Asset Sales, Operating Performance and Firm Strategy: An Empirical Analysis

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Abstract

This paper examines the operating performance of UK firms following a decision to sell off non-financial assets as part of a new or ongoing restructuring program. We report that asset sales normally follow a sustained period of poor operating performance, and tend to occur in well-diversified firms with high levels of financial leverage. In general, asset sales lead to a significant improvement in firm operating performance. Our findings suggest that, for the UK at least, managers sell assets in response to discipline from lender monitoring, product markets and markets for managerial labor.

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1 Introduction

In recent years, interest has centered upon efficient ways through which firms can respond to poor perrformance. The most general approach to this issue is to undertake some form of corporate restructuring, which can encompass a variety of actions that are justified on either financial or operational grounds.

A number of studies have examined corporate restructuring and the nature of responses that firms undertake to counter poor performance (see for example John, Lang, and Netter (1992), Ofek (1993), Kang and Shivdasani (1997), Berger and Ofek (1999), Denis and Kruse (2000), and Denis and Shome (2004)). In this paper, we focus on one such approach, that of asset sales.

An asset sale is defined as the disposal of subsidiaries, divisions or other combinations of fixed assets through a direct transfer of ownership from one corporate entity to another, in exchange for cash or equity. Several hypotheses have been proposed regarding why firms may choose to sell assets instead of some other form of corporate restructuring. The conventional view is that firms sell off assets when either the buying firm has a better use for that asset or when the asset is interfering with the existing operations of the selling firm. This proposition, which is based upon market efficiency, implicitly views managerial activity as being value-maximising.

John and Ofek (1995) argue that companies sell assets in order to increase the focus of their existing operations. A firm's management is better able to control a focussed portfolio of assets rather than a well-diversified and possibly unrelated group of business operations. As a result, asset sales will

remove any negative synergies that are present in a diversified firm.[1]

An alternative view is proposed by Lang, Poulsen, and Stulz (1995) who state that firms sell off assets because it is the cheapest source of financing for new investments. Highly levered and/or poorly performing firms may find it too expensive to have further equity or debt issues and as a result, other sources of financing must be pursued.[2]

Recent research has argued that asset sales, and corporate restructuring in general, may arise due to a reduction in agency conflicts between company managers and shareholders. In particular, this hypothesis rests upon asset sales occuring in response to some form of managerial disciplinary event. Outside of such an event, managers will be reluctant to sell assets owing to the private benefits that accrue from presiding over a larger firm (see Jensen (1986) and Stulz (1990)). In addition, Weisbach (1995) suggests that managers will be reluctant to dispose of poorly performing assets that they had previously invested in. Such a sale would provide a signal of the managers' low quality to the market.[3]

Empirical research that has examined the determinants and effect of asset sales include John and Ofek (1995), Lang et al. (1995), Lasfer, Sudarsanam,

[1]See Lang and Stulz (1994), Berger and Ofek (1995), Comment and Jarrell (1995), and Lins and Servaes (1999) for evidence on the value loss arising from industrial diversification at the corporate level amongst US and UK corporations. Comment and Jarrell (1995), John and Ofek (1995), and Berger and Ofek (1999) report evidence on shareholder wealth gains from an increase in corporate focus.

[2]The issuance of further debt will be disadvantageous due to the asset substitution problem, an underinvestment problem, and/or the perceived agency costs of managerial discretion. Equity issuance may be ruled out due to information asymmetry, and the resulting adverse selection problem (see Myers and Majluf, 1984).

[3]Weisbach (1995) also points out that newly appointed managers may have a strong incentive to dispose of such assets. Any accounting write-downs on the disposal of poorly performing assets will lower the benchmark against which future performance is evaluated, potentially increasing the size of any future performance-related compensation payments.

and Taffler (1996), Haynes, Thompson, and Wright (2000, 2002) and Denis and Shome (2004).

In this paper, we extend earlier research by examining the determinants and effect of asset sales for a sample of UK firms during the period 1993 to 2000. A comprehensive empirical analysis is undertaken of 413 occurrences of asset sales of at least £5.0m in one fiscal year during this period.

Our central hypotheses revolve around three primary issues: First, what factors motivate managers to undertake asset sales? Second, what is the market reaction to different types of asset sales? Finally, what is the effect of asset sales on a firm's performance?

We address managers' motivations to undertake asset sales in two ways: First, we document managers' own explanations for their firm's asset sales, which have been taken from public announcements. Second, we compare sample firms to a control group of companies in the same industry to provide ex-post evidence on the factors that influence the likelihood of asset sales.

Our results suggest that the most important factors in the decision to undertake asset sales are poor operating performance, high leverage, liquidity problems, and a need to refocus on core activities. Asset sale proceeds were utilised to service debt obligations, new investments, and for day-to-day activities within the firm.

Following asset sales, we document a significant performance improvement in return on assets over the three years following an asset sale. Further, we find evidence that operating performance improves when proceeds are used for servicing debt and financing working capital requirements over the three years following the asset sale. However, consistent with the fi-

nancing hypothesis of Lang et al (1995), there is no evidence of increased performance when asset sale proceeds are used for further investment.

We also document a significantly positive one-day reaction in share price returns in response to asset sale announcements, which is positively related to the level of operating performance subsequent to the sell-off. Our study suggests that, for the UK at least, managers make divestiture decisions in the interests of company shareholders. However, it is also apparent that managers may have been under pressure to sell assets as a result of discipline from lenders, and external labour and product markets.

This study is organized as follows. Section Two describes the sample selection procedure and test methodology. We present and discuss empirical results in Section Three and Section Four concludes the study.

2 Data and Methodology

An initial sample of 697 firm-observations was drawn from FT Extel News Reports and verified by Financial Times archive news articles. Details of asset sales were taken from official announcements made by companies to the London Stock Exchange. We arrive at the final sample according to the following criteria: First, a firm should be a non-financial UK listed company. Second, the firm should have traded at least for one year following the asset sale announcement. Third, firms must only make one sell-off announcement in any one year.[4] Fourth, the firm should disclose a selling price of the

[4]This filter allows us to examine a clean event window for assessing changes in operating performance, leverage and industrial focus surrounding asset sales announcements. However, such a procedure does have the effect of removing firms that engaged in large-scale restructuring programmes within a short period of time.

divested assets and the price should be a minimum of £5.0m.

These criteria resulted in a final sample of 413 asset sell-offs by 253 firms between January 1, 1993, and December 31, 2000. The choice of the time period is limited by the requirement that at least 3 years of data be available after the asset sale announcement period. Returns and accounting data are collected from Datastream.

Table 1 presents descriptive statistics of sample firms in the 1993 to 2000 period. There are many asset sales in years 1995, 1998, and 2000. Panel B reports characteristics of sample firms by selling price of the sold assets (£ millions); sample firms' equity values at the financial year end prior to the asset sale (£ millions); and the ratio of asset sale value to sample firms' equity values, again at the financial year-end prior to the asset sale.

The average value of the asset sale is £58.71 million and the median is £18.00 million. In many cases the divested asset is a substantial part of the seller's total assets. On average, the value of the asset sold is 19.45% of the sample firms' equity value before the asset sale (the median is 6.0%)

Table 1, panel C, presents the distribution of stated reasons of the asset sales as given by the firm at the sell-off announcement. Reported reasons are not mutually exclusive and it is apparent that several firms announce more than one explanation to the market. Consistent with prior studies in the UK and US,[5] poor performance (69.0% of the sample), a desire to refocus business operations (64.9%), and a need to improve the firm's financial condition (48.4%) are the primary reasons for asset sales. 73 (or 17.8%) announcements are not accompanied by an explanation of the motivation for the sale.

[5]See for example John et al. (1992), Ofek (1993), John and Ofek (1995), Lang et al. (1995), and Lasfer et al. (1996).

Table 1, panel C also presents data on the sample firms by use of asset sale proceeds. Debt repayment, need for investment, and the financing of working capital are the most important uses of proceeds. Managers of 142 (or 34.4%) firm-observations indicate that servicing debt was the main objective, followed by new investment, (61 (or 14.8%) events). Financing working capital, (25 (or 6.1%) events) and extraordinary dividends (4 (or 1.0%)) are the other uses of the sell-off funds. However, the majority, 239 (or 57.9%) events, provide no mention of the use of proceeds.

To investigate operating performance changes surrounding asset sale announcements, we utilise benchmarks constructed on the basis of control firms and industry medians. We construct a control sample of non-asset sale firms in a fashion analogous to Barber and Lyon (1996).

For each sample firm, we identify a UK listed firm that has similar return on assets in the financial year prior to the sell-off announcement and has the same FTSE level 4 industry classification as our sample firm. To compute industry-adjusted financial performance, we subtract median industry ROA from the sample firm's ROA. We subtract medians rather than means because of known skewness in financial ratios (see Barber and Lyon, 1996).

For comparison with prior research on corporate restructuring (see John and Ofek (1995), and Denis and Shome (2004)), we focus our pre-announcement analysis on years -3 to 0 and the post-announcement analysis on years 0 to +3. We examine both pre- and post-announcement for two reasons. First, the pre-announcement analysis provides insight into the factors that motivate managers to undertake asset sales, and second, the post-announcement analysis provides evidence on whether the sell-off decision is a value-maximising

one.

The abnormal performance of firm i in year t, AP_{it}, is defined as realized performance, P_{it}, less expected performance, $E(P_{it})$, where performance is measured using return on assets and expected performance is based on industry medians and/or control firms.

To determine which factors influence a firm's decision to undertake an asset sell-off and whether the asset sale increases the firm's efficiency in subsequent years, we examine profitability; leverage; and refocusing in the years prior to the asset sale announcements.

2.1 Variable Definitions

Following Barber and Lyon (1996), we use return on assets (ROA) based on earnings before interest, tax, depreciation, and amortization (EBITDA) to measure a firm's profitability. The return on assets, ROA, is defined as the ratio of EBITDA to total assets (TA). We compute the abnormal change in return on assets by subtracting the change in ROA of control firms or the industry median from that of the sample firms. The abnormal change in ROA is a measure of the firm-specific change in ROA and controls for any systematic change in profitability across similar firms.

Leverage is defined as the ratio of book value of total debts to book value of total assets. The abnormal or (matching firm) adjusted debt ratios is computed using the same criteria as that used to compute abnormal changes in ROA.

We utilise two measures of pre-event business focus. The first measure is the number of different lines of business the firm reports. We compare

these lines relative to that of a control firm. For the second measure, we use the sales-based Herfindahl index, H. This index is calculated across n business segments as the sum of the squares of each segment i's sales, as a proportion of total assets. The closer H is to one, the more concentrated are the firm's sales within a few of its segments, and hence the more focussed its operations.[6]

3 Empirical Results

As stated previously, this study examines operating performance changes in the years before and after asset sale announcements. We therefore divide our analysis into two major sections: pre-asset sale and post-asset sale periods.

3.1 Pre-asset sale operating performance

In Table 2 we compare our sample firms with control firms along a number of different dimensions underlying the sell-off decision. The data indicate that firms which sell assets tend to have higher debt ratios. The level of short-term borrowings over total (and current) assets show that the sample firms also experienced liquidity problems in the year prior to the asset sale.

Since the control firm selection criteria is based upon the same pre-event performance, naturally there is an insignificant difference in return on assets between the sample and control firms.[7] Table 2 also shows that sample firms operate in more lines of business than control firms, with a median of three

[6]See Comment and Jarrell (1995) for a full description of this formula.

[7]The results remain similar even when we compare these firms in year 2 or 3 prior to the asset sale announcements.

lines compared to two for the control sample. This is supported by the mean Herfindahl indexes for both samples, which indicate that asset sell-off firms were significantly less focused than control firms.

Taken together, the information in Table 2 suggests that firms which sold off assets were more diversified, had higher leverage and lower liquidity in relation to a control sample of firms. Thus, our findings to date suggest an important role for corporate re-focusing and lender monitoring in asset sale decisions. These findings are broadly consistent with past empirical research by John and Ofek (1995), Lasfer et al. (1996), and Denis and Shome (2004) on the motivation for why companies sell assets.

Table 3 reports the industry-adjusted changes in ROA and debt ratios for different periods in the years prior to asset sale announcements. The results in panel A generally show that sample firms exhibited a decline in ROA prior to an asset sale, which is statistically significant at the 5% level. When we analyze sample firms' performance by the stated reasons of the asset sale, our results show that loss making, re-focusing and leveraged firms all experienced significantly negative ROA in almost all the periods of the analysis.

However, when we examine operating performance prior to asset sales in relation to the reported use of proceeds, our results are not as strong. We find evidence of a decline in performance over the 3 years prior to the asset sale amongst companies that announced debt repayment as the intended use of asset sale proceeds. However, there is no significant evidence of poor performance amongst companies that intended to invest the proceeds or to use them for financing working capital requirements.

Overall, the results in panel A of Table 3 suggest that asset sales tend to

be associated with a trend of poor performance going back at least 3 years, rather than just with poor performance in the year immediately preceding the asset sale.

Panel B of Table 3 reports the industry-adjusted changes in financial leverage over the 3-year period prior to the asset sale year. Sample firms, in general, experienced a marginal increase in financial leverage in the period between year -3 and 0. In addition, the sub-sample that cites high borrowings as the rationale for the asset sale experiences significantly positive industry-adjusted changes in debt ratios over the 3-year period prior to the asset sale.

An analysis of differences between samples disaggregated with respect to how asset sale proceeds were utilised leads to mixed conclusions. The debt repayment sub-sample exhibits significantly positive industry-adjusted changes in debt ratios in some of the periods prior to the asset sale. However, the investment and financing sub-samples, on the other hand, experience insignificantly negative industry-adjusted changes in financial leverage.

It has been shown in Table 2 that the decision to sell off assets is influenced by firm and industry performance, the desire to focus operations, and the financial condition of the firm. We now examine these factors within a multivariate setting and carry out logistic regressions to assess the likelihood of a firm undertaking an asset sale.

To investigate this we include two additional factors: CEO turnover and size. Theoretical and empirical evidence has shown that both CEO turnover and firm size are related to asset sales (see Weisbach (1995), Berger and Ofek (1999), and Denis and Shome (2004)). We examine that relation by utilising

the following logistic regression:

$$Sale = \alpha + \beta_1 DEBT + \beta_2 ROA + \beta_3 Focus + \beta_4 \ln(MV) + \beta_5 CEO + \varepsilon \quad (1)$$

where $Sale$ is a binary dependent variable that takes on the value of one for asset sale firms and zero for control firms; $Debt$, ROA and $Focus$ are as described earlier. MV is the market capitalization of the equity of the firm, and CEO is a dummy variable that takes on the value of one if a firm has experienced a change in chief executive in the year prior to the asset sale and zero otherwise.[8] All variables are measured for the year prior to the asset sale.

The results of the logistic regression are presented in Table 4. It is clear that every factor we consider influences the asset sale decision. The likelihood of asset sales is increasing in the level of financial leverage in the firm. Theoretical evidence shows that creditors often insist on the divestiture of certain assets as a condition for restructuring firms with high financial leverage (Gilson, 1990). Ofek (1993) also documents that highly-leveraged firms are forced to sell their assets in order to service their debt obligations following poor performance.

The decision to sell assets is negatively related to prior operating perfor-

[8]Following Conyon and Florou (2002) we use a subjective definition of the company's top officer based on an examination of the annual report. Where the company reports a Chief Executive Officer (CEO) we take this individual to be the company's top officer. If there is no Chief Executive, we examine the annual report for evidence that the company employs a Managing Director, and that this individual holds responsibility as the top officer of the company. Where no Managing Director is in place, or where the role of the Managing Director is described in an operational sense rather than a top management sense, we take the company's Executive Chairman as the company's top officer. Hereafter, we refer to the company's top officer as the CEO.

mance. This finding is consistent with Denis and Kruse (2000) and Denis and Shome (2004), who together report a high incidence of asset sales following poor performance. While Jensen (1993) is critical of product market discipline as being at best a blunt instrument in managerial discipline, it is apparent from our results that declining performance has been an important contributory factor in our sample firm's decision to sell assets. However, our results may be reconciled with the arguments of Jensen (1993) if poor performance has increased the expected costs of financial distress and the resulting lender monitoring from debt (Ofek, 1993).

In addition, we find that the decision to sell assets is negatively related to the level of business focus in the firm. This arises where asset sales provide a strategy that allows firms to re-focus on their core activites by selling off non-core business areas, perhaps to reduce previously poorly performing diversification strategies (see Denis, Denis and Sarin (1997), and Berger and Ofek (1999)).

It can also be seen from Table 4 that the asset sale decision is positively related to the incidence of CEO turnover. This is consistent with Weisbach (1995), who finds that recently appointed CEOs are more willing to divest poorly performing business assets than the previous incumbent CEO. When we examine the logistic regressions of the sample firms by the stated reasons of asset sale, the results are similar.

Overall, the logistic regression results are consistent with managers' statements that they undertake asset sales due to poor performance, high leverage, and excessive diversification. Our findings with respect to CEO turnover also indciate that new managers may have been specifically appointed to reverse

the poorly performing business strategy of their predecessors. Therefore, it is apparent that managers are motivated to sell assets by some combination of threats from the managerial labour market (Fama, 1980), lender monitoring (Lasfer et al., 1996), and product market competition (Hart, 1983).

3.2 Post-asset sale operating performance

Consistent with previous research (John and Ofek, 1995), we measure the performance of the sample firms' remaining assets by comparing operating returns in the asset sale year to those in subsequent years. Panel A of Table 5 shows that, on average, industry-adjusted operating performance for the sample firms increases in the 3-year period following the asset sale, thus reversing the poor performance in the years before the sale.

The performance improvements are significantly positive in each of the 3 years after the sale. However, these results are restricted only to the sub-samples that indicate poor performance and high leverage as a motivation for the asset sale. It is apparent that corporate re-focusing asset sales do not consistently lead to improvements in the operating performance of the firm's remaining assets.

We also find some evidence of improvements in operating performance for firms that used asset sale proceeds for debt repayment and financing working capital requirements. In addition, firms that used asset sale proceeds for investment experienced significantly negative operating performance over the year following the asset sale, and insignificantly negative performance for the rest of the period.

Our findings are mixed in relation to those of prior studies in this area.

For asset sales in the US between 1986 and 1988, John and Ofek (1995) document an improvement in the operating performance of the seller's remaining assets in each of the three years following an asset sale. However, both John and Ofek (1995) and Markides (1995) report that for US firms, refocusing divestment is associated with improved operating performance. Kang and Shivdasani (1997) and Hillier and McColgan (2004) document similar results for Japanese and UK firms respectively, following a large decline in operating performance. In our case, re-focusing divestment announcements do not generally lead to an increase in operating performance.

Our results also support the free cash flow hypothesis that views the use of proceeds for reinvestment as undertaking value-destroying projects and thus serve the private benefits of the management (Jensen, 1986). They are also comparable with Lang et al. (1995) who find that stock price returns upon the announcement of an asset sale are discounted when the proceeds are retained for future investment. This arises due to the agency costs of managerial discretion (Stulz, 1990).

To investigate whether asset sales reduce financial leverage, we analyze industry-adjusted changes in debt ratios over the years following the asset sale, panel B of Table 5. Generally, the results show that the sample firms experienced a very slight decline in debt ratios in the years following the asset sale.

For the stated uses of proceeds sub-samples, the industry-adjusted changes in debt ratios are significantly negative for the debt repayment sub-sample. The financing sub-sample experiences a marginal industry-adjusted change in debt ratios which decline over the years post-asset sale. Surprisingly, the

investment sub-sample exhibits a significant increase in industry-adjusted change in debt ratios over some of the years post-asset sale. This suggests that, amongst these firms at least, asset sales are part of a wider process of raising finance for future investment.

Our results are consistent with the findings of Denis and Shome (2004) who document that asset downsizing firms in the US have higher debt ratios than their industry counterparts in the years prior to asset sale announcements. Denis and Shome (2004) also report an insignificant decline in industry-adjusted debt ratios over the three years following asset sales.

We also investigate whether asset sales lead to a more focused business entity. We find that firms tend to become more focused over the year following the asset sale in relation to the year prior to the asset sale announcements (see Table 6). Specifically, we document that the median lines of business of sample firms decrease from 3.0 from the year -1 to 2.5 in year +1. The median difference is significant at the 1% level of significance. In addition, the median Herfindahl index increases from 0.60 in the year before the sale to 0.62 in the year afterwards, which is significant at the 5% level of significance. Thus, while re-focusing has not been found to correlate with improved operating performance, it is apparent that it still provides an important motivation for asset sales by UK companies.

3.3 Sensitivity analysis

Are our findings attributable to asset sales or simply due to mean reversion in earnings? To investigate this, we conduct a sensitivity check by comparing the return on assets and debt ratios for control firms against those of sell-

off firms. Barber and Lyon (1996) document that matching sample firms to firms with similar performance before an event, helps to control for the mean-reversion tendency of a performance measure.

The results are presented in Tables 7 and 8 for return on assets and debt ratios, respectively. The first column in each table displays performance improvements over various time periods for the asset sale firms, with the second column displaying similar information for the control sample. The last column in each table reports the median difference between the sample firm and the control firm. On average, the results show that the observed performance improvements and declining financial leverage documented previously are indeed attributable to asset sales and not to mean reversion.

3.4 Stock returns

In this section we report evidence on the daily abnormal stock returns of sample firms that announced a sale of assets. Abnormal returns surrounding asset sale announcements are estimated as the difference between firms' daily returns and the daily returns on the FT All Shares Index. We report results over the event day and alternative event windows relative to the announcement day (0).

Mean and median cumulative abnormal returns in various periods surrounding the asset sale announcements are presented in Table 9. The mean abnormal market return on the asset sale announcement day is 1.125% (t = 4.57). In addition, our event study results for the entire sample are significantly positive based on mean and median returns over all of the event windows that we consider.

Our results suggest that the announcement of a corporate asset sale conveys positive information to the market. The positive market reaction suggests that investors perceive the asset sale as a way for the firm to take actions aimed at improving performance, in particular through the reduction of financial leverage or excessive diversification.

We also compute the abnormal returns of sample firms by the stated reasons of asset sale, as well as the use of asset sale proceeds. These results are reported in panels B and C of Table 9 respectively. The results on the sample firms by the stated reasons of the asset sale are similar across classifications. All sub-samples experience significantly positive abnormal returns in the periods surrounding the asset sale announcements.

Our results are generally consistent with that of John and Ofek (1995) and Lasfer et al (1996). However, unlike John and Ofek (1995), we find that the positive abnormal returns are also associated with firms that sell assets in response to poor performance and high financial leverage. Lasfer et al (1996), who examine UK asset sell-offs, report that significantly higher returns are associated with higher levels of debt, especially in the case of distressed firms. They conclude that, in the UK, the main benefit from divestures comes from the resolution of financial distress.

The abnormal returns of sample firms by use of asset sale proceeds are reported in panel C of Table 9. The market is seen to react positively to firms which state that they are using the proceeds to service debt, but there is little evidence that stock prices are significant upon the announcement of asset sales that are used to finance either investment or working capital requirements. Our results on the use of asset sale proceeds for debt repayment

and investment are consistent with the financing hypothesis of Lang et al. (1995), which predicts that asset sale proceeds will be discounted by investors when retained by the selling firms owing to the agency costs of managerial discretion (see Jensen (1986), and Stulz (1990)).

As a final test, we examine the cross-sectional determinants of announcement period abnormal stock price returns. John and Ofek (1995) argue that in an efficient capital market, the positive stock price reaction to an announcement of asset sales will reflect an increase in expected cash flows from the seller's remaining assets. As such, we would expect a positive correlation between the stock price reaction to the asset sale and subsequent changes in operating performance.

In addition, Lasfer et al. (1996) find that the main benefit from asset sales by UK companies arises due to the resolution of financial distress. Therefore, we examine the role of leverage, and pre and post-divestiture performance in the stock price reaction to the asset sale. We also control for firm size as the natural logarithm of the market value of the selling firm's equity at the financial year-end prior to the sale.

Our findings, which are presented in Table 10, indicate that smaller firms realise larger abnormal returns upon the announcement of the asset sale, where the divested division represents a larger fraction of the overall firm's asset value. We also find that the stock price response to asset sale announcements are positively correlated with subsequent improvements in operating performance. This arises where a positive stock price reaction reflects rational anticipation by investors of later improvements in operating performance.

Furthermore, we also find that the stock price reaction to asset sales

is inversely related to the post-sale industry-adjusted change in our sample firm's debt ratio. It thus appears that the stock price reaction to asset sales by UK companies is positive and contingent upon lender monitoring as part of the process of resolving financial distress.

4 Conclusion

We examine the performance changes of 413 UK firms that announced asset sales in the 1993 to 2000 period. Our study is distinctive in four ways: First, we examine data from a market that is relatively unexplored, the UK. Second, we examine the sample firms' performance in the years prior to, and post asset sale.

An analysis of this type provides insights not only into the reasons why firms undertake asset sales, but also whether selling assets is an effective strategy. Consistent with prior studies we provide evidence that asset sales are preceded by poor performance, high levels of financial leverage, low liquidity and occur in relatively diversified firms. It is also apparent, however, that companies may have been forced to sell assets owing to pressure from lenders, and external product and labour markets.

Following asset sales, the operating performance of firms tends to improve. There is also a reduction in financial leverage, and firms become more focused. There are a number of potential reasons for the increase in post-asset sale performance. One explanation is related to the factors underlying the asset sale itself. Asset sales reverse the trend of declining performance in firms and thus business operations are more likely to be rendered economically viable

after a disposal of underperforming assets.

Asset sales may also raise cash for servicing debt, which in turn reduces bankruptcy costs. In addition, the threat caused by a failure to make debt service payments serves as an effective motivating force to make organizations more efficient (Jensen, 1986).

Naturally, when a firm considers restructuring its organisational form, asset sales constitute only one of several approaches that could be employed. This paper has examined the topic of asset sales in detail from both an ex-ante and ex-post basis. Further research in this area would look at why managers choose asset sales instead of other restructuring strategies and whether asset sales represent the optimal approach to corporate restructuring.

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Table 1: Descriptive statistics for selloff firms

The table reports descriptive statistics for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Panel A reports the distribution of sample firms by year. Panel B reports data on the characteristics of sample firms by selling price of the divested assets, the sellers' equity value, and ratio of selloff value to the seller's total equity value at the financial year-end prior to the asset sale. Panel C reports data on the rationale given for the asset sale and the intended use of proceeds from the asset sale, as reported in company announcements disclosed through FT Extel News Reports.

Panel A: Distribution of the sample firms by years

Year	**No. of Observations**	**%**	**Year**	**No. of Observations**	**%**
1993	44	10.7	1998	76	18.4
1994	51	12.3	1999	27	6.5
1995	75	18.2	2000	80	19.4
1996	26	6.3	**Total**	**413**	**100**
1997	34	8.2			

Panel B: Selling price of the divested assets, sellers' equity value before the asset sale, and ratio of selloff value to seller equity value before the asset sale.

				Quartiles		
Characteristics	**No. of Observation**	**Mean**	**Median**	**1st**	**3rd**	**Std. Dev.**
Selling price of the divested assets (£ millions)	413	58.71	18.00	9.05	48.80	113.18
Sample firms' equity values before the selloffs (£ millions)	413	1929	399	111	1586	4590
Ratio of selloff value to sample firms' equity values before the selloffs	413	0.1945	0.06	0.019	0.1885	0.3917

Panel C: Stated reasons for asset sale and uses of proceeds from the selloff

Stated reasons of selloff			**Uses of proceeds from selloff activities**		
Reason	No. of Observations	Ratio of total	Uses	No. of observations	Ratio of Total
Re-focusing	268	64.9%[a]	Debt Repayment	142	34.4%[a]
High leverage	200	48.4%	Investment	61	14.8%
Poor Performance	285	69.0%	Finance Working Capital	25	6.1%
Reason not given	73	17.8%	Pay out to shareholders	4	1.0%
			Reason not given	239	57.9%

[a] - The sum of the ratios is more than 100% because several firms announce more than one reason for selloff and use of proceeds

Table 2: Descriptive statistics for sample versus control firms in the pre-asset sale year

The table reports means [medians] for selected financial variables at the financial year-end prior to the announcement of an asset sale for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. The debt ratio is calculated as book value of total debts divided by the book value of total assets. ROA is defined as operating income divided by the book value of total assets. The number of segments relates to the number of reported 3-digit SIC lines of business that our sample firms operated in. The Herfindahl Index is calculated as the sum of segments' sales squared divided by total sales squared, where sales are defined at the 3-digit SIC level. Short-term borrowings are defined as those with a maturity of less than one year. Current ratio is calculated as a ratio of current assets to current liabilities. *, **, and *** denote the 1%, 5% and 10% levels of significance, respectively.

Variable	Sample	Control	Difference
Debt ratio	0.251*	0.177*	0.074*
	[0.225]*	[0.165]*	[0.070]*
ROA	0.112*	0.113*	-0.001
	[0.125]*	[0.130]*	[-0.000]
Number of Segments	2.955*	1.997*	0.958*
	[3.000]*	[2.000]*	[1.000]*
Herfindahl Index	0.600*	0.747*	-0.147*
	[0.603]*	[0.751]*	[-0.155]*
Short-term Borrowings	0.087*	0.073*	0.014**
/ Total Assets	[0.070]*	[0.057]*	[0.014]*
Current Ratio	1.479*	1.663*	-0.184
	[1.295]*	[1.412]*	[-0.095]**

Table 3: Changes in operating performance and leverage prior to announcements of asset sales

The table reports mean [median] changes in industry-adjusted return on assets (ROA) and an industry-adjusted debt ratio prior to asset sales for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Asset sales take place between years –1 and 0. ROA is defined as earnings before interest, tax, depreciation and amortization (EBITDA) divided by the book value of assets. The debt ratio is defined as the ratio of total debt to total assets. The fraction of all changes that are positive are reported in parenthesis. *, **, and *** denote the 1%, 5% and 10% levels of significance, respectively.

Panel A: Changes in industry-adjusted ROA prior to asset sales							
Period	Whole Sample N = 391	Loss Making Sample N = 275	Focusing Sample N = 265	Leveraged Sample N = 198	Debt Repayment N = 128	Investment N = 55	Financing N = 18
Δ-3 to 0	-0.023 [-0.010]** (46.4%)	-0.045*** [-0.031]* (37.3%)	-0.010 [-0.014]** (43.1%)	-0.040* [-0.032]* (37.8%)	-0.035*** [-0.018]** (43.2%)	0.061 [0.012] (59.2%)	-0.009 [0.000] (44.4%)
Δ-2 to 0	-0.025 [-0.009]** (45.6%)	-0.049** [-0.027]* (33.9%)	-0.012 [-0.010]** (43.8%)	-0.035* [0.024]* (35.9%)	-0.023 [-0.009] (46.9%)	0.026 [0.007] (58.2%)	0.001 [0.000] (44.4%)
Δ-1 to 0	-0.008 [-0.004] (45.2%)	-0.028 [-0.026]* (28.1%)	0.004 [-0.004] (43.4%)	-0.034* [-0.029]* (31.5%)	0.001 [-0.005] (45.3%)	0.028*** [0.011] (58.2%)	0.001 [0.005] (44.4%)
Δ(-1,-2,&3) to 0	-0.031** [-0.011]* (43.5%)	-0.056** [-0.030]* (30.2%)	-0.018** [-0.012]* (41.9%)	-0.045* [-0.029]* (32.3%)	-0.032** [-0.016]** (41.4%)	0.017 [0.007] (56.4%)	-0.008 [0.000] (44.4%)
Panel B: Changes in company leverage prior to asset sales							
Δ-3 to 0	0.016*** [0.013]*** (51.3%)	0.027** [0.023]* (54.4%)	0.028** [0.019]** (54.3%)	0.052* [0.042]* (61.4%)	0.053** [0.042]* (60.5%)	-0.007 [-0.011] (41.5%)	-0.034 [-0.040] (27.8%)
Δ-2 to 0	0.005 [0.003] (51.3%)	0.013 [0.011]*** (54.8%)	0.016 [0.009] (53.6%)	0.043* [0.035]* (67.0%)	0.041** [0.029]** (58.6%)	-0.020 [-0.023]*** (41.8%)	-0.009 [-0.015] (38.9%)
Δ-1 to 0	0.009 [0.002] (49.4%)	0.018** [0.007] (49.8%)	0.013*** [0.006] (52.7%)	0.045* [0.033]* (66.8%)	0.016 [0.007] (52.8%)	0.011 [-0.004] (50.9%)	0.001 [0.000] (50.0%)
Δ(-1,-2,&3) to 0	0.010 [0.005] (51.4%)	0.020** [0.014]** (54.2%)	0.021** [0.012]** (54.9%)	0.046* [0.035]* (66.2%)	0.040** [0.026]** (58.6%)	-0.009 [-0.015] (43.6%)	-0.010 [-0.020] (27.8%)

Table 4: Logistic Regression Results of the Determinants of Asset Sales

The table reports the results of logistic regressions of the determinants of asset sales for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. *SALE* is our binary dependent variable that takes on the value of one for asset sale firms, and zero for non-asset sale control firms. *DEBT* is the ratio of total debt divided by total assets. *ROA* is the ratio of earnings before interest, tax, depreciation and amortization divided by total assets. *FOCUS* relates to the number of reported 3-digit SIC lines of business that our sample firms operated in, regression model (1) and a Herfindahl Index of revenue concentration in model (2). The Herfindahl Index is calculated as the sum of segments' sales squared divided by total sales squared, where sales are defined at the 3-digit SIC level. *Ln (MV)* is the natural logarithm of the company's market value. All continuous variables are measured at the financial year-end prior to the asset sale. *CEO* is a binary variable set equal to one where the company experienced a change in the CEO in the year prior to the asset sale, and zero otherwise. P-values for two-tailed tests of significance are reported in parenthesis.

Model:

$$Sale = \alpha + \beta_1 DEBT + \beta_2 ROA + \beta_3 Focus + \beta_4 \ln(MV) + \beta_5 CEO + \varepsilon$$

Variable	(1)	(2)
Constant	-2.078 (0.000)	-3.211 (0.000)
DEBT (Year -1)	1.813 (0.000)	1.833 (0.000)
ROA (Year -1)	-1.204 (0.041)	-1.088 (0.068)
Herfindahl Index (Year -1)	-1.141 (0.000)	
Number of Segments (Year -1)		0.232 (0.001)
Ln (MV) (Year -1)	0.502 (0.000)	0.464 (0.000)
CEO (Year -1)	0.825 (0.001)	0.785 (0.002)
Log-likelihood	-411.176 (0.000)	-395.407 (0.000)
Number of Observations	776	778

Table 5: Changes in operating performance and leverage in the post-asset sale period

The table reports mean [median] changes in industry-adjusted return on assets (ROA) and an industry-adjusted debt ratio following asset sales for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Asset sales take place between years –1 and 0. ROA is defined as earnings before interest, tax, depreciation and amortization (EBITDA) divided by the book value of assets. The debt ratio is defined as the ratio of total debt to total assets. The fraction of all changes that are positive are reported in parenthesis. *, **, and *** denote the 1%, 5% and 10% levels of significance, respectively.

Panel A: Changes in industry-adjusted ROA following asset sales							
Period	Whole Sample N = 391	Loss Making Sample N = 275	Focusing Sample N = 265	Leveraged Sample N = 198	Debt Repayment N = 128	Investment N = 55	Financing N = 18
Δ0 to 1	0.017 [0.008]** (55.3%)	0.032 [0.020]* (59.5%)	-0.002 [0.010] (50.4%)	0.007 [0.015]** (56.8%)	-0.003 [0.015]** (52.9%)	-0.115 [-0.020]** (35.3%)	0.002 [0.005] (55.6%)
Δ0 to 2	0.022 [0.007] (54.2%)	0.040 [0.015]* (54.2%)	0.020** [0.010] (50.6%)	0.029*** [0.020]* (55.1%)	0.022 [0.010] (52.7%)	-0.008 [-0.010] (41.7%)	0.028 [0.025] (64.7%)
Δ0 to 3	0.010 [0.006] (54.5%)	0.028 [0.020]* (58.0%)	0.001 [0.010] (51.8%)	0.006 [0.025]** (57.1%)	0.023 [0.020]*** (52.4%)	-0.016 [0.000] (48.9%)	0.050*** [0.030]*** (56.3%)
Δ0 to (+1 - +3)	0.029 [0.007]** (53.9%)	0.049*** [0.019]* (61.8%)	0.020** [0.009]** (56.5%)	0.037* [0.022]* (61.1%)	0.034** [0.014]** (57.1%)	-0.026 [-0.011] (45.1%)	0.036** [0.030]*** (61.1%)
Panel B: Changes in company leverage following asset sales							
Δ0 to 1	0.007 [-0.005] (41.0%)	0.006 [-0.005] (40.5%)	0.010 [-0.005] (41.7%)	0.004 [-0.010] (38.9%)	-0.008 [-0.025]* (34.5%)	0.042*** [0.010] (52.9%)	-0.029*** [-0.030]*** (33.3%)
Δ0 to 2	0.015 [0.000] (46.1%)	0.015 [-0.005] (47.1%)	0.012 [-0.005] (43.8%)	0.010 [-0.015] (42.7%)	-0.002 [-0.035]* (35.1%)	0.054*** [0.020] (54.2%)	-0.009 [-0.005] (47.1%)
Δ0 to 3	0.003 [-0.005] (46.2%)	0.005 [-0.005] (46.5%)	-0.006 [-0.010] (44.8%)	-0.012 [-0.020]*** (40.9%)	-0.018 [-0.035]** (34.8%)	0.043 [0.045]** (58.1%)	-0.017 [0.000) (43.8%)
Δ0 to (+1 - +3)	0.011 [-0.003] (46.9%)	0.012 [-0.003] (46.6%)	0.010 [-0.004] (44.9%)	0.008 [-0.012] (42.1%)	-0.001 [-0.031]* (34.5%)	0.054*** [0.022] (56.9%)	-0.016 [-0.010] (44.4%)

Table 6: Change in sample firm's focus following the asset sale

The table reports mean and median changes in industrial focus following asset sales for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Median significance tests are based on the Wilcoxon signed-rank test. The number of segments relates to the number of reported 3-digit SIC lines of business that our sample firms operated in. The Herfindahl Index is calculated as the sum of segments' sales squared divided by total sales squared, where sales are defined at the 3-digit SIC level. . The fraction of all changes that are positive is reported in the final column. *, **, *** denote significance at the 1%, 5%, 10% level, respectively.

Descriptions	Obs	Mean	Median	% positive
Number of lines of business				
in pre-asset sale year	390	2.9821*	3.000*	
in post-asset sale year	372	2.7876*	2.500*	
Change in the number of segments	362	-0.1906*	0.000*	17.4%
Sales-based on Herfindahl index				
in pre-asset sale year	401	0.5969*	0.6009*	
in post-asset sale year	401	0.6058*	0.6200*	
Change in the Herfindahl index	401	0.0088	0.0122**	48.9%

Table 7: Control firm matched operating performance for sample firms by reasons of asset sale

The table reports operating performance for the sample firms and control firms by stated reasons for the asset sale for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. The control firms are selected from firms within the same FTSE level 4 industry group as the asset sale firm, and having similar ROA in the year prior to asset sale announcement. ROA is defined as earnings before interest, tax, depreciation and amortization (EBITDA) divided by the book value of assets. Significance between the sample and control firms is based on the Wilcoxon sign rank test. *, **, and *** indicate the 1%, 5%, and 10% levels of significance, respectively.

Time Period	Asset Sale firms median	Non-asset sale firms median	Difference
Panel A: ROA – Loss-making sub-sample			
From year –1 to 0	-0.025*	0.005	-0.020**
From year 0 to 1	0.020*	0.000	0.020**
From year 0 to 2	0.010*	0.005	0.015
From year 0 to 3	0.010*	-0.005	0.020***
Panel B: ROA – Reduce debt sub-sample			
From year –1 to 0	-0.030*	0.005	-0.030*
From year 0 to 1	0.015*	0.005	0.010
From year 0 to 2	0.015**	0.000	0.015
From year 0 to 3	0.015***	-0.015***	0.030***
Panel C: ROA – Re-focusing sub-sample			
From year –1 to 0	-0.005	0.000	0.000
From year 0 to 1	0.010**	0.000	0.020**
From year 0 to 2	0.000	-0.005	0.020
From year 0 to 3	-0.010	-0.010	-0.000

Table 8: Control firm matched debt ratios for sample firms by reasons of asset sale

The table reports debt ratios for the sample firms and control firms by stated reasons for the asset sale for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. The control firms are selected from firms within the same FTSE level 4 industry group as the asset sale firm, and having similar ROA in the year prior to asset sale announcement. ROA is defined as earnings before interest, tax, depreciation and amortization (EBITDA) divided by the book value of assets. The debt ratio is defined as the ratio of total debt to total assets. Significance between the sample and control firms is based on the Wilcoxon sign rank test. *, **, and *** indicate the 1%, 5%, and 10% levels of significance, respectively.

Time Period	Asset Sale firms median	Non-asset sale firms median	Difference
Panel A: Debt Ratio – Loss-making sub-sample			
From year –1 to 0	0.005	0.000	0.005
From year 0 to 1	-0.005	0.000	-0.005
From year 0 to 2	0.000	0.005	-0.010
From year 0 to 3	0.000	0.025*	-0.020
Panel B: Debt Ratio – Reduce debt sub-sample			
From year –1 to 0	0.035*	0.000	0.035*
From year 0 to 1	-0.005	0.000	-0.005
From year 0 to 2	-0.005	0.010	-0.020
From year 0 to 3	-0.010	0.035*	-0.035**
Panel C: Debt Ratio – Re-focusing sub-sample			
From year –1 to 0	-0.015**	0.000	0.010
From year 0 to 1	0.005	0.000	0.010
From year 0 to 2	0.005	0.005	-0.000
From year 0 to 3	0.010	0.015	-0.015

Table 9: **Abnormal returns around asset sale announcements**

The table reports abnormal stock price returns surrounding asset sale announcements for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Panel A reports abnormal returns for the whole sample. Panel B presents abnormal returns of the sample firms by the stated reasons of asset sale. Panel C reports abnormal returns of sample firms by stated use of asset sale proceeds. The *, **, and *** denote the 1%, 5% and 10% levels of significance, respectively.

Panel A: Whole Sample [N = 413]

Statistic	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**
Mean %	0.499* [t = 2.71] (0.007)	1.125* [4.57] (0.000)	0.745* [3.24] (0.001)
Median %	0.262** (0.013)	0.515* (0.000)	0.376* (0.004)
% +ve	56.0	57.9	53.8

Panel B: Reasons for asset sale

	Refocusing firms (N = 265)			**Highly-Leveraged firms (N = 198)**			**Loss making firms (N = 275)**		
Statistic	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**
Mean %	0.646* [t = 2.68] (0.008)	1.159* [t = 3.59] (0.000)	0.920* [t = 3.10] (0.002)	0.581** [t = 2.30] (0.022)	0.902* [t = 2.86] (0.005)	0.794** [t = 2.52] (0.013)	0.641* [t = 2.94] (0.004)	1.018* [t = 3.90] (0.000)	0.929* [t = 3.51] (0.001)
Median %	0.350** (0.015)	0.550* (0.000)	0.467* (0.006)	0.325** (0.027)	0.550* (0.003)	0.40** (0.031)	0.425* (0.002)	0.60* (0.000)	0.06* (0.000)
% +ve	54.2	58.2	53.4	56.8	56.8	55.2	58.0	56.1	57.3

Panel C:Use of Proceeds

	Debt repayment (N = 126)			**Investment (N = 55)**			**Financing (N = 18)**		
Statistic	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**	**CAR (-1, 0)**	**AAR (0)**	**CAR (-1, 1)**
Mean %	0.733** [t = 2.27] (0.025)	1.276* [t = 2.85] (0.005)	1.060* [t = 2.68] (0.008)	0.327 [t = 0.81] (0.422)	0.895** [t = 2.01] (0.049)	0.584 [t = 1.21] (0.230)	-0.500 [t = -1.05] (0.307)	0.867 [1.19] (0.251)	-0.398 [t = -0.60] (0.558)
Median %	0.500** (0.019)	0.700* (0.003)	0.750* (0.003)	0.20 (0.488)	0.40 (0.195)	0.367 (0.285)	-0.525 (0.237)	0.350 (0.523)	-0.417 (0.306)
% +ve	55.6	57.1	59.5	56.4	52.7	60.0	33.3	50.0	33.3

Table 10: Relation between operating performance and return

The table reports an OLS regression of the relation between announcement period abnormal stock price returns and financial characteristics for a sample of UK non-financial firms that announced the sale of a non-financial asset during 1993-2000. Cumulative abnormal return is calculated over the day prior to and the day of the asset sale announcement (-1, 0). *DEBT* is the industry-adjusted change in the ratio of total debt divided by total assets. *ROA* is the ratio of earnings before interest, tax, depreciation and amortization divided by total assets, adjusted for industry. Industry adjustments are made by deducting the median value for the relevant financial ratio of all firms operating in the same FTSE level 4 industry group from the value of the financial ratio for the sample firm. The pre asset sale period covers years –3 to 0 relative to the asset sale, and the post asset sale period covers years 0 to +3 relative to the asset sale. *Ln (MV)* is the natural logarithm of the company's market value, measured at the financial year-end prior to the asset sale announcement. *, **, and *** denote the 1%, 5% and 10% levels of significance, respectively.

Model: $CAR_{t=-1,0} = \alpha + \beta_1 DEBT_{post} + \beta_2 ROA_{post} + \beta_4 ROA_{pre} + \beta_5 \ln(MV)_{t=-1} + \varepsilon$

Statistic	Constant	$Debt_{post}$	ROA_{post}	ROA_{pre}	Ln(MV)
Coefficient	0.023*	-0.056*	0.038**	-0.001	-0.002***
p-value	0.005	0.000	0.021	0.951	0.091
N = 326; R-sq.(adj)= 8.1%; and F-statistic = 8.20 (0.000)					