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Are Franking Credits Capitalised Into Share Prices?

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Overview

- The question: Are franking credits priced by the market?
  - We see if we can spot a footprint from franking credits in the level of share prices and earnings yields
  - Different approach to that done previously, e.g. ódrop-offô studies
- The findings:
  - We cover little evidence that franking has any substantial influence on the level of share prices
  - This joins with other evidence that franking does not seem to have influenced (pre-tax) returns
- This is GOOD NEWS for investors who can use franking credits: franking acts like a óbonusô on top of your market returns.

Franking and Share Prices Under Two Marginal Investors

Consider a simple company:

		Assumptions
Pre-Tax Earnings	100	
Tax	30	*Assume these are perpetuity amounts, so no capital growth*
Net Earnings (E)	70	
Dividend (D)	70	*100% payout of earnings*
Franking Credits (FC)	30	*Dividend is 100% franked*

Say the "marginal investor" requires a 10% pre-tax return …. and consider two extremes

Marginal Investor	**Overseas**	**Local**
Value Placed on Franking	0%	100%
Amount Received (Pre-Tax):		
- Dividend	70	70
- Franking Credits	0	30
Total	70	100
Required Return (Discount Rate)	10%	10%
Share Price (P)	**700**	**1000**
Earnings Yield (= E/P)	**10%**	**7%**
Market Return (= D/P)	**10%**	**7%**

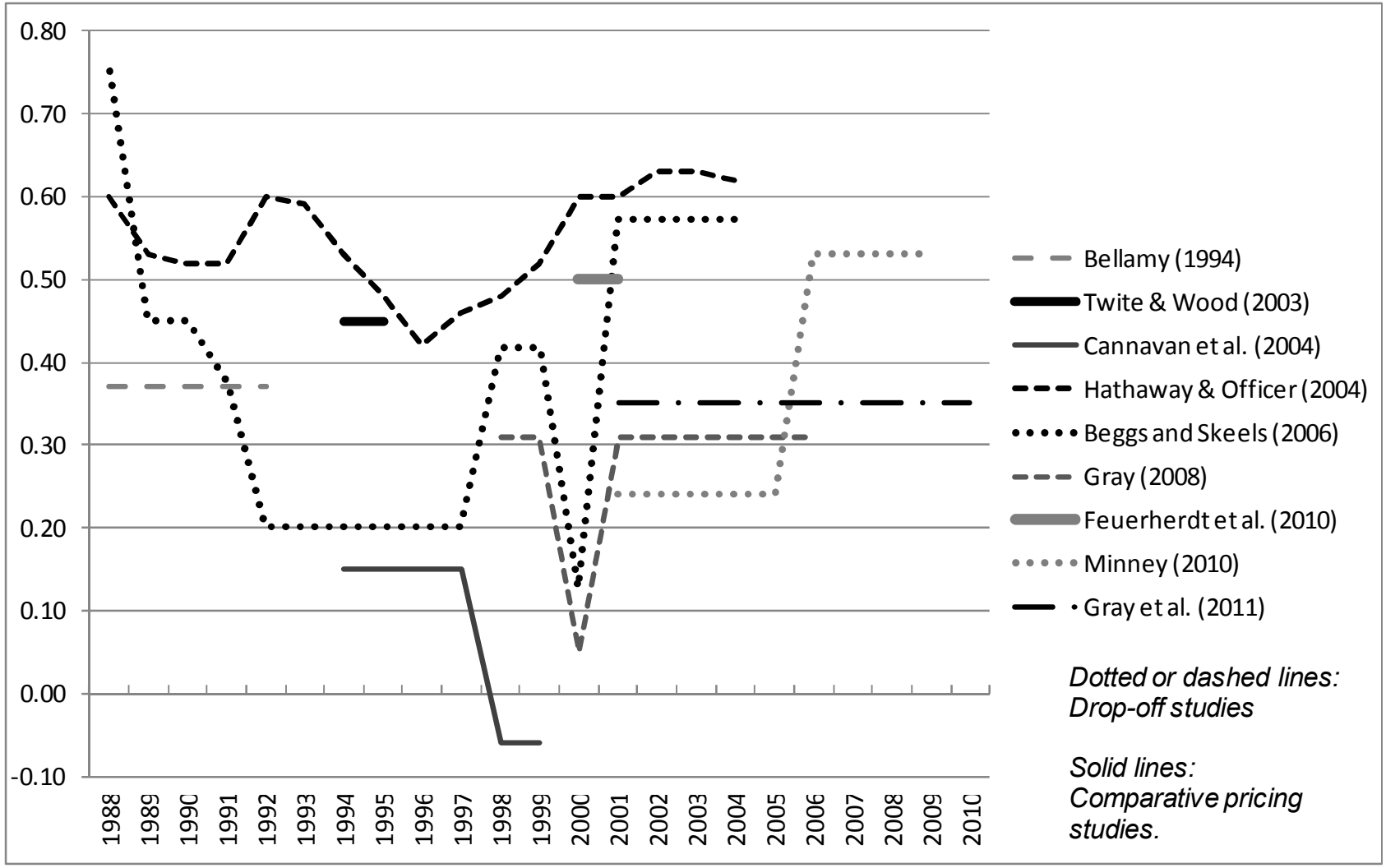
Note: Capital Gain = 0%

IF Local is marginal and franking priced, then:
Share price is higher (by capitalised franking)
Earnings yield is lower (i.e. P/E is higher)
Observed market returns are lower

Previous research on franking credits

- Valuation of franking credits by the market remains an open issue
- Two approaches have traditionally been used in the literature:
  1. ***Dividend drop-off studies***: extent to which franking credits influence ex-dividend price declines
  2. ***Comparative pricing***: examine pricing of instruments that differ only in their dividend / franking entitlement, e.g.
     - Individual share futures vs physical
     - Low exercise price options vs physical
- Results are mixed - although it seems fair to say the majority of these studies attribute some value to franking credits . . .

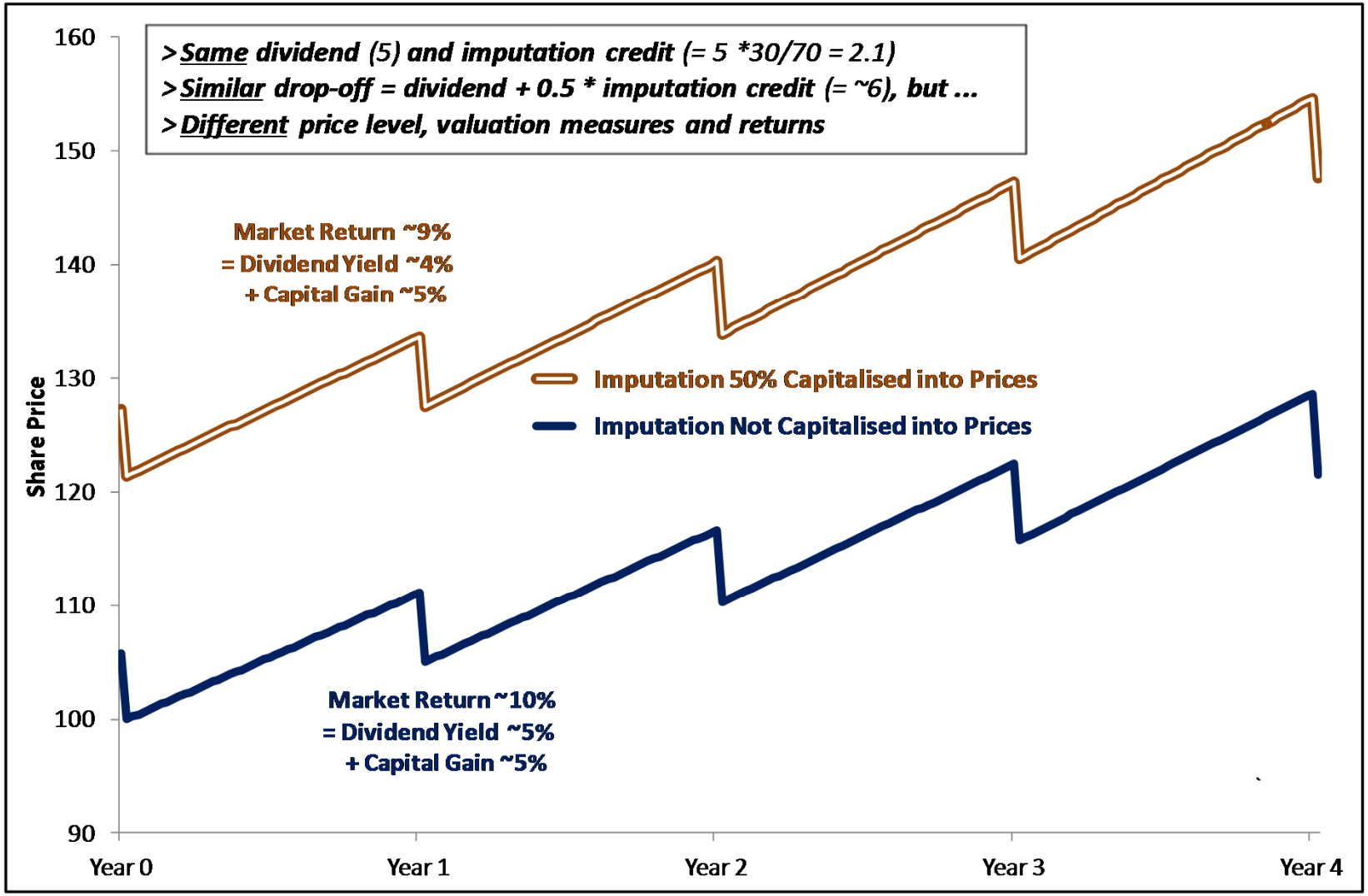
Dividend-Based Estimates of Value of Franking Credits



Issues with Dividend-Based Studies

1. Examines pricing around dividend events only:
   - Depends on marginal investor around such events *(next slide)*
   - More than just tax can influence the results, e.g. costs of arbitrage
2. Dividend drop-offs are imprecisely measured, and effect of dividends and franking hard to disentangle (multicollinearity)
3. Comparative pricing studies afflicted by limited samples

How Much Do Drop-off Ratios Really Tell You?



So How Else Can We Crack This Nut?

- ***If the real effect is revealed by share price and return levels, why not just 'cut to the chase' and examine these?***

Franking Credits and Returns:

- Examined by Lajbcygier and Wheatley (2012)
- They found no evidence that stocks paying higher franking generated lower returns, adjusting for risk. If anything, the tendency was the opposite é
- Thus there has been no trade-off between returns and franking
- (We found the same in our data.)

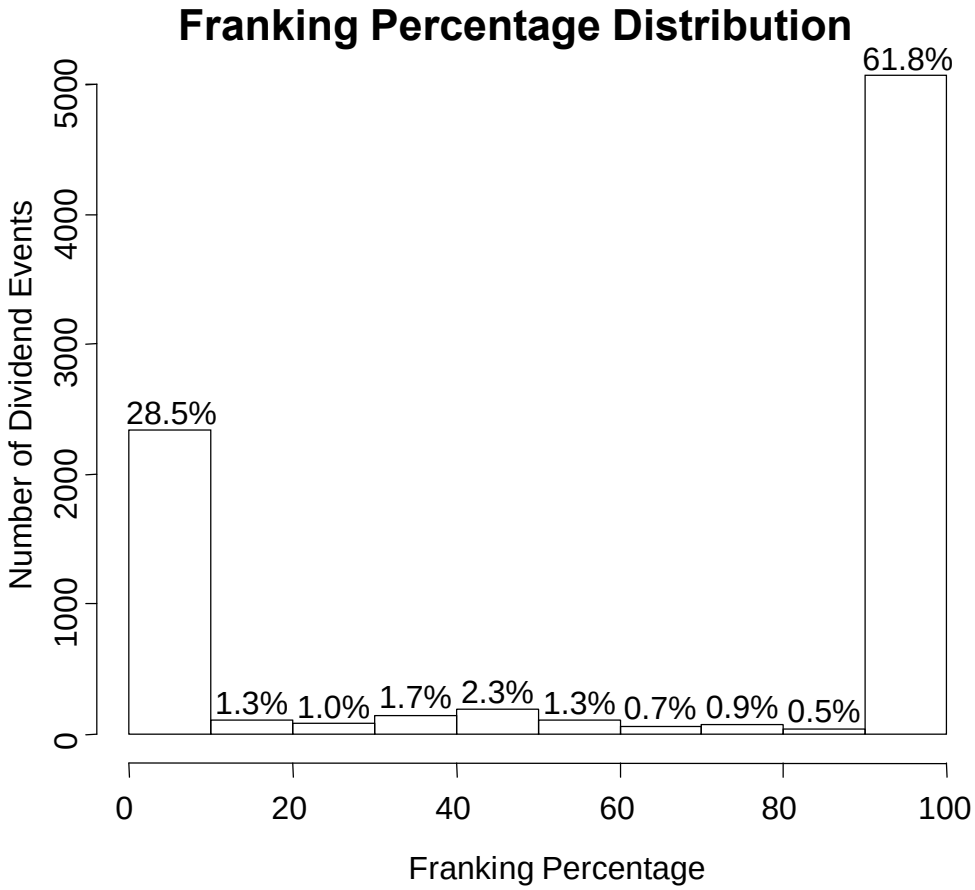
What about price levels?

Our contribution is to look at price levels using three main tests:

1. Examine price level under NPV models
2. Examine earnings yields
3. Do some portfolio sorts, to see if groupings with greater franking credits are more highly priced than groupings with less franking

Sample

- July 1997 to June 2011
- S&P/ASX 300 stocks, excluding REITs
- 471 unique firms after filtering (range: 106 to 276 each year)



Test #1: Price as NPV(Cash Flows)

Intuition: If franking is valued by the market, including a term for NPV(Franking) into a valuation equation should held explain prices.

Regression Test:

$$Price_t = f(NPV(E_t[Divs]), NPV(E_t[FC]))$$

Notes:

- Dividends and earnings per share drawn from I/B/E/S consensus
- Franking percentage extrapolated from trailing level
- CAPM-based discount rate: 48-month rolling betas; ERP range 4%, 6% and 8%

Results for Test #1: Price vs NPV(Divs) & NPV(FC)

Results with ERP= 6%	Full Sample		Extreme P/NPVs Excluded	
	Baseline (Divs only)	**With Franking**	**Baseline (Divs only)**	**With Franking**
Intercept	0.687***	0.739***	0.219*	0.261*
(t-statistic)	(4.01)	(4.07)	(1.64)	(1.68)
Coefficient on Dividends	1.058***	0.984***	1.129***	1.056***
(t-statistic)	(11.84)	(8.04)	(13.33)	(10.02)
Coefficient on Franking		0.300		0.300**
(t-statistic)		(1.46)		(2.00)
R-squared	0.646	0.647	0.771	0.772
Observations	3100	3100	2946	2946

*, ** and *** denoting significance at 10%, 5% and 1% respectively.

- Gives initial impression that franking valued at 30 cents in dollar, but é
- R=squared only rises by 0.1% when franking included

(Note: 'Multicollinearity' is an issue – relations are hard to disentangle)

Test #2: Modeling Forward Earnings Yields

Intuition: If franking is valued by the market, stocks offering franked dividends should trade on lower observed earnings yields (after controlling for other factors that may determine E/P ratios).

Regression Test:

E/P = f(Beta, Mkt Cap, P/Book, Debt/Assets, E[EPS growth], Div Yld, FC Yld)

Notes:

- Regressions are performed across pooled sample of stocks *k* and time *t*
- EPS inputs based on I/B/E/S consensus
- Controls aim to capture following:
  a) Differences in expected growth (*EPS growth; P/Book*)
  b) Differences in risk / cost of equity (*Beta; Mkt Cap; Debt/Assets*)
  c) *Div Yld* introduced as franking credits may proxy for dividend-related effects

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Results for Test #2: Modeling E/P

Specification:	*Baseline (Full)*	*With Franking*	*Baseline (Core)*	*With Franking*
Intercept	0.080***	0.078***	0.084***	0.083***
(t-stat)	(12.80)	(12.89)	(23.18)	(24.76)
Beta	0.011***	0.011***	0.013***	0.013***
(t-stat)	(2.71)	(2.79)	(3.23)	(3.37)
ln(Market Cap)	-0.006***	-0.006***	-0.006***	-0.006***
(t-stat)	(-11.36)	(-11.54)	(-8.26)	(-8.11)
Price / Book	0.033***	0.033***	0.027***	0.027***
(t-stat)	(9.54)	(10.19)	(23.52)	(24.35)
EPS growth, t+1 to t+3	-0.055***	-0.055***	-0.047***	-0.047***
(t-stat)	(-9.42)	(-9.17)	(-13.84)	(-12.11)
Dividend Yield	0.426***	0.342***	0.372***	0.298***
(t-stat)	(6.28)	(5.07)	(5.06)	(5.73)
EPS Growth (long-term)	-0.011	-0.009		
(t-stat)	(-0.81)	(-0.71)		
Debt / Assets	0.002	0.003		
(t-stat)	(0.27)	(0.39)		
Franking Credit Yield		0.293***		0.284***
(t-stat)		(3.15)		(3.67)
R-squared	0.577	0.582	0.504	0.510
Observations	1783	1783	2782	2782

This goes the wrong way!

*, ** and *** denoting significance at 10%, 5% and 1% respectively.

Results for Test #3: Portfolio Sorts

Portfolio Medians	Price / NPV(Divs) (ERP = 6%)	Valuation Measures: Franking Credit Yield	Dividend Yield	Forward P/E Ratio
Overall Sample	***1.06***	***0.89%***	***3.8%***	***14.4***
Single Sort *(by FC Yield)*				
Unfranked	1.07	0.00%	0.6%	14.1
Franked:				
Quintile 1	1.64	0.5%	2.0%	20.3
Quintile 2	1.36	1.2%	3.1%	17.5
Quintile 3	1.07	1.8%	4.1%	15.3
Quintile 4	0.98	2.3%	5.2%	13.4
Quintile 5	0.67	3.4%	7.4%	9.6
Double Sort				
(Initially by Div Yield, then FC Yield)				
Unfranked:				
Zero Dividend	1.17	0.0%	0.0%	15.1
DY> 0, Zero Franked	1.11	0.0%	0.3%	14.4
Franked, across 10 Div Yield Portfolios:				
Quintile 1 for FC Yield	1.08	0.8%	4.4%	14.4
Quintile 2 for FC Yield	1.07	1.8%	4.3%	14.8
Quintile 3 for FC Yield	1.05	1.9%	4.4%	14.5
Quintile 4 for FC Yield	1.03	1.9%	4.5%	13.9
Quintile 5 for FC Yield	1.06	2.3%	4.4%	14.7

Stocks paying higher franking priced lower versus fundamentals

Relation disappears after controlling for dividend yield

Closing Discussion

- A lack of clear evidence emerges that franking credits are priced, based on analysis of share prices and returns.
- GOOD NEWS! Investors who can utilize franking get full benefit.
- There are other implications:
  - Cost of capital not lowered by franking = bad news for investment
  - Stocks paying high franking also tend to have high dividend yields and low PEs = great news for value investors
  - What if the market starts to price franking going forward?
- ***Questions or comments?***