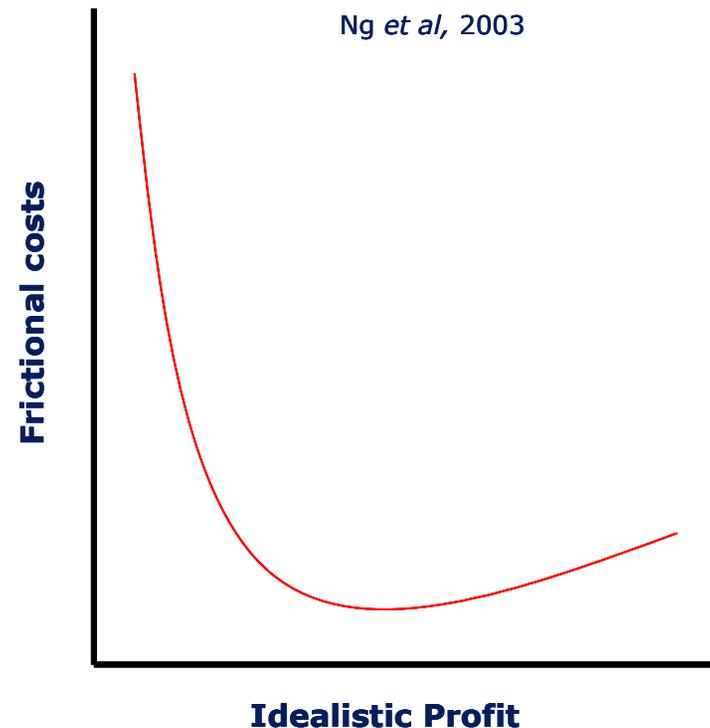
Models for Frictional Costs: Ng et al

Ng *et al* (2003) proposes a simple frictional cost function, which is stochastic function dependent on profit. In this function, frictional costs are very high when profits are lower than expected due to the costs of financial distress, but there is a gentler rise in frictional costs when profits are high because of agency costs.

Model combines such frictional cost functions (determined so that the cashflow model calibrates to the market price) with a deflator model to assess capital to allocate to risky projects within a company in a way that reflects the overall contribution to the overall risk of the portfolio.

Frictional Cost Function

Ng *et al*, 2003

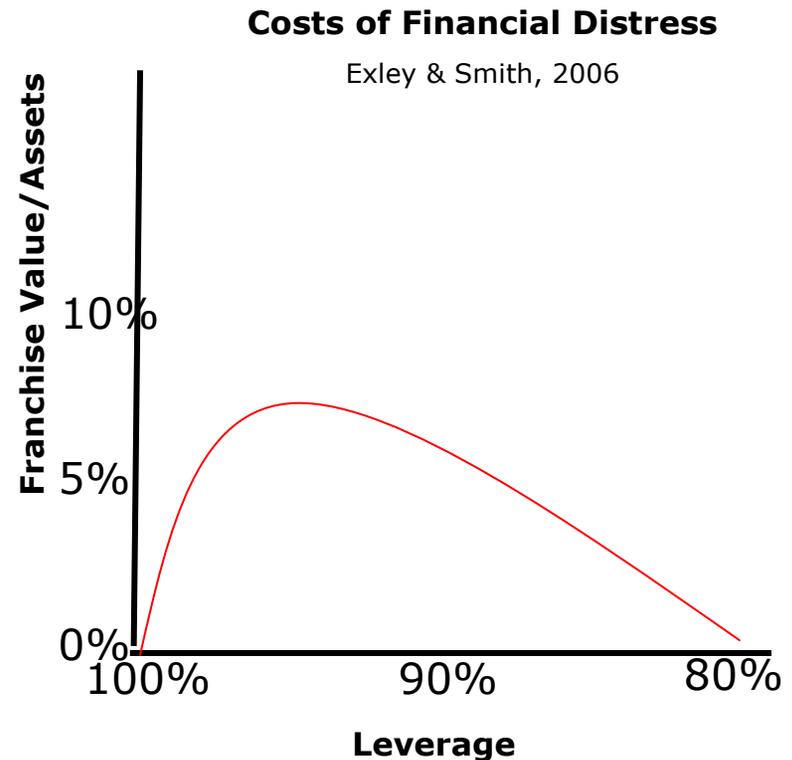


A frictional cost function is a stochastic cashflow that is deducted from the 'idealistic profit' to give the profit that shareholders are more likely to receive (the 'realistic profit').



Models for Frictional Costs: Exley & Smith

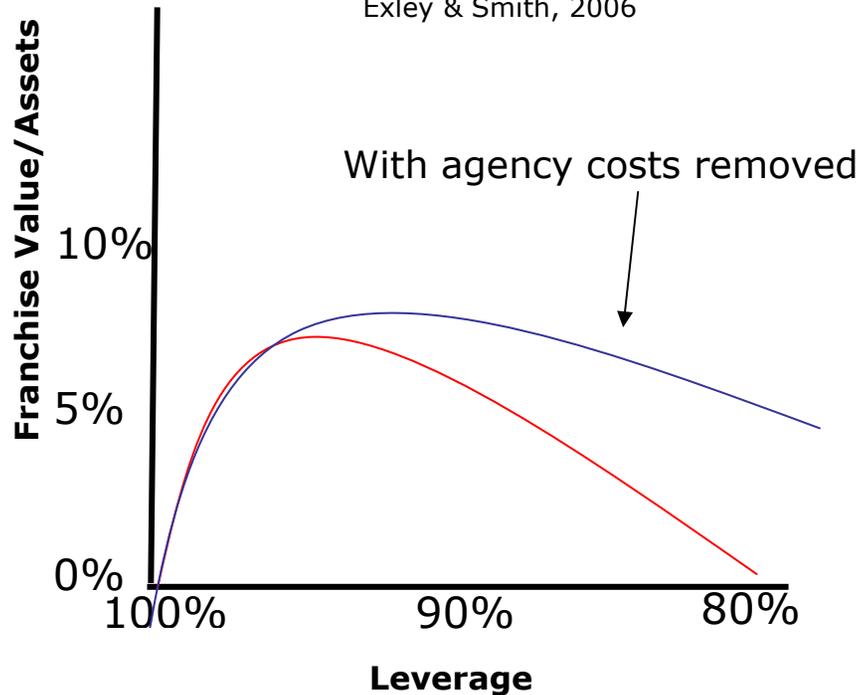
- Exley and Smith (2006) consider each potential cost item separately in considering the impact to shareholder returns of agency costs, costs of financial distress and double taxation
- Note that while this is an empirical question, theoretical models of frictional costs have been slow to develop



Models for Frictional Costs: Exley & Smith

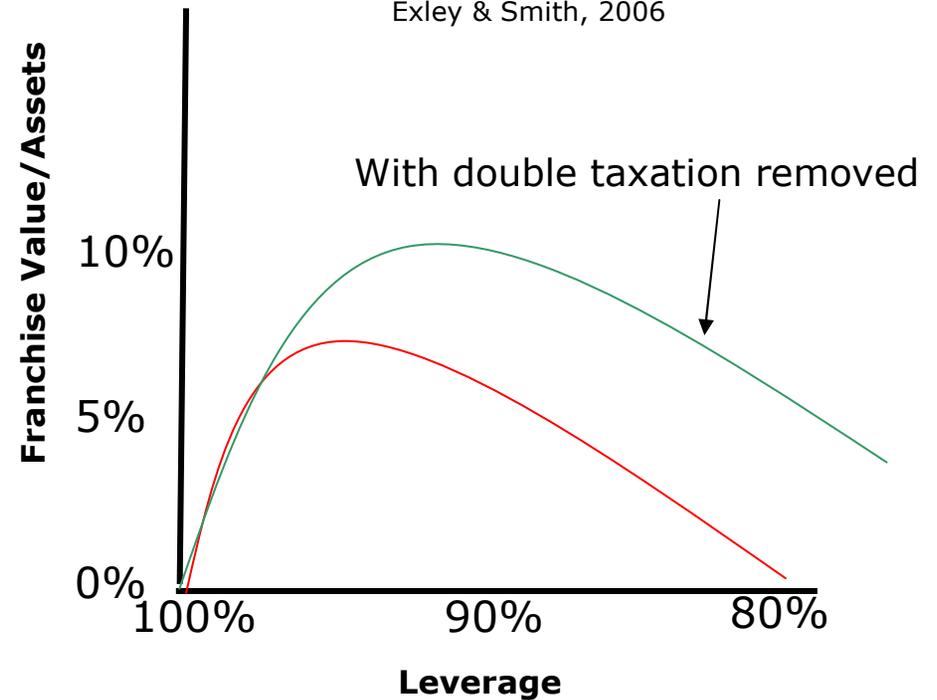
Agency Costs

Exley & Smith, 2006



Costs of Double Taxation

Exley & Smith, 2006



Conclude that it is plausible that the quantum of frictional costs may be linked to the accounting balance sheet net assets



Some methods being used to 'value' frictional costs in practice

AMP/AXA published results 31 Dec 2005

- Both groups have published Traditional vs. Market Consistent Values ('MCVs') of their Existing Business as well as Value of 1 year's New Business
- These 'MCVs' are before any agency costs adjustment, and the MCV is higher than the Traditional EV
 - AMP: +11% for Existing business, and +28% for 1 year New Business
 - AXA: +22% for Existing business, and +37% for 1 year New Business

Our comments

- The 'MCV' being published would not currently allow for correlation risk of certain cashflows to the market, such as lapse cashflows and new sales growth. This would make a true market consistent valuation of existing and new business values impossible at present.
- To value a total company, the financial community still needs to rely on the Traditional EV or AV to 'back solve' for frictional costs. Whilst it is widely accepted that some allowance needs to be made for frictional costs in a valuation, development has been slow in terms of coming up with a practical way of doing this.

Some methods being used to ‘value’ frictional costs in practice (cont’d)

Petroleum Industry

Applies a deflator model to value the portfolio for the level of systematic risks being taken on

Measured the ‘frictional costs’ by reducing the above cashflow projection values to the market value

Applied a simple profit dependent frictional cost function to allow them to distribute the frictional costs back to every asset in the portfolio, so that assets which created the higher profit volatility was allocated the higher frictional cost

Our comments

Whilst attempts have been made to define simple frictional cost functions to allow capital allocation optimisation, it remains that measurement of the total frictional cost relies on equating the cashflow projections to a ‘market value’ of some sort, whether this be observed market values or some ‘traditionally’ determined economic value

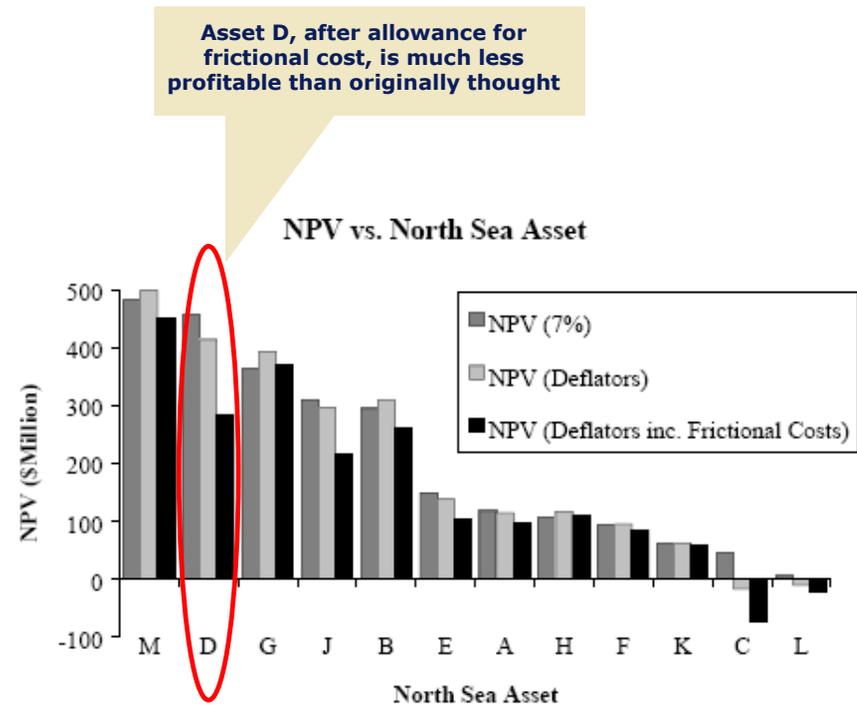


Figure 11-1 - North Sea oil and gas assets valuations using three different methods

Source: Ng *et al* (2003)

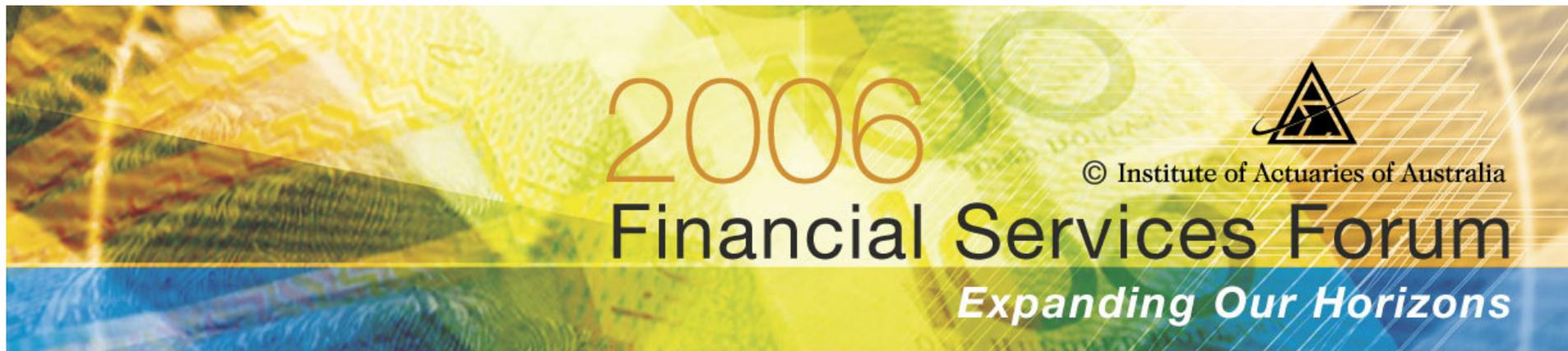
Summary

- Outstanding issue that needs to be resolved for completeness of valuation approach
- Solutions appear to be getting closer, potentially relatively simple solutions
- Will be necessary to arrive at an approach that is readily communicated to stakeholders



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