

Firm Valuation Effects of the Expatriation of U.S. Corporations  
to Tax Haven Countries

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## INTRODUCTION

The past year has witnessed a handful of high profile examples of U.S. multinational corporations undertaking “corporate inversion” or “expatriation” transactions. Inverting firms claim to save millions of U.S. tax dollars by moving the legal domicile of their parent corporation to a foreign country, typically a tax haven country like Bermuda. For example, Ingersoll-Rand expects to save at least \$40 million annually in U.S. income taxes; Cooper Industries expects an annual tax savings of \$54 million, and before abandoning their inversion plans, Stanley Works expected a \$30 million annual savings (Johnston 2002a). In general, these tax savings derive from the avoidance of U.S. tax on income earned outside the U.S and from shifting U.S. earnings offshore. These claims have elevated public and legislative concern that the expatriation trend could continue. Politicians have responded to these transactions by questioning the patriotism of firms that reorganize outside the U.S. and by introducing proposed legislation designed to prevent corporate inversions.<sup>1</sup>

It is possible that recent inversion activity is symptomatic of larger problems with U.S. tax rules governing international transactions and that, from the perspective of U.S. multinational corporations, an inversion transaction is a “final solution” to growing frustration with these rules. A recent study conducted by the National Foreign Trade Council (NFTC) examines U.S.

<sup>1</sup> Examples of the recent proposed legislation are the following: Reversing Expatriation of Profits Offshore (REPO) Act (S. 2119) introduced by Senators Baucus and Grassley; the Corporate Patriot Enforcement Act of 2002 (H.R. 3884), introduced by Representative Neal; To Amend the Internal Revenue Code of 1986 to Treat Nominally Foreign Corporations Created through Inversion Transactions as Domestic Corporations, introduced by Representative McInnis as H.R. 3857 and by Senator Wellstone as S. 2050; the No Tax Breaks for Corporations Renouncing America Act of 2002 (H.R. 4993), introduced by Representative Doggett; the American Competitiveness and Corporate Accountability Act (H.R. 5095) introduced by Representative Thomas; To amend the Internal Revenue Code of 1986 to prevent corporations from avoiding the United States income tax by reincorporating in a foreign country (H.R. 3922), introduced by Representative Maloney; To amend the Internal Revenue Code of 1986 to impose a moratorium on the ability of United States corporations to avoid the United States income tax by reincorporating in a foreign country (H.R. 4756), introduced by Representative Johnson.

international tax policy in light of criticisms that U.S. tax rules adversely affect the international competitiveness of U.S. corporations. In particular, the NFTC study finds that “the United States is a relatively undesirable location for a multinational company’s legal domicile” and concludes that “a significant modernization of the U.S. rules is necessary to restore competitive balance in the vastly changed circumstances of the global economy of the 21<sup>st</sup> century” (NFTC 2001, p. 14). Along these same lines, a study issued by the U.S. Treasury (2002) calls for Congress to reconsider whether U.S. tax rules are unfavorable to U.S. business vis-à-vis European territorial systems.<sup>2</sup> However, others<sup>3</sup> argue that, “...inversions are more than self-help territoriality. They provide an offshore platform for aggressive tax avoidance that borders on evasion” (Sullivan 2002). Thus, critical issues for U.S. tax policy are whether the current system is sustainable in a global business environment, and more immediately, what changes (if any) should be made to stem the tide of corporate inversion transactions.

This study investigates whether the share prices of inverting firms react positively to initial announcements of intentions to invert. Although inverting firms claim to save millions in future U.S. corporate income taxes, the transaction itself is immediately taxable at either the shareholder or corporate level, and may impose additional non-tax costs (e.g., political costs) or risks on the firm and its shareholders. Economic theory suggests that the change in share price at

<sup>2</sup> Similarly, the American Institute of CPAs argues that the Congressional response should consider “U.S. tax disadvantages facing U.S.-based multinationals as well as U.S. tax advantages to foreign-based multinationals” (Pecarich, 2002). However, Thompson (2002b) notes that in its June 11, 2002 report, the NFTC backed away from its support for a territorial system (NFTC, 2002).

<sup>3</sup> Thompson (2002a, b) and Sheppard (2002a, b, c) call for improving and tightening U.S. rules for anti-deferral rules, particularly with respect to passive income. Sheppard (2002b) maintains that, “It is absolutely false for the newly respectable proponents of territorial taxation to argue that America’s competitors have territorial systems. If any of them do, it is due to a failure of enforcement, not a systematic plan.” Extending this argument, Sheppard states that, “European anti-deferral regimes are more similar to subpart F than the Treasury would like to admit. Indeed, some of the targeted regimes are very similar to the hated...PFIC rules” (Sheppard 2002c).

the time of the inversion announcement should reflect the present value of the expected net benefit to shareholders.<sup>4</sup> Under the assumption that managers and shareholders seek to maximize share value, the relevance of our research question to the tax policy debate is straightforward. Evidence of positive share price reactions to inversion announcements would suggest that the inversion trend would continue in the absence of additional tax legislation. In contrast, if share prices do not react positively to inversion announcements, then perhaps the non-tax costs inherent in these transactions are sufficient to discourage future inversions without legislative action.

Our primary sample for investigating share price reactions to inversion announcements consists of 19 single-company inversion announcements.<sup>5</sup> We compare inverting firms to their industry averages on a number of dimensions relevant to an inversion decision, and we examine historical stock returns preceding the announcement date to assess whether the potential for shareholder capital gains is related to the legal form of the inversion transaction. This descriptive analysis permits several useful observations. First, inverting firms are significantly larger than the median firm in their industries. Second, inverting firms have lower leverage than their industry average before the inversion, but similar leverage afterward, suggesting that inverting firms increase leverage once a favorable tax structure is in place. Third, inverting firms have overall effective tax rates higher than their industry comparisons prior to the inversion, but similar effective tax rates afterward, consistent with motivations for and benefits from inversion.

<sup>4</sup> However, share prices should not be affected any shareholder-level capital gains tax triggered by the transaction because such taxes could not be avoided (but, in fact, would only be accelerated) by selling the stock prior to the inversion transaction.

<sup>5</sup> As far as we are aware, this represents the entire population of such announcements for which there is available data. We know of two additional inversion transactions for which stock price data is unavailable. We separately analyze share price reactions to merger-related expatriation transactions.

Finally, many firms exhibit decreased stock prices in the months preceding the inversion announcement, consistent with smaller shareholder tax costs. Further, many ‘shareholder-taxed’ inversions have high institutional ownership compared to ‘corporation-taxed’ inversions, consistent with the structure reflecting the more likely tax-indifference of institutional owners.

We assess the statistical significance of each firm’s abnormal returns around the inversion announcement date using approximate randomization procedures. In concurrent work, Desai and Hines (2002) (hereafter, D&H) compute announcement period abnormal returns for a commingled sample of single-company inversions and merger-related expatriations, but do not assess the statistical significance of these abnormal returns. We find that the market-adjusted returns are quite variable, and that many of the visually large market-adjusted returns shown by D&H are not statistically different from zero. In contrast to their overall conclusion that expatriating firms realized positive returns on average, we find that seven of the 19 single-company inversions have significant negative announcement period returns and only two show significant positive returns. The remaining ten inversions show no statistically significant market reaction. The average return in the announcement period across all 19 firms is negative, but not significantly different than zero. Overall, we find no evidence to suggest that share prices increase in response to inversion announcements.

We further investigate the share price response puzzle by examining abnormal returns over long-windows of one, three, and six months following the inversion announcement. Approximately half the sample realizes positive abnormal returns over these periods, while the other half realize negative abnormal returns. In sum, we still find no compelling evidence of positive share price effects arising from inversion transactions.

The remainder of this paper is organized as follows. The first section provides an overview of U.S. tax rules governing foreign income and the two primary types of inversion structures. The second section describes key characteristics of inverting firms by comparing them to their industry averages and also examines their stock price histories. The third section addresses our primary research question related to the valuation effects of inversion announcements, distinguishing our research methods and results from concurrent research. The final section offers concluding comments.

## **OVERVIEW OF RELEVANT U.S. TAX RULES**

In this section, we explore three areas of technical tax detail. First, we review the aspects of U.S. multinational taxation that provide incentives for inversions, indicating which types of firms would achieve gross tax benefits from an inversion. Second, we discuss the potential tax costs of achieving an inversion, indicating the general corporate and shareholder features that would minimize such tax costs. Third, we present two common structures for inversions—the shareholder-taxed ‘Flip’ and the corporation-taxed “Outbound F” reorganization. For these particular structures, we discuss what shareholder and corporate features provide natural tax clienteles for such structures. For more detail concerning steps in inversion transactions and the tax effects of each structure, we refer readers to presentations and articles that provide substantial technical review and diagrams of transactions.<sup>6</sup>

### **U.S. taxation of worldwide income earned by U.S. multinationals**

To understand why U.S. multinational corporations would find it beneficial to move offshore, we briefly review the U.S. worldwide taxation system. The U.S. taxes domestic

corporations on their worldwide income under IRC § 61(a), but only taxes foreign corporations on their U.S. source income.<sup>7</sup> To moderate double taxation of U.S. multinationals' foreign income, the U.S. grants a foreign tax credit equal to the lesser of foreign income taxes paid or a limitation roughly equal to the product of the U.S. corporate tax rate (35%) and foreign income. Consequently, there is generally no net U.S. tax due on foreign income if aggregate foreign income is taxed more than 35%.<sup>8</sup>

As noted, the U.S. only taxes foreign corporations on their U.S. source income.<sup>9</sup> Thus, it would seem that a U.S. corporation could avoid U.S. taxation on its foreign operations by incorporating them as separate foreign subsidiaries. However, when a foreign subsidiary pays dividends, the dividend is grossed-up to its equivalent pretax amount and increases the taxable income of its U.S. parent (IRC § 78). Thus, the tax on foreign subsidiaries' income is merely deferred until the subsidiary pays a dividend or repatriates the earnings through other means such as interest, royalties, or service fees. Additional restrictions prevent the U.S. parent from

<sup>6</sup> See Thompson (2002a), PricewaterhouseCoopers (2002), Sheppard (2002a, b, c), and Treasury (2002). In addition, D&H provide a detailed case analysis of the proposed Stanley Works inversion.

<sup>7</sup> Domestic corporations are those created or organized under the laws of one of the 50 states or the District of Columbia (IRC Section 7701(a)(4) and (a)(9)). Under U.S. tax principles, the headquarters office or seat of management is irrelevant for purposes of determining whether a corporation is domestic or foreign. In contrast, "British case law considers a foreign corporate taxpayer to be a resident in the country from which it is centrally managed and controlled, regardless of its country of incorporation" (Sheppard, 2002a).

<sup>8</sup> This brief explanation of foreign tax credits is overly simplistic. Among other complexities, foreign source income is reduced by certain allocations of expenditures by the U.S. related entities, including interest expense and research and development expense. As a result, the foreign tax credit limitation can so reduce the creditable foreign tax as to result in additional U.S. tax being paid on income taxed abroad at greater than 35%. See, for example, Newberry (1998) for an analysis of interest allocation effects on foreign tax credits and Hines (1993) regarding research and development. In addition, foreign tax credits are computed separately for various categories of income, including separate limitations for passive income. Thus, a company cannot fully cross-credit high-tax income against low-tax income if the two sources of income fall into different limitation "baskets."

<sup>9</sup> Trade or business income that is effectively connected with the conduct of a trade or business within the U.S. (IRC Section 871(b) and 882(a)) is taxed at graduated corporate rates. U.S.-source nonbusiness income (IRC Section 871(a) and 881(a)) is taxed at a 30% flat rate or at the applicable treaty rate.

avoiding the tax on this income by selling the stock of the subsidiary.<sup>10</sup> Moreover, if the foreign subsidiary is a “controlled foreign corporation”, then its U.S. parent is taxed immediately on any “Subpart F” income.<sup>11</sup> Therefore, the mere formation of foreign subsidiaries does not allow a U.S. corporation to avoid U.S. taxation on its foreign operations.

In summary, the typical U.S. multinational has foreign subsidiaries whose income is taxed either currently (through immediate dividends or Subpart F income) or eventually (through future dividends, or sale of stock or assets). However, if a foreign parent owned the foreign operations, then foreign earnings would permanently escape U.S. taxation. Thus, firms that would benefit most from an inversion are those that (1) have foreign income being taxed currently or “trapped” abroad and/or (2) expect continued growth in foreign operations, especially if the future foreign income will be taxed at an average rate of less than 35%.

A further tax benefit of inversions involves the ability to strip income out of the U.S., typically in the form of intercompany debt or other payments between the U.S. company and the new foreign parent. If the U.S. company issues debt to a related tax haven company, the intercompany interest it pays is tax-deductible in the U.S. but would not be taxable in the tax haven.<sup>12</sup> Further, inverting firms structure the transaction so that such payments are not subject to U.S. withholding tax. To effect this result, many of the inverting companies, while incorporated in Bermuda, establish headquarters operations in countries like Barbados or Luxembourg, where

<sup>10</sup> IRC § 1248 recharacterizes any gain on sale of a controlled foreign corporation’s stock as a dividend to the extent of the shareholder’s share of post-1962 earnings and profits.

<sup>11</sup> Under Subpart F (IRC § 954), non-*de minimis* passive income or “paper” sales income is taxed directly to the U.S. parent if it is lightly taxed relative to U.S. rates. Further, loans to the U.S. parent are treated as dividends under rules that tax earnings invested in U.S. property (IRC § 956).

<sup>12</sup> S. 2119 would tighten existing interest deductibility rules under IRC Section 167(j) to prevent or restrict such interest stripping (Willens 2002).

U.S. tax treaties provide for little or no withholding tax (Sheppard 2002a, b).<sup>13</sup> In addition, because the foreign operations are no longer subject to U.S. taxation, the U.S. company will no longer bear the indirect cost of the interest allocation rules, which further limit the foreign tax credit. We expect that firms with debt capacity could benefit from inversion, especially if they face high foreign tax rates that create excess foreign tax credits.

### **Taxpayer goals and tax law frictions to structuring an inversion**

The goal of an inversion is to restructure a company so that the future (and possibly accumulated) foreign earnings escape U.S. taxation. Most simply, instead of having a U.S. parent that owns U.S. and foreign business activities (subsidiaries, branches and other ventures), the multinational restructures into a foreign parent that owns U.S. and foreign business activities. Providing none of the foreign activities are owned by a U.S. entity, then only the U.S. source income is taxed in the U.S. If the new foreign parent is located in a country that, unlike the U.S., only taxes residence-based earnings, then the multinational can achieve permanent tax savings via income-shifting to low-tax foreign jurisdictions.

The main statutory weapon that prevents the accumulated foreign earnings from escaping U.S. taxation is IRC § 367. This section provides a series of rules that create an “outbound toll charge” when U.S. persons transfer assets to foreign corporations. Immediate tax costs arise either at the shareholder level, the corporate level, or both levels depending on the structure of the transaction (IRC § 367, Treas. Reg. § 1.367(a)-3).<sup>14</sup> Poor market conditions in 2001 and 2002 likely decreased both types of potential toll charge imposed by § 367, because the

<sup>13</sup> The U.S. income tax treaty with Barbados reduces the withholding tax on interest payments to five percent, and Barbados only imposes a one percent income tax on large companies (Gnaedinger, 2002).

<sup>14</sup> See Staffaroni (1999) for a discussion of how these rules also apply to acquisitions of U.S. corporations by foreign corporations (transactions we refer to as merger-related expatriations).

corporation's shareholders should have less (or no) gain embedded in their stock, and more corporations have net operating losses to offset corporate-level gain (U.S. Treasury, 2002).

To distinguish the inversions that primarily affect shareholders from those that primarily affect corporations, we briefly describe the "Flip" and the "Outbound F" transactions, respectively (PricewaterhouseCoopers, 2002). The U.S. Treasury (2002) refers to the "Flip" as a "Stock" transaction and refers to the "Outbound F" as an "Asset" transaction.

The "Flip" structure involves "interposing a newly-formed holding company located in Bermuda or another low-tax jurisdiction (the 'foreign parent') between the current U.S. parent corporation (the 'U.S. parent') and that corporation's shareholders" (U.S. Treasury, 2002). Shareholders exchange their shares of the U.S. parent for new shares in the foreign parent. After the transaction, the U.S. shareholders own the foreign parent that now owns the original U.S. parent and subsidiaries (both foreign and U.S.).

The exchange of shares by the U.S. shareholders would initially appear to be a nontaxable merger under IRC § 368. However, IRC § 367 overrides the nontaxable merger rules (Treas. Reg. § 1.367(a) – 3(a), (c)). IRC § 367 effectively requires that any gain, measured by the value of the foreign stock received over the basis of the U.S. stock exchanged, be recognized as a shareholder capital gain. Any loss is not recognized for tax purposes but is embedded in the tax basis of the new shares of the foreign parent.

The "Flip" structure is least costly to shareholders that have a high tax basis relative to the current value of the corporation. As such, the natural clientele for such an inversion transaction consists of companies whose stock price is recently depressed so that the potential shareholder gain is likely lower, or companies whose shareholder base is dominated by tax-exempt entities (e.g., pension funds).

Note that the basic “Flip” structure does not move the existing foreign affiliates or assets of the original U.S. group from beneath the U.S. corporation (former parent) to the new foreign parent. Thus, this transaction alone does not prevent (eventual) U.S. taxation of existing foreign operations.<sup>15</sup> However, the new foreign-owned company can establish new foreign operations outside U.S. control, so that future foreign earnings escape U.S. taxation, even without moving the existing foreign assets. In summary, the “Flip” transaction generally results in shareholder-level taxation, but no corporate-level taxation, unless additional transactions are appended to extract the foreign operations from beneath the old U.S. parent.

In contrast, an “Outbound F” reorganization is taxable to the corporation but not to the shareholders. This structure involves a change in the country of incorporation of the parent company, but no exchange of shares by the shareholders. IRC § 367 requires the U.S. parent to recognize gain, but not loss, as if all the assets of U.S. parent transferred to a foreign corporation had been sold for fair market value at the time of the transaction. As a result of the reincorporation, the foreign assets or affiliates owned by the U.S. parent have effectively been extracted from U.S. ownership to foreign ownership. This extraction generates taxable income to the U.S. parent that owns such foreign assets or foreign stock. However, the tax effect can be mitigated if the U.S. company has favorable tax attributes such as net operating losses to offset the gain. Thus, the natural tax clientele for the “Outbound F” reorganization consists of U.S. companies that have net operating losses or whose foreign assets or stock are not highly appreciated.

<sup>15</sup> Moving the assets out from under the U.S. parent generates a section 367 toll charge on the appreciated assets transferred, in which losses do not offset gains, under Treas. Reg. 1.367(a)-1T(f) and 1.367(a)-3(d)(3) (PWC, 2002, p. 32).

## CHARACTERISTICS OF INVERTING FIRMS

Our primary sample consists of 19 single-company inversions identified in panel A of Table 1. So far as we are aware, this sample represents the entire population of such transactions for which data are available.<sup>16</sup> In our later analysis of stock price reactions, we augment this sample with five merger-related expatriations (identified in panel B) for sake of comparison to concurrent research by D&H. Inverting firms were identified through searches of popular press articles and discussions with tax professionals at two Big 4 public accounting firms.

Table 1 shows that the earliest of these 24 transactions was announced in February 1983 and the latest was announced in April 2002. We also note that a majority of the single-company inversions were announced in 1999 or later, which likely worked to promote the concerns expressed by policy makers discussed in the previous section. Most of the inversions or mergers were approved within approximately six months of their announcement and involved foreign re-incorporations in Caribbean tax havens. We report the general categorization of the transaction as either a shareholder-taxed ‘Flip’ or a corporation-taxed reorganization. Most single-company inversions involve mid-sized firms with only one company (Ingersoll-Rand) having a market capitalization exceeding \$5 billion.

We perform two descriptive analyses to determine whether the characteristics of the firms that invert to tax havens are consistent with the tax and non-tax incentives discussed in the prior section. Because firms are likely to have many other motivations for undertaking merger-related transactions, we perform these descriptive analyses only for the single-company inversions. First,

<sup>16</sup> We could not find stock return data for two corporations that inverted in September 1998, PlayStar Corporation and AmerInst Insurance Group, Inc. (AIIG). At that time PlayStar’s stock was traded on the OTC Bulletin Board. AIIG’s 10-K filing for 1998 stated that there was no established market for its stock and that all stock transfers had

we compare firms' financial characteristics for size, leverage, effective tax rate and growth in foreign income to the firms' industry means and medians. Second, we examine stock effects that are related to the potential tax clienteles for each transaction structure. By examining the pattern of historical stock prices, we provide descriptive evidence about the likely built-in shareholder gain. We also report the percentage of institutional ownership as a potential indicator of firms whose shareholders are tax-insensitive.

Table 2 compares 18 single-company inverting firms<sup>17</sup> to their industry means and medians (based on 2-digit SIC codes) for four firm characteristics relevant to the inversion decision—size, leverage, total effective tax rate, and growth in foreign income. We compare the inverting firms to their industries in two separate time periods. Panel A makes these comparisons for the year prior to the inversion announcement, which allows us to consider what characteristics motivate the inversion. Panel B makes similar comparisons for the year following the inversion announcement, which provides some evidence on how the inversion affected these characteristics.

Panel A of Table 2 indicates that inverting firms are clustered by industry. Four of the 18 firms are oil and gas extraction firms (SIC 13), four are insurance carriers (SIC 63), and six are industrial firms involved in manufacturing various commercial equipment and machinery (SICs 34-36). This industry clustering suggests that once a competitor inverts, other firms in that industry feel pressure to invert to keep pace and preserve a level playing field, and emphasizes the importance of controlling for industry in these comparisons. The statistical significance of

to be approved by AIIG's Stockholder Relations Committee. Playstar reincorporated in Antigua while AIIG reincorporated in Bermuda.

<sup>17</sup> Because we are unable to locate financial data for McDermott, the sample used in these analyses decreases from 19 to 18 inversions.

firm versus industry differences is assessed using Wilcoxon signed-rank tests. Significant differences the mean but not the median, or visa versa, are a function of the skewed distribution of the characteristic within the industry rather than sample size.

Before the inversion (Panel A), inverting firms are larger than their industry counterparts (relative to the median,  $p < .01$ ).<sup>18</sup> This result is consistent with the idea that larger firms tend to have substantial global operations and the sophistication for complex tax planning and, therefore, are in a better position to implement and benefit from an inversion. However, inverting firms tend not to be among the *largest* firms in their industry and, with the exception of Stanley Works, they tend not to be “household names,” which might enable them to avoid the political costs of being labeled “unpatriotic” when announcing the inversion.<sup>19</sup>

Inverting firms’ leverage is significantly less than the industry means ( $p < 0.01$ ). This suggests that the inverting firms may have additional debt capacity relative to the industry norms. Our evidence is insufficient to determine whether inverting firms’ existing leverage creates a foreign tax credit constraint.

The inverting firms’ effective tax rates exceed their industry medians ( $p < 0.05$ ). Thus, we have partial evidence that inverting firms were motivated to reduce their overall tax burdens relative to their industry peers.

Firms with sizeable foreign operations or firms expecting increased growth in foreign income have a greater incentive to invert in order to move their foreign profits outside the U.S. taxing jurisdiction. However, inverting firms do not differ from their industry counterparts with

<sup>18</sup> We measure size based on assets (*COMPUSTAT* item #6). Untabulated results of size measured in terms of total sales (*COMPUSTAT* item #12) show similar results to those of the reported total asset measure of size.

respect to our measure of growth in foreign pre-tax income. We attempted to develop alternative measures of this construct using the Compustat geographic segment tapes, but this database does not report foreign assets or foreign sales frequently enough for the inverting firms to be useful.

Panel B of Table 2 compares the same four variables for the inverting firms to their industry means and medians for the period *after* the inversion announcement. The sample size decreases to nine firms for this analysis because subsequent year data are not available for recently announced inversions. Nonetheless, this analysis provides some interesting insights into how these comparisons change after the inversion.

Panel B shows that size is the only characteristic on which inverting firms differ (relative to the median,  $p < 0.074$ ) from their industries in post-inversion years. Inverting firms' leverage ratios are no longer lower than the industry means, and the inverting firms' total effective tax rates are no longer higher than the industry medians. Untabulated t-tests comparing firm-industry differences before and after the inversion announcement show that inverting firms weakly increased their leverage compared to the industry means (one-tailed  $p = 0.061$ ) and weakly decreased their effective tax rates compared to the industry medians (one-tailed  $p = 0.065$ ). This suggests that the inverting firms were somewhat successful in raising their leverage and lowering their effective tax rates to meet those of their industry competitors. Because Compustat data reflects only external debt, our leverage measure does not capture income stripping via intercompany debt. However, the tax savings from such income stripping would be reflected in the effective tax rate measure. Finally, we still do not find any differences in future growth in foreign income between the inverting firms and their industry means and medians. Based on

<sup>19</sup> In responding to Stanley Works decision to withdraw its inversion plans, Congressman Maloney asserted that worker-supported demonstrations he helped organize had more influence than the potential tax benefits, saying

Table 2 results, we conclude that inverting firms differ from other firms in their industries with respect to some, but not all, characteristics indicative of potential benefits from inversion.

Table 3 reports the pattern of stock prices and returns for inversion firms leading up to the announcement and the percentage of institutional ownership prior to the announcement. The purpose of this analysis is to determine whether the potential for shareholder capital gains is related to the tax structure of the inversion. Although the stock prices of many inverting firms decreased in the months preceding the inversion announcement, consistent with low shareholder tax costs from implementing a taxable inversion, we cannot conclude that this pattern describes all inversions.

However, we observe that the firms using a shareholder-taxable structure appear to have high institutional ownership relative to firms using corporate-taxed structures (C- and outbound F reorganizations). If the shareholder-taxed inversions involve firms with tax-indifferent shareholders, then the stock basis and potential built-in gain will not act as a friction on the inversion. We are in the process of gathering more specific ownership data to assess the extent to which institutional owners are tax-exempt entities.

Regarding the structures that involve corporation-level tax, we consider whether corporate net operating losses (NOLs) might reduce such tax costs. Only two of the five (untabulated) corporate-taxed inversions report NOLs on Compustat in the year prior to the inversion, Transocean and Xoma. However, Mills et al. (2002) caution that in the case of multinational corporations, a Compustat NOL does not necessarily indicate an U.S. NOL.

The foregoing descriptive analysis of 18 “case studies” compares firm characteristics to industry averages to see if any patterns emerge. In concurrent work, D&H (2002) estimate

“Stanley Works has responded to the political and community pressure that we’ve brought to bear” Rojas (2002).

logistic regressions to investigate the determinants of inverting (maximum 19 firms) versus not inverting using a control group of firms (varying in size from about 100 to 600 firms) that continuously report export data from 1992-1998 on Compustat. While their multivariate approach allows for control of multiple factors that our descriptive evidence cannot, we believe that our descriptive approach is appropriate for such a small sample of single-company inversions. Moreover, D&H's analysis includes four "inverting" firms that expatriated via a merger with a comparably sized foreign corporation. The large body of literature investigating merger and acquisition activity demonstrates that numerous factors beyond those motivating an inversion could confound their results.

Presumably, firms that choose to invert expect the present value of their future tax savings, net of any immediate tax costs and any non-tax costs, to be positive. However, the future tax benefits of inverting are less certain than the immediate tax costs because they are subject to uncertainties about future events. Although non-tax costs such as political costs are difficult to quantify, they undoubtedly exist. In the next section, we conduct tests of changes in firms' stock prices at or around the time the inversion is announced to assess whether investors view these announcements as favorable events.

## **STOCK PRICE REACTION**

As a result of uncertainty about the costs and benefits, whether the market reacts favorably to an inversion announcement is an empirical question. If the capital markets uniformly reward inverting firms with higher stock prices (i.e., significantly positive CARs), then one might reasonably expect more firms to follow their lead. On the other hand, if the stock prices of firms

that previously announced inversions did not materially or uniformly increase, then less evidence exists for the necessity of additional tax rule restrictions on corporate inversion.

We investigate whether inverting firms' share prices react positively to initial announcements of intentions to reorganize the firm in a tax-haven country, or whether there is evidence of post-announcement benefits over a longer window. In concurrent work, D&H (2002) conclude that, "share prices rise by an average of 1.7 percent in response to expatriation announcements." D&H base this conclusion on a sample of 19 inversion announcements, four of which involved mergers between U.S. firms and comparably sized pre-existing foreign corporations. Furthermore, D&H do not assess the statistical significance of the abnormal returns at either the firm level or in the aggregate.

We separately analyze 19 single-company inversion announcements described in the previous section and five additional merger-related expatriations (see Table 1). Because merger announcements have value-relevant information beyond the effects of inverting, we base our conclusions regarding share price reactions only on data from the single-company inversion subsample. We examine both two-day (day 0 through day +1) and five-day (day -2 through day +2) cumulative abnormal returns (CAR) around the inversion announcement date (day 0). We obtain daily returns for dates prior to 2002 from the Center for Research in Security Prices (CRSP). We obtained daily return data for dates in 2002 from [finance.yahoo.com](http://finance.yahoo.com). We use two proxies for expected returns: the daily return on the Standard & Poor's 500 stock index (S&P500) and the daily value-weighted market return provided by CRSP.<sup>20</sup>

<sup>20</sup> In untabulated results, we find similar results using the Nasdaq index and the CRSP equal-weighted index.

To assess the statistical significance of each stock's CAR values, we use approximate randomization procedures. Specifically, for each stock we construct a distribution of 999 random two- (and five-) day CAR values using daily firm and market returns from two (five) randomly selecting trading days over the 250-trading day period preceding day  $-5$  (relative to announcement day 0).<sup>21</sup> We then add the actual two- (five-) day CAR value to this distribution and assess its statistical significance relative to the randomly generated observations. For example, if the actual CAR value were the 50<sup>th</sup> most extreme positive value in the distribution of 1000 observations, then our assessed significance level would be 0.05 (i.e., 50/1000).

Panel A of Table 4 reports two- and five-day CAR values around initial inversion announcement dates for each sample firm proposing a single-company inversion. These results suggest that investors do not uniformly reward inverting firms with higher share prices—the shares of most firms actually *decreased* in value around the time of the inversion announcement. Because results are consistent across both proxies for expected returns, we discuss only the abnormal returns based on CRSP value-weighted market returns. Seven of the 19 firms in the single-company inversion sub-sample experienced significantly ( $p < 0.10$ ) negative CAR values over either the two- or five-day accumulation period. In contrast, only two firms (Fruit of the Loom and White Mountain Insurance) experienced significantly positive abnormal returns. The mean (median) two-day CAR in the single-company sub-sample is -0.0190 (-0.0055). The mean (median) five-day CAR in the single-company sub-sample is -0.0191 (-0.0014). However, neither

<sup>21</sup> The purpose of the randomization procedure is to construct a distribution of “normal” CAR values. Accordingly, we excluded from the pool of 250-trading days for each firm any days on which the firm made announcements about (1) earnings, (2) dividend changes, and (3) merger or acquisition activity, as such announcements could also create abnormal returns. These dates were identified using Lexis-Nexis.

the mean or median returns are significantly different from zero. In sum, we find no evidence to suggest that share prices increase in response to expatriation announcements.

Panel B shows the cumulative abnormal returns for firms announcing merger-related expatriation transactions. These transactions involve a merger between a U.S. domestic firm and a firm already domiciled in a Caribbean tax haven nation, with the tax haven firm surviving the transaction. Because each of these transactions could fairly be described as a “merger of equals,” it is impossible to discern whether the share prices are responding to anticipated tax savings from expatriating the domestic firm or to valuation implications of the merger itself.<sup>22</sup> Consequently, we chose to report separately the market reactions to these transactions. Not surprisingly, price reactions to such announcements tend to be larger in absolute magnitude than those shown in panel A. Three of the five firms announcing merger-related expatriations (Tyco, Trenwick, and Veritas) experienced significantly negative CAR’s over at least one of the two windows ( $p < 0.05$ ). Although both R&B Falcon and Global Marine have positive CAR values over both windows, our randomization test indicates that only the five-day CAR values for R&B Falcon are statistically significant ( $p < 0.10$ ).

To reconcile our results with those of D&H, note that R&B Falcon and Global Marine represent two of the three largest positive five-day excess returns in D&H’s study (see D&H’s figure 4). As such, they are the likely reason that D&H report an overall rise in share prices around inversion announcement dates. In addition, as described earlier, our sample includes four single-company inversions not included in D&H’s figure 4 (McDermott, Applied Power, Weatherford International, and Leucadia National), and D&H’s sample includes four of the five

merger-related expatriations that we segregate in Panel B (all except Veritas). Nevertheless, when we combine Panels A and B for sake of comparison to D&H, the average two- and five-day CAR's are  $-0.0239$  ( $t = -1.79$ ,  $p < 0.10$ ) and  $-0.0167$  ( $t = -1.02$ ), respectively.<sup>23</sup> Thus, if we follow D&H's method but add five additional transactions, we obtain a very different result (i.e., share prices do *not* rise, but actually *decrease*, on average, in response to inversion announcements).

### **Possible Explanation for Negative Returns**

It is counter-intuitive that management would propose, and shareholders would approve, a corporate inversion if they expected share prices to decline as a result. Although we are unable to resolve this puzzle, we offer several possible explanations. First, as with any “event” study, there is always the possibility that investors anticipated the transaction such that its positive effects are impounded into share values before the announcement date (or before day  $-2$  for purposes of our five-day CAR measure). Our discussions with Big 4 tax consultants involved with these transactions indicate that managers of some firms do “feel out” major shareholders to assess how they are likely to vote before publicly announcing an inversion proposal. To assess this possibility, we compute cumulative abnormal returns over the month preceding the announcement date (days  $-21$  to  $-3$ ) for each single-company inversion transaction. In untabulated results, we find that ten (nine) firms had positive (negative) CAR values over this period ranging from a high of  $0.5268$  to a low of  $-0.2566$ .<sup>24</sup> The average CAR of  $0.0079$  is not

<sup>22</sup> We examined the acquirer and target market values based on data from Securities Data Corporation or from newswire reports where SDC data were missing. In the case of all five mergers the ratio of acquirer to target was between 50% (1:2) and 200% (2:1), consistent with a “merger of equals.”

<sup>23</sup> The non-parametric sign and signed-rank tests are not significant.

<sup>24</sup> These tests do not control for the effects of any other firm-specific events that may have occurred during the one-month period prior to the announcement.

significantly greater than zero ( $t = 0.21$ ). The correlation between CAR values over this period with those computed over the five-day announcement period is not statistically significant (Spearman  $r = 0.19$ ,  $p = 0.42$ ). Thus, while we cannot rule out the possibility that shares prices of some firms impounded a positive value of inverting prior to the announcement date, this does not appear to explain the lack of positive returns during the announcement period on an overall basis.

Second, investors may be slow to appreciate the long-term value of the proposed inversion, such that share prices do not begin to reflect this value until after the event window (after day +2 for our five-day CAR measure). Similarly, there may be uncertainty as to whether shareholders will approve the inversion, such that share do not fully reflect the value of the inversion until this uncertainty is resolved.<sup>25</sup> To examine this possibility, Table 5 reports long window CAR measures over one, three, and six-month periods following the initial inversion announcement by firms proposing single-company inversion transactions.

Table 5 must be interpreted with caution, as long-window returns are likely to reflect the valuation implications of other events unrelated to the inversion announcement. Although some firms (most notably Foster Wheeler) do experience large positive abnormal returns over long windows subsequent to the announcement period, other firms continue to experience negative abnormal returns.<sup>26</sup> Across the three accumulation periods approximately one-half of the firms experienced positive returns, while the other half experienced negative returns. Thus, delay in

<sup>25</sup> Along the same lines, if the transaction is taxable to the shareholders, major investors might attempt to temporarily depress share prices until the transaction is completed in order to minimize their taxable gain. However, the fact that the transaction might trigger shareholders' capital gains taxes should not cause negative returns because such taxes could not be avoided (but, in fact, would only be accelerated) by selling the stock prior to the inversion transaction.

<sup>26</sup> Unfortunately, we are unable to utilize approximate randomization procedures to determine the statistical significance of these long window returns because repeated draws of a large number of trading days (e.g., 123) from a pool of 250 trading days would not result in independent observations.

the market's reaction to inversion announcements does not seem to be a systematic explanation for the lack of positive CAR values in the announcement period.

Third, for some firms, much of the future tax savings from inverting may be captured by top management rather than shareholders. For example, Johnston (2002b) reports that the compensation plans for Nabors Industries' top two executives give them eight percent (in total) of the company's cash flow. Thus, in this particular case, eight percent of the any tax savings would go directly to top management rather than shareholders. In addition, to the extent that future tax savings did cause share prices to increase, there is an increased likelihood that managers will exercise stock options they already hold already, thereby causing dilution of share values for existing shareholders. Finally, shareholders may have fewer rights to take legal action against corporate directors and officers under the laws of tax haven nations than they would under U.S. law (Johnston 2002c; Plitch 2002), and these differences may have negative valuation implications for the shares of inverting firms.

In sum, we find no compelling evidence to suggest that share prices systematically increase in response to announcements of corporate inversions. We are puzzled by this result because most firms justify their proposals to undertake inversion transactions with claims that shareholders will benefit from future corporate tax savings. Rather, these results suggest that the benefits of inversion are not obvious to market participants, or are offset by other costs. It is possible, therefore, that the apparent trend toward corporate inversions will not continue in the immediate future, particularly in light of the political scrutiny in 2002 and the resulting increase in political costs.

## CONCLUSIONS

As a direct response to the recent trend in corporate expatriations, politicians have questioned the patriotism of firms that reorganize outside the U.S. and introduced numerous legislative proposals designed to prevent corporate expatriations. In this study, we seek to provide empirical evidence on whether Congressional action is needed to constrain future expatriations of U.S. companies to tax haven countries.

In descriptive analysis, we compare single-company inverting firms to their industry averages on a number of dimensions relevant to an inversion decision. Although some of the descriptive evidence is consistent with incentives to invert and benefits from inversion, this evidence is weak. We also examine historical stock returns preceding the announcement date to assess whether the potential for shareholder capital gains is related to the legal form of the inversion transaction. We find some evidence that inversion structures creating taxable gain at the shareholder-level are common when share prices have recently declined and share ownership is concentrated among institutional investor who may be tax-exempt.

Our firm valuation analysis assesses the statistical significance of each firm's abnormal returns around the inversion announcement date using approximate randomization procedures. Additionally, we examine long-window returns following the inversion announcement. Overall, we do not detect obvious shareholder benefits from inversions. Our analyses of announcement and post-announcement stock returns fail to demonstrate that shareholders uniformly perceive that future tax benefits substantially outweigh tax and nontax costs associated with these transactions. We find that seven of the 19 single-company inversions have significant negative announcement period returns and only two show significant positive returns. The remaining ten

inversions show no statistically significant market reaction. The average return in the announcement period across all 19 firms is negative, but not significantly different than zero.

One policy implication of these results is that, if managers and shareholders seek to maximize share value, then existing non-tax costs associated with inverting might be sufficient to dissuade future inversion without additional tax rule restrictions. At the very least, the track record of prior inversions in failing to create substantial shareholder value might buy Congress some time to thoughtfully consider any legislative action that might be necessary. Because alternative avenues exist for firms to avoid, or at least substantially defer, U.S. tax on foreign income, a more comprehensive review of U.S. tax rules governing the taxation of foreign income may be needed.<sup>27</sup>

<sup>27</sup> For example, Cloyd et al. (2002) document an upward trend in Initial Public Offerings on U.S. stock exchanges by companies initially incorporated in Caribbean tax haven countries.

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**TABLE 1**  
**ALPHABETICAL LIST OF CORPORATE INVERSIONS AND MERGER-RELATED EXPATRIATIONS**

Company (Ticker)	Date Announced	Dates Approved	Date Completed	Destination	Industry	Form of transaction	Market Value <sup>a</sup> (in 000s)
<b>Panel A: Single Company Inversions</b>							
Applied Power (APW)	1/26/2000	7/22/2000	7/31/2000	Bermuda	35	Tax-free spinoff	\$ 998,701
Cooper Industries (CBE)	6/11/2001	5/14/2002	5/22/2002	Bermuda	36	Shareholder tax	3,550,665
Everest Reinsurance (RE)	9/17/1999	2/23/2000	2/24/2000	Bermuda	63	Shareholder tax	1,310,644
Foster Wheeler (FWC)	11/29/2000	4/23/2001	5/25/2001	Bermuda	16	Corporation tax	183,321
Fruit of the Loom (FTL)	2/11/1998	11/12/1998	3/4/1999	Cayman	22	Shareholder tax	1,823,229
Gold Reserve (GLDR)	11/24/1998	2/4/1999	2/4/1999	Canada	10	Shareholder tax	26,962
Helen of Troy (HELE)	12/30/1993	2/9/1994	2/9/1994?	Bermuda	36	Tax-free <sup>b</sup>	104,315
Ingersoll-Rand (IR)	10/16/2001	12/14/2001	12/31/2001	Bermuda	35	Shareholder tax	6,821,276
Leucadia National (LUK)	4/15/2002	n/a	n/a	Bermuda	63	Shareholder tax	1,596,944
McDermott (MDE)	10/28/1982	3/15/1983	3/15/1983	Panama	35	Tax-free <sup>b</sup>	635,024
Nabors Industries (NBR)	1/2/2002	6/14/2002	6/24/2002	Bermuda	13	Shareholder tax	483,6136
Noble Drilling (NE)	1/31/2002	4/25/2002	4/30/2002	Cayman	13	Shareholder tax	4,501,790
PXRE Corporation (PXT)	7/7/1999	10/5/1999	10/6/1999	Bermuda	63	Shareholder tax	223,184
Stanley Works (SWK)	2/8/2002	5/9/2002	withdraw	Bermuda	34	Shareholder tax	3,974,889
Transocean Offshore (RIG)	3/15/1999	5/13/1999	5/14/1999	Cayman	13	Both taxed	2,538,913
Triton Energy (OIL)	2/8/1996	3/25/1996	3/25/1996	Cayman	13	Shareholder tax	1,123,482
Weatherford Int'l (WFT)	4/5/2002	6/26/2002	6/26/2002	Bermuda	35	Shareholder tax	4,276,330
White Mountain (WTM)	9/27/1999	10/22/1999	10/25/1999	Bermuda	63	Corporation tax	765,033
Xoma (XOMA)	11/24/1998	12/29/1998	1/5/1999	Bermuda	28	Corporation tax	159,864
<b>Panel B: Merger-Related Expatriations</b>							
Tyco (TYC)	3/17/1997	7/2/1997	7/2/1997	Bermuda	36	Shareholder tax	9,122,591
Trenwick (TWK)	12/19/1999	9/25/2000	9/27/2000	Bermuda	63	Tax-free	278,790
R & B Falcon (FLC)	8/21/2000	12/12/2000	1/31/2001	Cayman	13	Tax-free	4,888,063
Global Marine (GLM)	9/3/2001	11/20/2001	11/20/2001	Cayman	13	Shareholder tax	2,666,660
Veritas/PGS (VTS)	11/26/2001	withdraw	withdraw	Cayman	13	Corporation tax	495,945

<sup>a</sup> Market value of equity is measured as of the inversion announcement date. Market value for firms announcing in 2002, are measured as of December 31, 2001.

<sup>b</sup> These transactions occurred prior to the issuance of Regulation § 1.367(a)-3 in December 1996.

**TABLE 2**  
**COMPARISON OF FIRM CHARACTERISTICS TO INDUSTRY MEANS AND MEDIANS**

<b>Panel A: Year prior to the inversion announcement</b>														
<b>Firm<sup>a</sup></b>	<b>Ann. Date</b>	<b>SIC</b>	<b>Size<sup>b</sup></b>		<b>Leverage</b>				<b>Total ETR</b>				<b>Growth in Foreign Inc.</b>	
			Firm	Industry	Firm	Industry	Firm	Industry	Firm <sup>c</sup>	Industry	Firm	Industry	Mean	Median
			Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median		
<b>Oil &amp; Gas</b>														
Triton Energy	2/8/1996	13	824	663	0.701	2.450	0.491	0.333	0.110	0	-1.076	0.192	0.154	
Transocean Offshore	3/15/1999	13	3,251	1,125	0.391	1.714	0.537	0.171	0.113	0	4.447	0.534	0.289	
Nabors Industries	1/2/2002	13	3,137	1,267	0.424	0.562	0.501	0.081	0.092	0.011	0.676	2.811	0.495	
Noble Drilling	1/31/2002	13	2,596	1,267	0.393	0.562	0.501	0	0.092	0.011	2.518	2.811	0.495	
<b>Insurance Carriers</b>														
PXRE Corporation	7/7/1999	63	633	18,426	0.472	0.748	0.764	0.264	0.193	0.174	0.128	0.128	0.166	
Everest Reinsurance	9/17/1999	63	5,997	18,426	0.753	0.748	0.764	0.25	0.193	0.174	0.128	0.166	0.166	
White Mountain	9/27/1999	63	3,281	18,426	0.786	0.748	0.764	0.252	0.193	0.174	0.127	0.166	0.166	
Leucadia National	4/15/2002	63	3,144	18,981	0.617	0.770	0.790	0.134	0.171	0.135	-0.762	0.213	0.213	
<b>Other</b>														
Helen of Troy	12/30/1993	36	123	822	0.346	0.595	0.474	0.229	0.173	0.131	0.281	0.137	0.105	
Fruit of the Loom	2/11/1998	22	2,483	462	0.830	0.670	0.629	0	0.145	0.155	-10.339	0.090	0.416	
Gold Reserve	11/24/1998	10	73	886	0.092	0.477	0.289	0	0.079	0	0.308	-2.071	0.153	
Xoma	11/24/1998	28	65	1,184	0.518	0.717	0.362	0	0.158	0	0.813	0.203	0.203	
Applied Power	3/10/2000	35	1,241	1,302	0.484	0.766	0.628	0.616	0.198	0.196	0.796	0.365	0.159	
Foster Wheeler	11/29/2000	16	3,438	749	0.891	0.599	0.630	0.678	0.205	0.192	0.192	0.390	0.465	
Cooper Industries	6/11/2001	36	4,789	1,544	0.602	0.622	0.345	0.144	0.230	0.210	0.061	1.016	0.335	
Ingersoll-Rand	10/16/2001	35	10,529	1,145	0.668	0.816	0.464	0.222	0.186	0.170	0.113	1.039	0.180	
Stanley Works	2/8/2002	34	1,885	773	0.609	0.910	0.628	0.194	0.190	0.196	-0.120	-0.836	0.159	
Weatherford Int'l	4/5/2002	35	3,462	1,145	0.613	0.816	0.464	0.188	0.186	0.170	0.994	1.101	0.180	
Mean of Firm / Industry Difference			-2,063	2,316	-0.291	0.009	0.060	0.097	0.060	0.097	-0.587	-0.377	-0.377	
<i>p</i> -value for signed-rank test of differences			0.799	0.000	0.006	0.640	0.404	0.021	0.404	0.021	0.635	0.839	0.839	

**TABLE 2 (CONTINUED)**  
**COMPARISON OF FIRM CHARACTERISTICS TO INDUSTRY MEANS AND MEDIANS**

<b>Panel B: Year after the inversion announcement</b>														
<b>Firm<sup>a</sup></b>	<b>Ann. Date</b>	<b>SIC</b>	<b>Firm</b>	<b>Size<sup>b</sup></b>		<b>Leverage</b>		<b>Total ETR</b>		<b>Growth in Foreign Inc.</b>				
				<b>Industry</b>	<b>Median</b>	<b>Industry</b>	<b>Median</b>	<b>Firm</b>	<b>Industry</b>	<b>Mean</b>	<b>Median</b>	<b>Firm<sup>c</sup></b>	<b>Industry</b>	<b>Mean</b>
<b>Oil &amp; Gas</b>														
Triton Energy	2/8/1996	13	1,098	948	131	0.730	0.546	0.494	0.053	0.094	0.001	-2.166	1.145	0.332
Transocean Offshore	3/15/1999	13	6,359	1,267	169	0.370	0.562	0.501	0.297	0.092	0.011		2.675	0.920
<b>Insurance Carriers</b>														
PXRE Corporation	7/7/1999	63	785	18,981	1,905	0.669	0.770	0.790	0	0.171	0.135	1.471	0.715	0.444
Everest Reinsurance	9/17/1999	63	7,013	18,981	1,905	0.774	0.770	0.790	0.231	0.171	0.135		0.715	0.444
White Mountain	9/27/1999	63	3,545	18,981	1,905	0.705	0.770	0.790	0.350	0.171	0.135		0.715	0.444
<b>Other</b>														
Helen of Troy	12/30/1993	36	133	936	39	0.335	0.61	0.441	0.215	0.205	0.224	0.074	0.727	0.425
Fruit of the Loom	2/11/1998	22	2,155	620	313	1.040	0.737	0.663	0.350	0.121	0.073	-0.323	-0.436	-0.323
Gold Reserve	11/24/1998	10	65	1,096	56	0.023	0.724	0.396	0	0.068	0	0.872	-0.553	-0.596
Xoma	11/24/1998	28	28	1,388	43	1.595	1.021	0.431	0	0.110	0	-0.012		0.132
Mean of Firm to Industry Ratio			-4,669	1,635			-0.029	0.106	0.033	0.087	0.087	-0.333	0.999	-0.071
<i>p</i> -value for test of Ratio=1 (two-tailed)			0.250	0.074			0.820	0.999	0.570	0.156	0.999			0.999

*Size* = Total assets (Compustat item #6). *Leverage* = Total liabilities (#181)/Total assets (#6). *Total effective tax rate* = current income tax expense (domestic and foreign)/pre-tax income before interest expense, unusual or non-recurring items, and minority interest. ((#16 - #50)/(#170 + #15 - #55)). However if the current income tax expense is negative, the effective tax rate is set to zero; and, if pre-tax income is negative and current tax expense is positive, the effective tax rate is set to the top statutory rate. The total effective tax rate is measured in a manner consistent with previous research (Gupta and Newberry 1997; Boatsman et al. 2002). *Growth in foreign income* = Average of the year over year percentage change in foreign pre-tax income (average of: (#273<sub>t</sub> - #273<sub>t-1</sub>)/(#273<sub>t-1</sub>) for a period of up to five years before the inversion announcement depending on data availability). For future growth, we use a period extending from the year after the inversion announcement to 2001 depending on data availability).

<sup>a</sup> This table includes observations for firms expatriating using an inversion structure. We exclude the observations for which the expatriations were accomplished via a merger. Comparisons are made for the year prior to the inversion announcement. For companies that announced their inversion in 2002, we use data for 2000 data is used for the comparison because 2001 *Compustat* data is not currently available.

<sup>b</sup> In size comparisons of firm total sales to industry total sales means and medians, inferences remain the same as those for total assets.

<sup>c</sup> Inverting firms not reporting sufficient information for the calculation of average growth in foreign income include Everest Reinsurance, Leucadia National, PXRE, White Mountain (SIC 63), and XOMA (SIC 28). Additionally, very few firms report foreign pre-tax income for the insurance industry (SIC 63) in general. For example, in year 1998 only 21 of 260 (8%) firms reported enough information to determine the average growth in foreign income.

TABLE 3

**SHARE PRICES AND RAW RETURNS OVER PERIODS PRECEDING INVERSION ANNOUNCEMENTS  
AND INSTITUTIONAL OWNERSHIP PERCENTAGE PRIOR TO THE INVERSION ANNOUNCEMENT, REPORTED BY TAX STRUCTURE <sup>a</sup>**

Company	Share Prices Prior to Inversion Announcement <sup>b</sup>					% Return over Periods Preceding Day -5						% Stock Held by Institutional Owners <sup>c</sup>
	-24 Months	-18 Months	-12 Months	-6 Months	-5 Days	24 Months	18 Months	12 Months	6 Months	6 Months		
<b>Panel A: Single Company Inversions <sup>d</sup></b>												
<i><b>Taxable to Shareholders</b></i>												
Gold Reserve	11.44	8.38	2.69	2.44	1.22	-89.3%	-85.4%	-54.6%	-50.0%	n/a		
PXRE Corporation	30.94	33.19	30.06	25.25	17.94	-42.0%	-46.0%	-40.3%	-29.0%	89%		
Ingersoll-Rand	57.25	44.13	35.50	41.45	36.25	-36.7%	-17.8%	2.1%	-12.5%	91%		
Everest Reinsurance	37.94	39.63	37.56	35.25	28.06	-26.0%	-29.2%	-25.3%	-20.4%	82%		
Cooper Industries	53.25	41.56	34.81	40.88	39.56	-25.7%	-4.8%	13.6%	-3.2%	76%		
Fruit of the Loom	25.38	25.75	39.63	27.13	25.06	-1.2%	-2.7%	-36.8%	-7.6%	57%		
Noble Drilling	30.38	39.56	42.13	30.00	30.50	0.4%	-22.9%	-27.6%	1.7%	88%		
Nabors Industries	29.44	42.00	54.25	42.20	34.55	17.4%	-17.7%	-36.3%	-18.1%	87%		
Weatherford Internat'l	38.11	43.38	54.52	24.43	47.63	25.0%	9.8%	-12.6%	95.0%	90%		
Leucadia National	22.56	25.31	31.70	30.48	36.81	63.1%	45.4%	16.1%	20.8%	37%		
Stanley Works	25.94	25.94	33.00	42.69	43.35	67.1%	67.1%	31.4%	1.5%	64%		
Triton Energy	30.75	32.75	32.38	49.63	56.13	82.5%	71.4%	73.4%	13.1%	n/a		
<i><b>C Reorganizations</b></i>												
Foster Wheeler	17.13	14.31	10.50	7.69	4.94	-71.2%	-65.5%	-53.0%	-35.8%	55%		
Transocean Offshore	28.75	44.81	45.56	28.50	23.25	-19.1%	-48.1%	-49.0%	-18.4%	72%		
<i><b>Outbound F Reorganizations</b></i>												
Applied Power (Spin-off)	70.50	35.25	37.06	27.50	34.81	-50.6%	-1.2%	-6.1%	26.6%	83%		
Xoma	3.38	5.13	7.13	4.88	3.56	5.6%	-30.5%	-50.0%	-26.9%	8%		
White Mountain Ins.	107.75	137.06	122.25	123.00	134.00	24.4%	-2.2%	9.6%	8.9%	5%		

**TABLE 3 (CONTINUED)**  
**SHARE PRICES AND RAW RETURNS OVER PERIODS PRECEDING INVERSION ANNOUNCEMENTS**  
**AND INSTITUTIONAL OWNERSHIP PERCENTAGE PRIOR TO THE INVERSION, REPORTED BY TAX STRUCTURE <sup>a</sup>**

Company	Share Prices Prior to Inversion Announcement <sup>b</sup>					% Return over Periods Preceding Day -5					% Stock Held by Institutional Owners <sup>c</sup>	
	-24 Months	-18 Months	-12 Months	-6 Months	-5 Days	24 Months	18 Months	12 Months	6 Months	6 Months		
<b>Panel B: Merger-Related Expatriations</b>												
Trenwick	36.25	36.06	31.50	28.13	17.38	-52.1%	-51.8%	-44.8%	-38.2%	-38.2%	38%	
Global Marine	17.81	25.00	32.25	28.71	15.74	-11.6%	-37.0%	-51.2%	-45.2%	-45.2%	78%	
Veritas/PGS	15.50	27.56	25.56	35.20	14.50	-6.5%	-47.4%	-43.3%	-58.8%	-58.8%	92%	
Tyco	26.19	30.75	18.50	21.44	30.69	17.2%	-0.2%	65.9%	43.1%	43.1%	85%	
R&B Falcon	13.38	5.69	12.13	13.94	23.69	77.1%	316.5%	95.4%	70.0%	70.0%	65%	

<sup>a</sup> Within each tax structure, firms are ranked by the raw returns over the 24-month period preceding the announcement (lowest to highest).

<sup>b</sup> Share prices are adjusted for stock splits occurring with the time period depicted above.

<sup>c</sup> Institutional ownership is the percentage of shares held by financial institutions including banks, investment firms, insurance firms, college endowments and 13F money managers. Data were obtained from Moody's Handbook of Common Stocks, Standard & Poor's Stock Reports, and Standard & Poor's Security Owner's Stock Guide.

<sup>d</sup> McDermott and Helen of Troy are excluded from this analysis because both inverted prior to the issuance of Regulation § 1.367(a)-3 in December 1996.

**TABLE 4**  
**CUMULATIVE ABNORMAL RETURNS AROUND THE INVERSION ANNOUNCEMENT DATE**

Company	Date	2-Day CAR ( <i>p</i> -value) <sup>a</sup>		5-Day CAR ( <i>p</i> -value) <sup>a</sup>	
		S&P500	CRSP <sup>b</sup>	S&P500	CRSP <sup>b</sup>
<b>Panel A: Single Company Inversions</b>					
McDermott Industries	10/28/1982	<b>-0.0799</b> <b>(0.005)<sup>c</sup></b>	<b>-0.0965</b> <b>(0.004)</b>	<b>-0.0983</b> <b>(0.027)</b>	<b>-0.1006</b> <b>(0.020)</b>
Helen of Troy	12/30/1993	0.0088 (0.421)	0.0027 (0.474)	0.0600 (0.138)	0.0520 (0.168)
Triton Energy	2/8/1996	0.0208 (0.194)	0.0221 (0.180)	<b>-0.0740</b> <b>(0.029)</b>	<b>-0.0676</b> <b>(0.046)</b>
Fruit of the Loom	2/11/1998	<b>0.0986</b> <b>(0.000)</b>	<b>0.0985</b> <b>(0.000)</b>	<b>0.1105</b> <b>(0.002)</b>	<b>0.1079</b> <b>(0.004)</b>
Gold Reserve	11/24/1998	<b>-0.1239</b> <b>(0.065)</b>	<b>-0.1242</b> <b>(0.063)</b>	-0.0871 (0.287)	-0.0860 (0.292)
Xoma	11/24/1998	-0.0328 (0.286)	-0.0331 (0.282)	-0.0603 (0.306)	-0.0592 (0.309)
Transocean Offshore	3/15/1999	-0.0547 (0.181)	-0.0536 (0.177)	0.0330 (0.267)	0.0340 (0.268)
PXRE Corporation	7/7/1999	0.0330 (0.128)	0.0352 (0.113)	0.0249 (0.232)	0.0258 (0.231)
Everest Reinsurance	9/17/1999	<b>-0.0452</b> <b>(0.080)</b>	<b>-0.0445</b> <b>(0.071)</b>	-0.0364 (0.261)	-0.0370 (0.258)
White Mountain Insurance	9/27/1999	0.0031 (0.382)	0.0044 (0.355)	<b>0.0635</b> <b>(0.024)</b>	<b>0.0603</b> <b>(0.023)</b>
Applied Power	1/26/2000	<b>-0.0988</b> <b>(0.010)</b>	<b>-0.0992</b> <b>(0.010)</b>	<b>-0.1128</b> <b>(0.022)</b>	<b>-0.1143</b> <b>(0.023)</b>
Foster Wheeler	11/29/2000	<b>-0.0828</b> <b>(0.068)</b>	<b>-0.0804</b> <b>(0.077)</b>	<b>-0.1597</b> <b>(0.025)</b>	<b>-0.1540</b> <b>(0.031)</b>
Cooper Industries	6/11/2001	0.0177 (0.283)	0.0196 (0.262)	0.0075 (0.472)	0.0083 (0.466)
Ingersoll-Rand	10/16/2001	-0.0055 (0.354)	-0.0055 (0.353)	0.0048 (0.466)	0.0033 (0.451)
Nabors Industries	1/2/2002	<b>-0.0799</b> <b>(0.055)</b>	<b>-0.0841</b> <b>(0.049)</b>	-0.0690 (0.200)	-0.0752 (0.181)
Noble Drilling	1/31/2002	0.0426 (0.152)	0.0445 (0.138)	0.0587 (0.215)	0.0569 (0.218)
Stanley Works	2/8/2002	0.0254 (0.121)	0.0268 (0.105)	0.0388 (0.159)	0.0426 (0.134)
Weatherford International	4/5/2002	0.0129 (0.386)	0.0128 (0.379)	-0.0601 (0.237)	-0.0593 (0.240)
Leucadia National	4/15/2002	-0.0180 (0.151)	-0.0198 (0.131)	0.0041 (0.457)	-0.0013 (0.401)
Average for single-company inversions		-0.0189	-0.0190	-0.0185	-0.0191

**TABLE 4 (CONTINUED)**  
**CUMULATIVE ABNORMAL RETURNS AROUND THE INVERSION ANNOUNCEMENT DATE**

Company	Date	2-Day CAR ( <i>p</i> -value) <sup>a</sup>		5-Day CAR ( <i>p</i> -value) <sup>a</sup>	
		S&P500	CRSP <sup>b</sup>	S&P500	CRSP <sup>b</sup>
<b>Panel B: Merger-Related Transactions</b>					
Tyco (with ADT)	3/17/1997	<b>-0.0516</b> <b>(0.002)<sup>c</sup></b>	<b>-0.0477</b> <b>(0.006)</b>	-0.0122 (0.325)	-0.0085 (0.359)
Trenwick (w/ LaSalle RE)	12/19/1999	<b>-0.1505</b> <b>(0.001)</b>	<b>-0.1564</b> <b>(0.001)</b>	<b>-0.1180</b> <b>(0.054)</b>	<b>-0.1294</b> <b>(0.035)</b>
R&B Falcon (w/ Transocean)	8/21/2000	0.0584 (0.179)	0.0585 (0.170)	<b>0.1465</b> <b>(0.061)</b>	<b>0.1457</b> <b>(0.062)</b>
Global Marine (w/ Sante Fe International)	9/3/2001	0.0433 (0.193)	0.0462 (0.177)	0.0705 (0.173)	0.0702 (0.170)
Veritas (with Petroleum Geo-Services)	11/26/2001	<b>-0.1088</b> <b>(0.049)</b>	<b>-0.1116</b> <b>(0.048)</b>	-0.1122 (0.120)	-0.1162 (0.117)
Average for merger-related transactions		-0.0419	-0.0422	-0.0051	-0.0076
Average across all transactions (Panels A and B combined)		-0.0237	-0.0239	-0.0157	-0.0167

<sup>a</sup> 2-day CAR's are computed over days 0 to +1 relative to announcement day 0, and 5-day CAR's are computed over days -2 to +2.

<sup>b</sup> We use value-weighted daily market returns provided by the Center for Research in Security Prices (CRSP) in computing abnormal returns. Because CRSP data is unavailable for dates in 2002, we compute predicted values of the CRSP value-weighted return based on OLS regression estimates obtained by regressing this measure on daily returns to the NASDAQ and S&P500 indices for 2000 and 2001. The R-squared for this regression is 0.98. Actual values of the CRSP value-weighted market return will be substituted for these estimates when data become available.

<sup>c</sup> We use approximate randomization to assess the statistical significance of each stock's CAR values. Specifically, for each stock we construct a distribution of 999 random two- (and five-) day CAR values using daily firm and market returns from two (five) randomly selecting trading days over the 250-trading day period preceding day -5 (relative to announcement day 0). We then add the actual two- (five-) day CAR value to this distribution and assess its statistical significance relative to the randomly generated observations. For example, if the actual CAR value were the 50<sup>th</sup> most extreme positive value in the distribution of 1000 observations, then our assessed significance level would be 0.05 (i.e., 50/1000).

**TABLE 5**  
**CUMULATIVE ABNORMAL RETURNS OVER PERIODS AFTER**  
**SINGLE-COMPANY INVERSION ANNOUNCEMENTS**  
**(LISTED IN DECREASING ORDER OF ONE-MONTH CAR VALUES)**

Company	Trading Days of Available Data	Abnormal Return Accumulation Period <sup>a</sup>		
		One Month (Days +3, +21)	Three Months (Days +3, +63)	Six Months (Days +3, +125)
Foster Wheeler	123	0.2989	2.8984	2.2021
Weatherford International	89	0.1948	0.1012	0.1128
Noble Drilling	123	0.1182	0.4193	0.2143
Fruit of the Loom	123	0.0939	0.1506	-0.1080
Stanley Works	123	0.0643	0.0111	-0.0380
Ingersoll-Rand	123	0.0395	-0.0517	0.2263
Cooper Industries	123	0.0182	0.5173	0.0364
Nabors Industries	123	0.0108	0.3037	0.2363
McDermott	93	-0.0036	0.0972	-0.0893
Helen of Troy	32	-0.0213	0.0270	0.0270
Leucadia National	83	-0.0406	-0.0080	0.0930
White Mountain Insurance	123	-0.0616	-0.3082	-0.2956
Transocean Offshore	123	-0.0627	-0.0232	0.2636
Gold Reserve	123	-0.0815	0.1005	0.0598
Triton Energy	123	-0.0902	-0.0292	-0.1942
Everest Reinsurance	123	-0.1426	-0.2210	-0.0625
Xoma	23	-0.1499	-0.1367	-0.1367
PXRE Corporation	123	-0.1627	-0.1696	-0.4157
Applied Power	123	-0.1943	-0.0215	0.3939
Overall Average <sup>b</sup>		-0.0091	0.1925	0.1329
Average excluding Foster Wheeler <sup>b</sup>		-0.0262	0.0422	0.0180
Number with Positive CAR Values		8	10	11
Number with Negative CAR Values		11	9	8

<sup>a</sup> The accumulation period ends before the end of the indicated period if data were unavailable (McDermott, Helen of Troy, and Xoma) or, for announcements occurring in 2002, if 125 trading days had not lapsed as of August 14, 2002 (Weatherford International and Leucadia National). CAR values are calculated by multiplicatively combining raw returns and CRSP value-weighted market returns over the indicated periods, and then subtracted the accumulated market return from the accumulated raw return.

<sup>b</sup> None of these average values are significantly different than zero based on *t*-tests and nonparametric sign and signed rank tests.