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FINANCING IRISH FIRMS: A COMPARATIVE STUDY OF IRISH AND MATCHING US FIRMS

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ABSTRACT

This paper analyses the interplay of dividends and seasoned equity issuances by Irish firms in a comparative framework with matched US firms. Irish firms have high dividend payout ratios. However, some Irish firms and not others issue equity frequently. The agency theory, that high dividends and issuing equity are connected, is not supported by the evidence. Instead, the frequent Irish issuers use more debt, have less institutional ownership and grow faster, in comparison both to the Irish non-issuers and to their US counterparts. A non-negative market response to equity issuances for growing Irish firms may explain why such firms use new equity to finance their growth.

INTRODUCTION

This paper analyses important aspects of the financing of Irish firms. I examine 49 Irish firms by themselves and in comparison to a sample of US firms matched by size and the book-to-market ratio. The sample covers the years from 1994 to 1998, though 1995 data is excluded because of missing information. The issues addressed are interesting and important, because Irish firms have very distinct dividend and equity issuance characteristics in comparison to their US counterparts.

Irish firms rely on the equity capital markets much more regularly than do US firms. It turns out that those Irish firms that issue equity frequently are also fast-growing. Such evidence appears consistent with the recent analysis of the pecking order model of capital structure by Shyam-Sunder and Myers (1999). This evidence, taken together with the fact that Irish firms have significantly higher dividend payout ratios

than similar US firms, is also consistent with the agency theory of dividends suggested by Rozeff (1982) and Easterbrook (1984), that firms with manager-shareholder agency conflicts will pay out higher dividends and thus be forced to use the capital markets more frequently. The frequent use of the capital markets serves a monitoring function for shareholders.

However, those Irish firms that issue equity frequently actually have lower dividend payout ratios than those that do not issue equity. Instead, the Irish firms that issue equity frequently tend to use more debt, grow faster and have less institutional ownership, in comparison both to the Irish non-issuers and to matched US firms. Hence, while there is *prima facie* evidence for the pecking order model in Ireland (as opposed to the static trade-off theory), the agency theory of dividends does not appear to be confirmed. The primary result is that the need for additional funds for financing growth drives some Irish firms both to pay lower dividends and to issue equity frequently. This result is consistent with the "additional funds needed" formula basic to finance.

But why are Irish firms able to resort to the equity markets, when their US counterparts are punished for issuing equity? A non-negative market response to equity issuances for Irish firms with valuable growth (investment) opportunities, as documented in Corby and Stohs (1998), may explain why they use new equity to finance their growth. This is consistent with Denis's (1994) hypothesis.

Such an explanation leaves unanswered the question of why the Irish market has a benign response to equity issuances. I can surmise that at least two distinct market equilibria may exist, one with a tradition of punishing firms that need external equity, and another (the Irish) with a tradition that does not punish those firms that need external equity.

Consider briefly a few of the details about the Irish and US firms. First, the average dividend payout ratio is 31.6 per cent for Irish firms, with a median of 27.8 per cent, while the matched US firms pay out only 17.4 per cent of their earnings as dividends, with a median of zero per cent. Second, between 1994 and 1998, Irish firms issued equity 55 times for an average of about once every four years per firm, while the US firms issued equity only twice. Of the 49 Irish firms, 18 did not issue equity during the sample years, 13 issued equity once, 13 issued equity twice, four issued equity three times, and one firm (Green Property) issued equity during each of the four sample years.

Just as importantly, those Irish firms that issued equity grew at a mean rate of 26.3 per cent annually during the three years prior to issuing versus a growth rate of 12.1 per cent for the Irish non-issuers. The Irish issuers are also more than twice the size of the non-issuers, at a mean value of £732 million in market value of equity compared to £347 million for the non-issuers. In contrast, the US firms that match the Irish issuers had a growth rate of 10.9 per cent, and those that match the non-issuers grew at 12.1 per cent.

Given that issuing equity is not perceived as a negative signal within the Irish setting, the patterns of Irish equity ownership become relevant because current or new shareholders constitute the market for the new equity. Irish firms that issue equity do have a significantly lower percentage of institutional ownership than their US counterparts. Such differences are germane to the agency hypothesis that institutional investors provide informed monitoring of the firm and, when a firm has less institutional interest, shareholders require other complementary methods of monitoring. Frequent visits to the capital markets provides this monitoring. Institutional investors hold an average of 39.7 per cent of the equity in the Irish issuers, compared to 46.1 per cent of shares of the non-issuers. Similarly, institutional investors hold 46.4 per cent of the matched US issuers' shares.

In sum, the most important explanations of dividend policy and the issuance of seasoned equity, especially when comparing these financial policies across Irish and US firms, rely on growth, ownership patterns and firm size. Growing firms and those with higher levels of outside ownership pay lower dividends, and Irish firms with these characteristics pay even lower dividends than their US counterparts.

THE IRISH MARKET AND THE FINANCING OF IRISH FIRMS

In order to provide a proper context for analysing the financing of Irish firms, a few features of the Irish market will be reviewed. The growth of Irish firms during the sample years is one of the keys to the analysis. Part of this growth is in the public equity market itself, with 33 new firms going public in the 1960s–70s and about 50 new firms in the 1980s–90s. Several different markets in Ireland complicate the analysis of Irish firms. Four distinct listings for corporations existed in 1993 on the Dublin Exchange, with 61 firms on the official list, 18 on the

Unlisted Securities Market (USM), four on the Smaller Companies Market (SMC), and 13 on the Exploration Securities Market. The current sample of 49 Irish firms constitutes 54 per cent of the non-exploration firms listed as of 1995. I exclude exploration firms from the sample, because their listing requirements are intentionally minimal in order to make it easier for these firms to raise equity capital.[1]

In the next section, I focus on those features of dividend policy and seasoned equity issuance that distinguish the Irish from the US market. Since these issues have been studied extensively for US firms, but have not been studied within the Irish context, it is valuable to consider what we may learn by comparison.[2] For definitions of the related variables, see **Appendix B**.

Dividends

Dividends are measured as the dividend payout ratio (PAYOUT) – dividends paid scaled by net income. I primarily consider agency cost hypotheses to explain the levels of dividends, but also to account for taxes. Jensen and Meckling (1976) argue that higher equity ownership by managers/insiders aligns the shareholders' and managers' interests and reduces agency conflicts and the need for high dividends. The hypotheses are that the payout ratio relates negatively to the percentage of shares held by insiders (INSIDERS), and positively to the percentage of shares held by outsiders (OUTSIDERS).

Jensen and Meckling (1976) add that institutional ownership may influence firm behaviour with direct representation on the board, the ability to control capital and voting strength attached to ownership. Such influence mitigates the need for dividends. A negative relationship should hold between the percentage of shares held by institutions (INSTITUTIONAL) and dividend payout.

As demonstrated by Miller and Modigliani (1961), taxes have no impact on dividend policy in perfect markets. But with capital market imperfections, the impact of taxes on dividend policy is not clear, either theoretically or empirically. I include a tax rate variable in the dividend regressions to control for any tax impact on dividend policy. Taxes are measured as the ratio of taxes paid to pre-tax income (TAX RATE) for Irish firms.

Finally, Lintner (1956) clearly revealed the persistence or stickiness of dividends within the US corporate structure. Once a firm pays dividends, the strong tendency is to increase the dividend per share slowly over time, regardless of temporary cash shortfalls. It is relevant to consider whether this same pattern holds within Irish firms, given their comparatively higher dividend payout ratio.

Seasoned Equity Issuance

While the pecking order and static trade-off models of capital structure underlie virtually all research on capital structure and the issuance of seasoned equity, the results here cannot be considered direct tests of these competing models, given the difficulties of distinguishing between them suggested by Chirinko and Singha (2000). Instead, I consider primarily what firm characteristics distinguish the Irish issuers (those that issue equity frequently) from the Irish non-issuers, along with which characteristics distinguish the Irish issuers from their counterparts in the US.

Since the Irish firms use seasoned equity financing and the average US firm in the sample does not, it is important to single out this feature for special analysis. The growth and ownership variables are included, along with the relevant control variables. A dummy variable for the issuance of seasoned equity equals one when the firm issues equity during a sample year and zero otherwise.

Control Variables

The regressions include control variables in order to minimise omitted variable bias. First, since the focus is on dividends and the issuance of seasoned equity, these variables are included as controls in the respective regressions. Second, leverage is included as a control variable in all regressions, because capital structure theoretically has a direct impact on dividend policy and is a part of the decision to issue seasoned equity. Third, as discussed in more detail below, I match US firms to Irish firms on the basis of market capitalisation (SIZE) and the book-to-market ratio, but use the market-to-book ratio (MB) in the regressions. In the regressions, firm size is the log of the firm's market capitalisation, as measured by the price per share multiplied by the number of shares outstanding (the log controls for a skewed distribution).

DATA AND METHODOLOGY

I obtained the data for the Irish firms manually from Irish Stock Market Annuals, from COMPUSTAT, COMPUSTAT DISCLOSURE for US firms, and tax data for the US firms from John Graham. The Irish sample firms include only those non-exploration firms for which complete data for all variables required in the various analyses are available for 1994, 1996, 1997 and 1998; this limits the sample to 49 firms (see **Appendix A** for the list of Irish firms). I then matched 49 US firms to the Irish sample, using size and the book-to-market ratio as of 1997 for the criteria. Size and book-to-market are used to match firms, because Barber and Lyon (1997) demonstrate the superior power of this procedure. When possible, the firms are also matched by industry.[3]

A crucial function of matching by size and book-to-market is that these two variables proxy for firm risk (i.e., substitute for beta, as suggested by Fama and French (1992)), because they are strong predictors of the future corporate returns. Since firm risk has an influence on dividend policy and capital structure, these two variables are included in all (relevant) regression analysis. It should be noted that T-tests of the differences in paired means across the Irish and US firms for both firm size and book-to-market indicate that they are insignificantly different from zero for the 1997 observations alone and for the whole sample, assuming equal or unequal variances. In other words, the firms are well matched by risk. This ensures that regressions comparing the two samples should mitigate the impact of firm risk on the regression results, allowing for a more direct analysis of other factors that influence corporate financial decisions.

Descriptive statistics for the Irish and US firms are displayed in **Table 1** and correlation matrices are displayed in **Table 2**. For the 49 Irish firms, the total number of observations over four years amounted to 196. Three US firms either were purchased or went out of business by 1998. In addition, institutional ownership for one US firm was not available for one year, with the result that there are 192 observations for the US descriptive statistics and for the related regressions.

The difference between the Irish value for a variable and the US value is calculated for each observation to arrive at a complete set of differenced variables. These computed variables are employed in differenced regressions, which should detect differences across Irish and US dividend and equity issuance policies.[4]

Table 1: Descriptive Statistics for 49 Irish and Matching US Firms for 1994, 1996 1997 & 1998 *

Irish Firms	Mean	Median	Std Dev	Min	Max
Dividend Payout	31.6%	27.8%	28.7%	0.0%	200.0%
Leverage	23.6%	19.3%	20.5%	0.0%	99.4%
Tax Rate	21.3%	22.4%	12.7%	–40.0%	40.0%
Annual Growth	16.1%	11.2%	27.3%	–57.9%	244.5%
Insider Ownership	6.1%	0.0%	11.6%	0.0%	54.9%
Inst Ownership	44.3%	43.2%	19.4%	5.9%	95.1%
Outside Ownership	0.9%	0.0%	3.6%	0.0%	41.4%
MB	2.79	1.63	4.67	–18.88	34.37
No. of Employees	2,995	1,007	5,338	1	25,638
Size ($000)	$690.8	$161.2	$1,503.2	$0.5	$10,564.0
Size (£000)	£454.9	£105.2	£1,005.5	£0.3	£7,087.6
Medium Debt (£000)	£170.6	£17.6	£547.3	£0.0	£5,406.1
Long Term Debt (£000)	£27.9	£0.0	£170.8	£0.0	£1,616.2
Total Assets (£000)	£1,728.5	£145.6	£6,211.0	£2.0	£41,354.0
Sales (£000)	£633.4	£214.3	£1,108.6	£0.5	£5,909.5

US Firms	Mean	Median	Std Dev	Min	Max
Dividend Payout	17.4%	0.0%	34.2%	0.0%	200.0%
Leverage	23.3%	20.3%	20.6%	0.0%	78.5%
Tax Rate	23.5%	34.0%	16.3%	0.0%	98.3%
Annual Growth	11.7%	7.8%	23.8%	–100.0%	175.9%
Insider Ownership	20.0%	16.0%	18.0%	0.0%	100.0%
Inst Ownership	39.1%	40.7%	25.7%	0.0%	100.0%
Outside Ownership	42.3%	35.0%	28.9%	0.0%	100.0%
MB	3.45	1.82	6.12	–5.58	52.45
No. of Employees	4,600	1,130	10,240	0.0	70,000
Size ($000)	$659.9	$157.7	$1,284.6	$1.3	$7,377.0
Short Term Debt ($000)	$58.7	$1.9	$308.2	$0.0	$3,198.0
Long Term Debt ($000)	$166.0	$20.2	$362.9	$0.0	$2,726.3
Total Assets ($000)	$1,007.0	$223.6	$2,552.2	$2.5	$15,990.0
Sales ($000)	$727.8	$267.1	$1,153.1	$0.0	$6,311.9

* For definitions of the variables, see **Appendix B**.

Table 2: Correlations for Sample Firms *

	Irish Firms	1	2	3	4	5	6	7	8	9
1	Dividend Payout									
2	Leverage	0.12								
3	Tax Rate	0.18	–0.05							
4	Annual Growth	–0.15	–0.05	0.04						
5	Insider Ownership	–0.16	–0.14	–0.18	0.11					
6	Inst Ownership	0.00	0.22	0.02	–0.18	–0.31				
7	Outside Ownership	–0.10	–0.08	0.13	0.18	0.00	–0.03			
8	MB	–0.06	–0.16	0.01	–0.04	0.27	–0.13	–0.01		
9	LN(Size)	0.07	0.08	0.16	0.17	–0.18	–0.20	–0.25	0.07	
10	Issue Equity	–0.07	0.03	–0.02	0.23	0.06	–0.15	0.12	0.18	0.21

	US Firms	1	2	3	4	5	6	7	8
1	Dividend Payout								
2	Leverage	0.08							
3	Taxrate	0.07	–0.03						
4	Annual Growth	–0.10	–0.08	0.06					
5	Insider Ownership	0.00	–0.08	0.06	–0.04				
6	Inst Ownership	0.07	0.04	0.27	0.03	–0.41			
7	Outside Ownership	–0.28	0.17	0.05	0.02	0.13	0.15		
8	MB	–0.03	–0.16	0.03	0.04	–0.02	0.05	0.05	
9	LN(Size)	0.29	–0.13	0.32	0.11	–0.13	0.64	0.02	0.17

* For definitions of the variables, see **Appendix B**.

REGRESSION RESULTS

Two sets of regression results are presented. **Table 3** reports the dividend regression results and **Table 4** reports the equity issuance results.

Dividend Regression Results

Table 3 considers growth and equity ownership as potential explanations for the differences in the dividend payout policy across firm-years, and includes the tax rate, leverage, the market-to-book ratio, size and the issuance of equity as control variables. For the Irish sample, the higher the effective corporate tax rate, the greater the dividend payout ratio, with a statistically significant coefficient estimate for TAX RATE of 0.418. This result is consistent with profitable and highly taxed firms taking advantage of the tax imputation system. However, it must be emphasised (as mentioned in Note 2) that no tax imputation proxy explains the dividend payout ratio.

Table 3: Dividend OLS Regressions for 49 Irish and Matching US Firms

Variables	Irish Firms	US Firms	Differenced
INTERCEPT	0.308 (3.05)***	–0.083 (–0.96)	–0.058 (–1.01)
GROWTH	–0.142 (–1.80)*	–0.180 (–1.90)*	–0.245 (–2.66)***
INSIDERS	–0.281 (–1.41)	0.102 (0.68)	–0.238 (–1.44)
INSTITUTIONAL	–0.139 (–1.20)	–0.176 (–1.30)	–0.045 (–0.43)
OUTSIDERS	–0.719 (–1.19)	–0.348 (–4.11)***	–0.478 (–4.26)***
TAX RATE	0.418 (2.55)***	–0.013 (–0.09)	0.207 (1.31)
LEVERAGE	0.155 (1.52)	0.290 (2.55)***	–0.042 (–0.34)
MB	–0.002 (–0.39)	–0.003 (–0.70)	0.003 (0.54)
SIZE	–0.0001 (–0.01)	0.082 (4.68)***	0.015 (0.33)
ISSUE EQUITY	–0.015 (–0.32)		–0.049 (–0.70)
R^2	0.05	0.19	0.12
# Observations	196	192	190
F-statistic	2.22**	6.61***	3.88***

Note: The dependent variable is PAYOUT, the ratio of dividends to net income. The explanatory variables are defined in **Appendix B**. For the *Differenced Regression*, each observation equals the Irish value less the US value. The *t-statistics* are reported in parentheses below the coefficient estimate and the statistical significance of the estimates is indicated by: *** (.01), ** (.05), and * (.10) levels. Since all of the variance inflation factors (VIFs) are below 1.50, they are not reported.

The more interesting finding for Irish firms is that growing firms pay lower dividends, with a statistically significant coefficient estimate of –0.142 for GROWTH. The importance of this result in the larger framework of financing Irish firms becomes more clear when the issuance of equity is discussed in the next two sections.

The US firms which grow faster, are smaller, less levered and owned by proportionately more outsiders, pay lower dividends (as indicated by the middle column of results in **Table 3**). The finding that faster growing firms pay lower dividends is consistent with the "additional funds needed" equation basic to finance, and the fact that more highly levered firms have a higher dividend payout ratio is a direct function of the fact that highly levered firms have less earnings after tax, due to the interest paid on debt.

The finding that larger US firms in this sample pay more dividends is consistent with general patterns in the US, as is evident by comparing dividend yields for firms listed on the NYSE to those listed on the NASDAQ, and to the general US approach that firms do not pay dividends until they are stable, and typically larger. The finding that firms with a higher percentage of outside ownership pay lower dividends is inconsistent with Jensen and Meckling's (1976) agency cost hypothesis that paying more dividends serves a monitoring function for outside shareholders.

For the differenced regression in **Table 3**, proportionately faster growing Irish firms that have greater outside ownership pay lower dividends than the matched US firms. The coefficient estimate of –0.478 for OUTSIDERS is statistically significant at the 1 per cent level. It is not clear that the outside ownership result is ultimately meaningful, because the reporting of equity ownership is not as comprehensive in Ireland as it is in the US[5]. Note, for example, that the median outside ownership for Irish firms is zero per cent, while for US firms it is 35 per cent. This median difference alone is likely to yield statistically significant results, regardless of whether fundamental financial patterns explain the difference.

Table 4: Equity Issuance Logit Regressions for 49 Irish and Matching US Firms

Variables	Irish Firms	Differenced
INTERCEPT	–3.085 (9.73)***	–1.186 (13.85)***
GROWTH	1.840 (4.52)**	1.088 (3.27)*
INSIDERS	0.317 (0.04)	–0.435 (0.20)
INSTITUTIONAL	–0.937 (0.82)	–1.738 (8.39)***
OUTSIDERS	15.664 (3.50)*	–0.394 (0.34)
PAYOUT	–0.336 (0.21)	–0.311 (0.54)
LEVERAGE	1.296 (1.92)	1.551 (4.30)**
MB	0.085 (4.66)**	0.002 (0.004)
SIZE	0.305 (6.69)***	0.219 (0.74)
R^2 (Cox & Snell)	0.14	0.10
R^2 (Nagelkerke)	0.21	0.15
# Observations	196	190
Correctly Predicted	75.00%	73.16%

Note: The dependent variable is ISSUE EQUITY, a dummy variable equal to one if the firm issues equity during the year and zero otherwise. The explanatory variables are defined in **Appendix B**. For the *Differenced Regression*, each observation equals the Irish value less the US value. The *Wald significance test value* is reported in parentheses below the coefficient estimate and the statistical significance of the estimates is indicated by: *** (.01), ** (.05), and * (.10) levels.

The most important result in **Table 3** is that fast growing Irish firms pay significantly more in dividends than their US counterparts, as indicated by the coefficient estimate of –0.245 (significant at the 0.01 level) for GROWTH in the differenced regression. Economically, this result is also important. A one standard deviation increase in the difference in growth (mean = 0.035, standard deviation = 0.339), produces one-fifth of a standard deviation decrease in the difference of the dividend payout (mean = 0.139, standard deviation = 0.442). In sum, the dividend payout for Irish firms is more sensitive to growth in revenues than for the US firms.

It is also appropriate to consider whether dividends in Ireland are paid as persistently as they are in the US, as documented by Lintner (1956). Changes in the dividend per share (DPS), for those firms that pay dividends, are calculated as equal to one if the $DPS_t \geq DPS_{t-1}$, and equal to zero otherwise. A firm that consistently maintains or increases its DPS will have the value for this variable equal to one for all years. Three Irish firms do not pay dividends over the sample period, but 31 of the matched US firms do not pay dividends. Of the remaining 184 Irish observations, only 13 decreased or omitted dividends, with only seven instances of decreased or omitted DPS for the remaining 72 US observations. In other words, of those firms that pay dividends, 93 per cent of the Irish firms consistently pay the same or a greater DPS, while 90 per cent of the US firms pay the same or a greater DPS year upon year. This is a rather remarkable record for both sets of firms.

Equity Issuance Logit Results

Irish firms on average pay out significantly more in dividends than their matched US firms, but are equally levered (see **Table 1**). The Irish firms also issue equity frequently, about once every four years, compared to a mean and median rate of zero issuances for the US firms. Is there any connection between the high dividend payout ratio of Irish firms and their frequent equity issuance?

The logit regression results in **Table 4** for the Irish firms indicate that dividends are not significantly related to the probability of the firm issuing seasoned equity (this result is consistent with the dividend regression for Irish firms in **Table 4**). But other important patterns emerge. Faster-growing, larger Irish firms with higher percentages of outside equity holders (statistically significant only at the 0.10 level)

and higher market-to-book ratios issue equity more frequently. High market-to-book ratios are typically interpreted as indicating greater growth (investment) opportunities, along with greater risk, as argued by Barclay, Smith and Watts (1995). In contrast, larger firms are typically considered to be less risky.[6] The Irish evidence, without comparison to the US matching firms, thus suggests that the safer or larger, but fast-growing, firms frequently rely on seasoned equity for that growth.

Does this interpretation change when the Irish firms are compared to the US firms in the differenced regression of **Table 4**? First, size and the market-to-book ratio do not explain why the Irish firms frequently issue seasoned equity. But this "non-result" is expected, given that the Irish and US firms are matched by size and market-to-book. This is one important reason for including another measure of growth, i.e., growth in sales (GROWTH).

Second, the relationship between growth and the Irish issuance of equity still holds, though the (logit) coefficient estimate of 1.088 is statistically significant only at the 0.10 level. This indicates that when the Irish firms have higher growth than their US counterparts there is also a higher probability that they will issue equity.

Third, the Irish firms that issue equity use more debt than the matched US firms. This is important, because it may indicate that those Irish firms that issue seasoned equity are at or near their maximum (optimal) level of debt, and is consistent with the basic theme that growing Irish firms are able to satisfy their need for more capital by turning to the equity markets. They are able to do this because the Irish markets do not punish firms that issue seasoned equity, as discussed above.

Finally, as the difference in institutional ownership between the Irish and US firms increases, the difference in the probability of issuing equity between the Irish and matched US firms decreases. In other words, the Irish firms with a higher degree of institutional interest tend to behave more like the US firms, because the US firms do not issue seasoned equity. While not indicated by the Irish firms' regression in **Table 4**, the comparative result suggests that a broader institutional market may have an impact on whether the market perceives the issuance of seasoned equity as a negative signal.

Robustness

It is possible to perform panel data regressions on the sample, because the data includes observations for four separate years. For each OLS or Logit regression in **Tables 3** and **4**, the corresponding panel regressions are performed and, in each case, the results are consistent with those presented in the tables above. However, there are only four observations for each firm, which reduces the degrees of freedom substantially, with the consequent problem of autocorrelation, as indicated at least in part by very high variance inflation factors (VIFs). Since the panel data regression results are unreliable, they are not presented.

The problem of autocorrelation may also arise because the pooled regressions include four observations for each firm. To evaluate this potential problem, all of the reported regressions are re-run four times with a single year's data each time. While some minor differences arise, the results of these tests are generally consistent with the regression results reported in **Tables 3** and **4**.

Data problems may also bias the regression results. First, the values for the dividend payout are set according to the procedure presented in **Appendix B**. This procedure allows for a high (extreme) maximum value of 200 per cent, which may affect the regression results. Second, the growth variable includes some relatively extreme observations. And third, the expectation would be that a firm's profitability has an impact on the dividend payout ratio. A profitability variable was calculated and included in the regressions to ensure that the growth variable was not being included inappropriately. To ensure that such outliers do not bias the results, all regressions were re-analysed with lower limits (a maximum of 1.00 for dividend payout and for growth and a minimum for profit of –1.00). The results presented in **Tables 3** and **4** are robust to all of these changes.

A final concern is with the matching procedure employed in this paper. One of the matching criteria is size, as measured by the market value of equity. This matching procedure is successful generally, at least in part, because size is a comparative measure within a given market, since, for example, large firms tend not to grow in market value as fast as small firms. This raises the problem that when firms are matched by size across markets, very large firms in one market may be relatively small firms in the other market.

However, no better procedure for matching exists, and size matching does not hinder the current research for at least two reasons. First, I do not attempt to measure the short- or long-term stock returns, where the assumption of size as a comparative measure would be crucial. Second, it is better to match Irish and US firms of similar size than to match according to other criteria, because size has an impact on a variety of financial policies. Industry is often suggested as a matching criterion. But there are no good industry matches in the US for the Irish dairy producers, for instance, because many dairy products in the US are controlled by non-public co-operatives or are produced by extremely large conglomerates or food corporations. Kraft Foods, for instance, is a subsidiary of Philip Morris, which has a market capitalisation approaching $100 billion at the end of 2000, over 75 times the 1998 size of Kerry Group. Simply put, size matters.

CONCLUSION

This paper attempts to explain how growing Irish firms satisfy their need for capital when they maintain high dividend payout ratios. Analyses of Irish firms by themselves and in comparison to US firms matched by size and book-to-market indicate that those Irish firms that have higher dividend payout ratios are not growing as fast as the firms with lower payout ratios. Yet it is the high growth Irish firms that frequently issue seasoned equity. This is consistent with the view that these firms recognise that they are growing, will need capital to fund the growth in operations, and thus retain a higher proportion of income. In addition, the Irish issuers are larger, have greater investment opportunities (as measured by the market-to-book ratio), and are owned proportionately more by outsiders. In comparison to the US matched firms, the Irish firms that issue equity tend to use more debt, grow faster than their US counterparts, and have less institutional interest.

The underlying explanation appears to be that when Irish firms grow fast, they obtain additional funds by issuing seasoned equity. This is a reasonable practice for Irish firms, because previous research indicates that the Irish market does not treat seasoned equity issuances as negative signals. This issuance of equity is especially reasonable when the new equity supports growth (investment) opportunities, as certainly appears to be the case for those Irish firms which issue seasoned equity frequently.

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NOTES

[1] Kennedy, MacCormac and Teeling (1995) discuss this issue. Note, the exploration market is designed to make it easy for these firms to raise equity. The goal of making it easier to raise equity capital has been fulfilled, because the 12 exploration firms originally considered issued equity 28 times over four years. In other words, each firm issues equity six years out of 10, significantly more often than the firms in the current sample. Yet exploration firms pay no dividends. The rationale for excluding the exploration firms is analogous to the standard exclusion of regulated firms in empirical studies, in that exploration firms are, in effect, regulated in significantly different ways.

[2] Differential taxation and dividend imputation between manufacturing and non-manufacturing Irish firms may appear relevant, because such rules do not exist in the US. However, a variety of statistical tests indicate that they play no significant role in determining dividend policy or in deciding whether to raise new debt or equity capital.

[3] A rationale for not using industry as a primary criterion for matching firms is given in Loughran and Ritter (1995).

[4] The difference in whether the Irish firm and its US matched firm issued equity during a sample year can take on the values (–1, 0, or 1). The –1 value occurs only when the US firm issues equity but the Irish counterpart does not, and this occurs only twice in the sample. For simplicity's sake, these two observations are omitted from the differenced regressions reported below.

[5] Ownership data is available on the internet in the US, yet is only "readily" available in Ireland through the *Irish Stock Market Annual*.

[6] See Barber and Lyon (1997) for details and additional references.

Appendix A: Irish Sample		
Firm Name	**Firm Name**	**Firm Name**
Abbey	Fyffes	Kerry
Adare	Goff	Kingspan
AIB	Golden Vale	McInerney
Anglo Irish Bank	Grafton	Norish
Ardagh	Greencore	Oglesby
Arnotts	Green Property	Powerscreen
Bank of Ireland	Hampden	Readymix
Barlo	Heiton	Reflex
Boxmore	Hibernian	Ryan Hotels
Clondalkin	IAWS	Seafield
Crean	IFG	Silvermines
CRH	Independent	Smurfit
DCC	Irish Continental	UTV
Dunloe Ewart	Irish Life	United Drug
Elan	IWP	Waterford Wedgwood
European Leisure	Jones	
FBD	Jurys	

Appendix B: Definitions of Variables	
PAYOUT [a]	The ratio of dividends to net income, equal to a maximum of 2.00 when dividends are positive and net income is negative.
LEVERAGE	The book value of debt scaled by the sum of the firm's capitalisation and book value of debt.
TAX RATE [b]	Taxes paid scaled by pre-tax income. The following procedures are applied: (1) if earnings before tax (EBT) < 0 and taxes paid > 0, then Tax Rate = 0.40, and (2) if EBT < 0 and taxes paid < 0, then change the sign.
ISSUE EQUITY	A dummy variable equal to one if the firm issues equity during the year and zero otherwise.
GROWTH	The annualised historical revenue growth over the previous three years.
INSIDERS	The percentage of equity held by managers and directors.
INSTITUTIONAL	The percentage of equity held by institutions.
OUTSIDERS	The percentage of equity held by non-inside individuals who own more than 5 per cent of the shares or who are listed as individual shareholders.
MB	The ratio of the market value of equity to its book value.
SIZE	The natural logarithm of the firm's equity capitalisation.

[a] A maximum value for the dividend payout is set because some firms have negative net income, yet maintain a positive dividend. The basic equation would yield a negative payout, yet these firms actually proportionately pay more out in dividends than those with positive net income. An upper limit is set to ensure that the two firms (one Irish and one US observation) in this situation do not become outliers in the regressions.

[b] While many Irish firms pay a maximum of 10 per cent in taxes, it should be noted that the basic theories being considered do not rely on

taxes; instead taxes are included primarily as a control. For the US firms the tax rate equals the tax rate after financing as calculated by Graham (1996). As a result, the tax rates for the US and Irish firms are not directly comparable, and I do not emphasise taxes in this paper. Graham simulates the marginal taxes for US firms and finds the first substantive US evidence that higher taxes motivate firms to use more debt. Given the lack of appropriate data in Ireland, such as tax carryforward and carryback amounts, it is not possible to replicate Graham's procedure for Irish firms.

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