

Dividend and Taxes, Redux, . . . Again

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In this paper we study the effect of The Job Growth and Taxpayer Relief Reconciliation Act of 2003 on dividend payouts of two types of firms. Using a sample of traditional (predisposed to paying dividends) and growth-oriented (paying dividends only to satisfy stockholders' demands) firms, we show that dividend payouts increased before the tax law changed and continued to rise, thereafter. In addition, the differences across the two types of firms disappeared, most likely because to increases in firm size. Thus, although the reduced tax rate on personal dividend income might have been a reason for the increase, there must have been other factors in play, too. We also conclude that the dividend decision not just varies, but that it also matters.

Keywords: Dividends, Dividend policy, Cost of capital, Value

OBJECTIVE AND INTRODUCTION

Felix qui potuit rerum cognoscere causas. Lucky is who understands the causes of things.—Roman proverb

The objective of this paper is to study the effect of The Job Growth and Taxpayer Relief Reconciliation Act of 2003 [JGTRRA, the Act] tax reform act on firms' dividend policy. Drawing on an earlier study by Frankfurter et al. [2004], we follow the sample of U.S. firms categorized as income-oriented (predisposed to paying dividends) and growth-oriented (paying dividends only to satisfy stockholders' demands). Accordingly, we expect to investigate not just whether dividends increased because of the incentive provided by JGTRRA but also whether a series of financial and accounting variables measured prior to the tax law change are different after the law was enacted. That is, we examine not

only if dividends did indeed increase after the Act came to pass but also if financial measures changed as a consequence of JGTRRA.

Dividend policy in theory and practice has been one of the central subjects, if not *the* central subject, of modern finance. More than a half dozen theories/explanations/hypotheses have been championed for the last 50 years to explain the otherwise economically irrational preference of dividends by the shareholder and the willingness of corporate executives to satisfy the owners' craving for dividend income.

Although the literature on dividends and, to a limited extent, on dividend policy is vast, it is not infinite.¹ The bulk of this literature is an attempt to explain the dividend phenomenon by the rationality of the "economic man." The unfortunate result of these attempts is their failure when subjected to empirical validation.

The most apropos subset of this "rationality" explanation consists of efforts to explain the dividend decision based on the tax liability of the shareholder, the corporation or both. Indeed, the double taxation of dividends would be an

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economically sound basis for the shareholder not to want and for the manager not to pay dividends (Black [1976]; Black [1990]). In fact, Black [1990] sees the eventual disappearance of dividends, putting the onus on managers who pay dividends to defend why they do so. Further, Fama and French [2001] empirically show that dividends are being substantially reduced and could possibly totally disappear.

Unfortunately for the theorists, reality intervened. The 2000 stock market mini-meltdown and the burst of the dot-com and tech bubble drastically altered the outlook on dividends. Dividend-paying companies returned to favor and were advocated by financial advisors as not just a source of income for the owners but also as a means of transparency by which the financial health of and managerial commitment to the enterprise may be judged. In the words of T. H. Huxley, "The great tragedy of science—the slaying of a beautiful hypothesis by an ugly fact."

The passage of JGTRRA, a 21st century version of the Reagan era "trickle down" economic program, soon followed. This law fixed the tax on dividends at the flat rate of 15% for high income and 5% for low income taxpayers, making dividends even more attractive. Professor Glenn Hubbard, the President's chief economic advisor, enumerated the economic advantages of the cut:²

1. the elimination of the double taxation of corporate income,
2. a reduction in the cost of capital,
3. an increase in capital investment and job creation, and
4. an increase in productivity and wages.

However, Hubbard did not rest there. He also argued in the *Financial Times* piece that

The president's proposal will improve corporate governance by removing tax-based distortions from corporate decisions and by giving shareholders more information about their investments. One of the biggest distortions engendered by the current tax code is excessive corporate debt relative to equity, or "leverage." A second problem is a disturbing lack of transparency and accountability in some U.S. corporations. The president's proposal will help solve both problems.

It is quite obvious that many private shareholders welcomed the change in the law and, in fact, supported the politics that brought about it. The question remains as to whether there has been a significant change in firms' dividend policy following the law's passage. This matter must be carefully examined if the dynamics of the dividend decision are to be understood.

In the second section, we survey the post-2000 dividend and taxation literature. Because of the considerable efforts in this area, it would be counterproductive and an unnecessary burden on the reader to review all of the dividends and taxes work. Even if the volume were not so substantial, the review is unnecessary given the fact that most of this research is data and time dependent.

In the third, we briefly summarize the methods of analysis and findings that were presented in Frankfurter et al. [2004]. The fourth section describes our statistical analyses including the univariate and multivariate models, the hypotheses we test and the results of these tests. The final section is our conclusions and cogitations about directions for future research efforts.

REVIEW OF THE POST-2000 LITERATURE

'Contrairiwise,' continued Tweedledee, 'if it was so, it might be; and if it were so, it would be: but as it isn't, it ain't. That's logic.' — *Through the Looking Glass* Lewis Carroll

It is a bit difficult to sort the post-2000 dividend and taxes literature. Motivations, research interests and other potential factors of taxonomy are often entwined. In addition, this literature, more often than not, cuts across the topical issue which is being discussed or investigated. We partition the research into two categories:

1. Papers that predict the effects of JGTRRA (Forecast Papers) based on the understanding and belief system of their authors and
2. Papers that model the likely effects of the Act (Model Papers) on the *dividend behavior* of firms.

The reader should know that we italicize dividend behavior to signify this is the language used by the overwhelming majority of authors whenever the issue of dividend policy is discussed. Dividend behavior suggests that dividends are a matter of long-lasting protocol, which obviously, as we shall see, they are not. In reality, this is a personification of a phenomenon, and firms do not behave *dividendly*, but rather make explicit decisions with regard to dividends or dividend substitutes (such as share repurchase, or greenmail).

Forecast Papers

Berner [2003] discusses the benefits of eliminating the double-taxation of dividends. The paper argues that, for the most part, the tax code has favored share repurchase over increasing dividend payout, resulting in higher levels of leverage. Investors have come to realize that increased debt levels are not necessarily a good thing. According to Berner (although one has to take his word for it), the tax incentives enhance shareholders' value, reduce unwarranted options, lead toward a "better" capital structure, create sound and proper executive compensation schemes and enhance incentives of acquisitions based on "true economics." The reader cannot escape the feeling that Berner's arguments, if not based on wishful thinking, are anchored in pure ideological grounds. Science and the meta-sciences that finance and accounting are, therefore, not value neutral, although their practicing academicians would strongly deny it and will build models as if that were the case.

Julio and Ikenberry [2004] study the reappearance of dividends which had nearly disappeared at the end of the 20th century (Fama and French [2001]). After considering several possible explanations, they document that the increase in dividends started in 2000, well before JGTRRA was passed. Although the authors do not rule out the possible effect of the Act, they primarily support two motivations for the reappearance of dividends:

1. The disbursement of free cash flows by mature companies, and
2. The use of dividends as a means to restore investor confidence in the wake of recent corporate scandals (Chetty and Saez [2005]).

Morck and Yeung [2005] focus on the relationship between dividend tax reduction and corporate governance in the light of JGTRRA. They argue that cutting the dividend tax deprives corporate insiders of a source of funds (retaining earnings) that may be used to fund unprofitable projects while at the same time gives the institutional investors another method to discipline underperforming managers. The research links the dividend tax cut to corporate governance by arguing that dividends primarily signal the managers' willingness to disburse free cash and thus serves as a factor that supports good corporate governance. The authors admit that the full intricacies linking corporate governance and dividend policy remain unknown. Nevertheless, they conclude, as did the Joint Economic Committee 2003,³ that reducing the tax on dividends would promote a more efficient allocation of capital and give shareholders rather than executives a greater degree of control over a firm's resources. The paper also suggests that taxing, not eliminating, an individual's dividend income encourages investors to hold stocks through tax-exempt institutional investors, which would help in monitoring and disciplining errant corporate insiders.

Antia and Meyer [2006] take issue with the reduction of the tax rate to a flat 15%. Instead, they champion the total deductibility of dividends from corporate income tax liability (rather than the total elimination of the corporate income tax) and put the onus of the tax liability solely on the recipient of the dividend. The elimination of the corporate tax liability on dividends would, in reality, make investors mere holders of "income bonds" (albeit lacking the legally binding contract for the "interest" payments) rather than shareholders with all of the associated risks and benefits of the current arrangement. The most intriguing aspect of this argument is the fact that there is nothing new in it and that this idea has been discussed "to death" in the literature since academia first realized that dividends are taxed twice. The only new angle in Antia and Meyer's paper is the aspect of "transparency," which has become one of the new buzz words as academe's infatuation with agency theory (the fact that managers might behave according to "me first" rules) continues to grow.

Model Papers

Green and Holifield [2003] use a dynamic model to study the determinants and magnitude of the personal-tax advantages of equity financing. The authors find that both the value of the "option" to defer capital gains and the cost of capital depend on the timing of the firm's cash distributions and the dividend to share repurchase ratio. A key assumption in the model is that repurchases require the firm to price the offer at a reservation price that is attractive to a shareholder considering not only their potential capital gain liability but also the opportunity to indefinitely defer the tax liability by not tendering their shares. Green and Holifield find that the option to defer capital gains reduces the effective tax rate on repurchases to approximately 60% of the statutory rate. They also find that the effective tax rate on capital gains increases as the growth in cash flows increases. Both effects are relatively insensitive to the volatility of the cash flow to be paid. If the model is correct, the cost of equity capital will increase after JGTRRA because of the increase in the ratio of dividend payments relative to repurchases. This further implies that the mix of cash outflows from the firm to the shareholder will also change. However, the model fails to predict the change in total cash flows across all firms.

Dhaliwal et al. [2003] show that the conclusion in numerous earlier studies that equity prices are discounted for shareholder dividend taxes on corporate retained earnings was the result of empirical misspecification of the Ohlson [1995] model used in their analyses. The authors replicate these studies with a comparable period, data, and *better* (our italics) specified model and test for evidence of dividend tax capitalization under different tax regimes, including both increases and decreases in the tax rate. The paper's findings fail to support the view that equity prices are discounted for shareholder dividend taxes on corporate retained earnings. On the contrary, they find (as does other research) that the discount of share prices for dividend taxes is independent of the firm's dividend policy. Bear in mind that both the proponents and critics of the belief that a firm's dividend policy is affected and that share prices are discounted because of individual tax liability base their view of the world on empiricism which may or may not stand up to scrutiny when a new and *better* (again, our italics) empirical study comes along.

Hanlon, Myers and Shevlin [2003] (hereafter, HMS) examine the Harris and Kemsley [1999] (hereafter, HK) model tying dividend taxation to firm value. The HK results imply that investors capitalize future dividend taxes in stock pricing. Unlike Dhaliwal et al. [2003], this paper questions the fundamental validity of the HK model. HMS evaluate the model on three levels:

1. They argue that the HK model and tests results are not direct evidence of tax capitalization.
2. They analyze the use of the ratio of retained earnings to book value (REBV) in the Ohlson [1995] model and

find that the Ohlson model used by HK has no role in the determination of firm value, even in a world where shareholder tax liabilities are fully capitalized.

3. They submit that the model either omits variables that can be proxied or that other linear combinations of currently used variables are absent.

The essence of the HMS paper is that the Ohlson model is useless for testing the relationship between shareholder tax liabilities and firm value. HMS apparently fail to realize, or choose to ignore, that the Ohlson model is grounded in the Miller and Modigliani (M&M, hereafter) [1961] world that assumes no taxes, no agency costs, no asymmetric information, fixed earning expectation and leverage and identifiable risk classes, in which dividend policy is irrelevant in firm valuation. The risk inherent in this and other models built on the earlier models of modern finance/accounting is that they are based on the same unrealistic assumptions underlying the original models and result in these assumptions being elevated to the level of unquestioned axioms.

Poterba [2004] explores the potential impact of JGTRRA on corporate distribution by examining the historical relationship between the dividend and capital gain tax differential and the percentage of corporate earnings that is distributed as cash dividends. Poterba also looks at the distribution behavior following JGTRRA and explains the relationship between payout decisions and investment decisions. In the paper, a “tax preference” *parameter* (again, our italics) is developed that is defined as the sum of the ratio of dividend tax liability to capital gain tax liability weighted by corporate stock ownership of each investor over time. This parameter assumes that each investor’s tax preference for dividends versus capital gains is proportional to the investor’s ownership of corporate stock.

Poterba claims to show a relationship between aggregate dividend payments and his tax preference parameter. In addition, Poterba finds that the long-term dividend elasticity with respect to profit is not unity, and that the relative tax burden on dividends and capital gains affects the share of earnings that is distributed as dividends. Poterba predicts that JGTRRA will reduce the weighted-average marginal tax rate on dividend income 12.1% using the household stock ownership tax rate on dividends and the tax preference parameter. He also forecasts a long-term increase of 20% of dividend payouts.

However, Poterba claims the long-term effect of JGTRRA is gradual, and thus a strong conclusion cannot be drawn from the data used in this study because of the impossibility of disentangling long- and short-term effects. Perhaps the most bothersome contention of the paper is that aggregate data cannot capture any possible differences across firms in their response to tax changes. Is it not then an acknowledgment that not only that the tax effect will be different for different firms but also the implicit recognition that there cannot be universal theoretical models of dividend policy?

Levinsohn [2005] compares the number of firms that paid dividends in 2003 and 2004, respectively, to the number of

firms paying dividends in 2005 and shows substantial increases (25% from 2004 to 2005 and 51% from 2003 to 2005) in the number of dividend paying firms. Levinsohn attributes the increases to two factors:

1. JGTRRA which was announced in January and enacted in May 2003, and
2. The record levels of cash that firms accumulated as a safety net after the 2000 stock market decline.

Levinsohn concludes that more and larger dividend payments may indeed follow in subsequent years.

Dhaliwal et al. [2005] construct a statistic which they call the Earnings Response Coefficient (ERC). The ERC is derived from the M&M irrelevance of dividends proposition (Miller and Modigliani [1961]) by taking the first derivative of the M&M firm’s value equation with respect to earning and it is equal to:

$$\frac{\partial V_0}{\partial X_0} = \frac{(1 - t_g) + d(t_g - t_d)}{\rho}$$

where d is the dividend payout ratio (assumed to be constant), ρ is the weighted average discount rate, t_g is the tax rate on capital gains and t_d is the tax rate on dividends.

The authors then test two hypotheses concerning the effect of the tax liabilities of shareholders:

1. Whether for a dividend-paying firm, an increase in the tax rate on dividends dampens the relation between dividend yield and the ERC, and
2. Whether an increase in the tax rate on dividends has an effect on the relation between share repurchase yield and the ERC.

They calculate cumulative abnormal returns (CAR’s) obtained from a 1990-1996 sample of 9581 firms using the Fama and French three factor model (Fama and French [1993]). Their tests indicate that when the tax rate on dividends increases, ERC’s decrease for firms with high dividend yields whose marginal investor is more likely to be an individual. For firms with high share repurchase yields and whose marginal investor is more likely to be an individual, an increase in dividend tax rate has no discernible effect on ERC’s.

If one disregards the econometric acrobatics of Dhaliwal et al. [2005] using a statistic without known and discernible distributional properties, the most relevant conclusion of their study is that there is no universal truth regarding dividend practices of firms and the effect of taxes on these practices. It is then safe to say that increases/decreases of dividend taxes at the investors’ level will affect different firms differently, if they have any affect at all.

Chetty and Saez [2005] perform perhaps the most comprehensive post JGTRRA study to date, analyzing the effect of the reform on corporate dividend behavior. Chetty and Saez document:

1. A 20% increase in dividend payments of public corporations (excluding financial and utility companies),
2. A significant increase in the number of firms initiating and/or raising the amount of regular dividend payments (the fraction of companies paying dividends increased from 20% in the fourth quarter of 2002 to about 25% in the fourth quarter of 2004),
3. The increase in dividends is not the result of simply substituting cash dividends for share repurchases,
4. Managers with substantial ownership in the company and few stock options are the most likely to initiate dividends,
5. A noticeable increase in the number of special dividends, and
6. No change in the dividend policies of those firms with high levels of nontaxable institutional ownership.

To isolate the effect of JGTRRA, the authors control for various confounding factors that might have affected the dividend decision. Nevertheless, they note that there was no decline in dividends before the tax reform which might suggest that management had anticipated the reform and shifted the timing of dividend payments.

Although their results provide substantial evidence that the new law did affect corporate dividend decisions, they are cautious to note that "...major accounting fraud scandals in 2000-2002 might have created distrust among shareholders and increased the demand for dividends. These scandals may have increased the sensitivity of dividend payments to taxation" (Chetty and Saez [2005], pp 793-794).

It is intuitively obvious that further mitigating the already hen's teathed progressivity of the individual income tax to a flat 15% at least in the beginning will show a substantial increase of dividends "shoveled out the front door" (Miller and Scholes [1978]). Thus, it is no great surprise that several of the studies we survey show that indeed this is what happens and that one can logically expect that this "trend" (if one can use the term in the time frame of just three years) will continue.

Yet it also becomes clear, as many of the studies we cover here argue, that there are other factors too numerous to mention that will affect firms' dividend policies, and perhaps these factors are influencing what firms will do regardless of tax cuts or tax increases. Among those factors, the most surprising is the recognition in at least two papers that the increase might be a response to shareholders' anger because of the nefarious deeds of management that came into sharp focus at the beginning of the 21st century. Model builders of "modern finance" never considered crime to be part of an idealized world, however.

Our research here is to explore not that there has been a clear impetus to pay dividends, or perhaps a demand by shareholders for increased dividends from 2003 forward, but rather whether one can speak of change in dividend policy as it is reflected by accounting, market and other variables from the *before* to the *after* Act era. This we will cover in the next two sections.

TABLE 1
Survey statistics

	Total Sent	Total Received	Usable	Response Rate
DE [#]	954	422	420	44.25%
HK	698	177	177	25.36%
TR**	279	141	137	49.10%
UK*	912	181	179	19.62%
US	1500	293	293	19.53%
Total	4343	1214	1206	27.76%

[#]Two firms could not be identified.

*Two firms had to be discarded because more than 50% of the statements were left unmarked.

**Two firms had no clear identification numbers, and two had missing pages in the responses.

PRIOR RELEVANT RESEARCH

The knowledge of the world is only to be acquired in the world, and not in a closet. — *Letters from celebrated nobleman to his heirs* Earl of Mansfield

In this section we briefly review the research methods we followed in Frankfurter et al. [2004] and show the results from the U.S. subsample. Although our objective in that work was a comparative analysis of the perception of dividends by financial managers in five countries, the U.S. sample and the data relevant to the U.S. sample stand alone.

A survey of 26 statements was distributed in five countries⁴ to chief financial executives. The executives were asked to mark on a continuous scale of strongly disagree to strongly agree their perception of the statements. The number of surveys distributed, total received, total usable and response rates are presented in Table 1.

Based on the usable responses, firms were separated by factor analysis and hierarchical grouping to obtain two groups regarding the perception of each of the 26 statements. The reason for applying factor analysis is to "purify" the data from any possible cross effects, and the resulting potential double counting of such effects if present.

Then, hierarchical clustering to the factor scores was applied using the Minimum Squared Euclidian Distance method and Ward's algorithm to obtain just two groups. In each country, albeit some inter country differences existed, it was found that the two groups roughly represented a classical perception of dividends (paying dividends is the primary reason for the existence of the firm, it shows financial strength, etc.) and a more growth oriented perception of dividends (dividends are paid because the shareholder want them, but we try to pay as little as possible, because the funds are needed to finance growth, etc.).

Although the responses were kept confidential, the survey was not completely anonymous. A numbering system for all the firms in the sample was included to track accounting, financial and market data. To see how perception affected firm

data, seven variables were measured for each of the sample firms in the two groups: Total Assets, Price/Book Ratio, Price/Earnings Ratio, Market Value, Institutional Ownership, Insiders' Ownership and Age.

In the interest of the objectives of the current research, we dropped the age variable (Group B firms were significantly younger) and instead included dividend payments. The accounting and other variables used were valid for the year 2000. The results for the seven variables are shown in Table 2.

The column headings in Table 2 are:

- Total assets (end of year)
- P/B ratio: market price and book value of a share at the end of the year
- MVE: market value of equity
- P/E ratio: price/earning ratio end of year
- Institutional ownership in percent
- Insider ownership in percent
- Annual dividend per share end of year

For the sake of identification, the more classical group was labeled Group A, and the more growth oriented one Group B. Table 2 shows the mean values of the seven variables, for the year 2000, their respective standard deviations, the number of observations, the pooled variance for the two groups, the hypothesis that the difference of the means equals zero (the two means are the same), the number of degrees of freedom, the t-statistic and the probability that the null hypothesis is true.

With the exception of institutional ownership, the null is rejected for all variables at the 0.10 level of significance or lower. Only the MVE is significantly different at the 0.099 level. For the other five variables, significance was 0.05 or lower.

The variable means show good group separation in that the more growth oriented firms are

- Smaller,
- Their P/B ratio is greater,
- Their P/E ratio is lower (implying higher cost of capital) oriented (younger) firms,
- Insider ownership is higher, and
- Dividend payments are 4.5 times smaller than the more established, Group A firms.

As already mentioned, Group B firms were significantly younger than Group A firms. Also note these variables were completely independent of the grouping method, which was strictly based on executive responses to a survey instrument, regarding their perception of dividends.

In the next section we describe the models we apply to our data for testing the explicit hypotheses of the current work, and the subsequent results of our analysis.

THE MODELS

Univariate Model

The seven financial, accounting and market variables are calculated for both Group A and B firms, respectively. We then separate the results into two subperiods, 2001–2002 and 2004–2005, we identify as *Before* and *After*, respectively, where 2003 serves as the separator between the two subperiods.

To reduce the effects of shocks and outliers, we calculate the means of the variables for each of the two subperiods. Univariate tests for each of the variables are then used to test a set of hypotheses:

1. Equal means for Group A *Before* and *After* (within group)
2. Equal means for Group B *Before* and *After* (within group)
3. Equal means for Groups A and B *Before* (between groups)
4. Equal means for Groups A and B *After* (between groups)

The test statistic, t is defined as:⁵

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

where:

- For within group comparisons:
 $\bar{X}_1$ is the mean of Group A (or B) *Before* the Act
 $\bar{X}_2$ is the mean of Group A (or B) *After* the Act
- For between group comparisons:
 $\bar{X}_1$ is the mean of Group A *Before* (or *After*) the Act
 $\bar{X}_2$ is the mean of Group B *Before* (or *After*) the Act.
- S_p^2 is the pooled variance:

$$S_p^2 = \frac{(n_1 - 1) S_1^2 + (n_2 - 1) S_2^2}{(n_1 - 1) + (n_2 - 1)}$$

with n_i and S_i^2 being the relevant sample size and variance, respectively, for the relevant groups/variables.

Tables 3 and 4 show the results for the four hypotheses.

In Table 3, the *before* and *after* subperiods for Group A firms, the null is rejected at the 0.05 or lower level for the P/E ratio, institutional, and insider ownership, respectively. The P/E ratio declined from 36.95% to 18.14% (firms became riskier), institutional ownership increased from 38.93% to 45.94%, and insider ownership decreased from 10.08% to 7.97%. Although these changes might have been the result of exogenous economic factors, they could be attributed to the process of aging as well.

For Group B firms there are four variables for which the null is rejected at the 0.10 or lower level. These are total assets, MVE and the two types of ownership. Total assets and MVE are two measures of size, both showing significant increases for group B firms after the tax reform. The two types of ownership changed in the same direction for both groups.

TABLE 2
Group differences at base year 2000

	Total Assets		P/B Ratio		MVE		P/E Ratio		Institutional. Ownership		Insider Ownership		Annual Dividend	
	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
Mean	5,297	1,168	1.9375	2.8145	2,629	1,457	54.55	12.08	37.78	38.09	11.79	18.51	\$0.59	\$0.13
Standard Deviation	22704.26	2787.55	1.88	4.67	8,404	4,119	105.42	107.28	27.09	105.42	14.06	21.26	0.61	0.34
Number of Observations	128	104	126	102	126	102	126	102	113	102	113	102	125	101
Pooled Variance	\$288,116,297		11.71		\$46,650,928		11290.71		712.78		318.25		0.26	
Hypothesized Difference	0		0		0		0		0		0		0	
Degrees of Freedom	230		226		226		226		213		213		224	
t Stat	1.8429		-1.9245		1.2885		3.0007		-0.0851		-2.7589		6.7891	
Probability (T <= t)	0.0333		0.0278		0.0994		0.0015		0.4661		0.0032		0.0000	

TABLE 3
Before and after tests for groups A and B

Panel A: Before (2001–2002) and After (2004–2005) Group A														
	Total Assets		P/B Ratio		MVE		P/E Ratio		Institutional Ownership		Insider Ownership		Annual Dividend	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Mean	\$4,871	\$5,668	1.59	1.68	\$2,319	\$3,185	36.95	18.14	38.93	45.94	10.08	7.97	1.19	1.73
Standard Deviation	\$14,222	\$11,684	3.80	9.35	\$6,998	\$6,960	102.54	49.17	28.24	30.75	14.15	11.07	4.19	5.18
Observations	239	195	236	194	236	194	236	194	220	189	216	189	243	186
Pooled Variance	\$172,732,031		47.37		\$48,735,515		6862.87		866.12		163.98		21.55	
Hypothesized Difference	0		0		0		0		0		0		0	
Degrees of Freedom	432		428		428		428		407		403		427	
t Statistic	−0.63		−0.14		−1.28		2.34		−2.40		1.66		−1.20	
Probability (T <= t)	0.2651		0.4435		0.1000		0.0097		0.0084		0.0492		0.1153	
Panel B: Before (2001–2002) and After (2004–2005) Group B														
Mean	\$1,183	\$1,596	4.67	3.47	\$1,357	\$2,305	7.17	−6.98	42.58	46.59	15.56	11.32	0.97	1.26
Standard Deviation	\$2,577	\$3,003	34.65	6.94	\$3,105	\$4,561	66.22	317.95	27.83	32.70	19.47	15.22	5.74	4.19
Observations	192	154	180	136	180	136	180	137	202	171	200	171	203	104
Pooled Variance	\$7,698,426		705.11		\$14,438,878		46137.70		909.62		311.07		27.71	
Hypothesized Difference	0		0		0		0		0		0		0	
Degrees of Freedom	344		314		314		315		371		369		305	
t Statistic	−1.38		0.40		−2.19		0.58		−1.28		2.31		−0.45	
Probability (T <= t)	0.0846		0.3447		0.0145		0.2808		0.1008		0.0108		0.3279	

TABLE 4
Group A to Group B comparisons

Panel A Group A vs. Group B Before (2001–2002)														
	Total Assets		P/B Ratio		MVE		P/E Ratio		Institutional Ownership		Insider Ownership		Annual Dividend	
	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
Mean	\$4,871	\$1,183	1.59	4.67	\$2,319	\$1,357	36.95	7.17	38.93	42.58	10.08	15.56	1.19	0.97
Standard Deviation	\$14,222	\$2,577	3.80	34.65	\$6,998	\$3,105	102.54	66.22	28.24	27.83	14.15	19.47	4.19	5.74
Observations	239	192	236	180	236	180	236	180	220	202	216	200	243	203
Pooled Variance	\$115,163,736		527.31		\$31,967,771		7863.66		786.67		286.09		24.53	
Hypothesized Difference	0		0		0		0		0		0		0	
Degrees of Freedom	429		414		414		414		420		414		444	
t Statistic	3.55		−1.36		1.72		3.39		−1.34		−3.30		0.46	
Probability (T <= t)	0.0002		0.0878		0.0432		0.0004		0.0908		0.0005		0.3230	
Panel B Group A vs. Group B After (2004-2005)														
Mean	\$5,668	\$1,596	1.68	3.47	\$3,185	\$2,305	18.14	−6.98	45.94	46.59	7.97	11.32	1.73	1.26
Standard Deviation	\$11,684	\$3,003	9.35	6.94	\$6,960	\$4,561	49.17	317.95	30.75	32.70	11.07	15.22	5.18	4.19
Observations	195	154	194	136	194	136	194	137	189	171	189	171	186	104
Pooled Variance	\$80,297,559		71.25		\$37,066,925		43207.08		1004.41		174.37		23.48	
Hypothesized Difference	0		0		0		0		0		0		0	
Degrees of Freedom	347		328		328		329		358		358		288	
t Statistic	4.22		−1.89		1.29		1.08		−0.20		−2.41		0.80	
Probability (T <= t)	0.0000		0.0300		0.0985		0.1399		0.4225		0.0083		0.2114	

For this to happen, maturity (survival?) might be a reasonable explanation.

Although in both types of firms dividend payments increased from the *before* subperiod to the *after* subperiod; however, the difference in the magnitude of increase for the two types of firms is not significant. Yet Group A firms continue to pay more dividend than Group B firms.

The test of differences between the two groups is shown in Table 4. From the table, it is clear that group separation is still very good in the *before* subperiod, as the null is rejected at the 0.10 or lower level of significance for six of the seven variables. Strangely, however, the only variable for which the null cannot be rejected is annual dividends.⁶ Although Group B dividends are less than Group A dividends by 18.5%, the difference is not statistically significant. In fact, the probability of the null being true is as high as 65%. This is a remarkable finding; meaning that a significant separator that existed between the two groups in 2000 vanished during the following two years, *before* the 2003 tax law came to pass.

We might wager an even stronger statement in this regard. If shareholders anticipated the change in the law, which would be reasonable to surmise given the psyche of the economic man and the political change that took place in 2000, it would behoove the behavior of such individuals to postpone dividend payment until after the law would have passed, thereby reducing their individual tax liability. This did not happen. Therefore, it is reasonable to conclude that other factors came to impact the dividend policies of firms. It is also clear that dividends substantially increased as compared to the base year of 2000 for both types of firms.

For the *after* period, the separation is not as good because for both the P/E ratio and institutional ownership, in addition to annual dividends, the null cannot be rejected, at the 0.10 level or less significance. It seems that the reason for this change is that Group B firms are getting older.

Annual dividends are rising substantially again for both groups, implying a similar dividend policy for the two groups. For Group A firms, the increase is 45.4% and for Group B firms it is 29.9%. Perhaps it might be argued that the increase must have been influenced by the law, still there must have been other factors impacting on the firms' alacrity to shovel out capital.

Analysis of Covariance

We seek the use of a model which would properly reflect the cross effects, if any, of the seven variables for the *before* and *after* subperiods. Accordingly, we have a multivariate relationship in two dimensions: time and group. It is possible to look at this relationship as within group (time) and between group (the difference, if any, between Groups A and B).

It is possible to express the multivariate problem in the framework of an ANCOVA model, a combination of qualitative and quantitative variables in a single linear relationship. In our case, where we have $p=1,2$ groups, $k=1,2$ time peri-

ods, $j=1,2, \dots, 6$ variables, for each i th observations on the dependent variable, annual dividends, i . The model then can be written as:

$$Y_{pkji} = \text{Constant} + \text{Main Effect} + \text{Group Effect}_{A,B} \\ + \text{Time}_{\text{Before, After}} + \sum_{j=1,6} \beta_j X_{ji} + \varepsilon_{pkji}$$

where

Y_{pkji} is the i^{th} observation on firm p , in time k , given the 6 independent variables $j=1,2, \dots, 6$,

- β_j is the j^{th} covariate,
- X_1 is total assets (end of year)
- X_2 is P/B ratio market price and book value of a share at the end of the year
- X_3 is MVE, market value of equity
- X_4 is P/E ratio, price/earning ratio end of year
- X_5 is institutional ownership in percent
- X_6 is insider ownership in percent

and

- ε_{pkji} is a random error with zero mean and fixed variance.

We find very high correlation between total assets and MVE (a Pearson correlation coefficient of 0.67 with a p -value = 0.0001). Because ANCOVA is quite sensitive to multicollinearity we drop the latter variable from the final model we test. The results of the ANCOVA are given in Table 5.

The only significant variable at the 0.05 level is total assets which is a proxy for size. Neither the Group effect nor the Time effect is significant. The model is weakly significant, because technically if one variable is significant the model is significant also, albeit at a weaker level. From Tables 3 and 4 it can be verified that although there is no significant difference between the two types of firms and time period, Group A firms still paid more dividends than Group B firms.

Thus, the conclusion one may draw for this is that as a firm's size grow, that is, as the firm matures, it will increase dividends to be paid out. In our case, the increase in dividend payments and the disappearance of the difference between the two groups took off before the law changed. The act might have been a factor after 2003, but it was neither the major nor the only factor.

Note the great loss of the number of degrees of freedom. It is because we had to eliminate data in categories with missing cells. Still, the sample remained quite large.

CONCLUDING REMARKS AND SOME COGITATIONS REGARDING FUTURE WORK

JGTRRA sparked renewed interest in the tax explanations of the economic enigma called dividend policy. Although some of the papers were quite conjectural, many works using post-2003 data pointed out an increase in dividend payments as

TABLE 5
ANCOVA with five explanatory variables

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F		
Panel A: Significance of Overall Model							
Model	7	127.56	18.22	1.90	0.07		
Error	584	5,611.98	9.61				
Corrected Total	591	5,739.54					
Panel B: Significance of Individual Explanatory Variables							
	Group Effect	Time Effect	Total Assets	Price to Book	Price to Equity	Institutional Ownership	Insider Ownership
F Value	0.00	0.61	4.11	0.87	1.43	2.03	1.17
<i>Pr > F</i>	0.94	0.44	0.04	0.35	0.23	0.15	0.28

This model replicates the first one without MVE among the explanatory variables.

a result of the Act, and the increase, as a matter of policy, transpired supposedly to take advantage of the tax benefits the law provided for the shareholders.

A few papers also concluded that although the increase of dividend payments is apparent, it is either too early or too general to draw conclusions for the long term. We also summarized one paper that claimed that perhaps the shoveling out of dividends, totally contrary to the predictions of Black [1990] and Fama and French [2001] who surmised that dividends are disappearing or will disappear, started their resurgence *before* the Act came to pass.

Caveats

Before we turn to a detailed description of what cannot and what can be concluded from the work presented here, the reader should be warned about the possible problems that are evident whenever survey based information is used in social sciences research. It is incumbent upon us lest we are guilty of academic dishonesty to explicitly cover potential problems that may affect our interpretation.

Baker and Powell [1999] mention the following limitations:

- Having the opinion of just one person.
- Limitation on length.
- Misinterpretation of statements.
- Non-response bias.

We can also add to these additional deficiencies:

- The risk of “loaded” statements.
- Statements that obviate an answer (perhaps ones that are close to the heart and convictions of the researcher).

- Not knowing for sure the identity of the respondent to the survey.

We would be the first to admit that some of these limitations, errors, and biases apply to the current research, but we made a genuine effort to eliminate or at least reduce their effects. We selected each statement with great care, tested the comprehensibility of each statement with financially well-informed and responsible people, “planted” statements that verified the response to other statements, and tried to formulate each statement in a way that it does not directly identify with a known academic hypothesis/position.

With all these caveats noted, and given the precaution to reduce, if not totally mitigate their effects, we are still of the opinion that a survey is the only way to open a new avenue of discussion and seek new directions in dividend research. This is the direction where a preliminary idea is obtained about both the perception of dividends that is “out there,” and the motivation for the corporate practice of paying dividends. We also note that this mode of research is in sharp contrast to the conformist approach. The conformist’s way of dividend research is to create yet another model based on the expected utility maxim of the *homo economicus*, when other previous orthodox ways fail to be consistent with observable facts (e.g., the tax explanation of dividends).

Further, if survey results affected the current research it was in the creation of the two groups, only. As we saw in Table 2, the separation of the groups using the data was quite impressive and perfectly consistent with *a priori* logic. The rest of the data came from publicly available information, totally independent of the survey. It must be considered, regardless, that grouping algorithms are very sensitive to data, and a newly distributed survey might have been resulted in a different grouping.

What We Cannot Conclude

We cannot conclude whether the increase in the level and pervasiveness of dividend payments when compared to those of the last quarter of the 20th century is permanent or transitory. The 400 years of history, including the last 225 in the United States, suggest that dividend policies do change, especially when nefarious deeds and shenanigans of managements are widespread (Frankfurter and Wood [1997]).

We also cannot conclude what, exactly, was the affect of JGTRRA in this increase. It is likely that it was responsible, at least in part, for the change but it is not entirely clear to what extent or whether other factors could have been more dominant in the reversal of dividend policies.

There is nothing concrete we can say about “transparency.” Nevertheless, ABC News Internet edition on March 2, 2007, foresees insiders’ trading to come back to the level of the 1980s. The article opens with the following paragraphs:

Just as '80s trends like miniskirts and electro music have made a comeback, so has insider trading.

Thursday's arrest of nine individuals and the guilty pleas of four others who were accused of taking part in a massive, five-year scheme that netted more than \$15 million in profits were just the beginning.

Thus, the “evidence” is anecdotal. Yet, it seems that it is the same old, same old.

About the reduction of the cost of capital we can say even less. However, it would be reasonable to assume that at least with respect to the *after* subperiod, the cost of capital must have increased across the board because of the Federal Reserve's policies to increase interest rates.

With all fairness we must admit that we did not explicitly study these two “predictions” of Professor Hubbard. Yet, the onus of proof is on those who argued that that will be the case. Predicting being one thing and proving the other, it is safe to claim that neither transparency nor the reduction of the cost of capital can be proven. Financial economics has yet to address itself to the first and has no clear measure of the second.

What We Can Conclude

Contrary to M&M's [1961] indifference proposition, there is clearly a dividend decision. This decision is not universal, neither temporally or spatially, but is in constant change responding to exogenous economic conditions and factors endogenous to the firm. These factors might involve management disposition toward dividends or their understanding of what their shareholders want. To be more specific, a broader and deeper analysis would be required, which at the present we cannot handle for several reasons, the most important of which being the monetary aspect of doing academic inquiry.

The era of disappearing dividends is *passé*. On the contrary, dividend payment levels exceed those of 20 years

ago. How long this lavish showering of dividends on the shareholder will last is anybody's guess. It seems that if and when the trust between agents and principals returns to the levels observed in the 1980s perhaps then a reversal can be expected. The study of dividends' historical evolution clearly shows that a turnaround will surely come. Unfortunately, at the moment we have nothing more solid to rely on than past history.

Final Words

In several papers, discussing financial models and theories of modern finance, the scene of the drunk trying to find his lost car key under the street light because that is the place that is lit, and not because that is the place he lost his key, was invoked. Regarding the dividend policy of firms, the dividend puzzle (Black [1976]) and the thirst for dividends by many shareholders, the analogy doesn't hold. A more appropriate similitude would be the inebriate who is looking for his car key in the dark, not because he lost it there, but because of the murkiness which makes it almost certain not to find it.

What we are arguing is that to understand dividends, and the dividend decision, we need a new path of research. The starting gate for this new journey should be a better understanding of shareholders' desire for dividends, that is, not that shareholders love dividends but why they do so. Because there is clearly a dividend decision and the shareholder is no *homo economicus*.

NOTES

1. The interested reader is referred to Frankfurter, G. M., and B. Wood, Jr. "Dividend Policy Theories and Their Empirical Tests." *International Review of Financial Analysis*, 11, (2002), pp. 111–138.
2. Hubbard was referring to the total elimination of tax on dividend income, which eventually was a compromise at 15% and 5%, respectively.
3. Joint Economic Committee. (2003). "Dividend Tax Relief and Capped Exclusions." Available at http://jec.senate.gov/_files/DividendTaxRelief.pdf
4. Germany (DE), Hong Kong (HK), Turkey (TR), the United Kingdom (UK), and USA (US).
5. Levine et al. (2005), p.375.
6. Recall from Table 2 that for the year 2000 the difference of annual dividends was significant with an error of Type I having the probability of 0.0000. Group A annual dividends (although quite low at \$0.59) were 4.5 times higher than Group B dividends (\$0.13).

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