Estimating the Distribution Rate of Imputation Tax Credits: Questions Raised by ETSA's Advisers

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I have been asked to provide my views on a series of questions. The questions all involve the effect of the dividend distribution rate on the value of franking credits. Imputation tax credits or franking credits are valueless unless they are distributed to shareholders who can utilise them. Therefore assumptions about when franked dividends are paid out of a particular tax year's earnings are important since the attached franking credits are a 'wasting asset'.

Assumptions of 100% distribution are unrealistic and not correct since a significant proportion of the franking credits are probably never distributed as franked dividends. It is incorrect to assume that *all* credits are eventually distributed. The idea that all credits will be paid out in any range (ie 1-5 years or 1-10 years) is also incorrect and inconsistent with the evidence.

The only time when the franked dividends attached to retained earnings (the franking account balance) have any value is when they are distributed. Moreover, the only time in which any of them would be distributed would be when the payout ratio is greater than 100%. Empirical evidence demonstrates that the overall distribution rate is significantly below 100%. Long term averages estimate the economy wide distribution rate at about 70% and listed companies rarely exceed this rate.

More detailed response to the questions posed follow:

1 The AER's view of the proportion of dividends that are distributed in the same year that profits are earned;

The Australian Energy Regulator's (AER) view, ***AER WACC Review Final Decision, Chapter 10: Gamma,*** is expressed as follows:

10.5.2. Estimating the payout ratio

As stated in the issues paper, the generally accepted regulatory approach in Australia has been to define the value of imputation credits in accordance with the Monkhouse definition. Under this approach, 'gamma' (y) is defined as a product of the 'imputation credit payout ratio' and the 'utilisation rate'.

In its explanatory statement the AER considered that a positive value for retained imputation credits should be recognised in the analysis of gamma. Based on Handley's advice regarding the distribution of free cash flows under the standard approach to valuation and the Officer WACC framework, the AER proposed to adopt a payout ratio of 1.0. This proposal represented a departure from the standard Monkhouse approach.

The AER stressed that the adoption of a payout ratio of 1.0 does not imply an expectation that all credits will be paid out in each period. Rather as Handley advised, the full distribution of free cash

flows is the standard assumption for valuation purposes, therefore for consistency, a 100 per cent payout of imputation credits is appropriate.[1]*(Page 410 of the Final Decision)*

There are three events in the 'life' of imputation credits:

1. They are created when a company pays Australian tax;
2. They are distributed to shareholders when a company pays a franked dividend; and
3. They are redeemed by shareholders as an offset against personal tax liabilities when they file their taxes.

Each of these 'events' affects the value of the imputation credits ($\hat{y}$). Clearly, if credits are not created they can have no value and therefore (1). is important. But, so are the other two stages in the life of imputation credits, unless the credits are distributed by way of franked dividends they can have no value (2.) and when distributed if they are not redeemed (3.), they have no value.

As I have noted, the credits have to be redeemed to have value and they are redeemed at face value. This means if the credits are not redeemed at the time they are created the 'time value' of the cash redemption they represent is reduced. Credits, once created are a 'financially decaying asset', they cannot be re-invested to earn revenue as retained earnings. Therefore the longer the time period between their creation and their redemption the greater the opportunity cost of capital represented by the credits and the lower the face value of the credits, in the limit having a zero value if they are never paid out or redeemed.

The Officer (1994) paper never addressed the issue. The numerical example in the paper assumed perpetuities, although this is not necessary since one can define a cost of capital as the simple weighted average of the company's sources of capital for a single or multiple periods. It worth noting that since tax credits cannot be traded in the manner of capital, the tax parameter, and therefore the value of franking credits must reflect the taxpayer's tax position and the value for the credits to the shareholder. The opportunity cost or price of tax and tax credits cannot be derived directly from a deep market like the cost of debt or equity. The use of averages or credit values from dividend drop-off and similar studies should be used when we have no better data or, alternatively, these estimates are used to reflect an 'efficient' derivation of the credits for the company to benchmark against.

The evidence that dividend payout ratios fall well short of unity (1.0) is compelling[2] and recognised by the AER. However, it does not follow that:

[1] *The AER also noted that while the value of retained credits may be affected by time value considerations, the effect is not expected to be material such that an estimate of 1.0 is unreasonable.*

[2] See the Appendix to this note for evidence that the dividend payout usually falls well short of 100%. It is typically around 70%.

… as Handley advised, the full distribution of free cash flows is the standard assumption for valuation purposes, therefore for consistency, a 100 per cent payout of imputation credits is appropriate.[3]

While it might be appropriate to assume all earnings are distributed in the year they are earned in a valuation because it can be assumed that earnings retentions are earning their cost of capital, the same cannot be said for the imputation tax credits which are a 'wasting asset', as discussed above. The standard valuation formulae and imbedded assumptions, do not imply the credits are all paid out as they are earned. The value placed on the estimates of the credits (ŷ) in the valuation should reflect any delay in their receipt (as well as the extent to which they can be utilised) – events or stages 2 and 3 above. The Officer (1994) paper implicitly assumes that the ŷ reflects the value of the credits at the time they are distributed which is consistent[4] with paying them out immediately or them being subject to significant (even infinite) delays.

2 the AER's view that all dividends *[earnings]* are eventually distributed;

Logically such a statement could **not** be so otherwise we would have no corporate liquidations or that in the event of liquidation all retained earnings were realised. However, we do not have to go to such logical extremities to prove the statement wrong. A company can adopt a constant payout ratio policy[5] indefinitely or into infinity without necessarily changing their size since earnings could be rising and falling (fluctuating) to maintain a constant or a variable size, depending on whether an increase earnings equalled or outweighed a fall in earnings and conversely.

Further, a constant proportion or amount of franking credits in a company's franking account balance (FAB) does not imply that credits are not distributed, just a constant proportion are maintained. However, in such circumstances it is equivalent to not distributing this amount or proportion and the value of the credits when distributed should reflect that.

3 the AER's description of the length of time before all dividends *[earnings]* are distributed (i.e. that the assumption is within 1-5 years is reasonable)?

The dividend payout rate is defined as the amount of the current period's earnings (or a defined period's earnings) that is paid out as dividends. For example, let us assume that a constant dividend payout rate of 70% was reasonable, this would imply of $1000 of after tax earnings in year 1, the retained earnings (including franking credits) would be $300. Year 2 earnings would have the same payout ratio on, say assumed earnings of $1000 and, therefore, the

[3] page 410 of the Final Decision. The AER also noted that while the value of retained credits may be affected by time value considerations, the effect is not expected to be material such that an estimate of 1.0 is unreasonable.

[4] As I pointed out above the Officer (1994) paper never addressed the issue but this does not imply the paper's analysis is wrong.

[5] In practice companies rarely adopt a constant payout **rate** policy, they are more inclined to adopt a constant payout **amount** policy.

same retained earnings and associated franking credits. The retained earnings (and franking credits) have accumulated and would continue to do so while the payout ratio was less than 100%.

The value of the franking credits associated with the retained earnings would have no value insofar as they are not distributed. Moreover, the only time any of them would be distributed would be when the payout ratio is above 100%. This is in contrast to the value of the retained earnings which are re-invested to earn (presumably) their cost of capital.

Therefore, unless it can be shown that a company's payout ratio exceeds 100% at least every five years and then by an amount that ensures the distribution of all the accumulated retained earnings and their associated franking credits, then the AER assumption is empirically at odd with the facts. For example, if a company had a 70% dividend payout rate for four years the fifth year payout rate would have to be 220% to exhaust the company's franking account balance (FAB account). The magnitude of the payout required to meet the AER assumption that earnings are paid out within five years of being earned is far greater than any empirical evidence would support (that I am aware of – see Appendix 1).

In fact, **on average** listed companies' payout ratios rarely exceed 70% and only very occasionally 100% and certainly not by an amount that it is reasonable to assume that the **average** company paid out earnings within five years of being earned. The empirical evidence is more supportive of a long term average payout rate of about 70%, implying that at least 30% of the franking credits attributable to those earnings are without value.

The above conjecture is supported by Australian Tax Office (ATO) data, for example a paper by Hathaway and Officer found:

From 1988-2002 (the latest ATO data available) there have been net tax collections of $265 billion and $77 billion of credits retained within FAB's. Hence 29% of credits are still held in companies and 71% or $188 billion have been distributed to shareholders. Not surprisingly, this pay out ratio is very similar to the dividend payout ratio of listed companies (Neville Hathaway and Bob Officer, The Value of Imputation Tax Credits: Update 2004, unpublished paper, page 4).

I believe more recent work by Hathaway has found an even greater proportion of the credits are retained.

4 whether the AER's time value analysis on all credits that are not immediately distributed is appropriate, having regard (in part) to:

(i) the value distributed by a company; and

(ii) the quantification of the loss of value being delayed in distribution?

Ignoring the fact that new earnings and associated credits are accruing each year, let us examine what might happen to a single years' credits. Assume the $1000 earnings after tax, in the above example, had associated credits of $300 and these credits were similarly distributed at a rate of 70%, for example 70% of $300 is distributed in the first year ($210) and 70% of the remaining $90 is distributed in the second year ($63) etc. The discounted value (at a 'risk free' discount rate of 4%) of these credits would be worth about $16 less than if the $300 that was assumed to be immediately distributed, and if only 50% was assumed to be utilised then these numbers would reduce accordingly.
If we assumed a discount rate of 12% (nearer the cost of equity) and made similar assumptions about the distribution, the $300 of credits would be worth about $44 less than the original $300. I believe the latter number is significant, it is a 15% reduction in value of the credits. Moreover, there are strong grounds for using the cost of equity capital to discount the credits rather than using a 'risk free rate'.

The WACC used in the regulatory hearings are used to discount future net cash flows or more accurately the cash flows that are attributable to the providers of capital to arrive at a 'fair price'. The credits in this context are ex-ante and are intimately tied to equity cash flows because these are the cash flows that are taxed to derive the imputation tax credits. Therefore, I believe the risk and 'risk premium' attached to equity cash flows are equally attributable to the expected imputation tax credits. Therefore an equity cost of capital is the appropriate discount use when valuing the time value of tax credits.

However, to the extent that some of the franking credits are never distributed, as discussed above in Question 3, then clearly the amount of the credits earned are much greater than the value of the credits distributed. In short, even if all credits were valued at their 'face value' when distributed, the fact that typically about 30% of them are never distributed means that their value is zero. In the above example the face value of a $1.00 of credits is $0.70 even if they are fully valued when distributed which they are typically not.

5 whether a 100% distribution rate is:

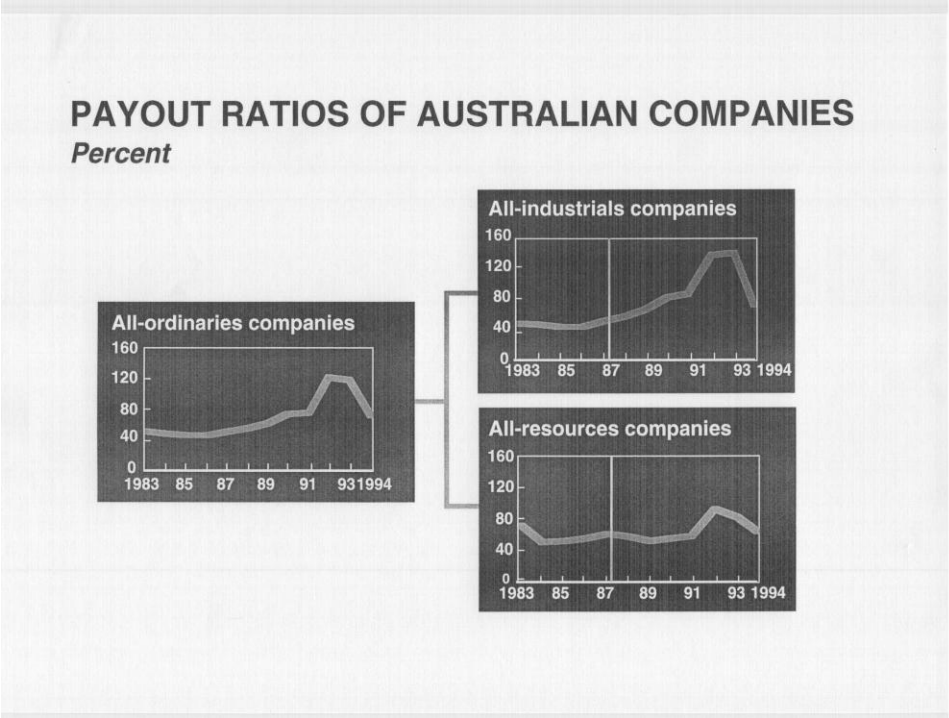
(i) a reasonable assumption to make in estimating gamma; and

(ii) whether this was what you meant in your article in Annex E?

Putting aside the issue of the 'utilisation rate' of franking credits which is a very important issue in arriving at a value for them, particularly because the rate is company rather than market centric, then the next major issue affecting the value of credits is the 'distribution rate'. Therefore, as my responses to questions 4 and 5 indicate, the assumption of a 100% distribution is unrealistic and would clearly lead to something like a 30% inflated value of the credits.

As I have indicated above, my original paper [Officer (1994)] did not address the issue of a variable distribution, the paper's conclusions are consistent with an immediate or full pay out of earnings or a delayed payment.

- Nicol, R.E.G. *"The Dividend Puzzle: An Australian Solution?"* Australian Accounting Review, 1992, Vol. 1, No. 4, pp. 42-55.



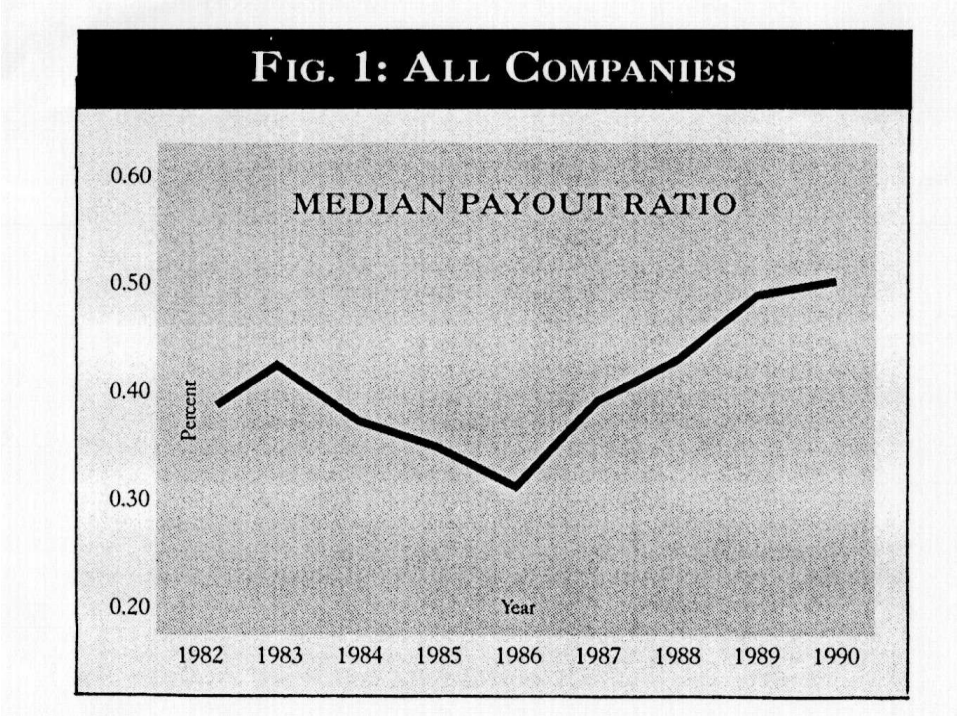
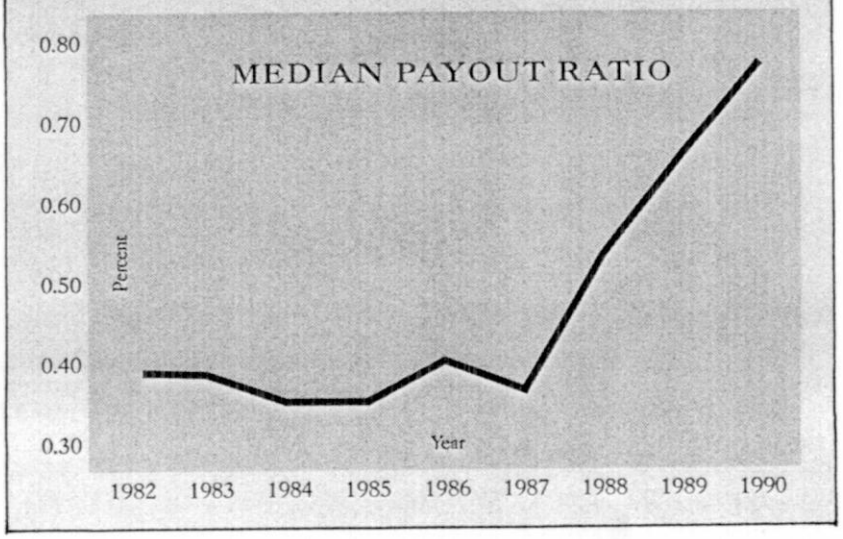


FIG 8: THREE MAJOR BANKS



Analysis of results – dividend payout ratios

Table 2 below shows the range of dividend payout ratios for the top 50 ASX firms over the past 10 years. The payout ratio is defined as the ratio of dividends to the net profit after tax, minority interests and preference dividends (but before extraordinary items).

Table 2. Private firm dividend payout ratios

Payout ratio %

		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
AUSTRALIAN GAS LIGHT FPO	AGL	--	--	--	--	--	71	69	70	100	60
ARISTOCRAT LEISURE FPO	ALL					33	48	58	33	71	63
AMCOR LIMITED FPO	AMC	--	--	--	--	--	136	96	84	88	75
AMP LIMITED FPO	AMP					--	--	17	25	44	93
ANZ BANKING GRP LTD FPO	ANZ	-32	89	46	47	55	61	68	62	62	63
AXA ASIA PACIFIC FPO	AXA						52	69	54	54	34
BHP BILLITON LIMITED FPO	BHP	78	44	51	48	63	60	66	242	49	31
BRAMBLES INDUSTRIES FPO	BIL	69	77	89	75	71	65	59	54	51	62
COMMONWEALTH BANK. FPO	CBA	8	66	78	77	78	78	77	90	74	89
COCA-COLA AMATIL FPO	CCL	--	--	--	--	69	62	70	64	112	55
COLES MYER LTD. FPO	CML		65	65	62	85	78	70	63	61	120
COMPUTERSHARE LTD FPO	CPU			73	66	80	74	44	27	13	11
CSL LIMITED FPO	CSL		26	--	--	--	58	59	59	57	51
CSR LIMITED FPO	CSR		--	--	--	--	42	73	68	51	46
FOSTER'S GROUP FPO	FGL	--	--	--	--	--	80	70	64	59	64
FAIRFAX (JOHN) FPO	FXJ	--	50	32	49	74	89	68	61	50	64
GENERAL PROP. TRUST UNIT	GPT										
HARVEY NORMAN FPO	HVN	--	--	--	--	--	34	35	35	32	39
INSURANCE AUSTRALIA FPO	IAG							--	--	--	97
JAMES HARDIE INDUST. CDI	JHX		--	91	65	86	53	70	67	26	85
LEND LEASE CORP. FPO	LLC		74	75	76	78	70	74	72	76	62
MAYNE GROUP LIMITED FPO	MAY	--	--	--	--	--	41	76	96	77	63
MACQUARIE BANK LTD FPO	MBL						56	58	67	69	67
MIRVAC GROUP STAPLED	MGR										
MACQUARIE INFRA. STAPLED	MIG						51	50	28	175	120
M.I.M. HOLDINGS LTD FPO	MIM	--	--	--	--	--	114	49	-110	50	54
NATIONAL AUST. BANK FPO	NAB	71	61	60	60	60	62	59	62	60	72
NEWS CORPORATION FPO	NCP	--	6	9	8	8	9	6	8	6	13
NEWS CORPORATION PREFERRED											
PUBLISHING & BROAD FPO	PBL	--	58	--	--	--	50	--	--	--	--
QANTAS AIRWAYS FPO	QAN			--	--	--	54	49	59	242	86
QBE INSURANCE GROUP FPO	QBE			49	57	63	67	103	64	75	-612
RIO TINTO LIMITED FPO	RIO		58	68	39	65	65	104	60	54	33
RESMED INC CDI 10:1	RMD										
ST GEORGE BANK FPO	SGB	74	109	63	70	69	97	102	107	89	80
STOCKLAND TRUST GRP STAPLED	SGP										
SINGAPORE TELECOMM. CDI	SGT								--	--	--
SOUTHCORP LIMITED FPO	SRP	72	69	74	81	80	75	71	68	64	75
SANTOS LTD FPO	STO		61	85	82	66	71	86	75	50	41
SUNCORP-METWAY. FPO	SUN	69	70	61	69	69	83	96	89	66	62
TABCORP HOLDINGS LTD FPO	TAH				--	107	105	95	66	103	92
TELECOM CORPORATION FPO NZ	TEL						98	--	92	--	38
TELSTRA CORPORATION. FPO	TLS			--	--	--	18	60	63	57	55
WESTPAC BANKING CORP FPO	WBC	-29	97	52	54	58	58	63	62	62	61
WESFARMERS LIMITED FPO	WES	--	--	--	--	--	96	98	97	100	94
WESTFIELD AMERICA UNIT	WFA										
WESTFIELD TRUST UNIT	WFT										
WMC LIMITED FPO	WMC		61	60	74	62	64	64	56	62	104
WOOLWORTHS LIMITED FPO	WOW		--	61	62	69	69	64	66	73	67
WOODSIDE PETROLEUM FPO	WPL		--	--	--	--	49	51	37	57	51
Sample size		9	18	20	20	23	40	39	40	39	41
Average of sample		42.22	63.39	62.1	61.05	67.3	66.58	67.08	62.65	69.77	48.29
Minimum		-32	6	9	8	8	9	6	-110	6	-612
Median		69	63	62	63.5	69	64.5	68	63.5	62	63
Maximum		78	109	91	82	107	136	104	242	242	120

List of companies sourced from Commonwealth Securities Limited: "Top 50 Leaders - Closing values for Friday 12, July 2002"
http://www.comsec.com.au/PublicAccess/Prices/TBC-Top50Leaders.asp

Payout Ratio data sourced from:
http://investor.ninemsn.com.au/