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Author(s): William G. Christie and Vikram Nanda

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Free Cash Flow, Shareholder Value, and the Undistributed Profits Tax of 1936 and 1937

WILLIAM G. CHRISTIE and VIKRAM NANDA*

ABSTRACT

In 1936, the Federal Government unexpectedly imposed a tax on undistributed corporate profits. Despite the direct costs of the tax, its announcement produced a positive revaluation of corporate equity, particularly among lower-payout firms. We interpret this as evidence of a divergence between managerial and shareholder preferences regarding dividend payout policies, consistent with the presence of agency costs. We also find that despite the incentives created by the tax, the actual growth in dividends during 1936 was lower among firms judged more likely to be subject to higher agency costs after controlling for liquidity, debt, and the growth in earnings.

ON MARCH 3, 1936 PRESIDENT ROOSEVELT unexpectedly introduced legislation to tax undistributed corporate profits. The law was intended to narrow the wide disparity between the rates of taxation on corporations and individuals. Under the prevailing tax structure, corporations faced progressive rates that reached 15 percent, while individuals were subject to an unprecedented peacetime maximum rate of 75 percent. The Federal Government believed that this disparity deprived it of revenue by encouraging firms to retain earnings rather than expose their shareholders to the tax liability associated with larger cash dividends.¹ The undistributed profits tax (UPT) was in-

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¹ In his recommendation, the President noted that

This method of evading existing surtaxes constitutes a problem as old as the income tax law itself. Repeated attempts by the Congress to prevent this form of evasion have not been successful. The evil has been a growing one. It has now reached disturbing proportions from the standpoint of the inequality it represents and of its serious effect on the federal revenue. Thus the Treasury estimates that, during the calendar year 1936, over four and one-half billion dollars of corporate income will be withheld from stockholders. If this undistributed income were distributed, it would be added to the income of stockholders and there taxed as is other personal income. But, as matters now stand, it will be withheld by those in control of these corporations. (Wall Street Journal, March 4, 1936, p. 3).

tended to significantly alter these incentives by replacing the corporate tax structure with a graduated schedule where the marginal rate would be a function of the percentage of the profits withheld. This action would expose undistributed profits to taxation at either the corporate level if the funds were retained, or at the personal level if the funds were distributed to shareholders.

Although the market could only speculate about the actual response by managers to the tax, there was a general consensus that the law would induce firms to distribute a greater proportion of their earnings as cash dividends. The following excerpt from *The Wall Street Journal* on March 4th, 1936 (p. 1) characterizes the tone of the discussion.

Higher dividends would be the immediate, likely result of enactment of a federal tax on undistributed corporate profits proposed by President Roosevelt to Congress yesterday. The President's plan appears to mean that any company wishing to finance new and additional construction out of earnings must first pay a tax averaging 33 1-3% of the total involved. The Administration's theory seems to be that while few corporations are likely to do anything of the kind, they will distribute the earnings to their stockholders, and then raise the desired funds for plant expansion by selling their stockholders additional stock or bonds.

The objective of this article is to use this unique experiment in tax reform to compare the reaction of investors and managers with the predictions arising from theories of corporate dividend policy. We first consider the potential costs and benefits to shareholders as a consequence of this controversial tax. Agency cost theories of dividend policy are based on the incentives of managers with access to free cash flow to overinvest in projects that satisfy their personal preferences rather than benefit shareholders. Since the UPT would significantly increase the costs of retaining earnings at their pretax levels, the expected reduction in free cash flow available to inefficient managers could trigger an increase in value among firms subject to agency costs. Offsetting this potential benefit was the increased tax burden at the firm level (if the funds were retained) or at the investor level (if the funds were distributed as cash dividends). In addition, the UPT would impose costs on firms that increased their external borrowing as a consequence of higher dividend payouts, and investors who incurred transactions costs in liquidating old positions and establishing new ones that satisfied their dividend preferences.

Since the net impact of these costs and benefits on firm value is an empirical issue, we study the market reaction to the President's announcement for a sample of 239 dividend-paying firms. Our results indicate that, consistent with the presence of significant agency costs, share prices rose in reaction to the announcement. In interpreting these results, it is possible that

the returns could be attributed to a variety of other causes. To test more directly for the importance of agency costs, we measure the stock price reaction across firms identified as being more or less likely to suffer from agency problems. The regression results support the hypothesis that a greater increase in shareholder wealth was experienced by firms where the potential to misuse free cash flow was judged to be higher.

While our results for the stock market's reaction are consistent with an agency cost interpretation, additional evidence on the role of agency costs in establishing dividend policy can be obtained by studying the actual growth in dividends during the period that the law was enforced. The agency cost explanation for the increase in equity values is based on the assumption that investors expected managers to respond to the tax by increasing cash dividends. We find that the actual growth in dividends between 1935 and 1936 was nontrivial. The median dividend payout ratio increased from 66 to 76 percent, and the median growth in dividends was 25 percent in the first year of the tax. We also find that proxies for agency costs help explain the cross-sectional variation in dividend growth after controlling for liquidity, long-term debt, and the actual growth in income. In addition, we conclude that dividend policies adapted quickly to the new tax regime in 1936, with little evidence of persistence in dividend growth continuing into 1937, the final year of the tax.

The article is organized as follows. Section I discusses the potential costs and benefits associated with the UPT. Section II outlines the selection criteria used to identify our sample of dividend-paying firms. Section III reports our empirical evidence on the market reaction to the announcement of the tax and studies whether the results are consistent with the predictions of the agency cost hypothesis. Section IV analyzes the actual growth in dividends between 1935 and 1936. We also examine whether dividend policies adapted quickly to the new tax regime by testing for persistence in dividend growth between 1936 and 1937. The article concludes with a discussion of the results in Section V.

I. Placing the UPT in the Context of Modern Theories of Corporate Dividend Policy

The announcement of unanticipated dividend increases is typically associated with positive abnormal stock returns.² Whether the anticipated increase in dividends stimulated by the UPT would be viewed favorably by investors can

² See Pettit (1972), Aharony and Swary (1980), and Asquith and Mullins (1983) for empirical evidence on the relation between unexpected dividend increases and the accompanying stock price response.

be examined within the context of competing theories of corporate dividend policy.

A. Potential Benefits Arising from the UPT

Theoretical explanations for the positive association between stock price changes and unexpected dividend announcements have relied on either the signaling value of dividends, or their role in reducing potential agency costs. Under the signaling hypothesis (see Miller and Rock (1985) and John and Williams (1985)), managers communicate their private information about firm value to investors through cash dividends. While the announcement of the UPT led investors to anticipate significant dividend increases, this revised expectation could not be traced to changes in corporate earnings. Thus, these models are not equipped to provide insights into the stock price response to the expected increase in dividends since they are driven by information asymmetries that were left unaffected by the UPT. Indeed, one of the appealing features of this tax experiment is that we can study the wealth effects from expected dividend increases in the absence of the release of private information.

In contrast, the agency cost hypothesis offers clearer predictions regarding the implications of the UPT for investor wealth. When equityholders delegate control of the firm to management and the actions of management are not directly observable, managers may have an incentive to act in their own self-interest rather than those of equityholders. Thus, agency costs reflect the costs of managerial discretion to pursue their own interests at the expense of stockholders. To minimize the opportunities for disciplinary action by the market, managers may rely heavily on internal funds and be reluctant to raise new capital externally. Easterbrook (1984), Jensen (1986), and Stulz (1990) argue that a reduction in the free cash flow available to inefficient managers through the use of debt contracts or the payment of cash dividends reduces agency costs and increases firm value.

The introduction of a tax on undistributed profits might be expected to reduce agency costs for two reasons. First, in firms subject to agency problems, managers face a tradeoff between the benefits of retaining free cash flow to pursue their own objectives or acting in the interest of shareholders and paying higher dividends. Since the UPT significantly raised the costs of retaining earnings, managers would be expected to relinquish more of their free cash flow to restore a balance between the marginal costs and benefits of retaining profits. Second, maintaining a relatively low payout ratio in the presence of a severe tax penalty increases the likelihood that shareholders would take actions to replace inefficient managers. The pressure to release additional funds would be especially intense if other firms responded by substantially increasing their cash dividends. Thus, the UPT would be expected to induce managers to forego a portion of the free cash flow that might otherwise be invested in negative net present value (NPV) projects, implying an increase in value. The strongest price increases would be expected among

the lowest payout firms if shareholders of these firms were exposed to the greatest potential abuse of free cash flow.³

We also examine whether other explanations might explain the market's reaction. For example, investors might view the tax as a favorable indication that the government was serious about maintaining a balanced budget. Another potential shareholder benefit is that the expected increase in dividends might permit the expropriation of wealth from unprotected bondholders. Whether this expropriation was anticipated by investors can be partially judged by the price reaction of the corporate bond market to the President's announcement.

B. Potential Costs Imposed by the UPT

While the free cash flow hypothesis provides a possible benefit to shareholders by inducing inefficient managers to relinquish control over a portion of their free cash flow, there are several offsetting costs, some of which might be relatively high. These costs can be classified based on whether they are borne by corporations or shareholders.

B.1. Costs at the Corporate Level

The only means available for firms to reduce their tax liability was to increase their dividend payout. Even if managers were acting in the best interests of shareholders, their ability to increase dividends may have been constrained by factors such as the costs of raising external capital, their liquidity position, and requirements for investment capital. Since lower-payout firms would be forced to make the largest changes in their dividend policies to avoid the higher UPT surtaxes, they would potentially bear the greatest costs of adjustment and realize more negative price reactions.

B.2. Costs at the Investor Level

Under the tax clientele hypothesis, investors in the higher marginal tax brackets would prefer to hold the equity of firms with low dividend payouts, while investors facing lower marginal tax rates would favor stocks with higher payouts. Thus, shareholders in the lower-payout firms would face direct costs (personal taxes) or indirect costs (brokerage fees) since they

³ The agency cost hypothesis that is used to motivate the results in this article requires the separation of ownership and control. Agency costs are more likely to arise when the ownership structure is disperse and firms are sufficiently large that the monitoring of managers is more difficult (costly). To indicate that these conditions are satisfied for our sample, we determined both the number of stockholders and the distribution of firms across size deciles formed using all NYSE firms on February 28, 1936. The median number of stockholders per firm is 6,618, with the 25 percent (75 percent) quartile producing values of 2,842 (17,525). With respect to the size distribution, we find that although firms appear in all size deciles, one-fifth are sampled from the largest size decile, and two-thirds are drawn from the top 40% of all NYSE firms. Thus, our sample consists primarily of widely held firms that are among the larger NYSE corporations.

would be forced to either hold equity that no longer suited their dividend preferences or readjust their investment portfolios.⁴

Thus, the net wealth effect of the various costs arising from the UPT and the potential benefits from reductions in agency costs or other benefits is an empirical matter.

II. Sample Identification

The dividend-paying status of the 715 New York Stock Exchange (NYSE) firms on February 28, 1936 was established using the monthly stock master compiled by the Center for Research in Security Prices (CRSP). Sample selection criteria were then imposed to ensure a stable history of dividends prior to the tax to permit the formation of reasonable expectations of future dividends and to ensure the availability of financial data. Details of the sample selection procedures are contained in Appendix A. We removed 347 firms that did not pay dividends at the time of the announcement and an additional 129 firms that failed to meet the filters imposed in Appendix A. Thus, our final sample contained 239 dividend-paying firms.

The empirical analysis requires calculating financial ratios both prior and subsequent to the imposition of the UPT. Since the law was enacted in June of 1936, financial ratios estimated prior to the tax are calculated as of December 1935. The financial ratios estimated while the tax was enforced are calculated in December of 1936 and 1937. Since the fiscal year-end for 48 firms was in a month other than December, Appendix A describes the algorithm used to establish when the pre/post-UPT financial ratios are estimated for these firms. The subsequent analysis distinguishes between samples of firms with December year-ends and those that include all firms. The advantage of the former is that all accounting data and market values are aligned in calendar time, while the unrestricted sample has the attraction of increasing the number of firms by 20 percent.

III. Investor Reaction to the Announcement of the UPT

Prior to examining the price effects for our sample of dividend-paying firms, it is useful to provide an overall perspective of the stock market's reaction to the proposed tax. The tone of the reaction can be summarized by the following excerpts from the March 4th, 1936 edition of the *Wall Street*

⁴ The potential importance of these costs did not apparently escape investors. On March 4, 1936, the *Wall Street Journal* carried a number of editorials highlighting the cost implications of the tax. The tone of these editorials was decidedly negative. For example, the "Review and Outlook" editorial stated that

To describe all such uses (accumulating reserves for unanticipated contingencies) as "evading existing surtaxes" may serve the emotional exigencies of a campaign year, but it ignores the unforgiving facts of the bread-and-butter world. It cannot possibly work toward permanent tax reform, for it will do much to impair the facilities of production and distribution, which are the well-springs of public revenue. No doubt it can be made to yield additional revenue, but it may well be doubted that it can be made to do that for more than a single year before it begins to sap the vitality of corporate structure.

Journal:

Business news overshadowed by President Roosevelt's tax proposals. They would tax undistributed corporate profits heavily. The stock market bullishly construed this move to turn a greater share of earnings into dividend channels. Industrial shares gained sharply. ("What's News" section, p. 1)

Traders yesterday took a little time to assimilate the President's message to Congress advocating a radical change in corporate taxation methods. When they did, a wave of buying occurred that sent most of the list strongly upward and the industrial averages into new high ground. ("Abreast of the Market" section p. 17)

This sentiment was echoed in the "Purely Gossip" section (p. 17):

Everybody agreed that the program would mean increased dividends, assuming that earnings warranted same. However, the Street also was of the opinion that a lot of the increased income would be taken away ultimately by government measures and that in the end the average recipient of larger dividends would probably be little better off. Be that as it may, buying was broad and sustained, particularly in those shares representing industries considered of the up-grade in regard to 1936 earnings.

Thus, investors increased their assessment of the value of corporate equity despite the obvious costs generated by the expected increase in tax payments at either the corporate or the personal level. The average increase in the market value of equity claims on corporate earnings was slightly over 1 percent. This evidence is consistent with the hypothesis that reducing the level of free cash flow available to managers triggered a sufficiently large increase in firm value to offset the many costs associated with the tax.

Table I reports the summary statistics for the equity returns on March 3, 1936 for all NYSE firms whose prices were reported in the March 3 and 4 editions of *The Wall Street Journal*. Panel A partitions firms based on their dividend-paying status and whether they satisfy our selection criteria. Row 1 reports that for our sample of 239 dividend-paying firms, the average price response was 0.96 percent, with over 65 percent of the returns exceeding zero.⁵

⁵ Table I is intended to provide summary measures of the average price reaction to the UPT. The table does not report significance levels for the one-day average returns, since test statistics would require a daily standard deviation computed from average daily returns measured over a period surrounding the announcement. If the daily standard deviation of average returns is approximated using the monthly variance of an equally weighted NYSE index for the 60 months following the announcement, the resulting *t*-statistic is 1.24. Although the one-day average return of 1 percent was not remarkable relative to other days, the positive response by the market was unusual in light of the President's announcement to expropriate funds from industry through an unprecedented retained profits tax. Moreover, the focus of the article is to evaluate the evidence for the agency cost hypothesis based on its ability to explain the cross-sectional variation in one-day returns using firm-specific characteristics.

Table I

Announcement Day Returns for NYSE Stocks on March 3, 1936

This table reports the distribution of one-day returns for NYSE stocks on March 3, 1936, the day that President Roosevelt announced the Undistributed Profits Tax. The table reports both the total number of firms that satisfy each selection criteria and the one-day returns for the firms whose closing prices were reported in the March 2nd and March 3rd issue of the *Wall Street Journal*. *Payout35* is defined as the ratio of common dividends to after-tax income in 1935.

Panel A: Full Sample						
No. of Firms	Average Return (%)	25% Quartile (%)	Median (%)	75% Quartile (%)	% of Returns > 0	
Results for the 239 dividend-paying firms that satisfy the selection criteria in Table AI						
221	0.96	0	0.82	1.85	65.2	
Results for the 129 dividend-paying firms that do not satisfy the selection criteria in Table AI						
102	1.20	0	0.81	2.21	63.7	
Results for the 347 zero-dividend firms						
311	1.10	−0.63	0	2.76	49.2	
Panel B: The Distribution of Equity Returns Across Dividend Payout Categories for the 191 Dividend-Paying Firms that Satisfied the Selection Criteria in Table AI and Whose Fiscal Year Ended in December.						
Payout Category	No. of Firms	Average Return (%)	25% Quartile (%)	Median (%)	75% Quartile (%)	% of Returns > 0
<i>Payout35</i> ≤ 40%	32	0.99	0	1.23	1.82	59.4
40% < <i>Payout35</i> ≤ 80%	86	1.36	0.14	1.12	2.26	75.6
<i>Payout35</i> > 80%	64	0.38	−0.42	0.19	1.16	51.6
Panel C: The Distribution of Equity Returns Across Dividend Payout Categories for the 239 Dividend-Paying Firms that Satisfied the Selection Criteria in Table AI Independent of Their Fiscal Year-End.						
Payout Category	No. of Firms	Average Return (%)	25% Quartile (%)	Median (%)	75% Quartile (%)	% of Returns > 0
<i>Payout35</i> ≤ 40%	42	0.96	0	1.01	1.75	61.9
40% < <i>Payout35</i> ≤ 80%	109	1.27	0	1.12	2.26	73.4
<i>Payout35</i> > 80%	70	0.46	−0.37	0.33	1.20	54.3

To examine whether the price reaction for our dividend-paying sample is representative of other NYSE stocks, rows 2 and 3 of Panel A report the distribution of returns for the nonsample firms. The mean (median) price reaction in row 2 for dividend-paying firms whose payments were not continuous during the two years prior to the tax is 1.20 percent (0.81 percent), and corresponds closely to the price reaction for the dividend-paying firms examined in row 1. Row 3 documents the price reaction for zero-dividend firms. Although the average price reaction of 1.10 percent is similar to dividend-paying firms, the range of returns is wider. In particular, the 25 percent quartile is negative and the median is zero. The restrained price reaction for

zero-dividend firms is consistent with the increased tax costs for firms whose financial condition may have been weaker relative to dividend-paying firms and were less likely to be capable of increasing dividends to avoid the surtaxes.^{6,7}

If the anticipated reduction in agency costs was responsible for the increase in equity values, we would expect greater benefits for the shareholders of firms whose managers imposed agency costs and had greater access to free cash flow. This hypothesis rests on the implicit assumption that inefficient managers would react to the tax by relinquishing a portion of the free cash flow that would have otherwise been allocated to objectives that satisfied the interests of managers rather than those of investors. However, such managers were already predisposed to act in their own self-interest and may have elected to ignore the tax implications by maintaining their pre-UPT payout policies. In this case, the UPT would not result in higher firm value since the retained earnings would be exposed to the higher marginal tax rates. Thus, the price effects that emerged from the announcement of the tax would incorporate the market's expectation of the benefits from dividend increases and the likelihood of receiving such increases from inefficient managers.

To assess the markets expectation of the net benefits across firms where the potential to abuse free cash flow may have differed, Panel B of Table I partitions the 239 dividend-paying firms whose fiscal year ends in December into three dividend-payout categories using their payout ratio in 1935 (*Payout35*), defined as the ratio of common dividends to after-tax income. The first category includes firms with payout ratios less than or equal to 40 percent, the second with payout ratios between 40 and 80 percent, and the third with payout ratios that exceed 80 percent. Since access to free cash flow would have been greater for managers of the lowest-payout firms, the agency cost hypothesis predicts a stronger positive price reaction among these firms. The results indicate that the median return for firms in the lowest-payout category is 1.23 percent, while firms in the highest-payout category realized a median return of 0.19 percent. This difference is statistically significant as the Krushkal-Wallis test rejects equality with probability 0.002 and is consis-

⁶ Our subsequent analysis excludes zero-dividend firms since they are unlikely to be subject to the same agency cost problems as firms capable of paying cash dividends. Indeed, a closer examination of the zero-dividend sample indicates that a large fraction of these firms were in poor financial health. For example, 15 percent of the firms in the zero-dividend sample were in bankruptcy or liquidation, while an additional 35 percent had pretax earnings that were negative in 1935 and/or 1936. Thus, any potential agency problems are likely overshadowed by the implications of fiscal distress.

⁷ The UPT is also the subject of a recent article by Calomiris and Hubbard (1993). They conclude that the costs associated with the tax were more likely related to the loss of value for firms facing high external finance costs than the abuse of free cash flow by entrenched managers. Under the hypothesis that zero-dividend firms retained earnings to fund growth due to external borrowing constraints, the UPT would impose higher taxes and would be expected to lead to a price decline. Although the average announcement-day return is positive for this subsample, the proportion of negative announcement-day returns is higher relative to the dividend-paying sample. If this result arises from the presence of profitable zero-dividend firms hurt by the tax, then our results are consistent with their interpretation.

tent with an expected decline in agency costs that more than offset any costs arising from the UPT for the low-payout firms. The results in Panel C, which considers firms irrespective of their fiscal year-end, are consistent with the results in Panel B. The smaller price reactions for the highest-payout firms may reflect their ability to escape the UPT with only minor adjustments to existing dividend policies.

Unfortunately, the use of payout ratios to identify firms more susceptible to agency costs is imperfect. Managers may elect low payouts for a wide variety of reasons, including the recognition of tax-based dividend clienteles or the use of internal cash to fund profitable investments. Thus, additional measures of managerial ability might aid the empirical analysis in explaining the cross-sectional variation in announcement day returns. Recent empirical work uses Tobin's q , defined as the ratio of market value to replacement cost, to proxy for managerial ability and the presence of agency problems (Morck, Shleifer, and Vishny (1988) and Lang and Litzenberger (1989)) and as a measure of the quality of the current and future investment opportunities (Lang, Stulz, and Walkling (1989)). These two interpretations of q are interrelated since more efficient managers will impose lower agency costs and be more likely to identify profitable investments. Similarly, less efficient managers, unable to locate valuable growth opportunities, are more likely to use the firm's free cash flow inefficiently and impose higher agency costs on its shareholders. Thus, we include both the payout ratio and a proxy for Tobin's q in the cross-sectional regressions.

A. Regression Evidence of Investor Reaction to the Announcement of the UPT

This section explores the influence of firm-specific factors on the returns generated by the announcement of the UPT. The dependent variable is the actual return on March 3, 1936. The independent variables and their anticipated relation to the market's reaction are outlined below. The variables are organized by whether they serve as proxies for agency costs or provide information concerning the firm's ability to escape the tax. All data were obtained from Moody's Manuals.

A.1. Measures that Proxy for Agency Costs

Dividend Payout (*Payout35*): The dividend payout ratio in 1935 is defined as the ratio of common dividends to after-tax income. Firms whose payout ratios were relatively low were disproportionately affected by the graduated UPT surtaxes and should respond with the highest percentage increase in dividends. Since the managers of lower-payout firms were in a more favorable position to use their discretion to pursue their own objectives, these firms should experience a higher stock price reaction.

Market-to-Book Ratio (*Q35*): The q ratio, or the ratio of market value to replacement cost in 1935, serves as a direct proxy for managerial efficiency

and the presence of agency costs. The expected reduction in free cash flow within firms subject to greater agency costs would trigger larger price increases at the announcement of the UPT, implying that *Q35* would be estimated with a negative coefficient. However, this prediction would be influenced by investor beliefs of how managers of lower *q* firms would likely respond to the incentives created by the UPT. Although a reduction in free cash flow should elicit higher price increases for the lower *q* firms, it is not unreasonable to expect that this effect would be tempered by investors anticipating a smaller dividend increase from inefficient managers.

The total market value for each corporation is calculated as the sum of the market values of its common equity, preferred stock, and debt. The market value of equity is calculated as the price per share times the number of shares outstanding.⁸ The market value of preferred stock is measured as the product of the price per share times the number of outstanding shares, where the price per share is calculated as the average of the high and low prices for the year reported by Moody's.⁹ The market value of debt is equated with the book value obtained from Moody's due to the absence of market data on quantities and prices. However, this compromise has a minimal effect on the total market value of the firm since debt represented a relatively small proportion of outstanding value.¹⁰ The total book value of assets is used to proxy for the replacement cost at the fiscal year-end. Thus, our measure of Tobin's *q* is equivalent to the ratio of market value to book value.

Earnings Gain between 1935 and 1936 (*EarnGain36*): This variable is computed as the ratio of pretax earnings in 1936 to pretax earnings in 1935 and proxies for the anticipated growth in earnings during 1936. The anticipated increase in earnings would be expected to produce a positive coefficient since higher earnings imply higher levels of free cash flow. If the UPT had the desired effect of inducing managers to distribute additional cash flow, it would reduce agency costs relative to those expected under the same earnings gain in the absence of the UPT.

Cash Flow (*Cash35*): We define cash flow in 1935 as the ratio of net income plus depreciation to total assets. The present value of agency costs may be relatively low if cash flows are low, even among low *q* firms. Lang,

⁸ A comparison of the outstanding share reported in Moody's with those reported by CRSP revealed 18 firms that reflected inaccuracies in the outstanding shares reported by CRSP. For these 18 firms, the number of outstanding shares reported by Moody's is used to calculate the market value of equity.

⁹ This procedure is amended when either the high or low price deviates from the average by more than 10 percent. For these cases we used an interpolated value between the high and low price based on the distance between the high and low for the S & P composite index over the same time interval evaluated at the firm's fiscal year-end.

¹⁰ Fewer than one-third of the 239 firms reported long-term debt (maturities exceeding one year) in their capital structure in 1935. The mean (median) percentage of total assets funded by long-term debt was only 15.7 percent (13.2 percent) for firms with long-term debt in their capital structure. In addition, only 10 percent of the firms relied solely on short-term debt.

Stulz, and Walkling (1991) apply a similar argument in a takeover context. Thus, firms with higher cash flows would be expected to realize a more positive price reaction to the UPT.

A.2. Variables that May Affect a Firm's Ability to Escape the UPT

Long-Term Debt (*LT Debt*) and Short-Term Debt (*ST Debt*): The regressions use dummy variables *LT Debt* (*ST Debt*) that take the value of 1 if long-term debt (short-term debt alone) was present in 1935. The presence of debt might result in smaller dividend increases since the UPT allowed exemptions for existing debt covenants restricting dividend payments. To the extent that covenants on long-term debt are more extensive and restrictive than on short-term contracts, the coefficient on the long-term debt dummy variable should be more negative. Even in the absence of debt covenants, firms with outstanding debt may have been subject to lower agency costs given the bonding benefits of debt (Jensen (1986)). Hence, the benefits of reducing free cash flow are expected to be smaller for firms with outstanding debt.

Market Value of Equity (*Lsize*): The log transformed value of the market value of equity (price times the number of shares outstanding) acts as a measure of a firm's ability to replace free cash flow with external funds. This variable is expected to be estimated with a positive coefficient if larger firms had easier access to capital markets.

Liquidity: *Liquidity1* is defined as the ratio of current assets to current liabilities in 1935. *Liquidity2* is defined as the ratio of cash plus marketable securities to the book value of total assets in 1935. Higher liquidity may allow firms to increase dividend payments at lower cost, thereby sheltering retained earnings from the highest surtaxes. Alternatively, higher liquidity may suggest the presence of higher agency costs through excessive retention. Thus, the market reaction to the announcement of the UPT is expected to be relatively more positive for firms with higher levels of liquidity, producing a positive coefficient.

A.3. Results

The regression evidence modeling the market's reaction to the UPT is presented in Table II. Models 1 through 4 use the restricted sample of firms with December year-ends, while Model 5 includes all sample firms whose returns on March 3, 1936 could be calculated. Model 1, which explains 7.4 percent of the variation in one-day returns, shows that higher-payout firms experienced significantly smaller announcement day returns, supporting the evidence from Table I. The market-to-book ratio (*Q35*) is estimated with a negative coefficient that is significant at the 5 percent level, consistent with the expectation that the market expected inefficient managers to relinquish a portion of their free cash flow by increasing cash dividends. The coefficient on *LT Debt* is significantly negative, indicating that firms with long-term debt

Table II
Cross-Sectional Regression Evidence of the Market's
Response to the UPT

This table reports the regression coefficients and their standard errors (in parentheses) for regressions that model the one-day returns on March 3, 1936. *Payout35* is the ratio of common dividends to after-tax income. *Q35* is the ratio of market value to book value. *EarnGain36* is the ratio of pretax income in 1936 to pretax income in 1935. *Log(size)* is the natural logarithm of the market value of equity. *LT Debt* is a dummy variable taking the value of 1 if the firm had long-term debt outstanding. *ST Debt* is a dummy variable taking the value of 1 if the firm had only short-term debt outstanding. *Liquidity1* is the ratio of current assets to current liabilities. *Liquidity2* is the ratio of cash and marketable securities to total assets. *Cash35* is the ratio of cash flow to total assets. *ROR* measures the rate of return on assets, defined as the ratio of income before taxes to total assets. All variables are computed at their fiscal year-end in 1935. Models 1 through 4 include firms whose fiscal year ended in December. Model 5 uses all firms independent of their year-end. The regressions exclude 18 (9) firms whose returns could not be computed, 7 (6) firms with negative earnings, and 2 (2) firms whose payout value exceeds 5.1 for the entire (December year-end) samples.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	1.11 (1.12)	0.80 (0.76)	0.71 (0.68)	0.82 (0.77)	0.34 (0.33)
<i>Payout35</i>	-1.32 (-3.29)	-1.40 (-3.43)	-1.40 (-3.44)	-1.53 (-3.49)	-1.16 (-2.81)
<i>Q35</i>	-0.26 (-1.97)	-0.23 (-1.77)	-0.21 (-1.60)	-0.26 (-1.78)	
<i>EarnGain36</i>		0.50 (2.15)	0.45 (1.95)	0.47 (2.05)	0.60 (2.54)
<i>Log(size)</i>	0.13 (1.41)	0.11 (1.23)	0.12 (1.33)	0.12 (1.28)	0.09 (1.07)
<i>LT Debt</i>	-0.73 (-2.41)	-0.82 (-2.61)	-0.82 (-2.63)	-0.76 (-2.45)	-0.43 (-1.52)
<i>ST Debt</i>		-0.36 (-0.77)	-0.28 (-0.61)	-0.26 (-0.54)	-0.04 (-0.09)
<i>Liquidity1</i>		-0.02 (-0.80)			-0.03 (-1.02)
<i>Liquidity2</i>			-0.44 (-0.90)		
<i>Cash35</i>				-0.07 (-0.03)	
<i>Cash35</i> if $q < \text{median}$, 0 otherwise				-2.77 (-0.67)	
<i>ROR</i>					-0.93 (-1.20)
Number of Firms	174	174	174	174	212
Adjusted R^2	0.074	0.085	0.086	0.079	0.051

earned average announcement day returns that were lower by 0.73 percent. *Lsize* is estimated with a positive but statistically insignificant coefficient. The sign of the coefficient is consistent with the hypothesis that larger firms were in a better position to replace internally generated funds with outside capital.

Model 2 includes *EarnGain36* as a proxy for the expected growth in earnings in 1936. The significantly positive coefficient implies that firms that were expected to have larger earnings growth in 1936 had higher announcement day returns. These results are consistent with predictions of the free cash flow hypothesis as the UPT would induce a larger distribution of cash than would have been expected in the absence of the tax. Thus, the funds available to managers for potentially inefficient uses would be reduced. While the presence of long-term debt was important in explaining the variation in returns for Model 1, short-term debt was unimportant as indicated by the lack of significance of *ST Debt*.

The results in Models 2 through 4 indicate that our liquidity measures provide no marginal explanatory power, since the two liquidity measures and *Cash35* are estimated with insignificant coefficients. The source of the insignificance may be that our proxies for liquidity do not appropriately capture the relative liquidity position across firms. Model 4 also tests whether there is a differential market reaction for the level of cash flow among lower *q* firms by introducing an interaction variable between cash flow and *Q35*. If larger cash flow among firms whose *Q35* lies below the median implies higher agency costs, the interaction variable should be estimated with a positive coefficient. However, Model 4 indicates that the coefficient estimate is negative and statistically insignificant.

Model 5 expands the sample to include firms whose fiscal year ends in a month other than December. In these regressions, *ROR*, defined as the ratio of the pretax earnings to total assets, serves in place of *Q35* as a measure of managerial quality and firm-specific investment opportunities. The substitution of *ROR* for *Q35* arises from the misalignment of firms in calendar time once non-December year-end firms are included. Since *ROR* is less susceptible to changes in market conditions than *Q35*, it introduces less noise into our measure of profitability/managerial efficiency. While the coefficient of *ROR* is estimated with the predicted negative sign, the statistical significance is lower than that of *Q35* in the previous regressions. However, the basic message from the previous regressions is maintained although the significance of long-term debt is considerably diminished.

While the results in Table II support the importance of agency costs, other factors may also have been relevant in understanding the market's positive reaction. First, the government's action may have been interpreted as an indication of its willingness to balance the federal budget. Although the positive reaction provides indirect evidence to support this hypothesis, it cannot explain the cross-sectional results since the firms that would have

borne the heaviest burden enjoyed the largest price increases.¹¹ The other potential benefit was that higher expected dividends would permit the expropriation of wealth from bondholders. However, the corporate bond market was relatively quiet on March 3, with no significant average price movements in either direction. Further, firms with long-term debt had smaller price increases, inconsistent with debtholder expropriation.¹²

IV. The UPT and the Actual Change in Dividends

This section studies the actual growth in dividends during 1936. The objective is to analyze the cross-sectional variation in dividend growth and to assess the role of agency costs and dividend adjustment costs and other factors in determining the dividend policies adopted in response to the UPT. We also attempt to assess whether the actual change in dividends across firms is consistent with the price effects that emerged at the date of the President's announcement.

The law initially proposed by the President differed in many respects from the law passed by Congress. A description of these differences is provided in Appendix B. However, the original framework remained intact and provided strong incentives for managers to distribute a large proportion of their after-tax earnings as cash dividends to avoid the highest marginal rates imposed under the UPT.

A summary of the distributional statistics for the primary variables used in the empirical analysis is provided in Table III for the sample of firms with December year-ends. The median growth in common dividends in 1936 was 25 percent. For approximately 25 percent of firms, dividends remained unchanged or actually declined in 1936 despite the tax. Since some firms paid dividends in 1935 that either met or exceeded their after-tax income, they would be relatively unaffected by the UPT. In contrast, 25 percent of firms increased their dividends by at least 87 percent. This increased flow of dividends may be attributed to either the UPT or to an increase in earnings. For example, the median value of *EarnGain36* was 28 percent. Therefore,

¹¹ The only reference to this aspect of the tax was in the *Wall Street Journal* on Monday March 9, 1936, p. 1.

Despite serious opposition to the proposed tax on surpluses carried to reserve, none of the alternative equals it in political feasibility. At the moment it appears more than likely to become law. It is bad in principle and will have evil consequences in practice, save for the one influence which may be expected of almost any additional levy now added to those we already have. That is, it will do something toward demonstrating that budget balancing must be attacked at the spending end and will not be achieved until it is so approached.

¹² The other potentially interesting date is June 19, 1936, when the tax emerged from Congress in its final form. We examined whether the cross-sectional variation in stock returns at the final resolution of the tax package could be explained on the basis of firm characteristics used in estimating Model 3 in Table II. The results indicate that the variables had no significant

Table III
Definition and Descriptive Statistics for Selected Variables
Used to Model the Variation in *DivGrowth36*

This table provides the summary statistics for the primary variables used to study the growth in dividends during 1936. The sample is restricted to those firms whose fiscal year ended in December.

Variable	Definition	Number of Firms	25% Quartile	Median	75% Quartile
<i>DivGrowth36</i>	Common Dividends in 1936/ Common Dividends in 1935	189	1.00	1.25	1.87
<i>Payout35</i>	Common Dividends in 1935/ After-Tax Income in 1935	182 ^{a, b}	0.47	0.66	0.88
<i>Payout36</i>	Common Dividends in 1936/ After-Tax Income in 1936	189	0.60	0.76	0.91
<i>EarnGain36</i>	Pretax Income in 1936/ Pretax Income in 1935	184 ^a	1.11	1.28	1.51
<i>EarnGain37</i>	Pretax Income in 1937/ Pretax Income in 1936	189	0.87	0.99	1.18
<i>UPT36</i> (if <i>UPT</i> > 0)	Undistributed Profits Tax in 1936/ Total Taxes Paid in 1936	103	0.03	0.06	0.14
<i>Q36</i>	Market Value in 1936/ Replacement Value in 1936	189	0.95	1.39	2.33

^a Five firms were excluded since their pretax or after-tax income was negative.

^b Two firms were removed as their value exceeded 5 and induced extreme nonnormality. These two observations exceeded the third largest value by a factor of more than three.

the growth in earnings between 1935 and 1936 serves as an important control variable in the subsequent regressions.

Table III also summarizes the distribution of q ratios measured in December 1936 and the proportion of total taxes attributed to the UPT.¹³ The distribution of q indicates that 50 percent of firms had q ratios exceeding 1.39, with 25 percent possessing a value under 0.95. For firms reporting a positive UPT liability, the median ratio of UPT tax to total tax was 6 percent, and for 25 percent of firms the UPT liability represented at least 14 percent of their total taxes. Thus, for a number of firms, the UPT represented a nontrivial proportion of their total taxes.

¹³ The empirical analysis in this section replaces *Q35* with *Q36*, since we need to align the timing of the dividend decisions with the impact of agency costs on market value. Specifically, the liability under the UPT would become clearer at the fiscal year-end (typically December 1936). Since this date lies at the end of 1936, we use *Q36* to capture the role of managerial efficiency/investment opportunities in the decision-making process. Substituting *Q35* for *Q36* would provide a noisier measurement of managerial efficiency/investment opportunities on the date that management determined the actions necessary to offset the tax. However, the qualitative nature of the results in the following sections are not affected by the choice of q ratio since the variables are correlated 0.95.

A. Intertemporal Movement in Payout Ratios

Table IV describes the movement in payout ratios for December year-end firms between 1935 and 1936, and also between 1936 and 1937, the final year that the UPT was enforced. Panel A shows that the median payout ratio increased from 66 percent in 1935 to 76 percent in 1936 and increased only slightly to 80 percent in 1937. The test for the differences in medians

Table IV
A Comparison of Intertemporal Dividend Payout Ratios
Across Payout Quintiles

This table examines the growth in dividends, dividend payout ratios, and earnings in 1936 and 1937. Dividend payout ratios are defined as the ratio of common dividends to after-tax income in each year. The quintiles are formed using *Payout35*, and the composition of the quintiles is preserved for subsequent years. Dividend payout Quintile 1 (5) contains firms with the smallest (largest) payout values. *DivGrowth* refers to the median value of the ratio of common dividends in 1936 to 1935, or in 1937 to 1936. *EarnGain* refers to the median value of the ratio of pretax income in 1936 to 1935, or in 1937 to 1936. In calculating the payout quintiles, we excluded five firms whose after-tax income in 1935 was negative. These firms were also removed in 1936 and 1937. The analysis is restricted to the sample of firms whose fiscal year ended in December.

Panel A: Median Dividend Payout Ratios				
	No. of Firms	1935	1936	1937
All Firms	184	0.66	0.76 ^a	0.80
Quintile 1	37	0.35	0.52 ^a	0.64
Quintile 2	37	0.54	0.65 ^a	0.65
Quintile 3	37	0.67	0.73 ^b	0.83 ^b
Quintile 4	37	0.84	0.85	0.86
Quintile 5	36	1.17	0.91 ^a	0.94
Panel B: Median <i>DivGrowth</i> and <i>EarnGain</i> Ratios				
	No. of Firms	Measure	1936	1937
Quintile 1	37	<i>DivGrowth</i>	2.09	1.12
		<i>EarnGain</i>	1.30	1.03
Quintile 2	37	<i>DivGrowth</i>	1.53	1.00
		<i>EarnGain</i>	1.36	1.00
Quintile 3	37	<i>DivGrowth</i>	1.33	1.00
		<i>EarnGain</i>	1.22	0.99
Quintile 4	37	<i>DivGrowth</i>	1.06	1.00
		<i>EarnGain</i>	1.18	0.95
Quintile 5	36	<i>DivGrowth</i>	1.16	1.00
		<i>EarnGain</i>	1.36	0.98

^a Indicates that the difference in medians between the current and the preceding year is statistically significant at the 1 percent level using a nonparametric test for the equality of medians.

^b Indicates that the difference in medians between the current and preceding year is statistically significant at the 5 percent level using a nonparametric test for the equality of medians.

confirms the statistical significance of the increase from 1935 to 1936, and the relative stability of the payout ratio between 1936 and 1937.

The UPT was expected to disproportionately affect firms with lower payout ratios prior to the tax. However, the presence of dividend adjustment costs (at both the investor and firm level) and managements' desire to retain profits suggests that managers would only partially adjust dividends to reduce their tax liabilities. Thus, firms with lower payout ratios in 1935 would still be expected to rank among the lower-payout firms in 1936. To examine the difference in actual dividend growth rates across payout categories, the remaining rows in Panel A of Table IV provide the payout ratios in 1936 and 1937 partitioned into quintiles based on the payout ratio in 1935. The results indicate that firms in the lowest quintile increased their payout from 35 percent in 1935 to 52 percent in 1936. Although this increase in payout is relatively large in percentage terms, these firms stopped well short of the payout levels necessary to significantly reduce their UPT liability. In fact, the median payout of the lowest quintile firms in 1936 did not exceed that of the next largest payout quintile in 1935. For firms in the highest-payout quintile, we observe a decline in the median payout ratio from 1935 to 1936. This decline can be attributed to firms whose dividend payments met or exceeded their after-tax income in 1935. Once these firms experienced increases in their earnings in 1936, their ratios fell back below 1. Apart from Quintile 4, the changes in median payout between 1935 and 1936 are all statistically significant. In contrast, only Quintile 3 experiences a significant increase in median payout between 1936 and 1937.

To verify that the movement in median payout ratios is driven by variability in dividends rather than in earnings, Panel B of Table IV reports the median growth in dividends and earnings within each payout quintile in 1936 and 1937. While dividends in 1936 respond aggressively in the lowest quintile and rise significantly in Quintiles 2 and 3, a comparison of the earnings growth across payout quintiles reveals only minor differences. A comparison of the relation between dividend and earnings growth rates among the lower payout quintiles indicates that the dividend growth rate surged ahead of earnings in 1936, yet maintained a relatively stable relation in 1937.

Thus, the actual growth in dividends across payout categories is consistent with the free cash flow interpretation of the price increases observed at the announcement of the UPT. The largest (smallest) price changes were associated with the firms that experienced the highest (lowest) percentage growth in dividends. The fact that firms in the lowest payout quintile increased dividends, but continued to retain almost 50 percent of their free cash flow, may help to explain why the low-payout firms did not experience larger announcement day returns. If the market anticipated that managers of low-payout firms would only partially adjust dividends in response to the tax (since these managers were predisposed to retain free cash flow), the price effects would be muted since the undistributed profits would be taxed at the higher marginal rates.

B. Analysis of q Ratios:

To the extent that the q ratio is a suitable proxy for agency problems and managerial efficiency, we have argued that the expected marginal benefit to shareholders from the distribution of an additional dollar in dividends would be greater for lower q firms. At the same time, we would expect managers of lower q firms to be less willing to increase dividends despite the UPT, given their predisposition to divert funds to pursue their own objectives. Lower q firms may also have had smaller debt capacities against which they could borrow, and the managers may have been averse to increasing their reliance on debt since doing so would result in closer monitoring by capital markets. In contrast, the managers of higher q firms might be expected to be more aggressive in raising dividends, despite the need for investment capital. Specifically, they would be more willing to face external capital markets and could replace internal funds with external capital at lower costs given their superior investment projects and the absence of agency problems.

Our evidence in this section indicates that lower q firms were less willing to increase dividends than higher q firms. Table V provides a two-way classification of the growth rate in dividends between 1935 and 1936 as a function of the payout ratio in 1935 and the q ratio in 1936. The table indicates that the median growth in dividends tended to be lower for firms in the lowest q quintiles across payout categories. Therefore, firms that displayed the least tendency to adjust their dividends in the lower-payout categories were those whose q ratio was among the lowest in our sample. The evidence in Table V shows that the median dividend growth for low-payout

Table V
The Distribution of *DivGrowth36* Across *Q36* Quintiles and Dividend Payout Ratio Categories

This table divides the q ratio in 1936 ($Q36$) into quintiles and examines the growth in dividends during 1936 using the two-way classification of $Q36$ and $Payout35$. *DivGrowth36* is defined as the ratio of common dividends in 1936 to common dividends in 1935. $Q36$ is defined as the ratio of market value to book value in 1936. $Payout35$ is defined as the ratio of common dividends to after-tax income in 1935. The analysis is restricted to the sample of firms whose fiscal year ended in December.

<i>Payout35</i> Category		<i>Q36</i> Quintile				
		1	2	3	4	5
<i>Payout35</i> $\leq$ 0.40	Median value of <i>DivGrowth36</i>	1.25	1.50	2.18	2.29	2.94
	No. of firms	8	7	10	5	3
0.40 < <i>Payout35</i> $\leq$ 0.80	Median value of <i>DivGrowth36</i>	1.19	1.29	1.44	1.43	1.75
	No. of firms	22	18	16	17	20
<i>Payout35</i> > 0.80	Median value of <i>DivGrowth36</i>	1.00	1.04	1.17	1.07	1.20
	No. of firms	8	13	13	16	15

and high q firms exceeded 200 percent, consistent with the premise that higher q firms would be more willing to increase dividends to escape the tax, particularly among the low-payout firms where the marginal rates were the highest.

A comparison of these results with the regression estimates in Table II highlights the interaction between the price reaction to the announcement of the tax and the ex post behavior of managers. Table II indicates that the price reaction was more favorable for lower q firms, implying that the market anticipated dividend increases among these companies. However, the actual dividend increases among lower q firms was less than for high- q firms within each payout category, particularly among the lowest-payout firms where the abuse of free cash flow may have been greatest. Thus, the actual dividend increases that materialized among lower q firms may have been smaller than anticipated by the market at the date of the President's announcement. Alternatively, the market may have anticipated the tepid response by managers of the lower q firms, but concluded that the release of funds that had previously been used inappropriately was sufficient to warrant the observed price increases.¹⁴ Since we cannot directly measure the market's expectation of dividend changes in 1936, we cannot be sure whether realized dividend growth was disappointing relative to the markets expectation.

C. Regression Evidence

This section models the cross-sectional variation in *DivGrowth36*.¹⁵ In addition to *Payout35* and *Q36*, the regressions use the log-transformed growth in earnings during 1936 ($\text{Log}(\text{EarnGain36})$), measures of liquidity (*Liquidity1*, *Liquidity2*), a dummy variable indicating the presence of long-term debt (*Debt*), the log of the market value of equity (*Lsize*), cash flow (*Cash35*), and an alternative measure of profitability/managerial effectiveness (*ROR*). Other than *DivGrowth36*, *Q36*, and *EarnGain36*, all variables are computed at their fiscal year-end in 1935. Consistent with our discussion in Section III, the growth in dividends during 1936 should be positively related to the growth in earnings. Firms with a greater ability to fund higher dividends internally or with external capital, measured by the liquidity and

¹⁴ If the relatively sluggish increase in dividends among the low-payout and low q firms was consistent with the markets expectation, the positive price reaction for these firms at the time of the announcement implies that investors placed a high marginal value on each dollar of free cash flow released by these firms. Specifically, the remaining undistributed profits would face average UPT taxes of approximately 10 to 15 percent. However, the present value of these additional taxes could be more than offset by the release of cash flow that would have been retained and invested in negative NPV projects that served the interests of managers rather than investors.

¹⁵ This variable is transformed to logs in the subsequent regressions due to the presence of extreme observations. Since the transformation changes this ratio into a continuously compounded growth rate, the same transformation is applied to *EarnGain36* to create an earnings growth rate.

size variables, respectively, would have greater latitude to increase dividends. In contrast, long-term debt might restrict firms from increasing dividends.¹⁶

The regression results are reported in Table VI. Models 1 through 5 apply to the firms whose fiscal year ends in December, while regressions 6 and 7 present the results for the full sample. Model 1 indicates that the coefficient of *Q36* is estimated with a positive sign and is significant at the 1 percent level. *EarnGain36* is estimated with a highly significant positive coefficient, suggesting that dividend growth was, as anticipated, tied to the growth in earnings. The negative coefficient on *Payout35* confirms the evidence in Table IV that the higher the payout ratio in 1935, the lower the growth rate in dividends. In addition, *Liquidity1* is estimated with a significantly positive coefficient, suggesting that firms with greater liquidity were more responsive to the tax. Consistent with the results in Table II, the market value of equity of the firm has no explanatory power. The overall ability of the regressions to explain variation in dividend growth is impressive as the adjusted R^2 of Model 1 is 0.590 and remains high across alternative specifications.

Models 2 through 5 test the sensitivity of these results when alternative proxies for liquidity and the presence of long-term debt are included. Model 2 indicates that the explanatory power of *Liquidity1* is not shared by *Liquidity2*. Thus, the remaining regressions retain *Liquidity1* as an explanatory variable. The presence of long-term debt in Model 3 appears to have no marginal explanatory power, although it is estimated with the anticipated negative sign. This contrasts with the evidence in Table II where long-term debt reliably implied a less favorable market reaction. Model 4' introduces cash flow (*Cash35*) as a proxy for agency costs and as a measure of liquidity and reports that *Cash35* has marginal explanatory power when the interaction term with *Q36* is excluded. However, including both *Cash35* and the interaction term in Model 5 renders both coefficients insignificant, consistent with the results in Table II.

Regressions 6 and 7 replicate the analysis for all firms independent of their fiscal year-end and leave the basic conclusions unaffected. The main caveats are that *ROR* lacks statistical significance, although it is estimated with the predicted positive sign. In addition, *Cash35* is estimated with the anticipated sign and is reliably significant, implying that firms with greater cash flows were more aggressive in increasing their dividends.¹⁷ Therefore, the results indicate that after controlling for the growth in earnings, the lower payout, higher *q* and more liquid firms experienced the largest dividend increases in 1936.

¹⁶ Regressions including a dummy variable for short-term debt are not reported as this variable was consistently estimated with an insignificant coefficient. These results are consistent with those in Table II where short-term debt was unimportant in explaining the market reaction to the tax.

¹⁷ We do not report a specification with the interaction term between *Cash35* and *ROR* since *ROR* appears to be a weak proxy for *q*. When this interaction term is included, it is not statistically significant.

Table VI
Regression Evidence Modeling the Growth in Dividends
During 1936 (*DivGrowth36*)

This table reports the regression coefficients and their standard errors (in parentheses) for regressions that model the logarithm of the growth in dividends between 1935 and 1936. *Payout35* is the ratio of common dividends to after-tax income. *Q36* is the ratio of market value to book value. *EarnGain36* is the ratio of pretax income in 1936 to pretax income in 1935. *Size* is the natural logarithm of the market value of equity. *Liquidity1* is the ratio of current assets to current liabilities. *Liquidity2* is the ratio of cash and marketable securities to total assets. *Debt* is a dummy variable taking the value of 1 if the firm had long-term debt outstanding. *Cash35* is the ratio of cash flow to total assets. *ROR* measures the rate of return on assets, defined as the ratio of income before taxes to total assets. Other than *DivGrowth 36*, *Q36* and *EarnGain36*, all variables are computed at their fiscal year-end in 1935. Models 1 through 5 include firms whose fiscal year ends in December. Models 6 and 7 use all firms.

Regression Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept	0.76 (4.48)	0.85 (5.05)	0.72 (4.17)	0.52 (7.84)	0.49 (6.93)	0.74 (4.67)	0.64 (4.07)
<i>Payout35</i>	-0.81 (-12.25)	-0.79 (-11.80)	-0.82 (-12.30)	-0.77 (-11.09)	-0.76 (-10.88)	-0.88 (-13.56)	-0.82 (-12.25)
<i>Q36</i>	0.050 (2.72)	0.053 (2.72)	0.040 (1.91)	0.035 (1.87)	0.045 (2.13)		
$\text{Log}(\textit{EarnGain36})$	0.78 (12.33)	0.80 (12.32)	0.79 (12.38)	0.78 (12.36)	0.77 (12.06)	0.78 (12.81)	0.78 (13.17)
$\text{Log}(\textit{size})$	-0.018 (-1.23)	-0.023 (-1.56)	-0.010 (-0.62)			-0.005 (-0.39)	-0.001 (-0.07)
<i>Liquidity1</i>	0.009 (2.31)		0.009 (2.15)	0.011 (2.72)	0.011 (2.74)	0.009 (2.34)	0.009 (2.34)
<i>Liquidity2</i>		0.051 (0.61)					
<i>Debt</i>			-0.058 (-1.09)				-0.061 (-1.38)
<i>Cash35</i>				0.67 (1.75)	0.51 (1.23)		1.06 (2.80)
<i>Cash35</i> if $q < \text{median}$, 0 otherwise					0.71 (1.03)		
<i>ROR</i>						0.16 (1.27)	
Number of Firms	182	182	182	182	182	225	225
Adjusted R^2	0.593	0.581	0.593	0.596	0.596	0.570	0.587

D. The Persistence of Payout Policies into 1937

The final issue that we consider is whether the payout policies in 1936 were “transitional” in the sense that dividends only partially adjusted in the first year of the tax towards a new and higher level necessitated by the UPT. Specifically, we test for predictability in *DivGrowth37*, defined as the ratio of

common dividends in 1937 to common dividends in 1936, using the information in *DivGrowth36*. To distinguish between common trend effects and the effects of mean reversion in dividend growth, *DivGrowth36* was decomposed into two components: (a) the predicted portion (*PredDiv36*), defined as that part of *DivGrowth36* predicted from regression 2 in Table VI, and (b) the unexplained portion (*ResDiv36*), defined as the residual from regression 2. In regressing *DivGrowth37* on these two components, a significantly positive coefficient on *PredDiv36* would be consistent with persistence or a common trend in dividend growth across the two years. A significantly negative coefficient on *ResDiv36* would be consistent with mean reversion in dividend growth. Mean reversion would arise if, after controlling for firm-specific characteristics, firms that responded aggressively to the UPT in 1936 were likely to react with lower dividend growth in 1937. Similarly, firms that reacted sluggishly in 1936 might be more aggressive in their dividend growth in 1937.

The results from regressing *DivGrowth37* on *PredDiv36* and *ResDiv36* after controlling for the gain in earnings between 1936 and 1937 are provided below.

$$\begin{aligned} \text{DivGrowth37}_i = & 0.013 + 0.074 * \text{PredDiv36}_i - 0.294 * \text{ResDiv36}_i \\ & (0.53) \quad (1.45) \quad (-4.61) \\ & + 0.447 * \text{Log}(\text{EarnGain37})_i \\ & (10.64) \end{aligned}$$

The explanatory power of the regression is relatively high as the adjusted R^2 is 0.491. The coefficient on *PredDiv36* is estimated with a positive, though insignificant coefficient, providing little evidence of a trend in dividend growth over this period. The coefficient on *ResDiv36* is negative and statistically significant, indicating mean reversion in dividend growth in 1937. *EarnGain37* (the ratio of pretax income in 1937 to pretax income in 1936) is estimated with a strongly significant positive coefficient, suggesting that dividend growth in 1937 could be partially traced to increases in earnings over the same period. Overall, these results indicate that dividend payouts in 1936 moved swiftly to their new levels, implying that although the speed of adjustment in dividends is often thought to be relatively slow, firms can respond quickly given the appropriate incentives.

V. Conclusions

This article has attempted to identify investor reaction to an expected decrease in free cash flow available to corporate managers and to evaluate the relative importance of agency costs as a partial determinant of dividend policy. The agency cost hypothesis contends that in firms subject to agency problems, managers invest in negative NPV projects to satisfy their personal preferences rather than those of shareholders. We examine this hypothesis within the context of the Undistributed Profits Tax of 1936 and 1937. This

tax attempted to force corporations to significantly increase their levels of cash dividends by imposing stiff tax penalties on undistributed profits. This radical tax reform measure provides a unique opportunity to explore issues related to agency costs since the anticipated increase in cash dividends was unrelated to the release of private information.

Despite the obvious costs associated with the UPT, the average value of corporate equity increased by approximately 1 percent when the President announced his intention to tax undistributed profits. Consistent with the predictions of the free cash flow hypothesis, the increase in equity values was concentrated among firms whose payout ratios were relatively low. These firms were more susceptible to the abuse of free cash flow by inefficient managers and were expected to be disproportionately affected by the tax, prompting an expectation of increased dividends. These results are reinforced in a series of cross-sectional regressions that relate the announcement day returns to payout ratios, liquidity, the actual growth in dividends and earnings in 1936, and measures of managerial efficiency.

The cross-sectional growth in dividends during 1936 appears to have been affected by dividend adjustment costs, managerial efficiency, and other factors. Firms with low payout ratios in 1935 increased dividends dramatically in percentage terms but continued to retain a greater proportion of earnings in 1936 relative to other firms. Firms whose managers were judged to be of lower quality (as measured by Tobin's q) responded sluggishly to the incentives of the tax. Specifically, firms in the lowest q quintile increased dividends by a significantly smaller proportion than high q firms. Therefore, the burden of the tax fell most heavily on the shareholders of firms with lower payouts and lower q ratios.

The sluggish response by the managers of low q firms to increase dividends, in conjunction with the higher price reaction at the announcement of the tax, suggests that the anticipated dividend increases may not have materialized. An alternative interpretation is that despite the anticipated reluctance of lower quality managers to increase dividends, even the relatively small reduction in free cash flow available to such managers was sufficient to warrant an increase in firm value.

Appendix A: Sample Identification and Elimination Criteria

This appendix provides the details of the selection criteria used to identify the sample of dividend-paying firms used throughout the article. The first criterion that firms must satisfy is that they be considered a dividend-paying corporation on March 3, 1936. Thus, zero-dividend firms must first be removed. A firm is classified as a zero-dividend firm if (1) no dividends had been declared between their listing date (or the start of the CRSP data on December 31, 1925) and the announcement of the tax, or if (2) cash dividends were omitted prior to the tax and payments had not been resumed. To test for an interruption in dividends, we calculated the elapsed time between succes-

sive regular dividends. When this interval exceeds the payment schedule by more than two months and an omission announcement appears in *Poor's Cumulative Daily Digest of Corporation News* or *Moody's Dividend Record*, the firm is removed from the sample. Firms are also removed if no omission announcement is found and payment dates are separated by more than 13 months. This analysis identified a total of 347 zero-dividend firms. The remaining 368 dividend-paying firms were then subject to a series of filters. The outcome of these selection criteria are provided in Table AI. While these criteria are mostly self-explanatory, the requirement of a history of dividend payments prior to the tax is intended to establish a stable dividend policy. This criterion required that the sample be restricted to firms that paid dividends without interruption between June 1934 and March 1936.

The selection criteria outlined in Table AI identify 239 dividend-paying firms, of which 191 firms concluded their fiscal year in December. To ascertain when the financial variables should be constructed for the non-December year-end firms, we used the following algorithm. Although the tax became law in June 1936, the first month that a specific line item for UPT taxes emerged in our sample was November 1936. Thus, financial ratios requiring pre-UPT data are estimated prior to November 1936, and financial ratios estimated while the law was effectively enforced are calculated between November 1936 and October 1938. This timing convention is also consistent with the reporting of taxes associated with the UPT after the tax was rescinded in 1938. We continued to observe firms reporting tax payments under the UPT through October 1938 whose fiscal year-ends were in a month other than December.

The sample is constructed such that the firms used to study the price reaction to the UPT in Section III are selected without regard to future dividend actions. However, two additional firms are removed in Section IV,

Table AI
Sample Elimination Criteria

This table reports the criteria used to eliminate firms from the initial sample of 368 companies that were paying cash dividends at the date the Undistributed Profits Tax was announced.

Elimination Criteria	Number
Insufficient dividend history prior to the announcement of the UPT	99
Insufficient balance sheet or income statement data	22
Foreign corporation whose earnings were not subject to the UPT	4
Multiple share classes outstanding	3
Incompatible balance sheets in adjacent years	1
Total number of dividend-paying firms eliminated	129
Remaining sample of dividend-paying firms	239
Number of firms with a December 31 year-end	191

which studies the actual growth in dividends during 1936, since they failed to pay dividends continuously through March 1938 when the law was repealed.

Appendix B: The History and Details of the Undistributed Profits Tax

The undistributed profits tax represented the first successful attempt by Congress to integrate the taxation of individuals and corporations since the inception of the income tax laws dating back to the Civil War in 1864. Various laws intended to expose undistributed profits to taxes were previously enacted, but they required proof that profits were retained for the sole purpose of tax evasion. Since the burden of proof lay with the government, these laws produced virtually no revenue. Although the UPT was partially justified by the inequity in the taxation of individuals and corporations, the additional revenue was also intended to fund an unexpected budget shortfall of approximately 620 million dollars. While this dollar magnitude may seem trivial by current standards, it effectively increased the President's proposed 1937 budget by roughly 10 percent.

The chronology of events between the unexpected proposal in March and its final passage in June 1936 highlights the sources of support and opposition to the tax. The House Ways and Means Subcommittee began consideration of the bill on March 4, the day following the President's announcement. The major sources of contention involved provisions for a "depression reserve" to permit businesses to accumulate earnings free of the UPT and to exclude banks and fiduciary institutions. The Treasury opposed these measures, since the necessary revenue required that all corporate earnings be exposed. The subcommittee and the Treasury reached a compromise on March 26, and the subcommittee presented the bill to the House for approval on April 29 following public hearings.¹⁸ The major provisions of the House bill allowed for graduated tax rates on undistributed profits that ranged from 15 percent on the first 10 percent of net income retained to 55 percent when firms retained more than 30 percent of their net income. The bill placed a flat rate of 15 percent on banks and insurance companies.

¹⁸ An indication of the partisan nature of the political climate is provided by the following passage from the *Wall Street Journal* on April 26:

The opening day of General Debate in the House offered an indication that the huge Democratic majority, with the bulk of its membership evidencing a complete lack of interest, will pass the bill in substantially the form prepared by the Ways and Means Committee.

In a subsequent article, the Republican view of the UPT became apparent:

It was predicted by Senate spokesmen that the Republicans would all vote against any new taxes. Senator Hastings of Delaware, in a one-man minority report, advocated further study of the tax issue. "The Congress should agree to no tax bill until there appears some evidence of economy in government."

The Senate Finance Committee began consideration of the bill on April 25. The subcommittee approved the bill on May 22 and presented it to the full Senate on June 2. This version discarded the graduated tax rates proposed by the President, substituted an increase in corporate income tax rates to 18 percent from 15 percent, and imposed a flat tax of 7 percent on the remaining undistributed earnings.

The Senate and House versions of the bill were sent to conference committee to resolve the philosophical differences on June 6. The final version of the bill emerged from committee on June 19. In its final form, the normal tax on corporate net income was retained and ranged from 8 percent on net income below \$2,000 to 15 percent on net income above \$40,000. The UPT was then imposed on adjusted net income using the following schedule.¹⁹

Percentage of Adjusted Net Income Retained	Marginal UPT Tax Rate (%)
0-10	7
10.01-20	12
20.01-40	17
40.01-60	22
60.01-100	27

Commercial banks, insurance companies, firms in receivership, and foreign corporations were exempt from the UPT. These firms are excluded from our sample.

The law remained virtually untouched in the Revenue Act of 1937 despite wide opposition from the business community. However, it became politically impossible to retain the UPT in its original form by 1938, and it was effectively abolished when the Revenue Act of 1938 reduced the maximum rate to 2.5 percent from 27 percent. It is interesting to note that the President remained committed to the tax he introduced two years earlier, and the Revenue Act of 1938 became law without his signature.

¹⁹ The UPT also permitted credits for taxable dividend payments and income subject to contracts restricting dividend payments that were in place prior to March 31, 1936. Credits were also received for the portion of net income used to discharge sinking fund obligations. Although taxable stock dividends allowed firms a noncash alternative to escape the tax, fewer than one-third of one percent of all firms subject to the tax elected this option due to the uncertainty concerning their taxability (see Lent (1948)).

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