
**Are Dividends Disappearing? Dividend Concentration
and the Consolidation of Earnings**

**Harry DeAngelo, Linda DeAngelo and
Douglas J. Skinner**

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University of Southern California Law School
Los Angeles, CA 90089-0071

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Are Dividends Disappearing?

Dividend Concentration and the Consolidation of Earnings

by

Harry DeAngelo

Linda DeAngelo

Douglas J. Skinner

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Abstract

Although the number of dividend paying industrials declines by more than 50% over the last two decades (Fama and French (2001a)), aggregate real dividends paid by industrials increase over the same period. Dividends increase despite a precipitous decline in the number of payers because (i) the reduction in payers occurs almost entirely among firms that pay very small dividends, and (ii) increased real dividends from the top payers swamp the modest dividend reduction associated with the loss of many small payers. These secular changes reflect high and increasing concentration in the supply of dividends which, in turn, reflect high and increasing earnings concentration. For example, 26 firms with real earnings of \$1 billion-plus account for 63.4% and 46.8% of aggregate industrial earnings and dividends in 2000. Our findings on dividend concentration cast doubt on the empirical validity of the dividend clientele and signaling hypotheses.

email: hdeangelo@marshall.usc.edu or ldeangelo@marshall.usc.edu or dskinner@umich.edu

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Are Dividends Disappearing?

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1. Introduction

In their intriguing study, “Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?,” Fama and French (2001a) document a large decline over 1978-1998 in the number and percent of non financial and non utility (hereafter, industrial) firms that pay dividends. Their analysis indicates that this dramatic change in dividend practices is due both to changes in the population of firms that are now publicly held (with many more public firms now exhibiting the characteristics of firms that historically have not paid dividends), and to a reduced propensity to pay dividends by firms whose characteristics historically would have led them to distribute cash to stockholders. Although Fama and French carefully state that their findings show a reduction in the number and percent of dividend paying firms, their evidence is commonly interpreted as indicating that dividends themselves are disappearing.¹ The latter view seems more than plausible, given the striking fact that the number of dividend paying industrials declines by more than 1,000 firms (over 50%) over the last twenty years.

Although our evidence confirms a radical transformation in corporate dividend practices over the last two decades, it does not indicate that dividends are disappearing. Rather, dividends paid by industrial firms actually increase over 1978-2000, both in nominal and in real terms (207.3% and 16.3% respectively for our sample). Why do aggregate real dividends increase despite a huge decline in the number of dividend paying firms? The answer is twofold: (i) the large reduction in the number of dividend paying firms occurs almost entirely among firms that pay very small dividends, with the net reduction in these firms having a minor impact on aggregate dividends paid by industrial firms, and (ii)

¹ For example, the New York Times and the Economist report that dividends have become less relevant and perhaps irrelevant, citing the findings of Fama and French as well as low dividend yields and the popularity of stock repurchases (“Dividends Are Fading as Market Signals, Too,” New York Times, November 7, 1999, “Shares Without the Other Bit: In Corporate America, Paying Dividends Has Gone Out of Fashion,” Economist, November 20, 1999, and “Economics Focus: Dividends End,” Economist, January 20, 2002). Time cites low dividend yields and an increased incidence of dividend omissions by healthy electric utility firms as evidence that “dividends have become only slightly more relevant than the gushing palaver in an annual report” (“Disappearing Dividends? Ending Payouts May Be a Good Thing for Investors,” Time, February 2, 1998).

dividends simultaneously increase substantially among the largest payers, reflecting a very large increase in their real earnings (denominated in 1978 dollars). The net result is that the increase in real dividends paid by firms at the top of the dividend distribution swamps the dividend reduction associated with the loss of many small payers at the bottom of the dividend distribution.

These secular changes reflect high and increasing concentration in the supply of dividends. For example, in 2000, three-quarters of aggregate industrial dividends are paid by a total of just 75 firms, each of which distributes at least \$100 million in real dividends. And the number of firms that pay real dividends of \$100 million-plus in 2000 is almost double the number of such firms in 1978 (75 versus 42). Further, the \$10.6 billion real dividend increase for this category from 1978 to 2000 drives the aggregate real increase for industrials as a group over this period. In absolute value, the \$10.6 billion increase is almost ten times the contemporaneous \$1.1 billion real dividend decline associated with the net reduction of 1,069 in the number of firms that pay real dividends of \$5 million or less. [The 1,069 firm net decline in the number of small payers accounts for 85.7% of the total decline from 1978 to 2000 in the number of dividend paying industrials.]

The increased concentration of dividends over the past two decades reflects a substantial underlying increase in the concentration of earnings among relatively few firms with very high real earnings. For example, the cross-sectional distribution of earnings in 2000 is dominated at the top end by 26 firms with real earnings of \$1 billion-plus, and by another 30 firms with over \$500 million (but less than \$1 billion) in real earnings. These 56 firms collectively generate \$79.6 billion in real earnings in 2000, or 86.2% of aggregate industrial earnings and 54.0% of the total earnings of firms with positive income (the difference reflects the fact that, in 2000, 44.7% of industrial firms report losses). For firms with \$500 million-plus in real earnings, total real earnings generated in 2000 are 163% greater than the total generated in 1978 (\$79.6 billion versus \$30.1 billion). In 2000, the 26 firms with \$1 billion-plus in real earnings pay almost half (46.8%) of aggregate industrial dividends, and the 56 firms with \$500 million-plus in real earnings pay 61.4% of aggregate dividends.

Changes in the cross-sectional distribution of real earnings – especially among firms at the top

end of the distribution – are the fundamental reason why real dollar dividends by industrials have increased even though, as Fama and French (2001a) conclude, industrial firms now exhibit a reduced propensity to pay dividends. In our sample, 100% of the firms with at least \$1 billion in real earnings pay dividends in 1978, whereas 84.6% pay dividends in 2000, clear evidence of a reduced propensity to pay. However, although a smaller proportion of firms with high real earnings now pays dividends, top earners continue to exhibit a very strong tendency to do so. And since firms at the top end of the distribution now produce so much more in real earnings, overall this group shows a large increase in real dividends even though a few very large earners such as Microsoft have not yet initiated dividends.

The remarkably high dividend concentration we document has implications for important issues in corporate finance, including the dividend clientele and signaling hypotheses and the evolution of corporate payout practices. We discuss these issues in section 6 below. Section 2 describes our sampling procedure and reports aggregate nominal and real dividends by industrial firms over the last two decades. Section 3 documents the concentration of dividends and the consolidation therein that has occurred over the last two decades. Section 4 examines the relation between the consolidation of dividends and corporate earnings. Section 5 documents how many of the 1978 dividend payers continue to pay dividends in 2000, and what happened to the remaining firms.

2. Sampling procedure and overall trends in nominal and real dividends, 1978-2000

Table 1 summarizes U.S. government data on aggregate dividends, which show a large upsurge in both real and nominal dividends for the corporate sector as a whole over 1978-2000. Nominal dividends increased 647.2% from \$50.8 billion in 1978 to \$379.6 billion in 2000, and real dividends (denominated in 1978 dollars) nearly tripled over the same period, increasing 182.9% from \$50.8 billion to \$143.7 billion. Although these data provide compelling evidence that dividends in the aggregate are flourishing, they are not confined to publicly traded industrial firms, the population for which Fama and French (2001a) document a sharp decline in the number of dividend paying firms. And given Moskowitz and Vissing-Jorgensen's (2002) estimates that the domestic private and public equity markets are roughly

equal in value, the table 1 aggregate dividend increase could conceivably be driven by private firms (perhaps together with publicly held non industrials), and might therefore mask a declining trend in dividends by publicly traded industrials.² However, data reported in table 3 below indicate that real and nominal dividends by publicly held industrials have in fact increased over 1978-2000, although the rates of increase are much less dramatic than those for the corporate sector as a whole.

In the remainder of this paper, we focus on non financial and non utility (industrial) firms on CRSP. Like Fama and French (2001a), we (i) exclude firms with SIC codes in the ranges 4900-4949 and 6000-6999 (which identify financials and utilities), and (ii) restrict attention to CRSP firms listed on the NYSE, AMEX, or NASDAQ with CRSP share codes 10 or 11 for at least one month of each sample year in question, and that have non missing share price and quantity data for December of that year. Almost all of our analysis requires data on the dollar value of total dividends and earnings, and we accordingly restrict attention to the subset of CRSP firms with dividends and earnings data available on Compustat (the CRSP/Compustat sample). Our sample sizes differ by minor amounts from those of Fama and French in part because we and they place different requirements on the availability of specific data items on Compustat, and probably also because of differences in the way we implement sampling conditions regarding the monthly observation of CRSP share codes and/or SIC industry membership. Fama and French's analysis focuses on 1978-1998, while we utilize data that became available after the publication of their study and therefore focus on the changes that have occurred from 1978 to 2000.

Table 2 indicates that (i) the large decline in the number of dividend paying firms from 1978 to 2000 is a phenomenon primarily confined to industrial firms, and that (ii) among industrials, dramatic declines in the number of dividend paying firms characterize both NYSE-listed firms and those on

² Another potential problem with the table 1 data is that the government's dividend totals include distributions of securities to stockholders effected, e.g., through spinoffs. Since spinoffs have likely increased over the last two decades, these data likely overstate the rate of increase in cash dividends. Also, to the extent that the government data embed an increase in preferred stock dividends (a possibility on which we have no evidence), the table 1 data overstate the rate of increase in cash payments to common stockholders. Given the enormous increase in aggregate real dividends in table 1, it seems very unlikely that spinoffs and increases in preferred dividends mask a reduction in common stock dividends – a view that is confirmed by our table 3 data below on common stock dividends for industrial firms on CRSP/Compustat.

NASDAQ/AMEX, with a sharper decline for the latter group. Consistent with the findings of Fama and French (2001a), the number of dividend paying industrials on CRSP falls 58.9%, from 2,250 in 1978 to 925 in 2000 (column (1)). Over the same period, the number of financial/utility firms on CRSP that pays dividends increases by 9.5% from 852 to 933 (column (2)). Within the set of industrials, the number of NYSE-listed payers falls 38.4% over 1978-2000, from 1,015 to 625 firms (column (4)), while the number of payers on NASDAQ/AMEX declines by 75.7%, from 1,235 to 300 (column (5)). Because the precipitous decline in the number of dividend paying industrials is not matched by a similar decline for financials/utilities, it cannot simply reflect a general increase in managers' aversion to paying dividends, but must instead relate to some underlying fundamental change(s) largely confined to industrial firms.

Table 3 presents descriptive statistics of the changes from 1978 to 2000 in the dividend practices of industrial firms on CRSP (rows (1) and (2)), and on CRSP/Compustat (rows (3) through (10)). Again consistent with Fama and French (2001a), rows (2) and (4) show that the proportion of dividend paying industrials falls precipitously, from 63.9% in 1978 to 18.5% in 2000 for firms on CRSP, and from 65.1% to 19.4% for firms with data on CRSP and Compustat.³ [Although not reported in the table, the proportion of dividend paying financials/utilities on CRSP falls from 79.9% to 71.6% over 1978-2000, a decline that occurs because the number of listed firms increases by a proportionately greater amount than the number of dividend payers.]

Although dividends are now paid by many fewer industrial firms, these firms' aggregate nominal dividends increase by 207.3%, from \$31.3 billion in 1978 to \$96.2 billion in 2000 (row (5) of table 3), and their aggregate real dividends (denominated in 1978 dollars) increase by 16.3%, to \$36.4 billion in 2000 (row (6)).⁴ The mean real dividend paid (per dividend paying firm) increases from \$14.4 million in

³ The CRSP/Compustat sample assigns each firm to 1978 (or 2000) based on the calendar year in which its fiscal year end falls, while the CRSP sample assigns a December 31 year end for all firms. Since a minority of firms has a fiscal year end other than December 31, it is possible for the number of dividend paying firms on CRSP/Compustat to exceed the number on CRSP (which is the case here for 2000 as a comparison of rows (1) and (3) indicates).

⁴ The Fama and French (2001a) approach of first screening for firms with CRSP share codes 10 or 11 and then matching with Compustat data offers protection against the possibility that changes in Compustat's coverage over time drive the results. For example, since Compustat has recently added many foreign firms with ADRs that pay very large dividends, the magnitude of the aggregate increase in dividends paid by the full Compustat population is

1978 to \$39.2 million in 2000, while the median increases from \$1.4 million to \$3.6 million (rows (7) and (8)). The difference between mean and median real dividends – and the large expansion in that difference over 1978-2000 – offers some hint of both the substantial concentration of dividends in 1978 and the increase therein that has occurred over the last two decades, as we discuss in section 3 below.

Table 3 also reveals that NYSE-listed firms account for 66.0% of dividend payers and 97.2% of dividend payments in 2000, both of which represent increases from their respective levels of 45.0% and 94.7% in 1978 (rows (9) and (10)). The overwhelming percentage of dividends paid by NYSE industrials is consistent with the common view that older and more stable (thus dividend paying) firms tend to list their shares on the NYSE, while younger growth (thus not dividend paying) firms gravitate to NASDAQ. And since larger firms tend to list on the NYSE, these percentage changes are consistent with the view that dividends have become increasingly concentrated among larger firms in recent years.

3. The concentration and consolidation of dividends over the last two decades

Table 4 ranks dividend paying industrial firms from highest to lowest in terms of total dollar dividends paid in a given year, with the first row corresponding to the 100 firms that pay the largest dividends, the second row corresponding to the 100 firms with the next largest dividends, and so on. The first two columns of the table report each ranked group's percentage of total dividends paid in 1978 and 2000, while the middle two columns give cumulative totals of the percentage amounts in the first two columns for those two years. The last two columns of table 4 report real dollar dividend totals (in 1978 dollars) for each group, both for 1978 and for 2000.

Table 4 shows that the distribution of dollar dividend payments by firms in the CRSP/Compustat sample is highly skewed, with a relatively modest number of (evidently very large) firms accounting for

misleadingly large. The aggregate dividend comparisons in table 3 do not suffer from this problem, as they were generated using the Fama and French sampling approach. Nor are they substantively affected by firms on CRSP that do not have dividends and earnings data available on Compustat. Using CRSP dividend data to augment the data in row (6) of table 3 for the latter firms, we find that the gap between 1978 and 2000 real dividends narrows by \$129 million, so that real dividends increase over 1978-2000 for the full set of firms.

the overwhelming majority of aggregate industrial dividends. The table also establishes that the degree of dividend concentration has increased substantially over the last two decades. In 1978, the top 100 dividend payers supply 67.3% of the total dividends paid by industrial firms. And the group that pays the next largest 100 dividends accounts for another 11.8%, so that cumulatively the top 200 firms pay a remarkable 79.1% of aggregate dividends. By 2000, the top 100 payers alone are responsible for 81.0% of aggregate industrial dividends, while the top 200 cumulatively supply a full 91.6%.⁵ In both 1978 and 2000, the top 500 dividend payers pay all but a very minor fraction of aggregate dividends of industrial firms (92.2% of total dividends paid in 1978 and 98.8% in 2000).

The last two columns of table 4 indicate that the top 100 dividend payers in 2000 pay real dividends (nominal dividends converted to 1978 dollars) of \$29.5 billion, an amount almost equal to the \$31.3 billion paid in 1978 by all 2,176 dividend payers in the CRSP/Compustat sample. The \$29.5 billion in real dividends paid in 2000 represents an increase of \$8.4 billion (39.9%) over the \$21.1 billion in dividends distributed by the top 100 dividend paying industrials in 1978. The \$8.4 billion increase in real dividends for the top 100 dividend payers over 1978-2000 is just \$1.8 billion less than the \$10.2 billion in total real dividends paid by all but the top 100 firms in 1978. In other words, the increase in real dividends paid by the top 100 payers in 2000 (above the dividends paid by the top 100 in 1978) almost equals the level of total dividends paid in 1978 by all firms below the top 100 payers in that year – clear evidence of a substantial increase in the concentration of dividends over the last two decades.

Table 5 reports the cross-sectional distributions of real dividends in 1978 and in 2000, with firms allocated to one of 13 classifications based on the dollar magnitude of real dividends paid in a given year – from classification A for firms that pay real dividends of \$500 million or more, down to classification

⁵ Table 4's measured increase in concentration at the top end of the dividend distribution is not an artifact of the reduction in the number of payers. To see why, suppose that we eliminate all dividends by firms ranked 901 and below in 1978 (a rough approximation to the sample decline from 2,176 firms in 1978 to 929 firms in 2000). Since the top 900 firms account for 97.2% of all dividends in 1978, the percent of dividends attributable to the top 100 firms is 69.2% ($= 67.3\% / (.972)$), which falls below the comparable 81.0% figure for the top 100 in 2000. Table 5's cross-sectional distribution of firms' real dividends (discussed below) provides a more striking indication of the consolidation that occurred at the top end of the dividend distribution from 1978 to 2000.

M for firms that pay real dividends of less than \$1 million. The first two columns of the table present the number of firms in each real dividend category in 1978 and in 2000. The third column gives the net change in the number of firms in a given category and the fourth reports the percentage change. The last four columns present statistics comparable to those in the first four columns, but based on real dollar dividends rather than on the number of dividend paying firms. [Table 10 reports a breakdown of the dividend and listing status in 2000 for the firms whose 1978 dividends appear in the 13 rows of table 5.]

The four main regularities established by table 5, which we discuss in turn below, are that: (i) firms that pay \$100 million or more in real dividends increase substantially in number over 1978-2000, (ii) total real dollar dividends by these firms also increase substantially over 1978-2000, (iii) the large decline in the number of dividend paying firms over the past two decades comes almost entirely from the low end of the real dividend distribution, and (iv) the reduction in real dividends associated with the decline in the number of dividend payers at the low end of the distribution is far smaller than the substantial increase in real dividends paid by firms at the top end of the distribution.

Table 5 indicates that in 1978 six firms pay at least \$500 million in annual dividends, with a total of 42 firms paying dividends of at least \$100 million whereas, by 2000, 14 firms pay at least \$500 million and a total of 75 firms each pays \$100 million or more in real dividends. As the table shows, these figures represent an increase over 1978-2000 of 133.3% in the number of \$500 million-plus payers, and an increase of 78.6% in the number of \$100 million-plus payers. In 2000, the 14 firms in the \$500 million-plus category pay a total of \$15.4 billion in real dividends, an increase of 69.1% over the \$9.1 billion in dividends paid in 1978 by the six firms in this group. The 75 firms that pay \$100 million-plus in real dividends in 2000 distribute \$27.6 billion in real dividends in that year. This amount is just \$3.7 billion less than the \$31.3 billion in dividends paid by all 2,176 CRSP/Compustat dividend payers in 1978, and is 62.3% greater than the \$17.0 billion in total dividends paid in 1978 by firms in the \$100 million-plus dividend category.

While the number of firms that pay real dividends of \$100 million or more increases from 42 to 75 (up 78.6%) over 1978-2000, the number that pay less than \$100 million decreases by 1,280 firms

(down 60.0%). Total real dividends for firms that pay less than \$100 million are \$14.4 billion in 1978, representing 45.8% of all dividends paid in that year. In 2000, real dividends paid by this group are just \$8.9 billion, or 24.4% of aggregate dividends paid in 2000. The \$5.5 billion decline in real dividends constitutes a 38.3% decline over 1978-2000 for firms that pay less than \$100 million in real dividends. We observe declines in both the number of firms and total real dividend payments for every real dividend category below \$100 million – and in virtually every such case, these declines are substantial. With the exception of the category for \$60-79.9 million in real dividends, all categories experience net declines of at least 34.0% in the number of firms and in total real dividend payments.

The bottom row of table 5 indicates that the large decline over 1978-2000 in the number of dividend paying firms manifests primarily as a net reduction in the number of firms in the two smallest real dividend classes, which together comprise firms that pay less than \$5 million in real dividends. Specifically, the group that pays less than \$5 million has a net reduction of 1,069 firms, which is 85.7% of the 1,247-firm decline in the total number of dividend paying industrials over 1978-2000. Although almost all of the total decline in the number of dividend paying industrials comes as a net reduction in the number of firms that pays less than \$5 million, the associated \$1.1 billion total reduction in real dividends is dwarfed by the real dividend increases at the top end of the distribution (e.g., the \$10.6 billion increase in real dividends for the \$100 million-plus category, which increases by just 33 firms).⁶

Overall, tables 4 and 5 reveal a major shift in how (real) dividends are channeled to investors, with more industrial firms now making very large dividend distributions and considerably fewer firms making small distributions. We reported in table 3 that the mean and median real dividend payment (per dividend paying firm) increased from \$14.4 million and \$1.4 million in 1978 to \$39.2 million and \$3.6

⁶ The 1,069-firm reduction at the low end of the dividend distribution in table 5 is a net decline that reflects the disappearance of many firms (e.g., due to merger, distress, or growth in real dividends) and the addition of some firms that now pay small real dividends (because they initiated dividends or cut them from a higher real level). Table 10 below shows that 1,152 firms that pay less than \$5 million in 1978 dividends were subsequently delisted due to acquisition or financial distress. Taken together, the figures in tables 5 and 10 imply that very few firms are newly added to the set that pays small dividends in 2000. A plausible explanation for low rates of dividend initiation among newly listed firms comes from Fama and French (2001b), who document that recent new lists tend to have persistent low profitability and low survival rates. See section 5 below for further discussion.

million in 2000. The fact that the mean substantially exceeds the median in each year reflects pronounced skewness in the cross-sectional distributions of real dividends documented in table 5. And consistent with the distributional changes summarized in the latter table, the increase in the median value of real dividends reflects the elimination of a large number of firms that paid modest dividends, while the difference between mean and median widens significantly as a consequence of the substantial increase in the number of firms that pays very large real dividends.

4. The cross-sectional distribution of earnings and the concentration of dividends

Black and Scholes (1974) and Miller (1977) argue that what matters to investors is the aggregate supply of securities with a given set of financial characteristics (e.g., dividends, taxable interest returns, etc.), and not the number of firms delivering the aggregate supply or the quantity supplied by any particular firm or set of firms. In this view, the large decline in the number of dividend paying industrials is of little or no consequence to investors so long as sufficient dividends are supplied in total to meet investors' demand for security payoffs in that form. Since aggregate real dividends increase over 1978-2000 at the same time that the number of dividend payers decreases, the latter decrease evidently was not caused by a reduction in investors' aggregate demand for dividends. Instead, the radical decrease in the number of payers and the increased dividend concentration that we observe must reflect underlying changes in the factor(s) that determine the dividend supply decisions of industrial firms.

Lintner's (1956) finding that corporate boards view earnings as the primary determinant of dividends suggests that the high (and increasing) concentration of dividends we observe is plausibly the consequence of high (and increasing) earnings concentration. The evidence reported next strongly supports this hypothesis, indicating that (i) earnings, like dividends, are highly concentrated in 1978 and become considerably more so in 2000, (ii) the cross-sectional distribution of real earnings is now dominated by firms at the extremes (those with very high real earnings and those with losses), (iii) a modest number of firms with real earnings above \$1 billion accounts for the majority of 2000 aggregate earnings, (iv) while dividends are now paid by a smaller proportion of firms with very high earnings, the

vast majority of these firms continues to pay dividends and, as a group, these high earners dominate the aggregate supply of dividends, and (v) total real earnings increase from 1978 to 2000, with most of the increase coming from firms at the top end of the 2000 real earnings distribution.

4.1 Dividend rank and earnings concentration in 1978 and in 2000

Table 6 presents data on earnings concentration in 1978 and in 2000, in the same format as table 4, i.e., the rows classify dividend paying industrials into sets of 100 firms ranked from those that pay the largest down to those that pay the smallest annual dividends. The first two columns of the table report the percent of earnings (relative to the total for dividend paying industrials) attributable to each ranked category of dividend payers, while the third and fourth columns give the cumulative percent beginning with the top dividend group and ending with the bottom group. The fifth and sixth columns of table 6 report real earnings for each dividend group in 1978 and in 2000.

Table 6 indicates that, while in 1978 earnings are highly concentrated, substantial additional consolidation has occurred over the last two decades, a finding similar to that for dividend concentration in table 4. In 1978, the top 100 dividend payers generate 57.5% of the earnings of all dividend paying industrial firms. Firms ranked in the second group of 100 account for another 13.5%, so that cumulatively the top 200 dividend payers in 1978 are responsible for 71.0% of the aggregate earnings reported by CRSP/Compustat industrial firms. The share of aggregate earnings attributable to the top 100 dividend payers in 2000 rises to 72.9%, while the share of the top 200 rises to 85.4%. All told, the top 500 dividend paying industrials account for 97.2% of the earnings of all dividend payers in 2000, up from 87.1% of the total earnings of all payers in 1978.

Table 6 also indicates that the top group of dividend payers exhibits a very large increase in total real earnings over 1978-2000, and that other groups near the top end show substantial but smaller real earnings increases. The top 100 dividend payers report \$74.9 billion in real earnings in 2000, an amount which exceeds 90% of the total earnings of all 2,176 dividend payers in 1978, and which represents an increase of \$27.4 billion, or 57.5%, over the \$47.5 billion in earnings for the top group in 1978. This 57.5% increase in real earnings is more than sufficient to fund the 39.9% increase in real dividends for

this group (per data in table 4), a fact which suggests that the dividend consolidation we observe among firms at the top end of the real dividend distribution is a result of the increased concentration of these firms' real earnings.

4.2 Cross-sectional distributions of real earnings in 1978 and in 2000

Table 7 documents the cross-sectional distributions of real earnings in 1978 and in 2000 for all CRSP/Compustat industrial firms, i.e., for dividend payers and non payers pooled. Panel 1 reports the distribution of a single year's (1978 or 2000) real earnings realizations, while panel 2 reports the distribution of average real earnings for the five year periods ending in 1978 and in 2000. Since Lintner's (1956) analysis indicates that dividends tend to be set in response to long run earnings rather than a single (possibly aberrant) earnings realization, the five year average earnings data in panel 2 are probably a more relevant determinant of dividends than the one year data in panel 1. The panel 2 data are especially useful in the current context because a remarkably large number of industrial firms report losses in 2000, raising the possibility that losses are a transitory phenomenon for a reasonable number of firms. If so, the five year earnings measure will offer a superior indication of industrial firms' long run capacity to pay dividends.

Panel 1 of table 7 indicates that real earnings in both 1978 and 2000 are concentrated among relatively few firms at the top end of the distribution, and that such concentration is notably greater in 2000 than it was in 1978. For example, in 1978, nine firms report \$1 billion-plus in earnings for a total of \$20.7 billion, which represents 24.4% of aggregate industrial earnings (row A of panel 1). In 2000, 26 firms fall in the same earnings category, and their real earnings total \$58.5 billion, or 63.4% of aggregate earnings (row B of panel 1). In 2000, the 56 firms with real earnings of \$500 million-plus produce \$79.5 billion in real earnings, which represents 86.2% of aggregate earnings and 54.0% of the total earnings of firms with positive income. [The difference in these percentages reflects the large aggregate losses reported in row I and discussed below.] The \$79.5 billion in total real earnings of the 56 firms in the \$500 million-plus category is more than two and one-half times the \$30.2 billion total earnings for the 22 firms in this group in 1978. The five year average real earnings figures in panel 2 also show a dramatic

increase at the top end of the distribution, although the increase is somewhat smaller than that for the one year earnings distribution. For example, the number of firms with \$500 million-plus in five year average real earnings doubles from 19 in 1978 to 40 in 2000, and the total real earnings of these firms also doubles from \$25.8 billion to \$52.9 billion (rows A and B of panel 2).

Table 7 also indicates that, in the aggregate, real earnings increase from \$85.0 billion in 1978 to \$92.4 billion in 2000, while aggregate five year average earnings increase from \$75.1 billion to \$88.7 billion. These increases in aggregate real earnings are due to increases among firms at the top end of the cross-sectional distributions (see the top three rows of panels 1 and 2). Restricting attention to the subset of firms with positive earnings (or positive five year average earnings), we see even larger total real earnings increases from 1978 to 2000. Panel 1 shows that firms with positive earnings generate \$86.1 billion in 1978 and \$147.4 billion in 2000 real earnings, for an increase of \$61.3 billion, or 71.2%, while panel 2 shows a corresponding increase of \$36.9 billion (49.1%) in the five year average real earnings measure. Since earnings determine the capacity to pay dividends, all of these aggregate earnings figures indicate that industrial firms collectively had a greater ability to pay (real) dividends in 2000 than they paid in 1978 – and, as documented earlier, they used this capacity to pay greater aggregate dividends in 2000 than in 1978.

Table 7 further shows that, in 2000, the total earnings of firms with positive income exceed aggregate earnings by the \$55.0 billion in total losses of firms with negative income (see row I of panel 1). These aggregate losses are much larger than the \$1.1 billion in losses reported in 1978 by all industrial firms. Averaged over the five years ending in 2000, industrial firms' total losses are \$22.7 billion, an amount that is also far greater than the \$0.6 billion average total losses for the five years ending in 1978. Almost half – 44.7% or 2,144 – of all industrial firms report losses in 2000,⁷ with most firms reporting real losses of less than \$10 million per firm (1,554 firms, not reported in table 7). But

⁷ Hayn (1995), Burgstahler and Dichev (1997), and Fama and French (2001a, 2001b) previously document a substantially increased incidence of losses in recent years. The proportion (44.7%) of industrial firms reporting losses in 2000 is quite high, but the incidence of losses has been high for some years. For example, Fama and

there are also 94 firms whose real losses exceed \$100 million, with the largest loss of \$2.8 billion reported by At Home Corp. Technology firms are prominent among the companies with \$100 million-plus in real losses, as one would expect, and they include Amazon, Web MD, Webvan, Priceline, Covad, Akamai, Ariba, JDS Uniphase, Earthlink, Broadcom, PSINet, MP3.Com, and CMGI. These firms obviously faced very uncertain futures in 2000, and it is understandable that management had failed to initiate dividends by this time. DeAngelo, DeAngelo, and Skinner (1992) document that losses play a key role in leading firms to reduce or eliminate dividends, and this general tendency – coupled with the much higher number and magnitude of losses in recent years, especially for newly listed firms (Fama and French (2001b)) – plausibly helps explain why so many fewer industrial firms now pay dividends.

4.3 Cross-sectional distributions of real earnings for dividend payers versus non payers

Table 8 partitions the 1978 and 2000 pooled distributions of real earnings from table 7 into separate distributions for dividend payers and for non payers. As in table 7, panel 1 presents the distributions for a single year's earnings realization, while panel 2 presents the distributions for the five year average of real earnings. In 1978 and 2000 respectively, dividends are paid by 17.0% and 4.1% of firms that report losses (row I of panel 1). In 2000, dividends are paid by just 2.0% of the firms with negative five year real earnings, down from 4.9% in 1978 (row I of panel 2). The overwhelming incidence of non payers among loss firms is consistent with the view that poor earnings performance leads many fewer firms to pay dividends in 2000. This view is further supported by the fact that non payers' real earnings in 2000 total a negative \$10.4 billion, and that their five year average real earnings total just \$0.9 billion (due to the large total losses of firms that do not pay dividends). [The decline in the percent of loss firms that pays dividends also reflects Fama and French's (2001a) finding of a reduced propensity to pay dividends, and we return to a discussion of this phenomenon below.]

Table 8 also reveals that, in both 1978 and 2000, a relatively small number of dividend paying firms at the top end of the real earnings distribution accounts for a very large proportion of the aggregate

French (2001a, figure 3) report that, by the late 1980s, nearly 30% of industrials report negative earnings before interest but after taxes and this pattern persists until the mid-1990s, when the incidence moves above 30%.

earnings of CRSP/Compustat industrial firms. Panel 1 shows that, in 1978, all nine firms with real earnings above \$1 billion pay dividends, and this group's earnings comprise almost a quarter of aggregate industrial earnings (\$20.8 billion, or 24.4% of the \$85.0 billion total). In 2000, the 22 dividend payers with real earnings of \$1 billion-plus together generate more than half of aggregate industrial earnings (\$50.0 billion, or 54.1% of the aggregate \$92.4 billion in real earnings), and more than one-third (33.9%) of total earnings for the 2,650 firms with positive earnings. And the 83 payers with \$250 million-plus in real earnings account for more than three-quarters (77.1%) of aggregate earnings in 2000, and for more than half (53.8%) of total earnings for firms with positive earnings in that year. Similarly, 71 dividend payers have five year average real earnings of \$250 million-plus, for total average real earnings of \$61.0 billion, which is 78.6% of aggregate industrial earnings and 54.7% of the total earnings of firms with positive income (see the top three rows in panel 2 of table 8).

Both panels of table 8 document a strong positive relation between the level of real earnings and the proportion of firms that pays dividends, and they also show that the relation in 2000 is weaker than it was in 1978. For example, only four (2.3%) of the 171 firms with earnings of \$100 million-plus in 1978 fail to pay dividends while, in 2000, 64 (28.2%) of the 227 firms in this real earnings category fail to do so (see rows A-D in panel 1 of table 8). In 1978, over 90% of the firms in every earnings category from \$10 million up pays dividends, while in 2000 each of these categories exhibits a notably lower percent of dividend paying firms, ranging from 84.6% for firms with real earnings of \$1 billion-plus to 36.1% for firms with real earnings of \$10-\$25 million. The five year average real earnings data in panel 2 also show a reduced percentage of firms in a given earnings category that do not pay dividends in 2000 relative to 1978, but the decline is not as pronounced as that in panel 1.

The fact that a smaller proportion of firms with a given level of real earnings pays dividends in 2000 than did so in 1978 supports Fama and French's (2001a) conclusion that industrial firms now exhibit a lower propensity to pay dividends. [Fama and French use the term "reduced propensity to pay" to characterize the decision to pay or not pay dividends, and specifically to express the idea that, holding constant the factors that would normally lead firms to distribute at least some cash dividends, a smaller

proportion of firms actually does so now.] Although the table 8 data clearly support a reduced propensity to pay dividends among the industrial firms in our sample, this reduced propensity to pay is insufficiently strong to generate a reduction in aggregate real dividends paid by industrials in 2000, a number that actually increases relative to those paid in 1978 (per data reported in section 2 above).

Why do aggregate dividends increase when industrial firms as a whole now exhibit a reduced propensity to pay? Several factors are jointly responsible. Most fundamentally, aggregate real earnings (and total earnings of firms with positive income) increase from 1978 to 2000 and, although real earnings are quite concentrated in 1978, they have become substantially more concentrated over the last two decades. And, the reduced propensity to pay dividends notwithstanding, firms at the top end of the real earnings distribution continue to exhibit a very strong tendency to pay dividends (see row A in both panels of table 8). The fact that top-end firms now produce so much more in aggregate real earnings generates, in turn, both a large increase in real dividends and a substantially greater concentration of those payments. On net, the substantial increase in real earnings at the top end of the distribution, coupled with the strong tendency of top-end firms to pay dividends, dominates the real dividend reduction from the reduced propensity to pay (which manifests primarily in a large net reduction in the number of firms that pays very small dividends).

Appendix tables A1 and A2 respectively identify the 25 industrials that pay the largest dividends in 2000 (ranked in descending order of dividends paid), and the 26 firms with \$1 billion or more in real earnings in that year (ranked in descending order of earnings). Table A1 indicates that the primary suppliers of dividends are well-established “old line” firms such as Exxon Mobil and General Electric. It also shows that these dividend paying firms experienced massive growth in real earnings over 1978-2000 and, with the exception of one firm that reports a loss, uniformly report very high levels of real earnings in 2000. Eighteen of the top 25 dividend payers in table A1 also appear in table A2’s list of the 26 firms with \$1 billion-plus in real earnings for 2000. Only three of these 26 firms exhibit a decline in real earnings over 1978-2000, and for most firms, the increase in real earnings is quite large. The four non dividend payers with \$1 billion or more in real earnings are all technology firms (Microsoft, Oracle,

WorldCom, and Cisco), and their 2000 earnings contribute 22.9% of the increase above 1978 earnings for the 26 firms with \$1 billion-plus in real earnings.⁸

4.4 Aggregate and median payout ratios in 1978 and in 2000

Table 9 presents five measures of industrial firms' payout ratios which collectively indicate that there has been little change over the last two decades in the fraction of (one year or five year average) earnings typically distributed by dividend paying firms. Row 1 reports that the ratio of aggregate dividends to the aggregate earnings of payers and non payers pooled increases a small amount (from 36.9% to 39.4%) using a single year of earnings in the denominator, and erodes a bit (from 41.7% to 41.1%) using five year average earnings. Because they pool the earnings of payers and non payers, the row 1 statistics offer a clouded picture of the payout ratios typically adopted by dividend paying firms. For example, the row 1 denominators include both the large total dollar losses of non payers in 2000 (which inflate the ratios) and the substantial positive earnings of firms like Microsoft which do not pay dividends in 2000 (which deflate the ratios).

The remaining rows in table 9 offer superior measures of the payout ratios of dividend paying firms because they include only the earnings of those firms in the denominator. Row 2 reports the ratio of aggregate dividends to the total earnings of dividend payers, while row 3 presents the median value of individual firms' payout ratios. Rows 4 and 5 report the same statistics for the "constant composition sample" of 474 firms that pay dividends in both 1978 and 2000. [An advantage of the constant composition sample is that it more likely captures genuine changes in payout policy as opposed to differences over time in the population of firms. The ratios in rows 3 and 5 equally weight all observations, while those in rows 2 and 4 give more weight to firms with large dividends and earnings.]

There are some modest increases and some modest decreases among the payout ratios in rows 2-

⁸ Microsoft, often viewed as a bellweather technology stock, has recently come under pressure to initiate dividends. See "Microsoft's \$40 Billion Bet," *Money*, May 2002. WorldCom is classified by Compustat as not paying dividends, even though the tracking stock for its MCI unit did pay dividends in 2000. Our empirical work employs the Compustat dividend amounts for all sample firms. For what it's worth, the recent accounting scandal at WorldCom suggests that the firm's year 2000 earnings ranking in tables 7 and 8 is far too high.

5, but the overall impression from table 9 is that there has been little change in payout ratios over the last two decades. For example, the ratio of aggregate dividends to the total earnings of dividend paying firms declines 2.5%, from 37.9% in 1978 to 35.4% in 2000, based on a single year's earnings, while the ratio based on five year average earnings declines 1.0%, from 42.5% to 41.5% (row 2). For the full sample of industrials, the median payout ratio rises 2.1%, from 26.2% to 28.3%, based on the one year earnings measure, and erodes 0.3%, from 31.1% to 30.8%, based on five year average earnings (row 3). For the constant composition sample, three of the four payout ratios show declines of 3.6%, 2.4%, and 1.8%, while the other ratio increases by 5.5%. Overall, the differences between the payout ratios for 1978 and 2000 (shown in rows 2-5) all fall within a few percentage points of zero, and thus they offer no indication of either a large increase or a large decrease over the last two decades in the fraction of earnings that dividend payers distribute to stockholders.

The payout ratios in table 9 are consistent with the analysis of Fama and French (2001a, p.38) who find no tendency toward a decline over 1978-1998 in the ratio of aggregate dividends to the total earnings of dividend payers. Fama and French (p. 35) also investigate the consequences of the large upsurge in stock repurchases in recent years and document that repurchase activity is dominated by dividend paying firms, so that repurchases increase the "already high" cash payouts of dividend payers. In sum then, although it is well known that aggregate repurchase activity has increased greatly in recent years (both in absolute terms and relative to dividends), the available data indicate that dividend paying industrials have not systematically reduced the fraction of earnings they distribute as dividends, and have instead used repurchases to increase the overall fraction of earnings distributed to stockholders.

5. Dividend decisions in 2000 of firms that pay dividends in 1978

Table 10 classifies the 2,176 firms on CRSP/Compustat that pay 1978 dividends according to whether they also pay dividends in 2000, whether they remain listed at that time, and the primary reasons for delisting. Column (1) replicates the distribution of 1978 dividends originally presented in table 5. Columns (2) and (3) report, respectively, the number of 1978 dividend payers in each size category that

are also in our sample for 2000, and the number that are listed but do not pay dividends in 2000. Columns (4) and (5) contain the number of dividend paying firms in each size category that are in our 1978 sample, but that were delisted post-1978 due either to financial distress or acquisition. The financially distressed delists in column (4) include all firms with CRSP delist codes in the range 500-599 (delisted or stopped trading) and those with codes in the range 400-499 (liquidations) for which The Wall Street Journal Index (WSJI) provides no clear indication that the firm was acquired. The acquisition delists in column (5) include all firms with CRSP delist codes in the range 200-299 (mergers) and those firms with CRSP delist codes in the range 300-399 (security exchanges) and 400-499 (liquidations) for which the WSJI indicates that the company was acquired.⁹

Firms that pay dividends in both 1978 and 2000 dominate the aggregate supply of 2000 dividends, distributing \$30.6 billion, or a full 84.1% of aggregate dividends paid by industrials in 2000 (column (2) of table 10). The small number of these firms, 474 or 21.1% of the 1978 dividend payers, does not adequately convey their importance to the aggregate supply of dividends in either 1978 or 2000. Their dominance of the dividend supply is most evident at the top end of the dividend distribution, with 31 of the 42 firms that pay \$100 million or more in 1978 dividends continuing to pay them in 2000 (columns (1) and (2) of table 10). This top group of continuing dividend payers contains 13 of the 14 firms that pay \$500 million-plus in real dividends in 2000 (per table 5). [The fourteenth \$500 million-plus payer, SBC, was spun off in 1984 from AT&T, which is one of the other 13 firms.] The surviving dividend payers (column (2)) dominate the dividend supply because their real earnings are huge, and those earnings increased substantially over the past two decades, growing 71.9% from \$47.3 billion in 1978 to \$81.3 billion in 2000.

⁹ This classification scheme is similar to that employed by Fama and French (2001b, table 4), who treat all delist codes in the range 200-399 as delisted due to merger and all codes in the range 400-599 as delisted for “cause.” The samples in columns (2) through (5) of table 10 are mutually exclusive, but not exhaustive. They do not include 40 firms with CRSP delist codes in the range 300-399 (which CRSP calls security exchanges) that we did not classify as acquisitions based on information in the WSJI. If we classify these firms as acquisitions, the sample in column (5) grows by 40 firms and \$136 million in 1978 dividends. The samples in columns (2) through (5) also do not include 15 firms that paid dividends in 1978, but that do not have dividends and earnings data on Compustat for 2000. The latter 15 firms paid \$254 million in dividends in 1978.

Column (3) of table 10 reports that 159 (7.3%) of the firms that pay dividends in 1978 remain listed, but pay no dividends in 2000. In 1978, none of these firms individually pays as much as \$80 million in dividends (per rows A-F), and 129 (81.1%) of them pays less than \$5 million (per rows L and M). In total, the 159 firms that stopped paying dividends previously paid only \$1.0 billion (3.2% of the 1978 total), and the loss of their dividends is far outweighed by the large supply expansion at the top end of the dividend distribution. The fact that these 159 firms no longer pay dividends likely reflects their almost 50% decline in total real earnings from \$3.9 billion in 1978 to \$2.0 billion in 2000. Their earnings totals are dwarfed by those of the continuing dividend payers in both 1978 and 2000, and their almost 50% real earnings decline stands in marked contrast to the 71.9% increase for the latter group.

Table 10 indicates that 239 (11.0%) of the 1978 dividend payers are subsequently delisted due to financial distress, with the vast majority of these firms having paid very small 1978 dividends. Specifically, 221 (92.5%) of the financially distressed delists paid dividends of \$5 million or less in 1978 (per rows L and M). The total 1978 dividends paid by the 239 subsequently distressed delists is \$0.4 billion, or 1.3% of aggregate 1978 dividends paid by industrial firms. Thus, even though a reasonably large number of the firms that pay 1978 dividends were subsequently delisted due to financial distress, the contribution of these firms to the 1978 aggregate dividend supply was small. The 239 financial distress delists combined with the 159 firms that remain listed but pay no 2000 dividends, whose real earnings have declined nearly 50% from 1978, are jointly responsible for only a small fraction (4.5%) of 1978 dividends. So, while financial distress contributes to a material reduction in the number of dividend paying firms over 1978-2000, the associated loss in real dividends is not large.

Table 10 also shows that well over half – 1,249, or 57.4% – of the firms that paid dividends in 1978 are delisted because they were acquired, and that these firms account for \$10.0 billion (31.9%) of 1978 aggregate dividends and \$28.9 billion (34.0%) of aggregate earnings (column (5)). In marked contrast to the financial distress delists in column (4), the dividend payers that are acquired post-1978 come from all but the very top tier of the dividend distribution. Among firms that paid the largest 1978 dividends, five that paid \$250 million-plus are subsequently acquired. All five are oil firms – a fact

which reflects the major consolidation in the petroleum industry in recent years. At the lower end of the dividend distribution, 931 firms that paid less than \$5 million in dividends in 1978 are subsequently acquired (per rows L and M of column (5)). The latter observation – coupled with the row L and M entries in column (4) – indicate that acquisitions are the primary factor (and financial distress the secondary factor) underlying the large decline over 1978-2000 in the number of firms that make very small dividend distributions (documented earlier in table 5).¹⁰

While both financial distress and acquisitions contribute to the decline in the number of dividend paying firms, these two corporate events have very different ramifications for dividend policy. Financially distressed firms eliminate dividends because of reduced profitability, i.e., because of their reduced capacity to continue payouts. In contrast, the typical acquisition does not itself reduce the ability of the target firm's future earnings to support dividends. This point is perhaps most easily seen in acquisitions for stock, which were especially prevalent in the 1990s.¹¹ Since bidders rarely reduce dividends in conjunction with an acquisition, the issuance of bidder shares to target stockholders typically increases the bidder's total dividend and thereby implicitly continues at least a portion of the dividends previously paid by the target firm. For example, Compustat reports that in 1998, Exxon paid \$4.0 billion in dividends and Mobil paid \$1.8 billion in dividends. Following the November 1999 merger of the two firms, Exxon Mobil paid \$6.1 billion in 2000 dividends, reflecting the addition of Mobil's earnings to Exxon's own earnings. Importantly, Exxon's acquisition of Mobil did not cause Mobil's

¹⁰ While acquisitions clearly contribute to the increased concentration of earnings and dividends over 1978-2000, they cannot be the entire story. For example, Wal-Mart, Intel, and Home Depot, ranked 22nd, 43rd, and 77th for their 2000 dividends, had massive earnings and dividend increases over the past two decades that were not attributable to mergers. Additionally, the 1980s and 1990s saw numerous spinoffs (such as the break-up of AT&T) and equity carve-outs, transactions that created new publicly traded firms, some of which pay substantial dividends. While such spinoffs and equity carveouts reduce the concentration of dividends, the overall increased dividend concentration we report in section 3 indicates that these concentration-decreasing transactions are of second order importance compared to concentration-enhancing factors such as acquisitions and internal growth.

¹¹ Andrade, Mitchell, and Stafford (2001, pp. 104-106) report "an overwhelming use of stock" as compensation in 1990s acquisitions involving U.S. firms listed on the NYSE, AMEX, or NASDAQ. Their table 1 reports that 57.8% of transactions over 1990-1998 are for all stock, while 70.9% involve at least some stock issued by the bidder. They also report that, although the use of stock is lower during the 1980s, it also occurs then with reasonable frequency, with 32.9% of acquisitions for all stock, and 45.6% involving at least some stock.

dividends to disappear; it simply relabeled them. And so, at least for stock transactions with bidders that pay dividends, there is good reason to believe many mergers do not eliminate the target's dividends, but instead channel them to investors through a smaller number of surviving firms.

The merger wave of the 1980s and 1990s accounts for a substantial portion of the decline in the number of dividend paying firms over 1978-2000. The “abnormal” delists from this merger wave are the actual merger delists (1,249 firms, per table 10) minus an estimate of the mergers that would have occurred absent the wave. Fama and French (2001a, table 2) report that dividend paying industrials are acquired at average annual rates of 3.9% over 1978-1999, 2.7% over 1963-1977, and 0.6% over 1927-1962. The 0.6% figure is a plausible lower bound on the “normal” merger rate, since it is measured over a period that excludes both the conglomerate wave of the 1960s and the merger wave of the 1980s and 1990s. The 2.7% figure is a plausible upper bound on the normal merger rate, since it pre-dates the recent merger wave (but includes the conglomerate wave). If 0.6% is the normal rate, the “abnormal” number of merger delists attributable to the recent merger wave is 979 firms, and it is 265 firms if 2.7% is normal.¹² Under either estimate, much but not all of the decline in the number of dividend paying firms over 1978-2000 is due not to acquisitions per se, but to the unusually high level of acquisitions during the recent merger wave.

Although the merger wave explains much of the decline in the number of dividend paying firms, it does not explain the decline in the proportion of firms that pays dividends, since payers and non payers are acquired at approximately the same rates during the last two decades (Fama and French (2001a, p.11)). One plausible hypothesis is that IPOs in the 1980s and 1990s brought many firms to the public equity market at a riskier (and perhaps earlier) stage than was true historically. If so, the decline in the proportion of dividend payers may be largely explained by a now much greater number of recently listed

¹² We generate these estimates by calculating the expected attrition (compounded at either 0.6% or 2.7%) over 22 years, starting from a base of 2,176 firms, the number of dividend payers in 1978. The abnormal number of acquisitions is 1,249 minus the expected attrition under either the 0.6% or 2.7% rate. [The expected attrition at Fama and French's 3.9% merger rate over 1978-1999 implies a loss of 1,269 firms, a number that is virtually identical to the 1,249-firm decline reported in table 10.]

firms. Preliminary support for this view comes from the large number of technology IPOs in recent years, many of which report large losses in 2000 (see section 4). Other support comes from Fama and French's (2001b) findings that recently listed firms tend to show low profit rates for at least five years, and that 40% are delisted within 10 years for poor performance. Fama and French's findings suggest a secular deterioration in the long run earnings prospects of newly listed firms, so that a given earnings realization today supports lower dividends than it would have twenty years ago. If so, what appears to be a reduced propensity to pay dividends (conditional on current earnings alone) may largely reflect reduced expectations about future earnings.

6. Summary and implications

Although many fewer firms now pay dividends, dividends themselves are flourishing, with aggregate real dividends paid by industrial firms in 2000 standing 16.3% above their level in 1978. The combinations of an increase in aggregate dividends and a decrease in the number of dividend payers reflects major underlying changes over the past two decades in the cross-sectional distribution of real earnings, which is now dominated by a relatively small number of firms with very high earnings. Although we do observe a reduced propensity to pay dividends among industrial firms, almost all firms with very high real earnings pay dividends, and the increased real earnings of this group drives the aggregate increase in dividends and the substantial concomitant increase in dividend concentration. Almost half of all industrials report losses in 2000, and almost none of these firms pays dividends, so that poor earnings performance plausibly helps explain why many fewer industrial firms now pay dividends. The decline over 1978-2000 in the number of dividend payers occurs predominantly among firms that pay very small real dividends, and is due primarily to acquisitions and secondarily to financial distress.

Our findings that dividends are highly concentrated among a small number of firms cast doubt on the empirical importance of the dividend clientele and signaling hypotheses (Allen and Michaely (1995) survey the extensive literatures on these two hypotheses). Clientele theories (such as those based on heterogeneous personal taxes) assume that individuals in different dividend clienteles can form portfolios

that simultaneously satisfy their demands for diversification and dividends. The strong dividend concentration we observe poses a challenge for these theories, which attribute heterogeneity in dividend policies to the demands of different investors who prefer either to hold or to avoid dividend paying stocks. Since dividends are highly concentrated among a small number of very large firms, investors may not be able to form well-diversified portfolios of non dividend paying stocks. Moreover, even if some investors could form well-diversified but dividend-free portfolios, it remains doubtful that the market could meet the aggregate demands of all clienteles seeking to invest significant amounts of wealth in such portfolios, given the substantial dividend concentration that characterizes today's stock market.¹³

If the demand to satisfy heterogeneous dividend clienteles were truly important, we should observe much greater heterogeneity in the dividend policies of the large publicly traded corporations whose securities are essential holdings in well-diversified portfolios. In particular, we should see many more large firms that do not pay dividends, and these non payers should be spread across a broad spectrum of industries. And within any given industry, we should observe a mix of large dividend paying and non paying firms. What we do observe, instead, is (i) only a handful of large firms fails to pay dividends, (ii) these firms are mainly bunched in one industry (technology), and (iii) very large firms in other industries all tend to pay dividends. The fact that the market does not supply a broad spectrum of dividend heterogeneity either across or within industries suggests that clientele demand pressures do not exert material influence on firms' dividend decisions. It would seem to follow that clientele pressures can have an important impact on dividend policy only in narrow circumstances, e.g., when a controlling stockholder's preferences shape a given firm's dividend policy.

Our finding that dividends are highly concentrated among a small number of firms with

¹³ Dividend clientele theories rest on an implicit assumption that dividends and interest are imperfect substitutes for investors. Without this assumption, for example, low tax bracket investors are not necessarily the only parties willing to accept dividend returns in their portfolios; high tax bracket investors could generate (levered) dividend-free portfolios by offsetting dividends with interest from borrowing on personal account, of course at the cost of incremental portfolio risk. Similarly, without this assumption, a high tax bracket investor could overcome the limitation imposed by high dividend concentration by borrowing on personal account. Such actions would, if allowed, break the hypothesized connection between the dividend policy of the firm and the tax bracket of the individual stockholder, i.e., would destroy the central testable prediction of the dividend clientele theory.

substantial earnings also raises doubts that signaling is a first order determinant of corporate dividend policy. If managers use dividends to communicate with stockholders, dividend signaling should occur primarily in small, relatively unknown firms with limited access to the financial press, Wall Street analysts, and other conventional information outlets. But the vast majority of dividends are paid by prominent corporations that enjoy major coverage by analysts and journalists – exactly the firms whose managers should have little need to use financial decisions to communicate with investors. How much of aggregate dividends can be motivated by signaling when 98.8% of industrial dividends are paid by the top 500 dividend payers? Overall, then, our evidence that dividends (and the earnings that support them) have become much more concentrated since the late 1970s raises serious questions about the empirical validity of both the signaling and dividend clientele hypotheses prevalent in the theoretical corporate finance literature.

Finally, our evidence on the high and increasing level of dividend concentration adds to a growing body of empirical research that documents major changes in corporate payout practices over the last 25 to 50 years. Prior studies have identified a number of other important trends, including (i) the virtual disappearance of special dividends in recent years, despite their prominence in the 1950s and earlier (DeAngelo, DeAngelo, and Skinner (2000)), (ii) a reduction in firms' propensity to pay dividends over the last two decades of the 20th century (Fama and French (2001a)), (iii) the emergence of stock repurchase as a popular payout technique in the 1960s and early 1970s (Dann (1981), Masulis (1980), and Vermaelen (1981)), and (iv) the massive increase in repurchase activity in the mid-1980s (Bagwell and Shoven (1989), Allen and Michaely (1995)). The extent to which these other major changes in corporate payout practices reflect secular changes in the properties of earnings (e.g., their concentration, quality, volatility, and the probability of reported losses) remain interesting areas for future research.

Table 1

Aggregate Nominal and Real Dividends (1978 Dollars) for the Corporate Sector: 1978-2000

Aggregate dividend payments are taken from table B-90 of the Economic Report of the President (<http://w3.access.gpo.gov/usbudget/fy2003/erp.html#erp7>). Real dividends are nominal dividends converted to 1978 dollars using the consumer price index taken from table B-60 of the same source. The aggregate dividend payout ratio equals the annual total dividend payment by all corporations divided by aggregate annual corporate earnings (after-tax and capital consumption adjustments), with all data taken from table B-90.

	Nominal dividends (\$ billions)	Real dividends (\$ billions)	Aggregate dividend payout ratio
1978	\$50.8	\$50.8	38.0%
1979	57.5	51.6	42.8%
1980	64.1	50.7	56.4%
1981	73.8	52.9	53.6%
1982	76.2	51.5	55.1%
1983	83.6	54.7	47.3%
1984	91.0	57.1	42.2%
1985	97.7	59.2	43.2%
1986	106.3	63.2	54.7%
1987	112.2	64.4	51.1%
1988	129.6	71.4	48.4%
1989	155.0	81.5	61.0%
1990	165.6	82.6	61.8%
1991	178.4	85.4	59.9%
1992	185.5	86.2	59.9%
1993	203.1	91.6	58.9%
1994	234.9	103.3	60.8%
1995	254.2	108.8	55.5%
1996	297.7	123.7	56.1%
1997	335.2	136.2	56.2%
1998	348.7	139.5	64.7%
1999	343.5	134.4	60.0%
2000	379.6	143.7	62.8%
Percent change over 1978-2000	647.2%	182.9%	

Table 2

**Number of Dividend Paying Firms Over 1978-2000:
CRSP Sample Partitioned by Industrial versus Financial and Utility Firms**

For each year, the sample of financial and utility firms includes those firms with CRSP share codes 10 or 11 that have SIC codes in the ranges 4900-4949 or 6000-6999, and that meet the other sampling criteria described in the paper. The sample of industrial firms includes all non-financial and non-utility firms listed on CRSP that have share codes 10 or 11, and that meet the other sampling criteria described in the paper. The numbers of dividend paying firms on the NYSE and on NASDAQ or the AMEX are based on subsets of firms in the CRSP samples.

Year	CRSP industrial firms	CRSP financial and utility firms	CRSP total	NYSE industrials	NASDAQ and AMEX industrials
1978	2,250	852	3,102	1,015	1,235
1979	2,160	841	3,001	1,004	1,156
1980	2,050	835	2,885	982	1,068
1981	1,936	815	2,751	951	985
1982	1,820	780	2,600	911	909
1983	1,712	784	2,496	870	842
1984	1,671	794	2,465	855	816
1985	1,561	817	2,378	814	747
1986	1,433	833	2,266	760	673
1987	1,362	979	2,341	708	654
1988	1,305	1,020	2,325	683	622
1989	1,270	1,015	2,285	662	608
1990	1,233	941	2,174	650	583
1991	1,176	863	2,039	641	535
1992	1,218	865	2,083	678	540
1993	1,217	959	2,176	690	527
1994	1,244	1,042	2,286	716	528
1995	1,264	1,103	2,367	744	520
1996	1,213	1,136	2,349	749	464
1997	1,169	1,110	2,279	743	426
1998	1,110	1,072	2,182	726	384
1999	1,037	1,022	2,059	698	339
2000	925	933	1,858	625	300
Absolute change over 1978-2000	-1,325	+87	-1,244	-390	-935
Percent change over 1978-2000	-58.9%	+9.5%	-49.4%	-38.4%	-75.7%

Table 3**Dollar Dividend Payments in 1978 and 2000 and Related Descriptive Statistics:
Industrial Firms on CRSP/Compustat**

The sample includes all firms on CRSP that have (i) share codes 10 or 11, (ii) SIC codes outside the ranges 4900-4949 and 6000-6999, and that (iii) meet the other sampling criteria described in the paper. The sample is restricted firms for which Compustat reports non-missing values of dividends and earnings before extraordinary items (Compustat items 21 and 18). The only exceptions are items 1 and 2 below which are based on firms on CRSP, regardless of whether data are available on Compustat. Real dividends in 2000 are nominal dividends converted to 1978 dollars using the consumer price index.

	1978	2000	Absolute (%) change
1. Number of dividend paying industrial firms on CRSP	2,250	925	-1,325 (-58.9%)
2. Percent of all industrial firms on CRSP that pay dividends	63.9%	18.5%	-45.4%
3. Number of dividend paying industrials on CRSP/Compustat	2,176	929	-1,247 (-57.3%)
4. Percent of all CRSP/Compustat industrials that pay dividends	65.1%	19.4%	-45.7%
5. Total nominal dividends (\$ billions)	\$31.3 billion	\$96.2 billion	\$64.9 billion (+207.3%)
6. Total real dividends (\$ billions, 1978 base)	\$31.3 billion	\$36.4 billion	\$5.1 billion (+16.3%)
7. Mean real dividend (per dividend paying firm)	\$14.4 million	\$39.2 million	\$24.4 million (+272.2%)
8. Median real dividend (per dividend paying firm)	\$1.4 million	\$3.6 million	\$2.2 million (+157.1%)
9. Percent of dividend paying industrials that are NYSE-listed	45.0%	66.0%	+21.0%
10. Percent of total dollar dividends accounted for by NYSE-listed firms	94.7%	97.2%	+2.5%

Table 4**Concentration of Total Dollar Dividends Paid by Industrial Firms in 1978 and in 2000**

Firms are ranked from the largest to smallest total dollar dividends paid in each year (per Compustat). The sample includes all firms on CRSP that have share codes 10 and 11 and SIC codes outside the ranges 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included only if Compustat has non-missing values of dividends and earnings before extraordinary items for the year in question (Compustat items 21 and 18). For 2000, the row corresponding to firms ranked from 901 to 1000 has 29 firms because there are 929 dividend payers that meet our sampling criteria in 2000. Each cell amount is rounded to the nearest significant digit, which explains a few minor discrepancies across row or column total figures.

Dividend ranking	Percent of total dividends		Cumulative % of total dividends		Real dividends (\$millions, 1978 base)	
	1978	2000	1978	2000	1978	2000
Top 100	67.3%	81.0%	67.3%	81.0%	\$21,111	\$29,524
101 to 200	11.8%	10.5%	79.1%	91.6%	3,691	3,843
201 to 300	6.3%	4.1%	85.4%	95.6%	1,970	1,481
301 to 400	4.0%	2.0%	89.4%	97.7%	1,247	744
401 to 500	2.8%	1.1%	92.2%	98.8%	865	398
501 to 600	1.9%	0.6%	94.0%	99.4%	585	221
601 to 700	1.4%	0.4%	95.4%	99.7%	431	131
701 to 800	1.0%	0.2%	96.4%	99.9%	325	69
801 to 900	0.8%	0.1%	97.2%	99.9%	249	28
901 to 1000	0.6%	<0.1%	97.8%	100.0%	192	1
1001 to 1100	0.5%		98.3%		153	
1101 to 1200	0.4%		98.7%		120	
1201 to 1300	0.3%		99.0%		96	
1301 to 1400	0.2%		99.3%		76	
1401 to 1500	0.2%		99.5%		61	
1501 to 1600	0.2%		99.6%		49	
1601 to 1700	0.1%		99.7%		40	
1701 to 1800	0.1%		99.8%		31	
1801 to 1900	0.1%		99.9%		23	
1901 to 2000	0.1%		99.9%		16	
2001 to 2100	<0.1%		99.9%		10	
2100 to 2176	<0.1%		100.0%		2	
Total for all firms	100.0%	100.0%	100.0%	100.0%	\$31,343	\$36,440
Number of firms					2,176	929

Table 5

Number of Firms and Real Dividend Payments in 1978 and in 2000 for Samples of Industrial Firms that Paid Given Amounts of Real Dividends (\$ millions, 1978 dollars)

The sample is comprised of non financial and non utility firms on CRSP with share codes 10 or 11 and SIC codes outside the intervals 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included only if Compustat has non-missing values of dividends and earnings before extraordinary items for the year in question (Compustat items 21 and 18). Real dividends are nominal payments converted to 1978 dollars using the consumer price index.

Real dividend payment (1978 dollars)	Number of firms 1978	Number of firms 2000	Change from 1978 to 2000	% change from 1978 to 2000	Real dividends 1978	Real dividends 2000	Change from 1978 to 2000	% change from 1978 to 2000
A. \$500 million or more	6	14	8	133.3%	\$9,095	\$15,382	\$6,287	69.1%
B. \$400 to \$499.9 million	4	4	0	0.0%	1,717	1,829	112	6.5%
C. \$300 to \$399.9 million	4	6	2	50.0%	1,441	2,005	564	39.1%
D. \$200 to \$299.9 million	9	13	4	44.4%	2,099	3,094	995	47.4%
E. \$100 to \$199.9 million	19	38	19	100.0%	2,630	5,252	2,622	99.7%
F. \$80 to \$99.9 million	18	10	-8	-44.4%	1,591	879	-712	-44.8%
G. \$60 to \$79.9 million	24	21	-3	-12.5%	1,649	1,462	-187	-11.3%
H. \$40 to \$59.9 million	55	36	-19	-34.5%	2,642	1,744	-898	-34.0%
I. \$20 to \$39.9 million	108	66	-42	-38.9%	3,003	1,883	-1,120	-37.3%
J. \$10 to \$19.9 million	161	94	-67	-41.6%	2,233	1,337	-896	-40.1%
K. \$5 to 9.9 million	187	115	-72	-38.5%	1,344	812	-532	-39.6%
L. \$1 to \$4.9 million	633	276	-357	-56.4%	1,523	655	-868	-57.0%
M. Less than \$1 million	948	236	-712	-75.1%	375	106	-269	-71.7%
Total	2,176	929	-1,247	-57.3%	\$31,342	\$36,440	\$5,098	16.3%
\$100 million and above	42	75	33	78.6%	\$16,982	\$27,562	\$10,580	62.3%
Less than \$100 million	2,134	854	-1,280	-60.0%	14,360	8,878	-5,482	-38.2%
Less than \$5 million	1,581	512	-1,069	-67.6%	\$1,898	\$761	-\$1,137	-60.0%

Table 6**Concentration of Earnings of Industrial Firms that Paid Dividends in 1978 and in 2000**

Firms are ranked from the largest to smallest total dollar dividends paid in each year (per Compustat). The sample includes all firms on CRSP that have share codes 10 and 11 and SIC codes outside the ranges 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included only if Compustat has non-missing values of dividends and earnings before extraordinary items for the year in question (Compustat items 21 and 18). For 2000, the row corresponding to firms ranked from 901 to 1000 has 29 firms because there are 929 dividend payers that meet our sampling criteria in 2000. Each cell amount is rounded to the nearest significant digit, which explains a few minor discrepancies across row or column total figures.

Dividend ranking	Percent of total earnings of dividend paying industrial firms		Cumulative % of total earnings of dividend paying industrial firms		Real earnings (\$millions, 1978 base)	
	1978	2000	1978	2000	1978	2000
Top 100	57.5%	72.9%	57.5%	72.9%	\$47,543	\$74,896
101 to 200	13.5%	12.5%	71.0%	85.4%	11,170	12,805
201 to 300	7.2%	6.5%	78.2%	91.8%	5,929	6,699
301 to 400	5.1%	3.1%	83.3%	94.9%	4,242	3,187
401 to 500	3.8%	2.3%	87.1%	97.2%	3,134	2,353
501 to 600	2.5%	1.5%	89.6%	98.7%	2,045	1,542
601 to 700	2.0%	0.5%	91.6%	99.2%	1,694	536
701 to 800	1.5%	0.5%	93.1%	99.7%	1,274	480
801 to 900	1.4%	0.3%	94.5%	99.9%	1,134	269
901 to 1000	1.0%	<0.1%	95.5%	100.0%	819	40
1001 to 1100	0.8%		96.3%		694	
1101 to 1200	0.7%		97.1%		617	
1201 to 1300	0.6%		97.7%		506	
1301 to 1400	0.5%		98.2%		440	
1401 to 1500	0.4%		98.6%		293	
1501 to 1600	0.3%		98.9%		269	
1601 to 1700	0.3%		99.2%		248	
1701 to 1800	0.2%		99.4%		170	
1801 to 1900	0.2%		99.6%		173	
1901 to 2000	0.2%		99.8%		138	
2001 to 2100	0.1%		99.9%		69	
2101 to 2176	0.1%		100.0%		100	
Total for all firms	100.0%	100.0%	100.0%	100.0%	\$82,701	\$102,807
Number of firms					2,176	929

Table 7

**Cross-sectional Distributions of Firms' Real Earnings (1978 Dollars) in 1978 and in 2000:
Industrial Firms on CRSP/Compustat**

Panel 1 reports the distributions of real earnings in 1978 and in 2000. Panel 2 reports the distributions of five year average real earnings ending in 1978 and in 2000. For example, the panel 2 figure for a given firm in 2000 equals the average of real earnings over the five years from 1996 to 2000 (or as many of those years that Compustat reports earnings data on that firm). The sample is comprised of firms on CRSP with share codes 10 or 11 and SIC codes outside the intervals 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included only if Compustat has non-missing values of dividends and earnings before extraordinary items for the year in question (Compustat items 21 and 18). Real earnings are nominal earnings before extraordinary items converted to 1978 dollars using the consumer price index.

1. Cross-sectional distributions of real earnings in 1978 or in 2000

Real earnings (1978 dollars)	Number of firms		Real earnings (\$ millions)		Real earnings as a % of total	
	1978	2000	1978	2000	1978	2000
A. \$1 billion or greater	9	26	\$20,781	\$58,538	24.4%	63.4%
B. \$500 million to \$1 billion	13	30	9,377	21,069	11.0%	22.8%
C. \$250 to \$500 million	28	50	9,716	17,094	11.4%	18.5%
D. \$100 to \$250 million	121	121	18,235	18,802	21.4%	20.3%
E. \$50 to \$100 million	136	176	9,327	12,120	11.0%	13.1%
F. \$25 to \$50 million	193	238	6,814	8,325	8.0%	9.0%
G. \$10 to \$25 million	388	427	6,261	6,880	7.4%	7.4%
H. \$0 to \$10 million	2,146	1,582	5,601	4,567	6.6%	4.9%
I. Negative earnings	306	2,144	-1,148	-54,991	-1.4%	-59.5%
Total	3,340	4,794	\$84,964	\$92,404	100.0%	100.0%
Total positive earnings only	3,034	2,650	\$86,112	\$147,395	---	---

2. Cross-sectional distributions of five year average real earnings ending in 1978 or in 2000

Five year average real earnings (1978 dollars)	Number of firms		Real earnings (\$ millions)		Real earnings as a % of total	
	1978	2000	1978	2000	1978	2000
A. \$1 billion or greater	9	19	\$18,541	\$39,601	24.7%	44.6%
B. \$500 million to \$1 billion	10	21	7,261	13,328	9.7%	15.0%
C. \$250 to \$500 million	22	45	8,115	15,230	10.8%	17.2%
D. \$100 to \$250 million	106	93	15,734	14,898	20.9%	16.8%
E. \$50 to \$100 million	128	149	8,916	10,243	11.9%	11.5%
F. \$25 to \$50 million	179	213	6,425	7,424	8.6%	8.4%
G. \$10 to \$25 million	348	367	5,480	5,798	7.3%	6.5%
H. \$0 to \$10 million	2,147	1,742	5,260	4,862	7.0%	5.5%
I. Negative earnings	391	2,145	-627	-22,685	-0.8%	-25.6%
Total	3,340	4,794	\$75,105	\$88,699	100.0%	100.0%
Total positive earnings only	2,949	2,649	\$75,732	\$111,384	---	---

Table 8

Real Earnings (1978 Dollars) for Industrial Firms in 1978 and in 2000: Sample Partitioned Into Dividend Payers and Non Payers

Panel 1 reports the distribution of real earnings for payers and non payers in 1978 and in 2000. Panel 2 reports the distribution of average real earnings over the five year period ending with 1978 (or 2000), or over as many of those years as Compustat provides earnings data. The sample consists of firms on CRSP with share codes 10 or 11 and SIC codes outside the intervals 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included in a given year only if Compustat has data on dividends and earnings (Compustat items 21 and 18). Real earnings are nominal earnings before extraordinary items converted to 1978 dollars using the consumer price index. The “% from payers” columns report the percent of total earnings that come from dividend paying firms.

1. Real earnings distribution for payers and non payers in 1978 and in 2000

Real earnings (1978 dollars)	1978 Number of firms			2000 Number of firms			1978 Earnings (\$ millions)			2000 Real earnings (\$ millions)		
	Payers	Non payers	% payers	Payers	Non payers	% payers	Payers	Non payers	% from payers	Payers	Non payers	% from payers
A. \$1 billion or greater	9	0	100.0%	22	4	84.6%	\$20,781	\$0	100.0%	\$49,996	\$8,542	85.4%
B. \$500 million to \$1 billion	13	0	100.0%	23	7	76.7%	9,377	0	100.0%	16,207	4,862	76.9%
C. \$250 to \$500 million	28	0	100.0%	38	12	76.0%	9,716	0	100.0%	13,091	4,003	76.6%
D. \$100 to \$250 million	117	4	96.7%	80	41	66.1%	17,619	616	96.6%	12,489	6,514	65.7%
E. \$50 to \$100 million	130	6	95.6%	95	81	54.0%	8,961	365	96.1%	6,543	5,577	54.0%
F. \$25 to \$50 million	185	8	95.9%	113	125	47.5%	6,519	295	95.7%	3,933	4,392	47.2%
G. \$10 to \$25 million	358	30	92.3%	154	273	36.1%	5,802	459	92.7%	2,531	4,350	36.8%
H. \$0 to \$10 million	1,284	862	59.8%	316	1,266	20.0%	4,404	1,197	78.6%	1,178	3,389	25.8%
I. Negative earnings	52	254	17.0%	88	2,056	4.1%	-480	-668	41.8%	-3,160	-51,831	5.7%
Total	2,179	1,164	65.2%	929	3,865	19.4%	\$82,701	\$2,263	97.3%	\$102,807	-\$10,403	---

2. Five year average real earnings distribution for payers and non payers in 1978 and in 2000

A. \$1 billion or greater	9	0	100.0%	18	1	94.7%	\$18,541	\$0	100.0%	\$37,456	\$2,145	94.6%
B. \$500 million to \$1 billion	10	0	100.0%	19	2	90.5%	7,261	0	100.0%	11,933	1,395	89.5%
C. \$250 to \$500 million	22	0	100.0%	34	11	75.6%	8,115	0	100.0%	11,579	3,651	76.0%
D. \$100 to \$250 million	105	1	99.1%	76	17	81.7%	15,579	155	99.0%	12,453	2,445	83.6%
E. \$50 to \$100 million	123	5	96.1%	96	53	64.4%	8,569	347	96.1%	6,730	3,513	65.7%
F. \$25 to \$50 million	171	8	95.5%	114	99	53.5%	6,127	298	95.4%	4,046	3,378	54.5%
G. \$10 to \$25 million	330	18	94.8%	168	199	45.8%	5,200	280	94.9%	2,770	3,028	47.8%
H. \$0 to \$10 million	1,387	760	64.6%	361	1,381	20.7%	4,376	884	83.2%	1,444	3,418	29.7%
I. Negative earnings	19	372	4.9%	43	2,102	2.0%	-52	-575	8.3%	-628	-22,057	2.8%
Total	2,176	1,164	65.1%	929	3,865	19.4%	\$73,716	\$1,389	98.2%	\$87,783	\$916	99.0%

Table 9**Aggregate and Median Dividend Payout Ratios for Industrial Firms on CRSP/Compustat in 1978 and in 2000**

The payout ratios in rows 1 and 2 are based on aggregate dividends paid by industrial firms in 1978 or in 2000. Row 1 takes the denominator to be the sum of earnings for all industrials (payers and non payers), while row 2 takes the denominator to be the sum of earnings for payers only. Row 3 reports the median firm's payout ratio within the set of firms that pay dividends. The payout ratios in row 4 and 5 are based on dividends and earnings for the "constant composition sample" of 474 firms that pay dividends in both 1978 and in 2000. Row 4 defines the payout ratio in a given year as (1) total dividends paid by firms in the constant composition sample divided by (2) total earnings of all firms in that sample. Row 5 reports the median firm's payout ratio within the constant composition sample. The columns marked "1 year earnings" report payout ratios based on earnings in the year in question. The columns marked "5 year average real earnings" report payout ratios based on a firm's average real earnings over the five years ending with the year in question (or as many of those years that Compustat reports earnings data for the firm). For example, for a given firm in 2000, the earnings variable is the average of earnings over the five years 1996-2000, with each year's earnings converted to 2000 dollars using the consumer price index. The full sample of industrial firms consists of firms on CRSP with share codes 10 or 11 and SIC codes outside the intervals 4900-4949 and 6000-6999, and that meet the other sampling criteria described in the paper. A firm is included in a given year only if Compustat has data on dividends and earnings (Compustat items 21 and 18). Earnings are before extraordinary items.

Payout ratio measure	1 year earnings		5 year average real earnings	
	1978	2000	1978	2000
1. Aggregate dividends/Aggregate earnings (payers and non payers pooled)	36.9%	39.4%	41.7%	41.1%
2. Aggregate dividends/Total earnings of dividend payers	37.9%	35.4%	42.5%	41.5%
3. Median firm's payout ratio (dividend payers)	26.2%	28.3%	31.1%	30.8%
4. Constant composition sample of firms that pay dividends in both 1978 and 2000: Total dividends/Total earnings of these dividend payers	41.3%	37.7%	47.0%	43.6%
5. Constant composition sample of firms that pay dividends in both 1978 and 2000: Median firm's payout ratio	27.5%	33.0%	33.7%	31.9%

Table 10

**Listing and Dividend Status in 2000 of 2,176 Industrial Firms that Paid Dividends in 1978:
Sample Partitioned by Size of 1978 Dividend Payment**

The sample includes all non financial and non utility firms on CRSP that have share codes 10 and 11 and SIC codes outside the ranges 4900-4949 and 6000-6999, and that have non-missing values on Compustat of dividends and earnings before extraordinary items for 1978 (Compustat items 21 and 18). Column (2) contains firms that were in our sample in 1978 and in 2000, and that paid dividends in both years. Column (3) contains firms that paid dividends in 1978 and that remained publicly traded in 2000, but no longer paid dividends. Columns (4) and (5) contain dividend paying firms that are in our 1978 sample, but that were delisted post-1978 due either to acquisition or financial distress, and thus are not in the 2000 sample. The financially troubled delistings in column (4) include (i) all cases with CRSP delist codes in the range 500-599 and (ii) those cases with delist codes in the range 400-499 for which we found no evidence in the Wall Street Journal Index that the firm was acquired. The acquisition delistings in column (5) include (i) all cases with CRSP delist codes in the range 200-299 and (ii) those cases with CRSP delist codes in the range 300-499 for which we found evidence in the WSJI that the company was acquired. The subsamples in columns (2) through (5) are mutually exclusive, but not exhaustive. They exclude 40 firms with delist codes in the range 300-399 for which we found no evidence in the WSJI that the firm was acquired. They also exclude 15 firms for which Compustat does not report dividends and earnings data for 2000. Real dividends and earnings in 2000 are nominal values converted to 1978 dollars using the consumer price index.

Dividend payment in 1978	All dividend payers in 1978 (1)	Paid dividends in 2000 (2)	Listed, but not dividend payer in 2000 (3)	Delisted due to financial distress (4)	Delisted due to acquisition (5)
A. \$500 million or greater	6	6	0	0	0
B. \$400 to \$499.9 million	4	2	0	0	2
C. \$300 to \$399.9 million	4	3	0	0	1
D. \$200 to \$299.9 million	9	6	0	0	3
E. \$100 to \$199.9 million	19	14	0	0	4
F. \$80 to \$99.9 million	18	12	0	0	6
G. \$60 to \$79.9 million	24	9	5	0	10
H. \$40 to \$59.9 million	55	19	4	1	29
I. \$20 to \$39.9 million	108	37	7	1	61
J. \$10 to \$19.9 million	161	58	5	9	84
K. \$5 to 9.9 million	187	51	9	7	118
L. \$1 to \$4.9 million	633	143	43	46	389
M. Less than \$1 million	948	114	86	175	542
Total number of firms (% of 1978 industrial total)	2,176 firms (100.0%)	474 firms (21.8%)	159 firms (7.3%)	239 firms (11.0%)	1,249 firms (57.4%)
Total 1978 dividends (% of 1978 industrial total)	\$31.3 billion (100.0%)	\$19.5 billion (62.3%)	\$1.0 billion (3.2%)	\$0.4 billion (1.3%)	\$10.0 billion (31.9%)
Total 2000 real dividends (% of 2000 industrial total)	\$36.4 billion (100.0%)	\$30.6 billion (84.1%)	\$0.0 billion (0.0%)	---	---
Total 1978 earnings (% of 1978 industrial total)	\$82.7 billion (97.3%)	\$47.3 billion (55.7%)	\$3.9 billion (4.6%)	\$1.3 billion (1.5%)	\$28.9 billion (34.0%)
Total 2000 real earnings (% of 2000 industrial total)	---	\$81.3 billion (88.0%)	\$2.0 billion (2.2%)	---	---

Appendix Table A1

Real Dividends and Earnings in 1978 and in 2000 of the 25 Industrial Firms that Pay the Largest Dividends in 2000

The table lists the 25 industrial firms on CRSP/Compustat that pay the largest total dividends in 2000, with firms ranked in descending order of dividends paid. All but two of these firms are in our 1978 sample and also paid dividends in that year. [UPS went public in 1999, after many years as a large privately held firm. SBC was a subsidiary of AT&T in 1978. AT&T's real dividends and earnings in 2000 are well below their 1984 levels in part because of the 1984 spinoff of SBC and the other "baby bells."] Real dividends and earnings in 2000 are nominal values converted to 1978 dollars using the consumer price index.

	Real dividends (\$ millions, 1978 base)			Real earnings (\$ millions, 1978 base)		
	1978	2000	Change	1978	2000	Change
1 Exxon Mobil	\$1,472	\$2,318	\$846	\$2,763	\$6,054	\$3,291
2 General Electric	570	2,138	1,568	1,230	4,822	3,592
3 Philip Morris	125	1,722	1,597	409	3,222	2,814
4 SBC	----	1,304	1,304	----	3,017	3,017
5 Merck	132	1,100	968	308	2,583	2,275
6 Ford	417	1,036	619	1,589	2,048	460
7 Pfizer	82	973	890	206	1,408	1,202
8 AT&T	3,038	941	-2,097	5,273	1,768	-3,505
9 Bristol Myers Squibb	77	731	654	203	1,551	1,348
10 Johnson & Johnson	101	653	552	299	1,817	1,518
11 Chevron	435	639	205	1,106	1,963	857
12 Coca-Cola	215	638	423	375	824	450
13 Procter & Gamble	223	636	413	512	1,341	829
14 Du Pont	348	551	203	787	876	89
15 General Motors	1,713	490	-1,223	3,508	1,686	-1,822
16 American Home Products	207	455	248	348	-341	-690
17 Abbott Labs	47	446	399	149	1,055	906
18 Eli Lilly	116	439	322	277	1,158	880
19 Texaco	543	370	-173	852	962	110
20 3M	234	348	114	563	703	140
21 IBM	1,763	344	-1,419	3,111	3,064	-46
22 Wal-Mart	2	337	335	22	2,111	2,089
23 Schering-Plough	65	304	239	194	917	724
24 Pepsico	88	303	215	226	827	601
25 UPS	----	298	298	----	1,111	1,111
Total for 25 firms	\$12,012	\$19,512	\$7,500	\$24,308	\$46,548	\$22,241
Total as a % of aggregate for all industrials	38.3%	53.5%		28.6%	50.4%	

Appendix Table A2

Real Dividends and Earnings in 1978 and in 2000 of the 26 Industrial Firms with At Least \$1 Billion in Real Earnings in 2000

The table lists the 26 industrial firms on CRSP/Compustat that report at least \$1 billion in real earnings in 2000, with firms ranked in descending order of 2000 earnings. WorldCom is classified by Compustat as not paying dividends in 2000, even though the tracking stock for its MCI unit did pay dividends in that year, and we follow Compustat's classification. Microsoft, Oracle, WorldCom, UPS, and Cisco are not in our 1978 sample. Real dividends and earnings in 2000 are nominal values converted to 1978 dollars using the consumer price index.

	Real dividends (\$ millions, 1978 base)			Real earnings (\$ millions, 1978 base)		
	1978	2000	Change	1978	2000	Change
1 Exxon Mobil	\$1,472	\$2,318	\$846	\$2,763	\$6,054	\$3,291
2 General Electric	570	2,138	1,568	1,230	4,822	3,592
3 Intel	0	178	178	44	3,989	3,945
4 Microsoft	----	0	0	----	3,567	3,567
5 Philip Morris	125	1,722	1,597	409	3,222	2,814
6 IBM	1,763	344	-1,419	3,111	3,064	-46
7 SBC	----	1,304	1,304	----	3,017	3,017
8 Merck	132	1,100	968	308	2,583	2,275
9 Oracle	----	0	0	----	2,384	2,384
10 Wal-Mart	2	337	335	22	2,111	2,089
11 Ford	417	1,036	619	1,589	2,048	460
12 Chevron	435	639	205	1,106	1,963	857
13 Johnson & Johnson	101	653	552	299	1,817	1,518
14 AT&T	3,038	941	-2,097	5,273	1,768	-3,505
15 Tyco	1	32	31	12	1,711	1,699
16 General Motors	1,713	490	-1,223	3,508	1,686	-1,822
17 WorldCom	----	0	0	----	1,580	1,580
18 Bristol Myers Squibb	77	731	654	203	1,551	1,348
19 Pfizer	82	973	890	206	1,408	1,202
20 Hewlett-Packard	14	242	228	153	1,348	1,195
21 Procter & Gamble	223	636	413	512	1,341	829
22 Texas Instruments	40	53	13	140	1,169	1,029
23 Eli Lilly	116	439	322	277	1,158	880
24 UPS	----	298	298	----	1,111	1,111
25 Abbott Labs	47	446	399	149	1,055	906
26 Cisco	----	0	0	----	1,010	1,010
Total for 26 firms	\$10,368	\$17,049	\$6,682	\$21,313	\$58,539	\$37,227
Total as a % of aggregate for all industrials	33.1%	46.8%		24.8%	63.4%	

References

- Allen, F., Michaely, R.,** 1995. Dividend policy. In: Jarrow, R.A., Maksimovic, V., Ziemba, W.T. (Eds.), *Operations Research and Management Science*, Elsevier Science, Amsterdam.
- Andrade, G., Mitchell, M., Stafford, E.,** 2001. New evidence and perspective on mergers. *Journal of Economic Perspectives* 15, 103-120.
- Bagwell, L., Shoven, J.,** 1989. Cash distributions to shareholders. *Journal of Economic Perspectives* 3, 129-140.
- Black, F., Scholes, M.,** 1974. The effect of dividend yield and dividend policy on common stock prices and returns. *Journal of Financial Economics* 1, 1-22.
- Burgstahler, D., Dichev, I.,** 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24, 99-126.
- Dann, L.,** 1981. Common stock repurchases: an analysis of returns to bondholders and stockholders. *Journal of Financial Economics* 9, 101-138.
- DeAngelo, H., DeAngelo, L., Skinner, D.,** 1992. Dividends and losses. *Journal of Finance* 47, 1837-1863.
- DeAngelo, H., DeAngelo, L., Skinner, D.,** 2000. Special dividends and the evolution of dividend signaling. *Journal of Financial Economics* 57, 309-354.
- Fama, E., French, K.,** 2001a. Disappearing dividends: changing firm characteristics or lower propensity to pay? *Journal of Financial Economics* 60, 3-43.
- Fama, E., French, K.,** 2001b. Newly listed firms: fundamentals, survival rates, and returns. Center for Research in Security Prices Working Paper No. 530, July, University of Chicago, Graduate School of Business.
- Hayn, C.,** 1995. The information content of losses. *Journal of Accounting and Economics* 20, 125-153.
- Lintner, J.,** 1956. Distribution of incomes of corporations among dividends, retained earnings, and taxes. *American Economic Review* 46, 97-113.
- Masulis, R.,** 1980. Stock repurchase by tender offer: an analysis of the causes of common stock price changes. *Journal of Finance* 35, 305-319.
- Miller, M.,** 1977. Debt and taxes. *Journal of Finance* 32, 261-275.
- Moskowitz, T., Vissing-Jorgensen, A.,** 2002. The returns to entrepreneurial investment: a private equity premium puzzle? *Forthcoming American Economic Review*.
- Vermaelen, T.,** 1981. Common stock repurchases and market signaling. *Journal of Financial Economics* 9, 139-183.