Tax Inversions: How do Financial Metrics of Foreign Acquisitions Compare?

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This research was performed as a consulting project for Pfizer Inc. Richard Manning, Partner, Bates White Healthcare & Life Sciences practice, was Senior Director of Economic Analysis at Pfizer until 2008. Richard Sciacca, Partner and Alan Alford, Principal, are members of Bates White's Transfer Pricing practice. The authors are solely responsible for the observations and findings set forth in the report.

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I. Executive Summary

(1) Our prior analysis of tax inversions focused on assessing the extent to which the financial metrics of inverting companies differed in systematic ways from those of a sample of non-inverting peer companies through the time period before and following the inversion. By tracking changes in 10 financial metrics from a baseline period of two years prior to a completed inversion to one year following the inversion, we found that inverting companies do exhibit differences from peers in certain key metrics, but not always in the manner one might expect if inversions were motivated solely by a desire to reduce tax rates or tax payments.

(2) We also found that the effects of inversion, and the behavior of financial metrics generally, differed substantially across the three industry groups studied. These differences, together with the relatively small sample of inverting companies, complicated the assessment of the statistical significance of the differences we observed. Hence, we provided general impressions arising from a visual inspection of the time paths generated for the 10 metrics.

(3) Here, we extend the prior analysis to consider how the metrics of foreign domiciled companies engaged in the (non inversion-related) acquisition of US target companies behave relative to those of inverting companies and their peers. Since inversions often, but not always, involve an acquisition, it is interesting to assess the extent to which inversions appear similar or different from non inversion-related acquisitions. The key question of policy interest is this: To the extent that inversions enable companies to achieve investments or expenditures that enhance or diminish their contributions to the global (or domestic) economy, or allows them to reduce tax burdens, how do those effects differ from ostensibly similar merger and acquisition activity that does not have the overt motive of tax inversion?

(4) These are complex questions of which the data permit only high level examination. As illustrated and discussed below, the data yield no simple and consistent answers to these questions. The most compelling conclusion that can be drawn is that the financial metrics of foreign companies engaged in acquisitions of US companies are not systematically similar to either those of inverting companies or to their non-inverting peers. It is certainly not obvious that there is any policy-addressable “problem” with either inversions or foreign acquisitions.

II. Sample of foreign acquisitions

(5) As in the prior analysis, the sample of foreign acquiring companies was drawn from data available in Standard & Poor's Capital IQ (CAPIQ) database. The following selection criteria yielded an initial sample of 308 total acquisitions:

- Transaction involved the acquisition of majority stake in the target
- Target's HQ: the United States of America
- Acquirer's HQ: outside the United States of America
- Total transaction value is greater than $100 USD (MM)
- Listed transaction closing date is between Jan 1, 2005 - Dec 31, 2013 (the same period covered in the prior analysis)
- Both the target and the acquirer have public financials accessible through CAPIQ

(6) From the 308 total companies identified as completing a foreign acquisition during this time period, 129 had to be dropped for a variety of data issues. Of the total, 107 observations were dropped because the acquisitions involved multiple companies as either acquires or targets in the acquisition year; 18 were dropped because they had been included as either an inverting or a non-inverting peer in the prior analysis. These were excluded in order to avoid duplication of companies across samples. Finally, four acquisitions were dropped due to lack of sufficient data from which to evaluate any of the metrics of interest. The resulting sample included a total of 179 foreign acquisitions broken down by industry as indicated in

(7) Figure 1 below. For comparison, the figure shows the composition of the inverting and non-inverting peer samples as well.

Figure 1 – Number of Companies in Each Sample by Industry

Industry	Inverting Companies	Non-inverting Peers	Foreign Acquirers
Biopharma	5	27	7
FIRE	5	39	19
Other	10	82	153
Total	20	148	179

(8) For each company among this sample of 179, data on each of the 10 metrics are taken from CAPIQ for both the acquiring and target company. Prior to the merger, the metrics for the acquirer and target are combined in an effort to adjust for the simple additive effects of the merger.[1] As data for acquirer and target are merged, there are metrics for which data are missing. This introduces a potentially important source of volatility. For example, within the set of seven Biopharma acquisitions, data for only capital outlays exists for both parties for all seven of the acquisitions. While most of the metrics have data for four or more of the Biopharma acquisitions, complete data on full time employment exists for only two acquirers. Sample sizes are somewhat larger for the FIRE industry and substantially so for the Other industry group. Within FIRE, the count of usable data from which to calculate metrics runs from three (for the Altman's Z metric) to 19 (for total revenue), and in the Other group, the count runs from 40 (for R&D expense) to 151 (for the ratio of current to total assets).[2]

(9) Summary statistics for the various industry groupings are provided in Figures 2, 3 and 4 below. The summary statistics are calculated from data beginning two years prior to the inversion (t=-2) and ending the year after (t=1). Across all industries, targets are substantially smaller in terms of financial measures and number of employees than are non-inverting acquirers; this is obviously not a surprise. Within the Biopharma sector, the acquirers tend to be smaller on financial metrics than the non-inverting peer group, but more similar in size to the inverters. In the FIRE sector, acquirers are much larger on financial metrics than are both inverters and peer companies. The same pattern holds among companies in the Other group.

[1] To the extent that acquiring and target companies bought and/or sold from each other before their merger, there would be some degree of financial double counting using this procedure (e.g., combined revenues and cost of goods sold would be higher than post-merger consolidated revenues). Obviously, this procedure also does not account for synergies that are commonly realized as a result of a merger.

[2] Additional detail about the composition of the sample and counts of acquisitions for each metric are available from the authors.

Figure 2 – Summary Statistics – Biopharma

Summary Statistics for BioPharma Companies from t = -2 to t = 1						
Statistic	**Full Time Employees**	**Total Revenue ($MM)**	**Market Cap ($MM)**	**Total Assets ($MM)**	**R&D Expense ($MM)**	**Effective Tax Rate (%)**
Non-Inverting Foreign Acquirers (represents combined target and aquirers)						
Mean	20,844	$ 3,506	$ 7,735	$ 6,128	$ 637	32
Median	19,608	$ 1,713	$ 5,395	$ 1,668	$ 207	24
25th Percentile	375	$ 904	$ 2,492	$ 584	$ 104	21
75th Percentile	39,919	$ 3,407	$ 7,980	$ 4,719	$ 1,181	36
Target Companies (pre-merger; t = -2 to t = 0)						
Mean	1,425	$ 646	$ 2,206	$ 1,749	$ 46	26
Median	598	$ 89	$ 783	$ 302	$ 30	31
25th Percentile	112	$ 11	$ 300	$ 119	$ 13	18
75th Percentile	1,510	$ 1,602	$ 3,845	$ 1,754	$ 102	34
Inverting Companies						
Mean	6,083	$ 2,697	$ 11,249	$ 7,881	$ 176	29
Median	2,834	$ 1,027	$ 7,493	$ 2,714	$ 89	26
25th Percentile	605	$ 358	$ 1,919	$ 1,001	$ 57	24
75th Percentile	9,350	$ 3,800	$ 12,682	$ 11,952	$ 145	36
Non-Inverting Peer Companies						
Mean	19,669	$ 9,684	$ 23,708	$ 21,517	$ 1,388	22
Median	9,900	$ 4,315	$ 11,187	$ 6,699	$ 564	21
25th Percentile	1,846	$ 848	$ 2,761	$ 1,327	$ 140	13
75th Percentile	36,507	$ 17,715	$ 35,719	$ 33,643	$ 1,427	31

Figure 3 - Summary Statistics – FIRE

Summary Statistics for FIRE Companies from t = -2 to t = 1						
Statistic	Full Time Employees	Total Revenue ($MM)	Market Cap ($MM)	Total Assets ($MM)	R&D Expense ($MM)	Effective Tax Rate (%)
Non-Inverting Foreign Acquirers (represents combined target and aquirers)						
Mean	15,492	$ 11,114	$ 11,607	$ 143,117		28
Median	1,623	$ 2,726	$ 8,329	$ 17,046		27
25th Percentile	723	$ 881	$ 1,157	$ 6,042		16
75th Percentile	23,984	$ 13,566	$ 17,191	$ 245,036		31
Target Companies (pre-merger; t = -2 to t = 0)						
Mean	2,633	$ 659	$ 837	$ 8,226		37
Median	380	$ 230	$ 363	$ 1,137		31
25th Percentile	131	$ 124	$ 239	$ 488		28
75th Percentile	1,190	$ 626	$ 1,253	$ 2,740		36
Inverting Companies						
Mean	14,765	$ 2,992	$ 6,317	$ 8,634		23
Median	2,200	$ 1,273	$ 1,196	$ 3,956		26
25th Percentile	1,396	$ 862	$ 730	$ 1,911		18
75th Percentile	3,864	$ 1,849	$ 15,130	$ 6,382		30
Non-Inverting Peer Companies						
Mean	8,105	$ 2,654	$ 6,345	$ 7,979		29
Median	1,894	$ 1,001	$ 1,391	$ 2,957		29
25th Percentile	868	$ 384	$ 667	$ 1,141		25
75th Percentile	5,286	$ 1,651	$ 4,268	$ 6,398		33

Figure 4 - Summary Statistics – Other

Summary Statistics for Other Companies from t = -2 to t = 1						
Statistic	Full Time Employees	Total Revenue ($MM)	Market Cap ($MM)	Total Assets ($MM)	R&D Expense ($MM)	Effective Tax Rate (%)
Non-Inverting Foreign Acquirers (represents combined target and aquirers)						
Mean	35,016	$ 9,825	$ 16,896	$ 29,461	$ 723	26
Median	24,746	$ 3,147	$ 7,293	$ 4,274	$ 123	27
25th Percentile	5,610	$ 945	$ 1,860	$ 1,222	$ 58	17
75th Percentile	55,669	$ 11,361	$ 15,850	$ 14,706	$ 651	33
Target Companies (pre-merger; t = -2 to t = 0)						
Mean	3,961	$ 1,483	$ 2,115	$ 2,014	$ 55	35
Median	1,175	$ 308	$ 600	$ 363	$ 23	34
25th Percentile	456	$ 124	$ 185	$ 136	$ 10	23
75th Percentile	4,100	$ 914	$ 1,932	$ 1,335	$ 41	39
Inverting Companies						
Mean	14,037	$ 4,081	$ 9,134	$ 10,576	$ 204	25
Median	2,557	$ 1,832	$ 4,406	$ 3,838	$ 36	28
25th Percentile	1,399	$ 378	$ 674	$ 1,208	$ 10	14
75th Percentile	7,508	$ 3,514	$ 8,953	$ 7,375	$ 425	34
Non-Inverting Peer Companies						
Mean	26,946	$ 6,572	$ 12,403	$ 14,508	$ 447	29
Median	7,356	$ 1,357	$ 1,929	$ 1,765	$ 48	29
25th Percentile	1,058	$ 202	$ 296	$ 237	$ 10	20
75th Percentile	24,833	$ 3,798	$ 8,053	$ 6,540	$ 166	36

III. Results

(10) Here, we discuss the results in context of the prior work. We focus on the same 10 metrics as previously, six of which capture economic contribution and size related measures and four of which are financial performance ratios that are more independent of firm size, as indicated in Figure 5 below. For each of these measures, metrics reflecting the characteristics of foreign acquiring firms and their domestic (US) targets are presented along with the same metrics for inverting companies and their non-inverting peers, as presented in the previous analysis.

(11) A more complete description of these metrics and their interpretation is provided in the prior report. In brief, however, data for each metric is set equal to 100 in the baseline period, two years prior to the acquisition. Values relative to that baseline are then calculated as percentages of the baseline value for each metric.

Figure 5 - Financial metrics used to compare inverting companies to their peers

Economic Contribution and Size-related Measures	Performance Ratios
Full Time Employees	Current Assets / Total Assets
R&D Expenditure	Revenue / Employee
Capital Expenditure	Altman's Z-score
Income Tax Expense	Effective Tax Rate
Total Revenue	
Market Capitalization	

(12) Although we discuss the patterns observed below, the overall take away from this analysis is that the behavior of financial metrics accompanying foreign acquisitions are not systematically similar to those of either inverting companies or their non-inverting peers. It also seems fairly clear that industry matters in this analysis just as it did in the previous one. The fact that there are no consistent patterns may be due to the fact that sample sizes are small – particularly in the Biopharma sector – but it may also reflect the fact that the economic motives of merger and acquisitions differ substantially across sectors and across individual companies. The variety of effects (and of motives) suggests caution in trying to devise policies that affect the ability of companies to engage in such transactions.

III.A. Economic contribution and size-related measures

(13) The first group of charts in Figure 6 to Figure 22 presents data for the six metrics in the first column of Figure 5. In these charts, the acquirer data, plotted in orange, do not consistently track with any either the inverter company (blue) or the peer company data (green). That said, there are a handful of cases in which the acquirer metrics track fairly closely with the non-inverting peer group. In the Biopharma sector, those metrics are Full Time Employment (FTE), Total Revenue and Market Capitalization. This is also the case for R&D expenditure for the Other sector. For none of the metrics and none of the industries is there close tracking between acquiring companies and inverting companies, giving some support to the idea that inversion and acquisition are in fact distinct financial phenomena.

(14) It is notable that in the Biopharma sector, inverting companies experience substantially greater growth relative to baseline following the inversion or acquisition year in FTE, R&D, Capital Outlay, Total Revenue and Market Capitalization than do acquiring companies. Inverters also show substantially lower Income Tax Expense in this sector than do acquirers. These patterns do not generally hold for the FIRE and Other industry groups. On their face, these data suggest that inverting companies perform better in the immediate aftermath of the transaction than do companies acquired by foreign companies. Obviously, these trends may not be generalizable due to the fact that the Biopharma sector sample is small relative to the Other sector in particular, and the limited time frame examined.

III.A.1. Full time employees

Inverters Peers Acquirers

Figure 6 – Full time employees: Biopharma

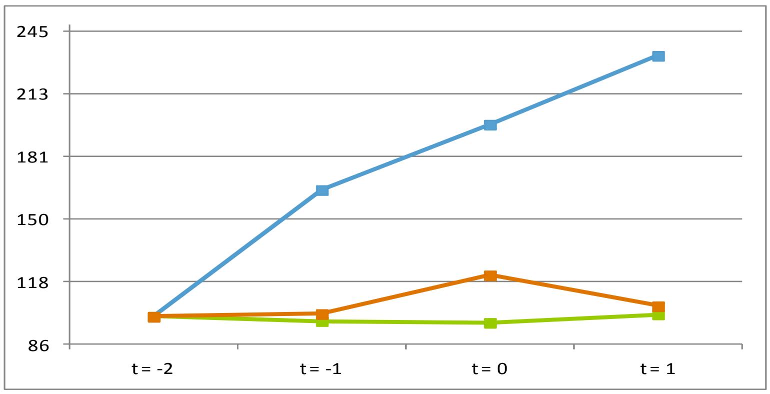


Figure 7 – Full time employees: FIRE

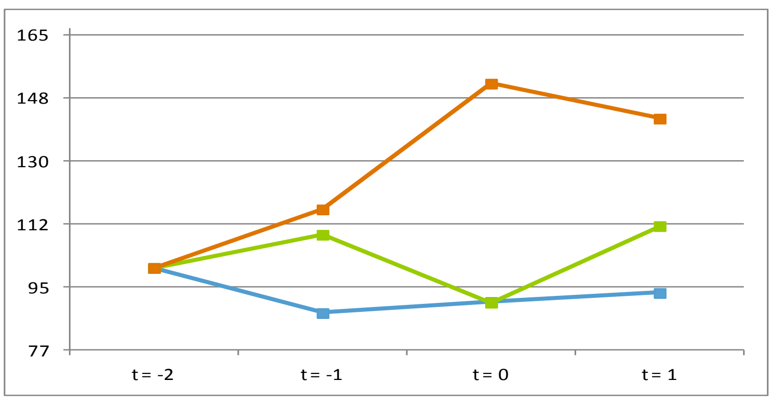
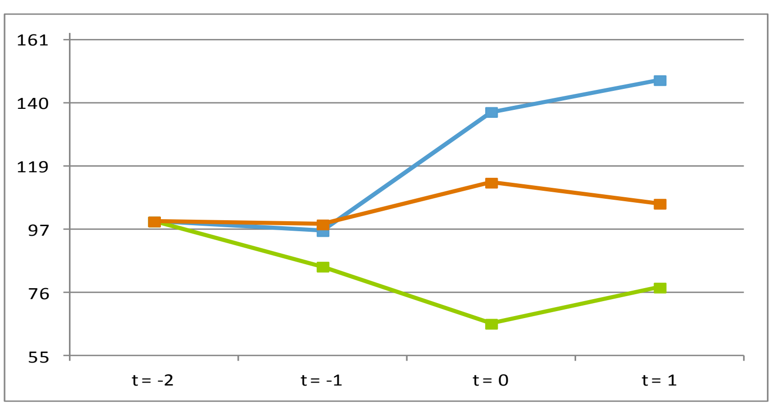


Figure 8 – Full time employees: Other



III.A.2. R&D Expenditure

Inverters Peers Acquirers

Figure 9 – R&D Expenditure: Biopharma

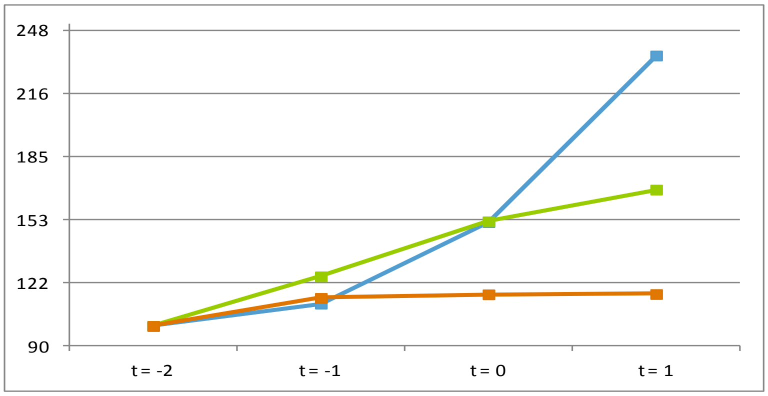
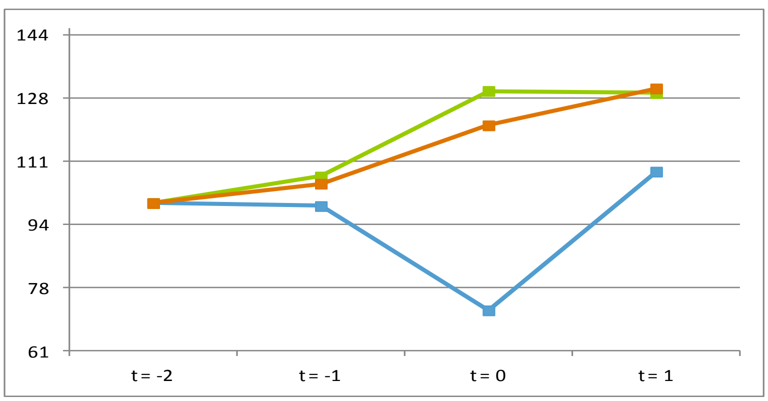


Figure 10 – R&D Expenditure: Other



III.A.3. Capital Outlay

Inverters Peers Acquirers

Figure 11 – Capital Expenditure: Biopharma

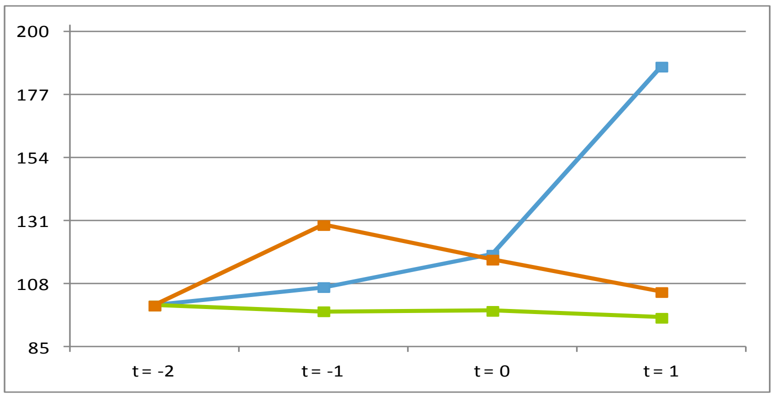


Figure 12 – Capital Expenditure: FIRE

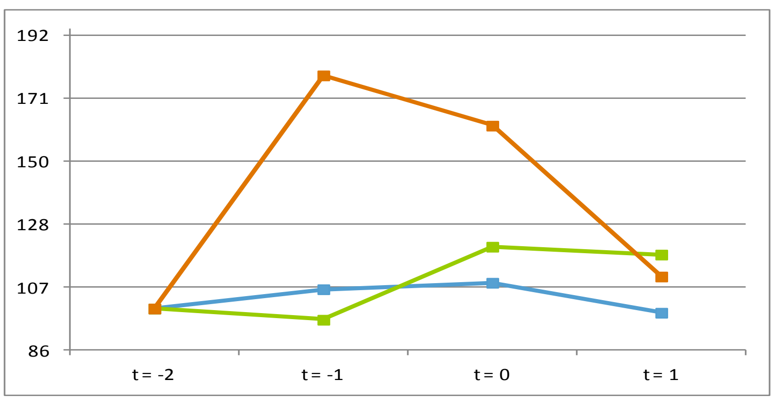
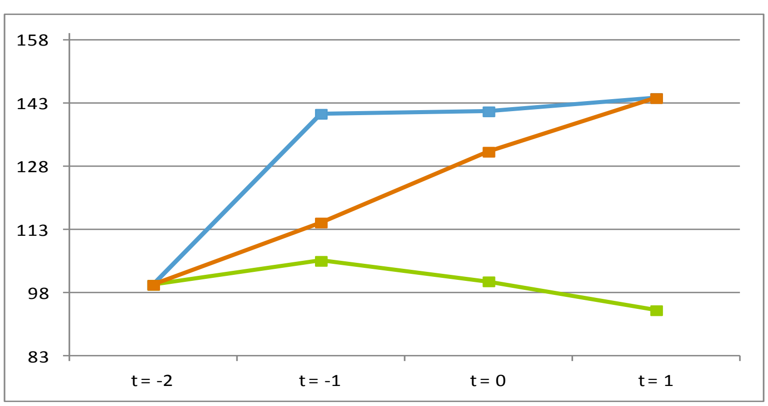


Figure 13 – Capital Expenditure: Other



III.A.4. Income Tax Expense

Figure 14 - Income Tax Expense: Biopharma

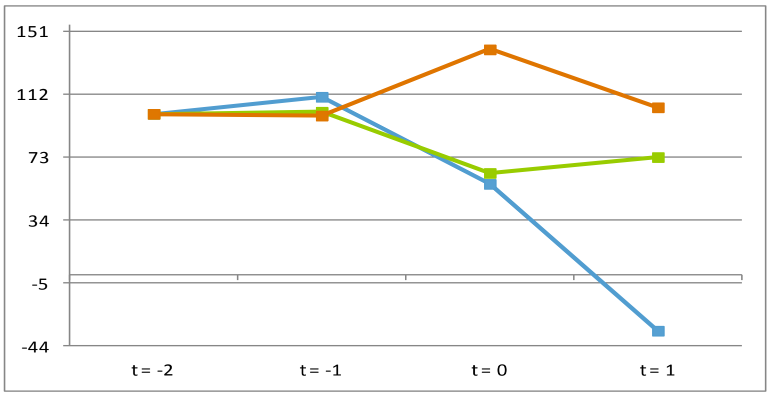


Figure 15 - Income Tax Expense: FIRE

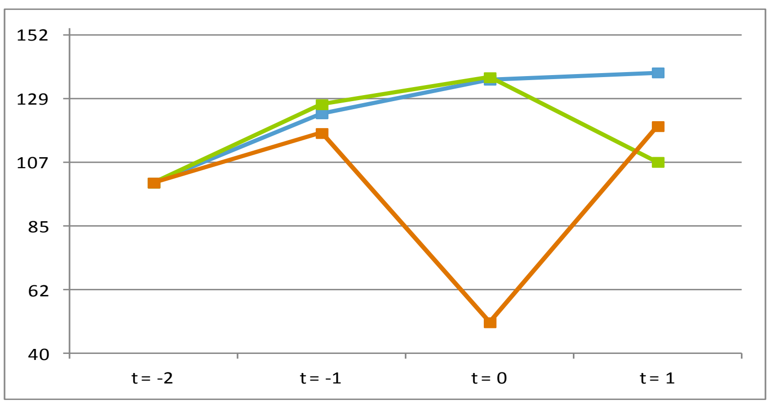
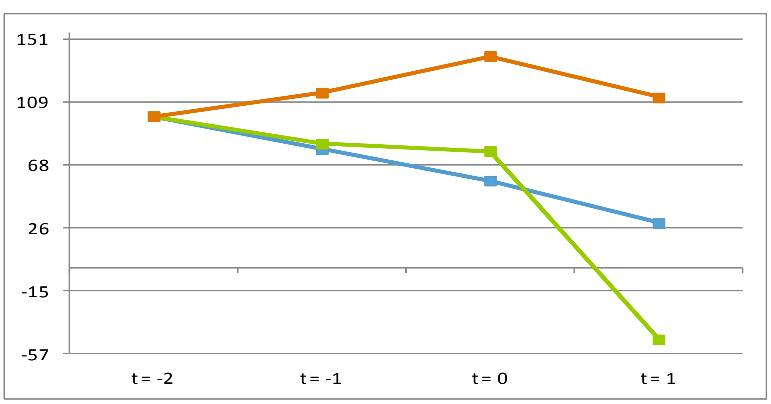


Figure 16 - Income Tax Expense: Other



III.A.5. Total Revenue

Inverters Peers Acquirers

Figure 17 - Total Revenue: Biopharma

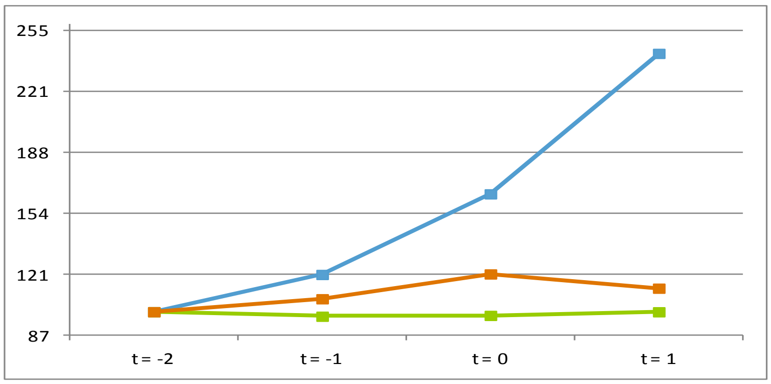


Figure 18 - Total Revenue: FIRE

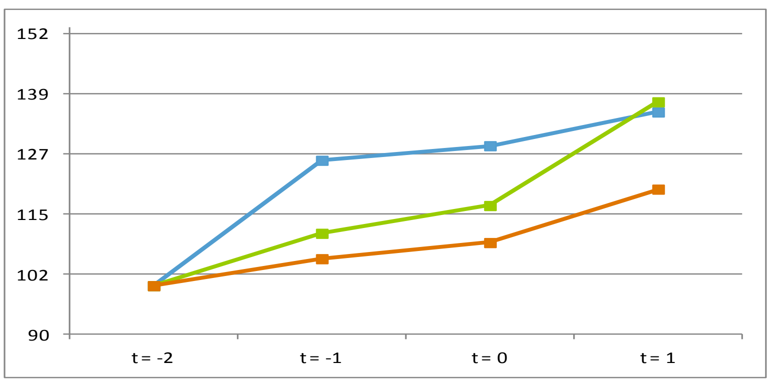
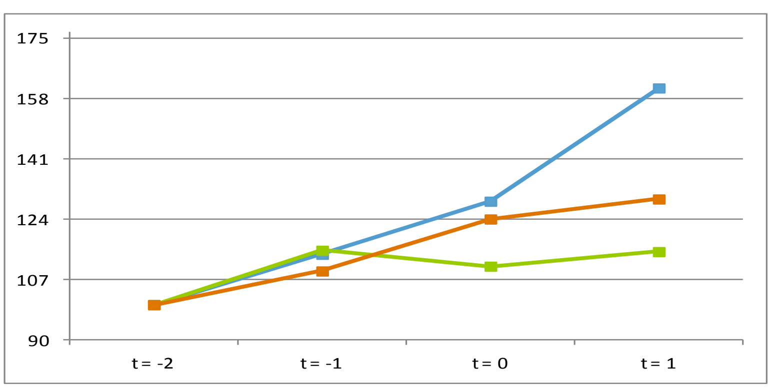


Figure 19 - Total Revenue: Other



III.A.6. Market Capitalization

Inverters   Peers   Acquirers

Figure 20 - Market Capitalization: Biopharma

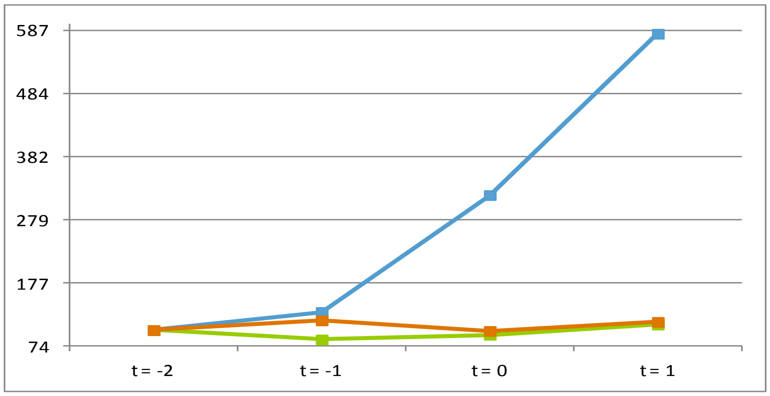


Figure 21 - Market Capitalization: FIRE

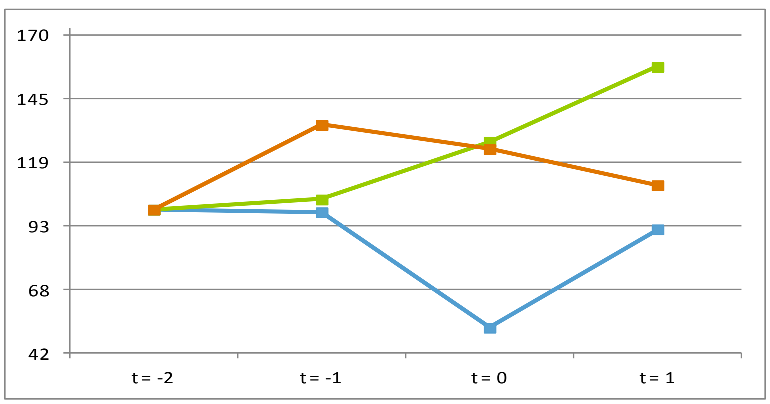
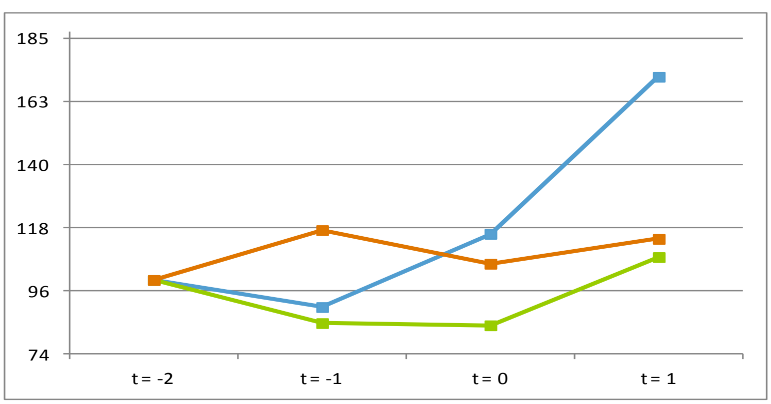


Figure 22 - Market Capitalization: Other



III.B. Performance ratios

(16) The data on performance ratios are presented Figure 23 to Figure 34 in the following sections. The pattern of acquiring company metrics tracking non-inverting peers is again noted, though it is not as common as it was in the first set of metrics. Here, close tracking is seen only in the FIRE sector with the ratio of Current to Total Assets and Altman's Z score. Although there is some similarity in the pattern of acquiring company to inverting company data with the Revenue per FTE metric in the FIRE sector, that tracking is not particularly close. This lends further support to the suggestion from the first set of metrics that inversion is typically distinct from acquisition in terms of financial impact.

(17) Looking at the metric that perhaps is most relevant to the potential motive of inverting companies, the ratio of Current to Total Assets, in both the Biopharma and Other industries, inverters experience steeper declines compared to baseline than do non-inverting peers, but acquirers also experience reductions in this ratio. As discussed in the prior report, a reduction in this ratio is consistent with the notion that the transaction makes a greater share of the new company's assets available for investment or return to shareholders – freeing up "trapped cash" as it is sometimes called. To the extent this is what we see operating here, it also appears to apply, though to a lesser extent, to the foreign acquiring companies.

(18) Finally, it is interesting that effective tax rates following acquisition are lower relative to baseline for the acquiring companies than it is for both the inverters and the baseline companies. This is observed in all three industry groups. Although in this mixed bag of results, it is not possible to draw strong conclusions, it is interesting to note that if dramatic reductions in tax rates are indeed the primary motive, and an important consequence of inversions, it seems that foreign companies acquiring US targets may also have similar (and perhaps even greater) effects.

III.B.1. Current Assets/Total Assets

Inverters   Peers   Acquirers

Figure 23 - Current Assets/Total Assets: Biopharma

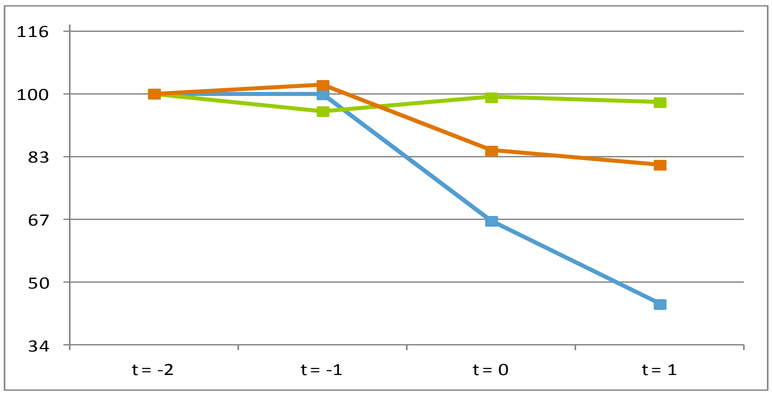


Figure 24 - Current Assets/Total Assets: FIRE

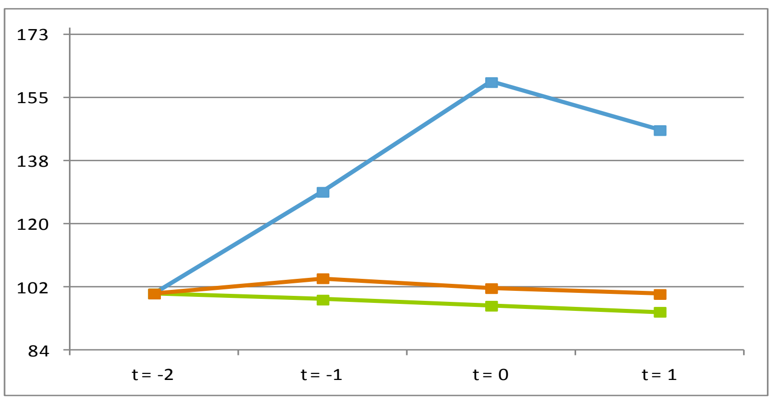
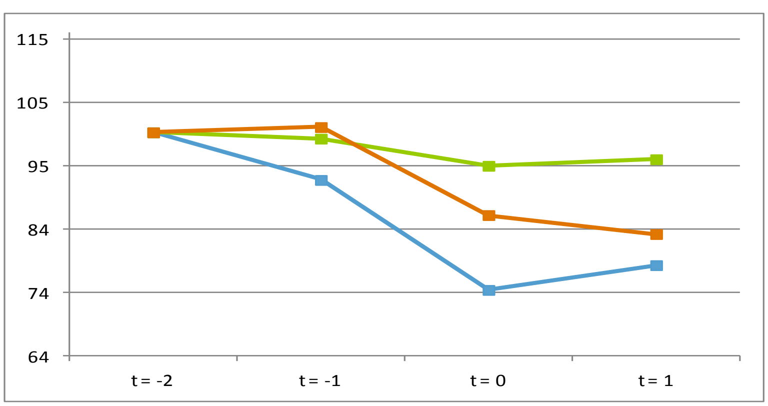


Figure 25 - Current Assets/Total Assets: Other



III.B.2. Total Revenue per Full-time Employee

Inverters Peers Acquirers

Figure 26 **- Revenue per Full-time Employee: Biopharma**

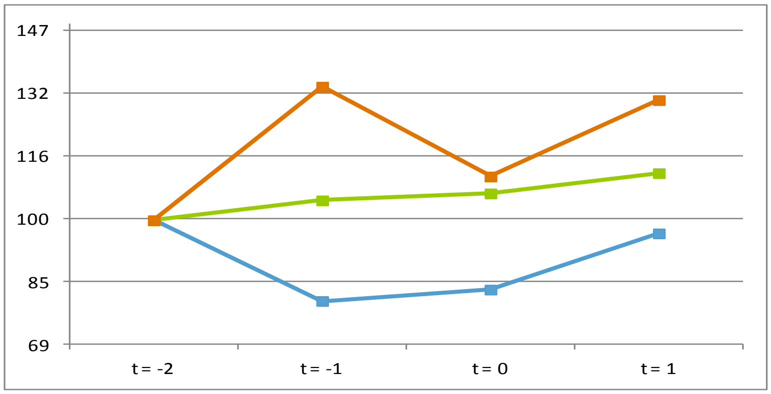


Figure 27 - Revenue per Full-time Employee: FIRE

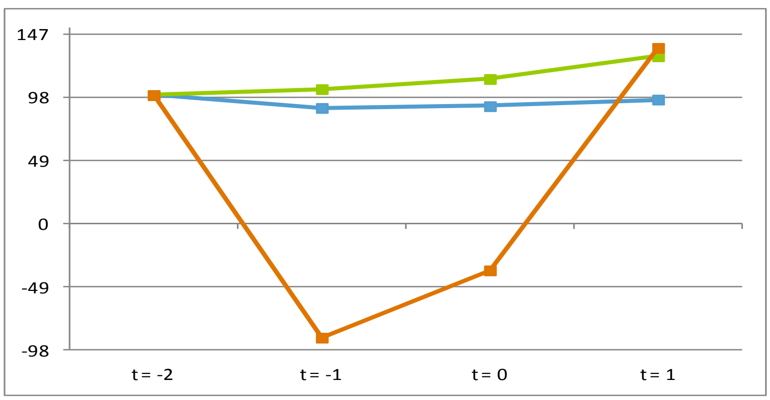
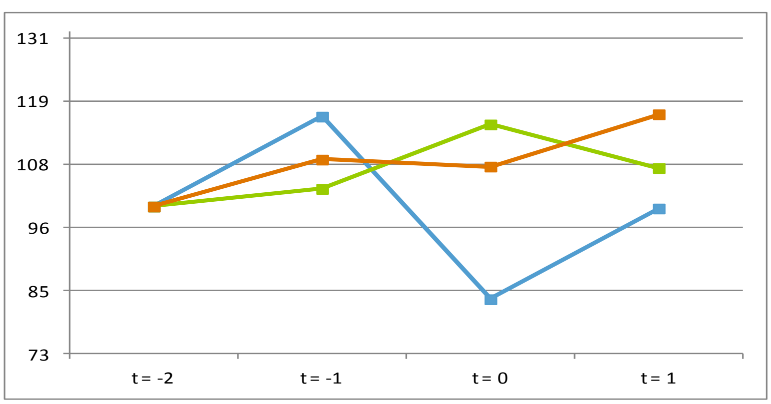


Figure 28 - Revenue per Full-time Employee: Other



III.B.3. Altman's Z-score

Figure 29 - Altman's Z-score: Biopharma

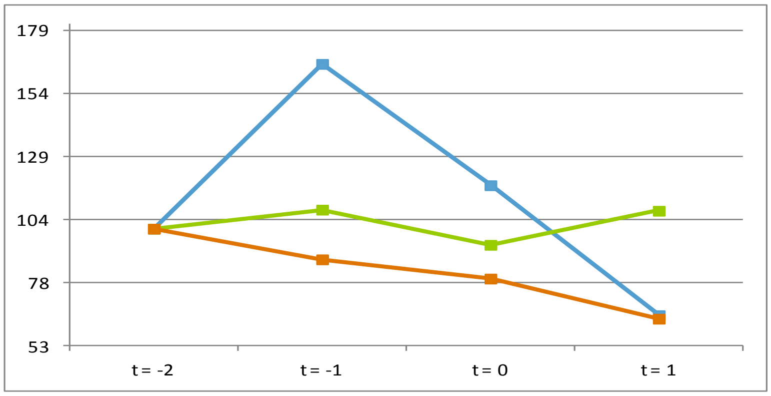


Figure 30 - Altman's Z-score: FIRE

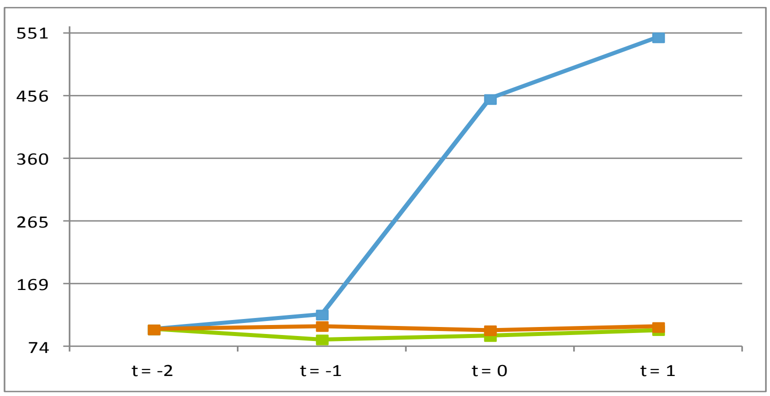
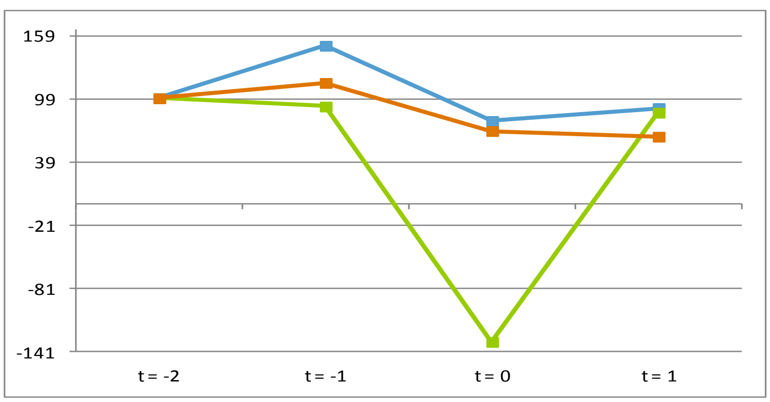


Figure 31 - Altman's Z-score: Other



III.B.4. Effective Tax Rate

Inverters Peers Acquirers

Figure 32 - Effective Tax Rate: Biopharma

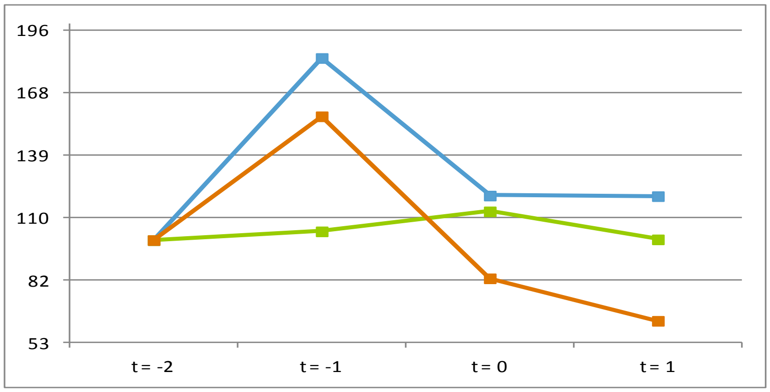


Figure 33 - Effective Tax Rate: FIRE

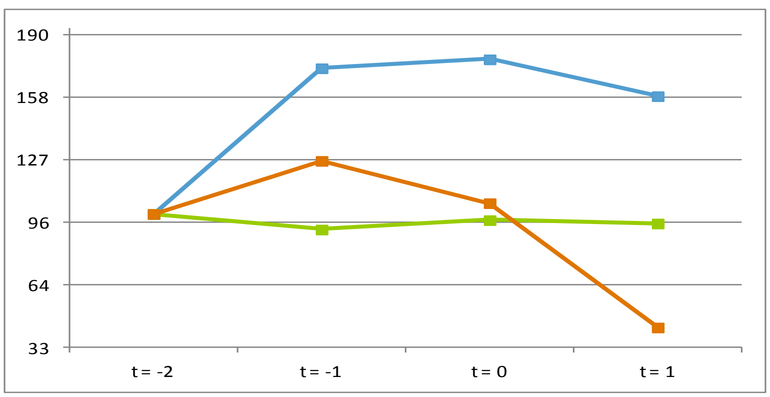
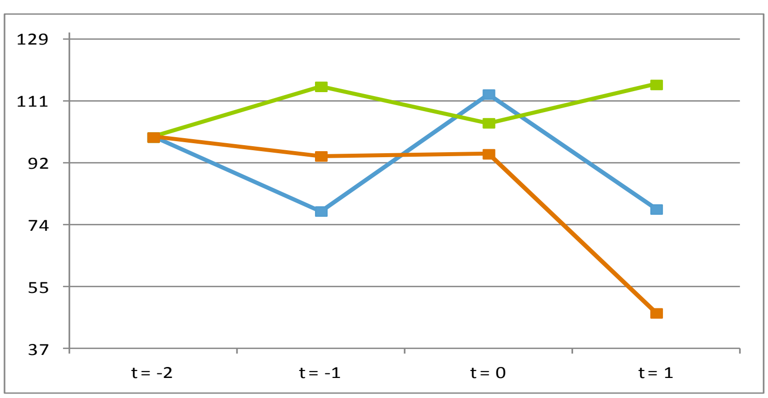


Figure 34 - Effective Tax Rate: Other



IV. Conclusion

(19) In this report, we have extended our previous analysis of tax inversions by adding to it a comparison of ex-US domiciled companies that have acquired a US target (unrelated to inversion) during the period from 2005 to 2013. Interestingly, we find that inversions and acquisitions appear to be distinct events: foreign firms undertaking acquisitions of US companies generally do not have patterns of financial results following inversion that are similar to those of US companies undertaking inversions (which often involve a foreign company acquiring the US company in order to change the company's tax home).

(20) Among the differences, acquiring companies observed in our sample have somewhat higher Income Tax Expenses relative to their baseline than to inverting companies (and relative to non-inverting peers) in both the Biopharma and Other industry sectors. They also do not achieve the same level of growth in R&D, Capital Outlays, Revenue or Market Capitalization in the Biopharma sector as do inverters, though their performance on these and other metrics is better than inverters (and peers) in some other cases.

(21) Despite these differences, some of the asserted benefits/motives of inversion, such as increased liquidity of "trapped cash" and reductions in Effective Tax Rates are seen for acquiring companies as well. Tax rates, in particular, fall substantially more for acquiring companies than they do for inverters or peers across all industry sectors.

(22) The most obvious conclusion from both the prior exploration and this one is that it is not possible to reach clear conclusions. The unfortunate reality is that the data are simply too sparse to allow more than a high level examination of the effects of inversions. The data lend support to the viewpoint that inversions (as any financial transaction) happen for a variety of reasons. While limitation of tax obligations may certainly be a motive, that outcome is not always observed. There is nothing in this analysis that suggests our prior conclusions are in need of alteration. Overall, the evidence suggests that companies are not sacrificing something important in their reorganization. In fact, by several measures, inverting companies appear financially healthier post inversion than do both non-inverting peers and foreign acquirers. An effort to make inversion more difficult or more costly arguably has a burden to demonstrate the harms arising from the status quo.