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The Impact of Tangible Asset Sales on Stock Returns: A Research on Manufacturing Companies Listed in Borsa Istanbul

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Abstract: *Nowadays, due to economic fluctuations, increasing competition and technological development companies need to continuously and rapidly adapt to changing business environment. Furthermore, internal conditions like financial distress or strategy changing make the restructuring inevitable for companies. Within this frame, tangible assets sales might have an effect on firm value both by generating a source of financing and allowing companies to optimize their asset structure. In this study, the impact of tangible assets sales on stock returns of manufacturing companies listed on Borsa Istanbul was examined for the period of January, 2016-December, 2017 using event study method. The empirical results show significant positive average abnormal returns associated with the asset sales on announcement day.*

Keywords: Tangible Asset Sales, Event Study, Restructuring, Abnormal Return, BIST Manufacturing Industry

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1. Introduction

Nowadays, the accelerated development of technology, along with macroeconomic and geopolitical fluctuations have created a rapidly changing business environment. Meanwhile, new opportunities and complexities in every industry have brought intense business competition. Within this challenge, companies need to continuously evaluate and update their assets, operations and organization and adopt a dynamic structure in order to easily align with new market needs and enhance value. This adapting process requires new strategies like financial or organizational restructuring as some of the assets of the company will no longer fit into the future plans or add value they once did (KPMG, 2015). Divesting these assets may have an effect on firm value both by generating a source of financing and allowing companies to optimize their asset structure.

Asset management gains a particular importance in manufacturing companies, in which the process of converting raw materials into final products relies on high levels of tangible assets. According to Central Bank of Republic of Turkey (CBRT)s' real sector statistics, the ratio of tangible fixed assets to total assets in manufacturing industry is approximately 26 percent for 2014-2016 period, suggesting a deep dependence on tangible assets in manufacturer companies compared to other industries. Therefore, a proper tangible asset management is a drastic requirement for manufacturing firms in order to achieve financial performance and create value.

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While rethinking their structures and strategies, companies should make a balance between the cost of tangible assets, their performance and risks (Madusanka, Rajini and Konara, 2016). As an outcome of this decision making process, the sale of tangible assets may have critical importance in companies' value creation processes. However, the effect of these transactions on stock returns is expected to differentiate according to a number of factors influencing the investors' perceived impact on companies' future income flow. Why and when firms sells the assets is of critical importance for investors' response. For healthy firms, tangible asset sales may represent a strategy of renewal or of focusing on new opportunities; thus, a better prospect for firms' future, increased operating performance, high profitability and cost reduction expectations will automatically lead to positive stock reactions. However, a corporate action perceived as having no effect on firm's future prosperity (Bowman & Singh, 1993) or wrong timing of divestment decision may have a negative effect on stock returns. Financial distress conditions may alter stock price reaction to tangible asset sales; in these circumstances, the use of proceeds by the disposing company may be a determinant factor affecting investors response.

Little empirical evidence has been provided on the impact of tangible asset sales in Turkey. Otlu, Ölmez and Ceyhan (2012) broadly assessed this issue in their research covering all the companies listed in Borsa Istanbul, regardless of the industry they operate in. This study differentiates by attempting to assess the reaction of stock returns in an industry heavily relying on tangible assets. As previously stated, tangible asset sales may offer insights for companies' future growth prospects. Consequently, the impact on stock returns will vary depending on investors' perceived benefit on forthcoming corporate performance. For this purpose, manufacturing companies listed in Borsa Istanbul which disclosed tangible asset sales between January, 2016 and December, 2017 have been analysed by employing event study method. The paper is organized as follows; Section 2 refers to rationales for asset sales and their possible implications for stock prices, Section 3 outlines prior literature on tangible asset sales, Section 4 describes the sample construction and the method employed, Section 5 discusses the empirical findings and the final section concludes.

2. Rationales For Tangible Asset Sales and Possible Implications for Stock Prices

Tangible asset sales have been often addressed within the context of restructuration strategies of companies. Restructuring is a process of fundamental changes in a firm's capital structure, asset mix and organization in order to support firm value. Depending on specific strategic or financial situations, restructuring mostly serves as a tool for increasing competitiveness by reducing investments or for managing high risk by the disposal of ineficient assets (Akkaya & Tükenmez, 2007: 179). However, the value creation process in restructuring activities is not strightforward, as it relies mostly on the market participants' interpretation on company's future prosperity.

The rationales behind asset sales as a part of restructuring strategies of companies and their possible implications for stock prices can be observed under three dimentions as follows (Bowman & Singh, 1993);

2.1. Portfolio Restructuring

Portfolio restructuring refers to strategic divestitures that are no longer compatible with the future plans of the company. Often addressed in the context of "downscoping", portfolio restructuring process describes the range of activities through which the firms redesign their core activities (Hoskisson & Hitt, 1994: 164).

Due to their strategic plans, companies may prefer to grow on certain fields of activities, therefore the decision to focus on core activities should be followed by disposing of non-related units that will not anymore fit the future plans of the company. Implicitly, these surplus assets will not be associated with additional cash flows and will not add value inside the firm (Nguyen, 2016: 21). Selling non-core assets may allow management to focus on remaining assets and thus increasing efficiency, productivity and reducing costs. Furthermore, the removal of negative interactions between non-core assets and the core business operations can lead to a better distribution of resources within the company (John & Ofek, 1995: 108). Larger or highly diversified companies can meet difficulties in efficiently managing the complexity of operations and

procedures within the organization causing loss of competitive advantage. As a result, the firm may have the tendency to dispose assets in order to adopt a leaner approach (Kolev, 2016: 183). In that case, the value will not necessarily be created by the proceeds of the divested assets, but from the higher opportunity cost of the complementary resources involved with the divested assets in the generation of the firm's cash flows (Nguyen, 2016: 22).

Along with internal factors, threats arising from changing market dynamics can also trigger asset sales; macroeconomic volatility, regulatory environment or technological changes drive companies to reshape their business in order to realign to new opportunities or to eliminate risk. Hillier, McColgan and Werema (2009) and Kaul (2012) bring evidence that industry competition and increased innovativeness of rivals triggers the sale of non-core assets, rendering firms more focused (Silva & Moreira, 2019: 449). Attractive foreign country investment opportunities may lead firms dispose assets, relocating the resources for an optimal use in low-cost, new geographic markets (Berry, 2010: 383).

2.2. Financial Restructuring

Mostly driven by free cash flow and corporate governance motives, financial restructuring is related to the reconfiguring of the capital structure of the company by re-establishing the debt-equity equilibrium (Bowman & Singh, 1993: 10). When cash flows are lower than expected and debt ratio have the tendency to rise, the default risk increases, leading to higher cost of capital, which reduces firm's present value. Thus, reducing financial distress by divesting some of the assets that are not essential in the production process may lead to a positive investors' response depending on whether new raised funds are used to repay debt or not (Nguyen, 2016:22)

Selling assets has been often addressed as a recovery method for poor corporate and financial performance (Silva & Moreira, 2019: 449). Poor corporate performance translates in low profitability and poor financial position which makes it difficult for firms to engage in future projects. By divesting inadequate assets firms can properly reconfigure their asset composition and increase financial performance (Kolev, 2016: 184).

Evidence support this hypotheses, generally revealing weak financial performance previous to divestment. After Duhaime and Grant (1984) reported lower ROE for divesting firms than for their competitors in the year before divestment, Montgomery and Thomas (1988) bring evidence that before divestment, divesting firms have weaker financial position on four dimensions (return on assets, current ratio, interest coverage, debt ratio) than their rivals in the same industry. Low levels of profitability and liquidity together with high leverage in the year before divestment are also reported by Otlu et al. (2012). Thus, financially distressed firms may choose to sell assets to improve their positions in financial markets. Cash flows generated by asset sales may reduce liquidity risks and strengthen companies' financial structures by reducing their debts. High leveraged or financially poor performing firms may have difficulties in accessing sources of finance; therefore, asset sales may represent the cheapest and the most beneficial method to raise funds (Lang, Poulsen & Stultz, 1995: 4; Shin & Groth, 2012). Thus, the sale of assets should be perceived as a sign that improvement at firm level performance is imminent and a consequent positive stock price reaction to sale announcement is expected to arise depending on weather proceeds of sale are used to reduce debts (Cho & Cohen, 1997: 368).

However, the effect of the sale is ultimately determined by the received price for the assets and the profitability of the transaction (Clubb & Stouraitis, 2002). Most often, the firm's weakened financial position associates with the loss of bargaining power, which forces the distressed company to accept a price (large discounts) for its assets below their going concern value or even the market value. Thus, the transaction may end in favour of the creditors, involving a wealth transfer from equity holders to debt holders and a simultaneous negative reaction of stock prices to the asset sale (Senbet & Wang, 2012: 11).

2.3. Organizational Restructuring

Organizational restructuring is a corporate action that aims improving efficiency and effectiveness by modifying the business structure (Bowman & Singh, 1993: 6). Within this process firms can implement a variety of restructuring operations such as relocation of facilities, employment downsizing or asset restructuring, involving the sale of tangible and intangible assets or lines of business, among others.

Within this context, a firm may want to dispose of one or several tangible assets for various reasons; a decrease in demand for the goods and services produced by the tangible asset or an increase in production costs may cause the removal of unproductive assets or units. As the expected profitability and value of a tangible asset may change due to age, the sale of the asset may generate a bigger amount of cash flow than utilizing it inefficiently. High maintenance and repair expenses may lead the management to replace the deteriorated fixed assets with new performant ones (Akgüç, 2010). As the present value of the cash flows generated from the non-performing assets falls below their opportunity cost, the underperforming asset can negatively affect the enterprise value; therefore management may feel inevitable to dispose of the asset in order to enhance shareholder value (Gole & Hilger, 2008: 5; Nguyen, 2016).

In changing economic and environmental conditions, a firm may also want to sell assets and use proceeds to reverse its investment mistakes or to meet new opportunities (Hwa 2003; Hovakimian & Titman, 2006; Ushijima & Iriyama, 2015). Desai and Gupta (2019) found evidence that firms prefer to finance their investment opportunities by selling assets instead of issuing new securities when the financing need is a smaller amount. Indeed, the managerial discretion hypotheses suggest that firms retaining the proceeds of asset sales, subsequently engaging in positive NPV projects may experiment an increase in shareholder value. Moroever, the retention of the proceeds of asset sale may restore financial flexibility leading to positive stock market reactions (Bates, 2005: 124).

Another argument for selling assets is the efficient redeployment hypothesis which posits that when a firm does not possess the necessary resources to fully exploit an asset, selling it to another firm having these missing attributes makes the asset more valuable; empirical evidence show that both the selling and the buying companies obtain significant positive abnormal returns from these transactions, indicating beneficial results for both sides (Jain, 1985; Dadalt, 2015).

Managerial reasons have also been found to be important in asset sale decisions. Management changes can bring about disposals of previously acquired assets with poor performance, without damaging their own reputation (Silva & Moreira, 2019: 450). On the other hand, managerial agency hypothesis posits that asset sales may often serve as a self-protective action for managers rather than a tool for shareholders' wealth maximization. The allocation of sale proceeds can become a matter of agency when sales are followed by subsequent investments in manager specific or firm diversifying projects decreasing the risk of failure. The retention of proceeds is also associated with reputation aspects of firm size or other self-benefitting issues like compensation or bonuses (Bates, 2005: 108).

3. Literature Review

The effect of tangible asset sales on stock prices has been addressed in early research papers within the context of divestitures. Alexander, Benson and Kampmeyer (1984) investigated the effect of decisions to sell part of the operations of the firm on stock returns. Analysing a sample of 53 sell-off announcements made during 1964- 1973, they found positive but small abnormal returns for the selling company on the announcement days, preceded by negative returns on the days before the announcement. Jain (1985) extended their work with a sample of 1000 announcements reported between 1976 and 1978 and analysed the effects for both the selling and the buying company. The results show that significant positive excess returns are obtained both for sellers and buyers. Similarly, Klein (1986) analysed announcement effect among firms disclosing voluntary sell-offs. Separating the events into price disclosed and non-price transactions, he found significantly positive results for the price group but not significant results for the non-price group. The paper also reported a positive relation between the size of the sel-off and the return on the announcement day.

Parallel to research on US markets, studies conducted in different markets found similar effects for asset sales announcements. Kaiser and Stouraitis (1995) provide evidence on stock market reaction to divestiture announcement by European firms. Including French, German, Swedish and UK firms in their analysis, they find positive stock price reaction to initial announcements of domestic sell-offs. For U.K. markets Clubb and Stouraitis (2002) analyse 187 sell-offs announced by UK publicly traded companies during 1984-1989. Their results show that the profit on the sale has a very significant positive impact on the abnormal returns of the selling firm during sell-off announcements. Huang and Chen (2012), examine asset sales and asset exchanges in China between 1998 and 2006 and also report significantly positive stock price reactions during asset-sale announcements.

Compared to the abundant literature in developed countries, there are few studies examining the effects of asset sales in emerging countries. Sun (2012) examines divestitures between 1995 and 2004 and analyses short term performance of stock returns of listed companies in Taiwan. The results show that divestiture announcements lead to significant positive stock abnormal returns. Lee, Nor and Alias (2013) analysed asset (PPE) divestitures of public-listed companies in Malaysia within 2002-2005. They found that divesting companies in Malaysia prefer to dispose of assets from their core businesses rather than non-core businesses. Contrary to studies conducted for developed countries where increasing focus improves stock performance, in Malaysia reducing focus is found to trigger performance. Putri and Asandimitra (2016) conducted their study for Indonesian companies and found a significant market reaction two days before the announcement.

In Turkey, Otlu et al. (2012) assessed the effect of tangible assets on stock returns listed on Istanbul Stock Exchange (now Borsa Istanbul) during 2008-2011 and reported significantly positive CAARs in the period surrounding the tangible asset sales. Eyüboğlu and Bulut (2016), although not limited to tangible asset sales, examined the impact of restructuring announcements of companies indexed on BIST-30 for the 2003-2012 interval and found significant positive results (1.8%) on announcement day and the day after.

Several researchers have investigated the effect of asset sales on companies experiencing financial distress. Empirical evidence provides, on average, positive reactions of stock market to the asset sale announcement, suggesting stockholders approval for the efforts of managers to minimize financial distress costs and to recover its financial health (Lasfer, Sudarsanam & Taffler, 1996: 59). Lang et al. (1995) find a strong relation between the stock price reaction to asset sales and the use of proceeds. In their sample, the stock price reaction to asset sales is significantly positive for firms that intend to use the proceeds to pay down debt, but negative and insignificant for firms which intend to retain the proceeds within the firm. Positive stock reactions to divestiture announcements are also reported by Gadad and Thomas (2005), which attributes this effect to reducing the level of debt. Similarly, Clayton and Reisel (2013) provides evidence that high leveraged companies that use the proceeds to retire debt obtain excess stock and bond returns from asset sales. Comparing asset sales effects both in financially distressed and healthy firms, Lasfer et al. (1996) find a stronger positive reaction for distressed companies, suggesting that asset sales represent a means for regaining financial health.

However, in the case of firms experiencing financial difficulties, the magnitude of the effect of asset sales is still controversial. Brown, James and Mooradian (1994) and Shin and Groth (2012), report lower stock returns for companies that use the proceeds to repay debt than for retaining companies, as a reaction to creditors'or banks' pressure on liquidation decisions. Finlay, Marshall and McColgan (2018) provide empirical evidence on the effect of firm-level, industry-level and economy-level distress conditions on the stock price reaction to asset sale announcements by non-financial UK firms, concluding that industry-wide stress cause significantly lower abnormal returns.

As mentioned before, increasing focus has been found to be a significant determinant of the asset sale decision. John and Ofek (1995) find consistent results with this hypotheses and report higher abnormal returns for focus increasing divestitures than for the others. Using a sample of Canadian companies, Francoeur and Niyubahwe (2009) provide additional support for the wealth enhancing effects of increasing focus.

Along with a wide literature about divestitures, there are some studies focusing only on a narrow area such as real estate assets divestments. Glascock, Davidson and Sirmans (1989) examined a sample of non real estate firms which disposed real estate assets between 1981 and 1986 and found weak positive returns associated with these transactions. Eng et al. (2015) assess the real estate divestiture and acquisitions in Malaysia during the Global Financial Crisis, concluding that in periods of recession the market does not favour divestitures.

4. Methodology and Data

4.1. Method

Event studies focus on the behavior of firms' stock prices surrounding corporate actions or macroeconomic events. Frequently used to measure the effect of these specific events on firm value event studies are concerned with the magnitude of abnormal performance at the time of an event which provides a measure of the unanticipated impact of this type of event on the wealth of the firms' claimholders. Therefore, event studies focusing on announcement effects for a short-term around an event are very useful techniques for assessing the impact of corporate policy decisions on the prices of the company's securities (Kothari & Warner, 2007: 5).

Event studies provide an ideal tool for investigating the information content of disclosures (MacKinley, 1997: 16). As finance theory suggest that security prices continuously reflect all available information and new information occurs randomly (otherwise, it would not be new information), then one would expect that security prices would fluctuate randomly as randomly generated news is impounded in security prices. Thus, non-random performance of security prices immediately after a given event suggests that news of the event has a significant effect on security values (Teall, 2012: 302)

As appraisal of the abnormal performance of stock returns is the key point in event studies, the abnormal returns must be calculated. The abnormal return for security "i" on day t (ARit) is the difference between the observed (or actual) return and the expected return:

$$ARit = Rit - E(Rit) \quad (1)$$

While actual returns (Rit) are observable, expected returns must be estimated; through numerous methods of estimation, in this study market model was employed to construct the expected returns (MacKinley, 1997):

$$Rit = \alpha i + \beta i * Rmt + \varepsilon it \quad (2)$$

where, Rit is the return on security on day t, Rmt is return on market index (i.e. BIST100) on day t, αi is the intercept, βi is the slope coefficient and εit is the disturbance term. In this study, the length of the estimation period is of 121 days before the event period.

An aggregation of the abnormal returns must be made in order to identify overall paterns of the event of interest. First an aggregation through the event period for an individual security, i.e. cumulative abnormal return (CAR) is calculated as (MacKinley, 1997: 21; Brooks, 2014: 638);

$$CAR_i(T_1, T_2) = \sum_{t=T_2}^{T_2} AR_{it}$$

Where where (T1,T2) is the length of the event period of interest (the event window). CARs correspond to security holder wealth changes around an event and post-event CARs provide information about market efficiency, since systematically nonzero abnormal returns following an event are inconsistent with efficiency (Kothari & Warner, 2007: 10).

The variance of CAR is computed as

$$\hat{\sigma}^2\big(CAR_i(T_1,T_2)\big) = (T_2 - T_1 + 1)\hat{\sigma}^2(AR_{it})$$

With a test statistic

$$SCAR_i(T_1,T_2) = \frac{CAR_i(T_1,T_2)}{[\hat{\sigma}^2(CAR_i(T_1,\ T_2))]^{1/2}}$$

When the analyses is conducted for more than one security, an aggregation of the individual abnormal returns across all firms is made for each separate day t during the event window (MacKinley, 1997: 24; Brooks, 2014: 639);

$$AARt = \frac{1}{N} * \sum_{i=1}^{N} ARit \tag{3}$$

where, AARt (the average abnormal return for day t) is the sum of the individual abnormal returns on day t divided by the number of the securities the sample (N).

In order to construct the test statistic, the variance of the average abnormal return must be calculated as

$$\hat{\sigma}^2(AR_t) = \frac{1}{N^2} * \sum_{i=1}^{N} \hat{\sigma}^2(AR_{it}) \tag{4}$$

Then the test statistic for testing the null hypothesis that the average across N firms return on day t is zero will be given by (MacKinley, 1997: 24; Brooks, 2014: 639);

$$SAAR_t = \frac{AAR_t}{[\hat{\sigma}^2(AR_t)]^{1/2}} \tag{5}$$

Finally, the aggregation both across firms and over time must be made in order to examine the cumulative return (CAAR).

$$CAAR\ \big(T_1,T_2\big) = \sum_{t=T1}^{T2} AAR_t \tag{6}$$

CAARs represent the sum of the average abnormal returns to a point in time and show the impact of the event over time. Examining the CAAR is a way of looking at whether or not the values of the average returns, starting from the day of cumulation and up to that point are systematically different from zero (Brown & Warner, 1980: 228).

The variance of $CAAR_t\ \big(T_1,T_2\big)$ can be calculated as

$$\hat{\sigma}^2(CAAR(T_1,T_2\ )) = \frac{1}{N^2} * \sum_{i=1}^{N} \hat{\sigma}^2(CAAR_i(T_1,T_2\ )) \tag{7}$$

Then the test statistic can be constructed using the following formula

$$\text{SCAAR (T1, T2)} = \frac{CAAR\ \big(T_1,T_2\big)}{[\hat{\sigma}^2(CAAR(T_1,T_2\ ))]^{1/2}} \tag{8}$$

As the objective of this paper is to determine whether any abnormal performance occurs on days surrounding the asset sales announcement, the null to be tested is that the event having no effect on the stock return, which means an abnormal return of zero (Brooks, 2014: 637). Thus, the hypotheses are structured as follows;

H1a: $AR_{it} \neq 0$, the abnormal return for stock "i" on day "t" is not equal to zero

H1b: $CAR_i \neq 0$, the cumulative abnormal return for stock "i" is not equal to zero

H1c: $AAR_t \neq 0$, the average abnormal return on day "t" is not equal to zero

H1d: CAAR ≠0, the cumulative average abnormal return is not equal to zero

4.2. Sample Construction

In order to conduct an event study, firstly the event under investigation should be defined (Bhagat & Romano, 2001: 4). This research addresses the impact of tangible asset sales on stock prices of manufacturing companies listed in Borsa Istanbul between January, 2016 and December, 2017. The second step, is to search for the first public announcement of the event. This identification is of critical importance, since the semi-strong form of the Efficient Market Hypotheses posits that the impact of the event on stock prices would occur on the announcement day, or the day the investors have been first informed of the event (Bhagat & Romano, 2001: 4). However, while some events like natural disasters or accidents are clearly impredictable, corporate actions like tangible asset sales are likely to be subject to leakage due to the long and complex nature of corporate decision making process preceding the event. If some news related to the event leaked before the first public announcement, the effect of the event would be mitigated, as some of the information had been priorly incorporated in stock prices. Appropriately, the sample construction started with the examination of tangible assets sales announcements posted on Public Disclosure Platform (PDP) by manufacturing companies listed in Borsa Istanbul in the period of study. While collecting the data, the first announcement posted by the company on PDP was considered; updates and other related announcements were excluded. Simultaneously, available internet sources had been checked for previous leakage related to the event. The final sample consisted of 16 tangible assets sales announcements made by 14 manufacturing companies during the above mentioned period.

Consequently, the event day (t=0) was defined as the day the event was disclosed by the company, i.e. the day the announcement was posted on PDP; if the announcement was made after the market closure, the event day was set as the following trading day, as the earliest day the effects of the announcement can be observed.

Table 1 shows the distribution of asset sales announcements along with additional financial information related to the sale price, the ratio of the sale price to total assets, the profit (loss) realised and the motivation for sale as declared by the divesting company.

As reported in Table 1, 10 of 16 asset sales announcements (62.5%) are clustered in 2016. All the companies in the sample, excepting DOKTA, reported profit from the disposal of the tangible asset. The motivation for asset sale as declared by the companies varies with a concentration on financing reasons; 9 of 16 announcements (56.2%) are justifying the disposal of assets by reducing debt or financing matters. Meanwhile, 3 of the transactions (TUCLK, EKIZ and BALAT) in the sample count for more than 10 percents of the total assets of the disclosing company. Two of the companies in the sample (TMPOL and EKIZ) disclosed more than one asset sales announcement with an interval of six months (TMPOL) and respectively three months (EKIZ) in the examined period.

5. Empirical Results

The event window examined in order to gauge the stock price reaction around tangible asset sales of manufacturing companies listed on Borsa Istanbul begins 10 days before the announcement (t=0) and ends 10 days after the announcement (t-10; t+10). Splitting the event window into few sub-sets of it, allows isolating the effect of day itself and assessing more precisely the period surrounding the event. While the

examination of periods prior to the announcement may offer an outlook of the possibility of leakages of information related to the event, the post-announcement period captures the short-term reaction of stock prices to the event of interest (MacKinley, 1997: 15). Table 2 reports the ARs on the announcement days and CARs on different lengths around the event for each individual firm.

Table 1. Tangible Asset Sales Announcements By Manufacturing Companies Listed in Borsa Istanbul, 2016-2017

Obs.	Announcement Day (Event Day)	BIST Code[1]	Subject of Sale	Sale Price	Sale Price/Total Assets (%)	Profit (Loss) (TL)	Motivation for Sale
1	11.01.2016	BRKO	Building	7,250,000 TL	2.79	7,216,961	Financing debts and improving working capital
2	19.01.2016	TUCLK	Land	23,483,520 TL	11.60	9,733,520	Financing debts
3	04.02.2016	EKIZ(a)	Land and building	5,300,000 TL	14.10	182,223	Reducing debt
4	24.02.2016	KRSAN	Production facility	700,000 TL	1	50,000	Generating cash from surplus assets
5	24.02.2016	DAGI	Land and building	1,750,000 TL	1.79	289.175	Surplus assets
6	04.05.2016	EKIZ(b)	Equipment	2,800,000 TL	7.32	1,128,240	Reducing debt
7	04.07.2016	OZBAL	Land, plant and building	1,409,096 USD	3.90	1,433,665	Not declared
8	04.07.2016	DOKTA	Land and building	2,500,000 EUR	0.7	0	Organizational
9	11.07.2016	ULUUN	Real estate property (sale and lease back)	9,440,000 TL	1.88	1,709,131	Financing working capital
10	01.12.2016	BALAT	Plant building	7,500,000 TL	22.38	1,703,707	Reducing financial distress
11	02.01.2017	SAYAS	Land and buildings	15,145,000 TL	9.72	1,434,771	Efficient use of assets and resources
12	02.01.2017	TMPOL(a)	Building	285,000 TL	0.43	167,700	Efficient use of assets and resources
13	17.05.2017	GENTS	Land	5,255,000 TL	1.74	4,385,725	Financing working capital
14	16.06.2017	BRSAN	Land	87,835,000 TL	2	5,675,991	Creating funds for strategic investments and reducing debt
15	28.07.2017	TMPOL(b)	Building	300,000 TL	0.4	183,975	Efficient use of assets and resources
16	27.12.2017	HURGZ	Land	38,500,000 TL	4.71	33,029,409	Efficient use of assets and resources

Source: PDP (2018), https://www.kap.org.tr/en/bildirim-sorgu (Date of access: 01.06.2018)

Table 2. Abnormal Returns (ARs) and Cumulative Abnormal Returns (CARs) for BIST Manufacturing Companies Involved in Tangible Asset Sales between January, 2016 and December, 2017

	BRKO	TUCLK	EKIZ(a)	KRSAN	DAGİ	EKIZ(b)	OZBAL	DOKTA	ULUUN	BALAT	SAYAS	TMPOL(a)	GENTS	BRSAN	TMPOL(b)	HURGZ
AR (t=0)	-0.0044	0.0406	**0.1972**	0.0617	**0.0359**	-0.0547	0.0094	0.0271	**0.0434**	-0.0392	0.0526	-0.0107	0.0107	-0.0053	0.0294	-0.0043
Test stat	-0.22	0.69	**3.96**	1.16	**2.14**	-0.95	0.14	0.75	**3.31**	-1.71	1.53	-0.22	0.69	-0.33	1.17	-0.11
CARs(-10;-1)	0.0131	0.1186	-0.0152	0.0335	0.0530	-0.0088	-0.0421	0.0233	-0.0362	-0.0021	-0.0166	-0.0772	-0.0388	-0.0358	0.0616	0.0680
Test stat	0.20	0.61	-0.09	0.19	0.95	-0.05	-0.19	0.19	-0.83	-0.03	-0.15	-0.48	-0.76	-0.68	0.74	0.54
CARs(+1;+10)	0.0296	0.0440	-0.0159	0.0165	0.0915	-0.0815	-0.1991	-0.1381	**-0.0859**	0.0133	-0.0495	-0.1435	0.0121	-0.0111	-0.0006	-0.0688
Test stat	0.46	0.22	-0.10	0.09	1.65	-0.43	-0.92	-1.15	**-1.97**	0.17	-0.43	-0.89	0.24	-0.21	-0.01	-0.54
CARs(-10;+10)	0.0384	0.2032	0.1660	0.1116	**0.1804**	-0.1450	-0.2318	-0.0877	-0.0786	-0.0281	-0.0135	-0.2314	-0.0161	-0.0522	0.0904	-0.0051
Test stat	0.43	0.75	0.73	0.46	**2.35**	-0.55	-0.77	-0.53	-1.31	-0.27	-0.09	-1.04	-0.23	-0.72	0.79	-0.03
CARs(-5;+5)	0.0318	0.0966	0.1706	0.0935	**0.2021**	-0.1068	-0.0460	0.0168	-0.0419	0.0708	0.0400	0.0388	-0.0822	-0.0289	0.0486	-0.0757
Test stat	0.49	0.49	1.03	0.53	**3.63**	-0.56	-0.21	0.14	-0.96	0.93	0.35	0.24	-1.61	-0.55	0.58	-0.60
CARs(-1;+1)	-0.0022	0.0496	**0.3789**	0.1367	0.0553	-0.0344	0.0140	0.0084	0.0126	-0.0418	0.0355	-0.0462	0.0047	-0.0411	0.0555	-0.0214
Test stat	-0.07	0.48	**4.39**	1.48	1.90	-0.34	0.12	0.13	0.55	-1.05	0.60	-0.55	0.17	-1.49	1.28	-0.32

Individual company results displayed in Table 2 reveal that while most of the companies in the sample experience positive abnormal return on the day of announcement, 3 of the companies (EKIZ(a), DAGI and ULUUN) have been found to be highly significant, suggesting an immediate positive reaction to the event. For EKIZ(a) the results, taken together with the financial aspects provided in Table 1, may be interpreted as investors' reward for company's effort to reduce the debt. During ten trading days before the event (-10;-1) none of the companies have significant CARs, which is in favour of no leakage of information before the event. In the post-announcement period (+1; +10), only one company (ULUUN) has a significant CAR of -8%, suggesting an adjustment downward after the jump on the announcement day. CARs for 3, 11 and 21 day periods centered on the announcement day, show a significantly positive performance of 18% within (-10; +10) and of 20% within (-5; +5) for DAGI. When a more narrow event window is considered (-1; +1), a highly significant positive CAR of 37% is realised by EKIZ(a).

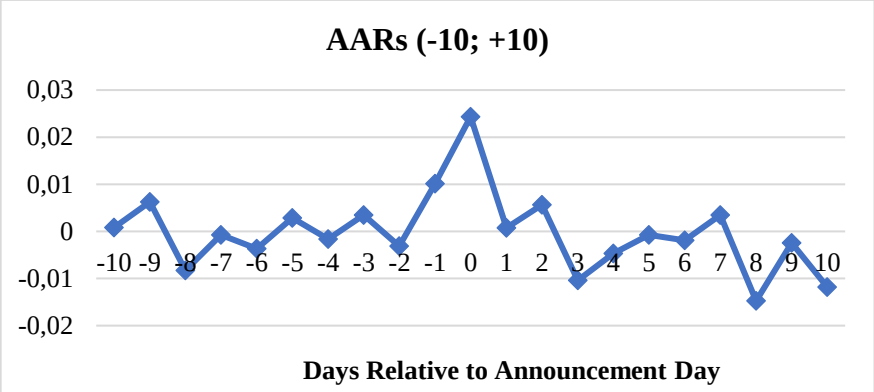
In order to analyse the average effects, the aggregate-level results must be examined (Brooks, 2014: 647). Table 3 reports the AARs and CAARs for the event period.

Table 3. Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs) for Manufacturing Companies Listed on Borsa Istanbul (2016-2017)

Event Period	AARs	T-stat	CAARs
-10	0.0008	0.0844	0.0008
-9	0.0062	0.6317	0.0071
-8	-0.0083	-0.8380	-0.0012
-7	-0.0007	-0.0721	-0.0019
-6	-0.0036	-0.3712	-0.0056
-5	0.0028	0.2892	-0.0027
-4	-0.0016	-0.1656	-0.0043
-3	0.0034	0.3507	-0.0009
-2	-0.0030	-0.3122	-0.0040
-1	0.0101	1.0211	0.0061
0	**0.0243**	**2.4516**	**0.0304**
1	0.0007	0.0783	0.0312
2	0.0056	0.5672	0.0368
3	-0.0103	-1.0436	0.0265
4	-0.0046	-0.4693	0.0218
5	-0.0007	-0.0731	0.0211
6	-0.0018	-0.1879	0.0192
7	0.0034	0.3518	0.0227
8	-0.0147	-1.4865	0.0080
9	-0.0024	-0.2430	0.0055
10	-0.0118	-1.1900	-0.0062

As depicted in Table 3 and Figure 1 daily AARs surrounding the announcement (-1, +2) are positive but only statistically significant on the announcement day (2.43%), implying that overall market participants perceived the tangible asset sales as a positive surprise. Thus, the null hypotheses that the event has no impact is rejected providing evidence of the announcement effect on day 0 (t=0). These findings are similar to results of Alexander et al. (1984) for US, Gadad and Thomas (2005) for UK, Huang and Chen (2012) for China, Sun (2012) for Taiwan and Eyüboğlu and Bulut (2016) for Turkey, that found positive significant AARs on announcement day. The fluctuation of stock returns in the pre-announcement period can be interpreted as no leakage of information that affected stock returns prior to the event. The post announcement period, however, shows negative but not statistically significant AARs starting with t=+3, suggesting a realignment of stock prices following the immediate effect occurred on the announcement day.

Figure 1. Average Abnormal Returns (AARs) from day -10 to +10

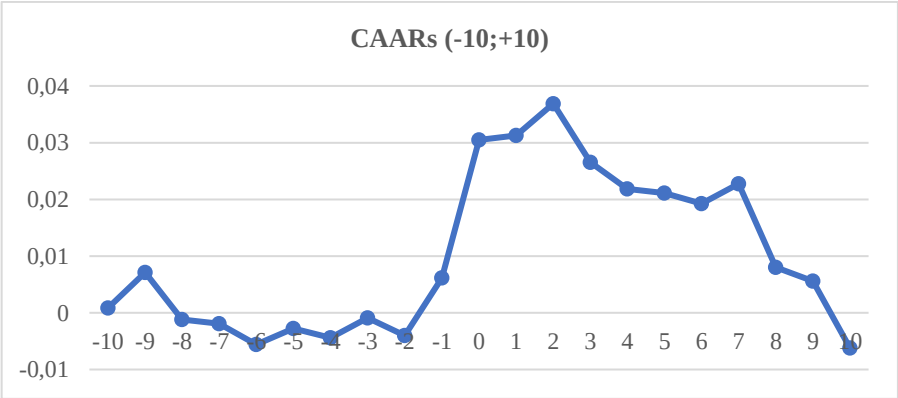


To make inferences about the overall effect of the tangible asset sales announcement in the event period the CAARs should be examined. Table 4 reports the CAARs calculated for different length periods (T) around the event.

Table 4. Cumulative Average Abnormal Returns for Different Periods (T)

T	CAARs	T-stat
(-10;+10)	-0.0062	-0.1367
(-10;-1)	0.0061	0.1863
(+1;+10)	-0.0366	-1.1144
(-5;+5)	0.0267	0.8123
(-1;+1)	**0.0352**	**2.0502**

Figure 2. Cumulative Average Abnormal Returns for the Event Window (-10; +10)



As illustrated in Figure 2, the CAAR for the whole event window (-10; +10) show a stable pattern in the days preceding the event, suggesting that overall the market did not anticipate the event, a jump -as expected- in the day of the announcement but a drift downward toward day +10, indicating that the event has a temporary positive effect on stock returns. However, the results have found not to be statistically significant in the interval (-10; +10), pre-announcement (-10; -1) and the post-announcement (+1; +10) periods. For a more narrow window around the event (-5; +5) the CAAR is positive (2.67%). As Table 4 reveals,

no statistically significant result suggest an overall effect on shareholder wealth neither before the announcement nor in the following days. When a more event specific window (-1; +1) is considered, the CAAR rises to 3.52%, which is statistically significant confirming the one day effect of the announcement. These findings are consistent with the results found by Otlu et al. (2012) and Sun (2012) among other studies providing evidence that the impact of tangible asset sales on stock returns is significantly positive in the period surrounding announcement day.

6. Conclusion

Tangible asset sales are often addressed as a part of financial and organizational restructuring strategies of companies. As a means of generating finance to meet new opportunities or reduce debt, disposal of these assets may allow companies redesign the asset structure on their way to maximizing firm value.

The sale of tangible fixed assets is undoubtedly a resource for companies. Positive financial aspects such as increasing the liquidity of the firm, debt repayment and funding new projects or organizational benefits like increasing efficiency and focus on core activities are generally associated with a positive impact on stock returns, having an enhancing effect on shareholder wealth. However, by selling its tangible assets, a company meanwhile may be deprieved of a future increase in value of sold assets or exposed to risks arising from its inability to use the tangible assets as a collateral (Akgüç, 2010: 954). These negative financial aspects or agency problems like the misallocation of the proceeds can cause investors' negative reaction to asset sales.

In this study, the impact of tangible asset sales announcements of manufacturing companies listed in Borsa Istanbul on stock returns was examined employing event study method. The sample consist of 16 announcements of 14 manufacturing companies that disposed tangible assets between January, 2016 and December, 2017. Aggregate-level findings reveal a significantly positive average abnormal return of 2.45% on announcement day, suggesting that, in general, tangible asset sales announcements overall are perceived by investors as positive news. Consequently, to make inferences about the overall effect surrounding the event the cumulative abnormal returns at firm level and cumulative average abnormal returns for different length periods have been investigated. The pre-announcement period show a stable pattern, which is in favour of no leakage of information before the event. The post-announcement period, however, reveal a downward adjustment after the jump on announcement day. According to the results, only in the most event specific window (-1; +1) the cumulative average abnormal returns are significantly positive indicating that the disclosure of tangible asset sales conveys positive information to the market participants. The results are consistent with the studies of Otlu et al. (2012) and Eyüboğlu and Bulut (2016) for Turkish stock market and provide additional evidence on the immediate effect of the tangible fixed assets sales announcements in manufacturing industry.

Further research may consider a longer period of study and a different industry to compare the results, or may focus on different firm characteristics when constructing the sample.

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Appendix 1. List of the Manufacturing Companies in Borsa Istanbul Disclosing Tangible Asset Sales on PDP between January, 2016 and December, 2017

	BIST Code	Company Name
1	BALAT	BALATACILAR BALATACILIK SANAYİ VE TİCARET A.Ş.
2	BRKO	BİRKO BİRLEŞİK KOYUNLULULAR MENSUCAT TİCARET VE SANAYİ A.Ş.
3	BRSAN	BORUSAN MANNESMANN BORU SANAYİ VE TİCARET A.Ş.
4	DAGI	DAGİ GİYİM SANAYİ VE TİCARET A.Ş.
5	DOKTA	DÖKTAŞ DÖKÜMCÜLÜK TİCARET VE SANAYİ A.Ş.
6	EKIZ	EKİZ KİMYA SANAYİ VE TİCARET A.Ş.
7	GENTS	GENTAŞ GENEL METAL SANAYİ VE TİCARET A.Ş.
8	HURGZ	HÜRRİYET GAZETECİLİK VE MATBAACILIK A.Ş.
9	KRSAN	KARSUSAN KARADENİZ SU ÜRÜNLERİ SANAYİİ A.Ş.
10	OZBAL	ÖZBAL ÇELİK BORU SANAYİ TİCARET VE TAAHHÜT A.Ş.
11	SAYAS	SAY REKLAMCILIK YAPI DEKORASYON PROJE TAAHHÜT SANAYİ VE TİCARET A.Ş.
12	TMPOL	TEMAPOL POLİMER PLASTİK VE İNŞAAT SANAYİ TİCARET A.Ş.
13	TUCLK	TUĞÇELİK ALÜMİNYUM VE METAL MAMÜLLERİ SANAYİ VE TİCARET A.Ş.
14	ULUUN	ULUSOY UN SANAYİ VE TİCARET A.Ş.

Source: PDP (2018), https://www.kap.org.tr/en/Sektorler (Access Date: 01.06.2018)