

Does the response of competitors to privatization announcements reflect competitive or industry-wide information effects? International evidence[☆]

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Abstract

We examine the stock price reaction of rival firms to the announcement of the privatization of their industry counterparts to infer information about the intra-industry effects of privatization. We find that the rival firms reacted negatively to the privatization announcements, suggesting that the announcement effects reflect competitive rather than positive industry effects. The reaction is stronger for industry counterparts in low economic freedom countries than those in high economic freedom countries. Interestingly, we also find that full privatization announcements generate larger negative abnormal returns for rival firms than partial privatization announcements where the privatized firm gains only partial autonomy from the government. In this regard, we find that, as the proportion of government ownership reduces, subsequent partial privatization announcement elicits stronger market reaction from rival firms. The negative abnormal returns earned by shareholders of rival firms are not due to price pressure and portfolio rebalancing effects resulting from index composition changes. We conclude that the negative effects documented for the rival firms reflect investors' concern about the potential competitive effects resulting from privatization of the state enterprise.

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1. Introduction

It is well documented that state-owned enterprises (SOEs) are ‘inefficient’ as compared to their private counterparts (see for example, Boycko et al., 1996). The poor performance of state enterprises has, inter alia, been attributed to the realization of social and political objectives that involve wealth redistribution rather than wealth creation (Krueger, 1999) and to the lack of managerial incentives for better performance. Prior empirical studies show that privatization (especially share issue privatization) leads to improvements in operating performance because the new competitive environment and the monitoring role of the stock market drive managers towards efficiency and profitability objectives.¹ As a result of these redeeming features, privatization has become a notable tool for restructuring state-owned enterprises. Governments of all persuasions in both developed and developing countries have privatized state-owned enterprises through the sale of shares to the public.

The popularity of privatization also stems, in part, from the large revenues that governments can generate from the sale without raising taxes or cutting back programs. According to Gibbons (2000), by mid-1999 the amount of money raised by governments around the world through privatization programs exceeded US\$1 trillion, with the average yearly revenue being around US \$140 billion. More importantly however, governments adopt privatization programs with the view to improving the operating and financial performance of state enterprises by exposing the firms to market forces and competition. Privatization usually proceeds deregulation, which in turn paves the way for new players to enter the industry; hence the newly privatized firms may have to compete with other firms for business and market share.² Share issue privatization exposes the firm to the discipline of the product and capital markets, increases competition, and provides the necessary incentives for improving performance. The trading of the firm’s shares on the stock exchange and the attendant monitoring of the firm’s performance by various stakeholders, and the disciplinary nature of the market for corporate control make the managers of the privatized firm more accountable to shareholders. Under these circumstances, the newly privatized firm may become more aggressive, efficient and profitable.

Privatization occurs partly because governments want to improve the efficiency and competitiveness of the privatized firms. Because there is no stock market data on the privatized firm at the time of the privatization, it is not possible to determine investors’ reaction to the privatization announcement regarding the expected gains in efficiency and competitiveness of the privatized firms. Eckel et al. (1997) argue that the stock market’s expectation of the efficiency of the privatized firm can be inferred from changes in the rival firms’ stock price following the privatization announcement. While there is a large amount of empirical research that examines the operating performance of privatized firms (see Megginson and Netter, 1998 for a survey of this literature), most of the studies have focused primarily on the privatized firms, and less attention has been paid to questions concerning the rival firms’ reaction to privatization announcements. Such analysis can generate information that may be relevant to investors who are participating in these equity offerings with a view to making profits, in particular, in the short run.

¹ For example, Boardman and Vining (1989), Megginson et al. (1994), Boubakri and Cosset (1998) and Otchere and Chan (2003) show that privatized firms increase sales, capital investment, operating efficiency and profitability in the post privatization period.

² Vickers and Yarrow (1989) identify competition as a major determinant of post privatization performance improvements of privatized firms.

In this paper, we build on prior studies by focusing on the valuation effects of privatization announcements on rival firms. We conjecture that if privatization creates a competitive environment and incentives for better performance for the privatized firms, then a more efficient competitor will appear in the industry, as the privatization process releases the former state enterprise from control and interference of the government. The privatization of a state enterprise could thus hurt rival firms through increased competition from the reinvigorated, more aggressive, and perhaps more efficient newly privatized firm that, by virtue of its hitherto monopolistic position could have immense competitive advantage and market power.³ As a result, rival firms could react negatively to privatization announcements if investors believe that there is going to be a more efficient and aggressive competitor in the industry whose operations can possibly lead to fall in product prices and, hence, erode the profitability of competitors.

Alternatively, the privatization could bode well for the whole industry if, for example, it results in the relaxation of the rules of operations. The industry could also attract more financial analyst coverage and institutional investors which, in turn, could make the whole industry more transparent. Privatization announcements could thus send positive information about the future prospects of the industry rather than negative competitive effects on the rival firms. We contribute to the literature by analyzing a sample of 121 share issue privatizations and the reaction of 314 rival firms from 29 countries and 28 industries to privatization announcements. In addition, we examine the differential reaction of rivals to privatization announcements in high economic freedom and low economic freedom countries, non-competitive and competitive industries and full and partial privatization announcements.

First, consistent with the conjecture that privatization could hurt competitors, we find that rival firms reacted negatively to privatization announcements. On the announcement day, the rival firms lost a small but significant abnormal returns 0.54% (p -value=0.004). For the 3-days (5-days) surrounding the privatization announcement day, the rival firms' shareholders lost 0.43% (0.57%) of their investments. The rival firms' reaction following the privatization announcements reflects the market's concerns about the potential competitive effects of privatization. Second, we find that the reaction of the rival firms is stronger in low economic freedom countries than in countries with high economic freedom. For the 21-days surrounding the privatization announcement date, the shareholders of rival firms in low economic freedom (developing) countries lost 1.81% of their wealth, while those in high economic freedom countries realized an insignificant return of -0.60%. If the efficiency of the privatized firms can be inferred from the rival firms' stock price reaction to privatization, then these results imply that the privatized firms in low economic freedom countries are likely to realize more gains than those in high economic freedom countries. This assertion is consistent with the results of Boubakri and Cosset (1998) and D'Souza et al. (2000) who document stronger performance improvements for privatized firms in developing countries.

Third, we find that the magnitude of the rival firms' reaction to full privatization announcement is larger than that of partial privatization. In the 3-days surrounding the announcement day (day -1,+1), the rivals of fully privatized firms lost 1.25% (1.35%) of their value while rivals of firms that were partially privatized only lost 0.43% (0.11%) of their wealth. Interestingly also, we find that the rival firms' reaction to partial privatization is positively related to the degree of privatization. As the proportion of government ownership in the privatized firm reduces (degree of

³ There is evidence that privatized firms reduce employment levels subsequent to privatization (see for example, Ramamurti, 1997; LaPorta and Lopez-de-Silanes, 1999; Dewenter and Malatesta, 2001; Otchere and Chan, 2003; and Otchere, 2005).

privatization increases), subsequent partial privatization generates stronger negative market reaction from the rival firms. We further examine the possibility that the negative abnormal returns earned by the rivals firms are due to price pressure effects resulting from portfolio rebalancing activities of index funds. Our results do not support the alternative hypothesis that price pressure resulting from portfolio rebalancing activity of index funds accounts for the negative abnormal returns experienced by the rival firms.

The remainder of the paper is organized as follows: In Section 2, we discuss our basic hypotheses regarding the effects of privatization announcements on competitors' stock price. Section 3 deals with the data and methodology. The results are presented and analyzed in Section 4. We examine plausible alternative explanations for our results in Section 5. We relate the results of our study to prior literature in Section 6. Section 7 concludes the study.

2. Background

2.1. Privatization announcements and competitors' stock price effects: The potential for competitive and information effects

The theoretical literature on privatization identifies two types of problems associated with government ownership, namely the political and managerial incentive problems. The political problem proposed by [Shleifer and Vishny \(1994\)](#) suggests that political interference from governments distorts the objectives of state enterprises. Governments use state enterprises to pursue multiple and, sometimes, conflicting goals such as welfare maximization at the expense of profit maximization. The managerial incentive problem discussed by [Vickers and Yarrow \(1989\)](#) also suggests that the lack of monitoring may result in low-powered incentives on the part of managers to improve performance. Privatization however brings about a change in the firm's objectives and this change, together with a change in the managers' incentives, often leads to a more focused and efficient organization [Megginson et al. \(1994\)](#) and [D'Souza et al. \(2000\)](#). Public trading of the firm's shares also facilitates the adoption of market oriented compensation plans, as management compensation can be tied to the firm's stock price. The pressures from product market competition may also compel the newly privatized firms to operate more efficiently, aggressively and competitively if they are to survive in the post privatization period. This rejuvenation can affect the rival firms' performance.

Under government ownership, most privatized firms had strong market power but they had to endure pressures from the government in relation to their pricing and investment decisions. Following privatization however, most privatized firms usually retain significant market power and may continue to operate as defacto monopolies (on account of their market power) while being relieved of the requirements to follow government directives designed to promote social goals. The privatized firms may be able to exploit this market power to their advantage to enhance their competitive position. They can become a stronger competitive force for the rivals in the industry because of their dominant position in the product market. This advantage can translate into above average performance.

The fundamental basis of the above average performance in the long run is (sustainable) competitive advantage that the privatized firms may have over their rivals. Their dominance in the market through control over access to infrastructure will give them a competitive advantage. Their competitive advantage over rivals may also lie in their cost leadership and market share ([Porter, 1998](#)). The source of the cost advantage may include pursuit of economies of scale and especially ownership of the infrastructure. This can help the newly privatized firms to achieve and sustain

overall cost leadership that can translate into strong competitive edge over rivals. The privatized firms, with their significant market power, could realize greater post privatization gains at the expense of their rivals. The privatization of a state enterprise could thus hurt rivals through increased competition, as rivals (some of which may be relatively young in the industry) may be forced to discount prices to gain or retain their market share. From this perspective, the privatization announcement may send an unfavorable signal about increased level of competition in the industry. If investors believe that there is now a rejuvenated, more efficient and aggressive competitor in the industry whose operations can lead to falls in product prices and hence erode the profitability of the rivals, then the rival firms will react negatively to privatization announcements.⁴

Privatization announcements could also generate positive information effects for the rival firms in several ways. First, privatization could lead to the relaxation of the rules of operations in the industry. Deregulation that accompanies or precedes privatization could unlock growth opportunities to all firms in the industry. Second, the presence of a newly privatized, usually large firm in the industry could attract more analyst coverage and institutional interest and this may make the whole industry more transparent. This increased attention and focus, emanating from the presence of such large and visible players in the industry, can lead to efficient valuation of the industry as a whole (Subrahmanyam and Titman, 1999). To the extent that investors perceive that industry counterparts will benefit from the increased focus and attention on the industry, rival firms will benefit from privatization announcements.

Third, prior literature shows that privatization leads to better performance of the privatized firm. The presence of a rejuvenated (privatized) firm could spur the rival firms to perform better if they are not to lose market share to the privatized firm. Thus, if investors expect that the rival firms achieve parallel gains, then their stock prices would increase in response to privatization announcements. This is a kick-in-the-arm effect. Fourth, privatization usually results in the loss of non-competitive incentives such as subsidies and tax cuts that the former SOE used to enjoy. The loss of these benefits could hurt the competitive position of the newly privatized firm. Alternatively, the fact that all firms may now be operating on a fair playing field will make the industry counterparts relatively more competitive than before. Privatization announcements could thus send positive information about the future prospects of the industry rivals. We analyze the share price effects of privatization announcements on rival firms with a view to ascertaining the nature of the information contained in privatization announcements. If the announcements

⁴ One mechanism through which privatized firms enhance their competitiveness is to reduce their marginal cost sometimes by shedding labor in the post privatization period. In a theoretical paper, Boycko et al. (1996) suggest that SOEs are over-staffed and would tend to reduce employment levels in the post privatization period because of the profit maximization objective and the abandonment of social goals. However, the empirical evidence on the impact of privatization on employment levels appears inconclusive. On one hand, privatization might lead to an increase in employment levels since privatization unlocks growth opportunities for the former SOEs. The privatized firms could respond to the improvement in their prospects by employing more labor. Megginson et al. (1994) and Boubakri and Cosset (1998) find evidence of increase in employment levels following privatization. On the other hand, Ramamurti (1997), LaPorta and Lopez-de-Silanes (1999), Dewenter and Malatesta (2001), and Otchere and Chan (2003) and Otchere (2005) document a significant decrease in employment. Sun and Tong (2003) find that employment levels for partially privatized Chinese firms increase, though the increase is not statistically significant. Gupta (2005) also shows that employment levels do not change following the partial privatization of Indian firms. The evidence relating to partial privatization and employment levels has to be viewed against the backdrop that the government may still be in control of the privatized firm and therefore for political reasons, the firm may not be able to reduce employment. On balance, the weight of the evidence seems to support the conclusion that privatized firms reduce employment levels in the post privatization period.

contain unfavorable information that indicates a stronger competitive position for the privatized firms, the share price of rival firms would fall. On the other hand, if the privatization announcement is good news for the industry, we would expect positive valuation effects on industry rivals.⁵

2.2. Other testable hypotheses

2.2.1. Rival firms' reaction to privatization announcements in developed and developing capital markets

One of the causes of the poor performance of SOEs has been the lack of monitoring of the firm's performance from stakeholders. The public listing of the firm's shares following privatization and the attendant monitoring of the firm's performance, together with the linking of managers' remuneration to the firm's stock performance, could spur management on to become more efficient, productive and accountable. Megginson et al. (1994) and D'Souza et al. (2000) suggest that capital market monitoring that accompanies privatization triggers improvements in performance. Holmstrom and Tirole (1998) however argue that the benefits from capital market monitoring depend on the level of sophistication of the market. A well-developed and active capital market allows the newly privatized firms greater access to capital needed to finance profitable projects. Such markets are also likely to be informationally efficient. Subrahmanyam and Titman (1999) argue that the presence of newly privatized firms in an industry can attract more information gathering about the industry, thus making the prices of all firms in the industry more efficiently priced. However, in developing countries where information gathering may be inefficient and costly, firms may not be efficiently priced.

Firms in developing countries could face less market monitoring since investors may have less access to information as well as lack the power to sanction managerial performance. In addition, shareholder activism is low in those countries. Consequently, the privatized firm may not be very aggressive; hence the magnitude of the rival firms' reaction to privatization announcements in developing countries could be less than that in developed countries. On the other hand, it is possible that the rival firms' reaction to privatization announcements in developing countries where information gathering may be costly could be greater than that determined by fundamentals. We examine the rival firms' differential reaction to privatization announcements in high and low income countries. Though the foregoing argument is cast in terms of a well functioning market it is important to recognize that there are some

⁵ The intra-industry valuation effects of privatization (public sector IPOs) could be greater than those of private sector IPOs. Regulatory changes that follow or precede privatization affect all firms in the industry. For example, privatized firms often operate in industries that are subject to extensive government regulation (e.g. banks, utilities and telecommunications). Dewenter and Malatesta argue that after privatization, governments retain influence over firms through structured regulatory bodies. Uncertainties regarding the nature of the regulatory policy will affect the rivals of the privatized firms. Also, government IPOs are often large, old and well known firms while private company IPOs are mostly relatively new firms. Two implications can be deduced from this feature. First, public sector IPOs or security offerings tend to be of substantial size than private sector IPOs. From the perspective of the intra-industry hypothesis, such large privatization offerings are likely to have significant effects on rival firms than small issues. Second, by virtue of their sizes, industry status and availability of information, there is likely to be more uncertainty in the intrinsic value of small, young firms in new industries of the private sector than public sector IPOs. Following public listing of large companies, the industry attracts more attention. If investors expect the increased focus and attention on the industry to be beneficial to the whole industry, rival firms will benefit from the privatization. These differences make the examination of the rivals firms' reaction to privatization announcements worthwhile. For a detailed comparison of government IPOs and private company IPOs, see Dewenter and Malatesta (2001) for further discussion.

governments in developed countries that may interfere in the operations of the privatized firms for the purpose of creating employment. Therefore, an alternative method of classification based on the degrees of economic freedom is used in this study. We discuss this in detail in Section 3.

2.2.2. Rival firms' reaction to privatization announcements in competitive and non-competitive industries

Prior studies document evidence of stronger output gains for firms in competitive industries (see for example, D'Souza et al., 2000; Megginson et al., 1994; LaPorta and Lopez-de-Silanes, 1999).⁶ Boardman and Laurin (1998) argue that privatized firms such as utilities that operate in non-competitive markets and are therefore less subject to the discipline of competitive pressures would be less likely to benefit from privatization. Given their market dominance and near monopoly status, privatized firms operating in non-competitive sectors may not have the incentive to restructure and aggressively pursue business. Under such circumstances, the rival firms' reaction to privatization announcements will be less in non-competitive industries than in competitive industries.

On the other hand, privatized firms in non-competitive industries such as telecommunication and utilities may control the product market through their ownership of the infrastructure and significant market share. Rival firms operating in such industries may have to depend on the former monopoly for access to infrastructure and could therefore suffer greatly from increased competition, especially if, in the case of power generation utilities, the privatized firm owns the power generation, transmission and retail components of the business. Similarly, for privatized telecoms, if the telecommunication network is not separated from the retail business, competitors may have to depend on the privatized firm for access to the network infrastructure. In that case, the network pricing power of the privatized firm will impact negatively on rival firms. This anti-competitive configuration will make the position of the privatized firm similar to that of a trucking company that owns the majority of a nation's highways and charges its rivals for access. This dominance can impact negatively on the financial position of the rivals. In competitive industries however, all firms may be operating on a level playing field following privatization, with the hitherto non-competitive incentives that the former monopoly used to enjoy taken away. Privatization could thus hurt the former SOE's position but enhance the rival firms' relative competitive position. Also, the presence of a new and rejuvenated privatized firm could even spur the rival firms to become more competitive. We test the conjecture that the reaction of rival firms to privatization announcements in competitive industries is significantly different from that of rivals in non-competitive industries.

2.2.3. Differential reaction to partial and full privatization announcements

Privatization often leads to a change in the goals of the firm, with the privatized firm usually focusing on profit maximization, efficiency and shareholder value creation. However, the degree to which these goals can be achieved depends on whether or not the government fully privatizes the state enterprise. Continued government ownership in a partially privatized firm may hinder the managers' ability to restructure the firm since the government may continue to interfere with the firm's operations. This is likely to be the case if the partially privatized firm decides to pursue economically profitable but politically unpopular investment decisions such as reducing staff

⁶ We define non-competitive industries as telecommunication, banks and utilities (water and electricity) and all others as competitive industries.

levels and closing down unprofitable divisions that may be located in politically sensitive constituencies. Consequently, continued government ownership may weaken the signaling content of privatization announcements so that the valuation effects may be weaker than that of full privatization. If efficiency and competitive considerations are the reasons for the privatization, then partial and full privatization would have different valuation effects on rival firms because the partially privatized firms will have little autonomy in pursuing its goals and becoming more competitive.

Prior studies including Boardman and Vining (1989) and Boycko et al. (1996) suggest that in order to facilitate the restructuring of state enterprises, both cash flow and control rights should pass from governments to private investors, i.e. firms should be fully privatized. Boubakri and Cosset (1998) find that increases in profitability and efficiency are significantly larger for control privatizations (in which governments fully surrender voting control) than for revenue privatizations (in which governments sell a minority ownership stake). This suggests that partial privatization may not achieve the desired effects of improving the profitability and efficiency of the former SOEs given that the firms may still be controlled by the state. Thus if corporate governance is a factor in enhancing the efficiency and competitiveness of the privatized firm, then full privatization could generate greater efficiency and competitive gains than partial privatization. We test whether significant government ownership of the privatized firm affects the firm's competitive position and therefore the valuation effects of the privatization announcements on rival firms. We hypothesize that the rival firms' reaction to full privatization announcements is greater than that associated with partial privatization announcements.

3. Data and research design

The data used in this study come from a variety of sources. The initial sample of privatized firms is drawn from the supplemental appendix to Jones et al. (1999) and consists of privatizations that occurred between 1981 and 2001. We identified the announcement dates from Reuters' news service archives. The stock price data come from Datastream International or Bloomberg. To be included in the study, we require that the privatization announcement date and stock price data be available from the aforementioned sources. The privatized firm should also have industry counterparts in the same country at the time of the announcement. For 121 share issue privatizations, we were able to obtain the necessary data.⁷ The rival firms were selected on the basis of their industry category and market capitalization. To keep the data collection task manageable, we selected at most six rivals per privatization. In cases where there were less than 6 rivals, we included all of them in the study without imposing any constraint. Where there were more than 6 industry rivals, we included rivals that had market capitalization in the range of 80%–120% of that of the privatized firm one month after the privatization.⁸ The final sample comprises 121 share issue privatizations and 314 rival firms from 28 industries in 29 countries.

Political risk is a major concern for investors. The institutional environment and country risk play an important role in attracting investors and this in turn can affect the liquidity and

⁷ We analyzed the effects of announcements that led to the privatization of the SOE but not the announcements relating to privatization that did not materialize.

⁸ Barber and Lyon (1997), who found that matching sample firms of similar sizes to control firms yields well-specified tests, employed filters similar to what we use in this study.

development of the market.⁹ We employ a proxy for the institutional environment and country risk from the Economic Freedom of the World Institute to classify the sample into two with the view to ascertaining the extent to which interference by governments influences investors' reaction to privatization announcements. The economic freedom indicator is used as a proxy for the stability of the government and its ability to honor its commitment regarding the economic reforms and privatization. The data used by the Institute to determine the degree of economic freedom in a country include the legal structure and security of property-rights in the country, freedom to trade internationally, international capital market controls, access of citizens to foreign capital markets, foreign access to domestic capital markets, and restrictions on the freedom of citizens to engage in capital market exchange with foreigners (*Economic Freedom of the World Index, 2005*). All these variables reflect political risk, contract repudiation, rule of law, corruption and ethnic tension, which in turn affect property-rights and the country's ability to attract investors to the market.

The Economic Freedom ratings provided by the Institute are based on a zero-to-ten-point scale, with 10 being most free (low risk) and zero the least free (high risk). We use the index to classify the sample into two, countries with a rating of 7 out of 10 or a ranking of ≤ 40 out of 123 countries ranked by the Institute are considered high economic freedom countries and those with ratings of < 7 or a ranking of > 41 out of 123 are considered as low economic freedom countries. Table 1 presents the distribution of the privatized firms and their rivals. Panel A shows the distribution of the sample firms in high economic freedom countries (HEFC), Panel B shows the same for low economic freedom countries (LEFC) while Panels C and D show the breakdown of the sample firms into competitive and non-competitive industries respectively. Seventy-one percent of the privatized firms are from high economic freedom countries and the rest are from low economic freedom countries. India has the highest number of privatized firms in the sample (12), followed by France (11) and the UK; Canada, Spain and China have 8 privatizations apiece. About 40% of the privatized firms are in non-competitive industries (*Economic Freedom of the World Index, 2005*). About 11% of the firms' are resource companies while the remaining firms are in different manufacturing and transport service industries.

The rival firms' reaction to privatization announcement is measured by calculating their abnormal returns around the privatization announcement date. We calculated abnormal returns using the market model.¹⁰ Designating the announcement date as day 0, we estimated the regression parameters using 200 observations prior to day -21 . The regression parameters, together with the returns of the market index of the respective countries, were used to calculate expected returns. Abnormal returns were calculated as the difference between the observed returns and the expected returns. The abnormal returns were in turn averaged across the sample for each day to obtain the daily average abnormal returns. These returns were then cumulated over different event windows from day -20 to day $+20$. For the privatized firms, we calculated returns in two ways. For the initial privatization announcement, we calculated raw returns for the 20-day

⁹ Doidge et al. (2004) argue that listing in a highly reputable exchange enhances the legal protection of the firm's investors and reduces the agency cost of controlling shareholders. Lombardo and Pagano (2000) and Bortolotti et al. (2000) also show that the legal and institutional environment has a significant impact on expected returns. The more stable the institutional and political environments, the lower the cost of capital. Liquidity and returns are stronger for countries with stronger property rights protection than countries with weaker property right protection laws and low standards of corporate governance. Also, a stable government with strong commitment to economic reforms has the advantage of reducing investors' concern about future policy reversals (Perotti, 1995; Perotti and van Oijen, 2001). This feature explains why in spite of the liberalization of financial markets and the increased privatization of SOEs in developing countries especially in Africa, capital flows have not increased significantly (Lemma and Otchere, 2005).

¹⁰ We use the Dimson's adjustment procedure to correct for non-synchronous trading.

Table 1
Distribution of sample

Country	Level of economic freedom**	Economic freedom ranking*	No. of privatizations	No. of rivals
<i>Panel A: High economic freedom countries</i>				
Singapore	8.5	3	3	5
New Zealand	8.4	5	1	1
UK	8.2	6	8	14
Canada	8.1	8	8	23
Australia	8	10	7	33
Finland	7.7	13	3	3
Germany	7.6	15	5	19
Austria	7.5	16	2	2
Sweden	7.4	20	1	3
Spain	7.4	22	8	14
Portugal	7.3	23	5	7
Japan	7.3	24	5	17
Taiwan	7.2	30	2	4
Italy	7.1	36	6	16
France	7	38	11	21
Sub-total			75	182
<i>Panel B: High economic freedom countries</i>				
Peru	6.9	41	1	2
Greece	6.9	42	3	18
Malaysia	6.8	43	3	5
South Africa	6.8	44	1	1
Hungary	6.7	46	1	1
Czech Rep.	6.7	49	3	4
Egypt	6.7	51	1	1
South Korea	6.6	53	4	17
Israel	6.5	56	4	13
Poland	6.4	67	3	6
India	6.2	72	12	35
Indonesia	5.9	82	1	6
China	5.8	88	8	20
Turkey	5.8	90	1	3
Sub-total			46	132
Total			121	314
<i>Panel C: Non-competitive industries</i>				
Telecom			15	39
Banks			31	97
Utilities			3	9
Sub-total			49	145
<i>Panel D: Competitive industries</i>				
Energy/resources			13	31
Manufacturing			48	117
Transport			9	19
Others			2	2
Sub-total			72	169

* out of 123 countries (in 2000); ** out of 10 (where 10 is the least risky).

period following the initial public offering. For subsequent privatization announcements, we calculated abnormal returns employing the same procedure used to calculate the rival firms' abnormal returns. We test the significance of the reaction by dividing the abnormal returns by their standard errors.

4. Results

4.1. Main results

The abnormal returns realized by the rival firms around the time of the privatization announcements are presented in Table 2. Panel A shows the daily abnormal returns while Panel B presents the cumulative abnormal returns for different event windows surrounding the announcement date. Consistent with the assertion that privatization could hurt rival firms, we find that the rival firms reacted negatively to the privatization announcements. Shareholders of the rival firms earned small but significant abnormal returns of -0.54% (t -statistic $= -2.93$) on the announcement day.

Table 2
Rival firms' reaction to privatization announcements

Day(s)	% Return	<i>t</i> -statistic	<i>p</i> -value	% Negative	<i>z</i> -statistic
<i>Panel A: Abnormal returns around the time of the privatization announcement (N = 314)</i>					
-10	-0.40	-1.84	0.07	58	2.82**
-9	0.08	0.31	0.76	56	2.03*
-8	-0.02	-0.05	0.96	52	0.68
-7	0.09	0.37	0.71	54	1.35
-6	0.01	0.04	0.97	53	1.02
-5	-0.03	-0.19	0.85	53	1.02
-4	0.02	0.13	0.90	52	0.56
-3	0.04	0.14	0.89	53	1.02
-2	-0.05	-0.19	0.85	57	2.48**
-1	0.03	0.18	0.86	50	0.00
0	-0.54	-2.93	0.01	54	1.24
1	0.08	0.64	0.52	50	0.00
2	-0.10	-0.49	0.63	50	0.11
3	-0.06	-0.33	0.74	50	-0.11
4	0.04	0.18	0.86	51	0.45
5	0.22	0.77	0.44	50	-0.11
6	-0.22	-1.01	0.31	54	1.35
7	-0.09	-0.32	0.75	54	1.35
8	-0.37	-1.62	0.11	53	1.13
9	0.13	0.68	0.50	51	.023
10	0.01	0.01	0.99	55	1.81*
<i>Panel B: Cumulative abnormal returns around the time of the privatization announcement</i>					
CAR _(-1,1)	-0.425	-1.72	0.09	53	1.12
CAR _(-2,2)	-0.570	-1.64	0.10	53	1.12
CAR _(-5,5)	-0.331	-0.58	0.56	53	1.02
CAR _(-10,10)	-1.108	-1.27	0.20	53	1.02
CAR _(-20,20)	-0.684	-0.52	0.60	52	0.68

This table presents the rival firm's abnormal returns over different return intervals. Abnormal returns are calculated (using the market model) as the difference between the firm's returns and the returns of the market index in the respective country. The abnormal returns are cumulated over the -20 to $+20$ interval. The percentage negative is the ratio of firms with negative abnormal returns to the total number of firms. The symbols ***, **, * represent significance at 1%, 5% and 10% respectively.

Significant abnormal returns of -0.40% are also observed ten days before the announcement day. None of the other daily abnormal returns is significant at the 10% level. Also, generally over 50% of the rival firms earned negative abnormal returns on or before the announcement day, with 57% of them experiencing negative abnormal returns on day -2 . We also document negative cumulative abnormal returns for all the event windows around the announcement date. For the 3-days surrounding the privatization announcement date, shareholders of the rival firms lost 0.43% of their wealth (p -value = 0.086). The negative abnormal returns indicate that the rival firms' reaction to the privatization announcements reflects competitive effects rather than positive industry effects.

4.2. Rival firms' reaction to privatization announcements in HEFC and LEFC

Prior studies suggest that privatization in less developed capital markets (countries with low economic freedom) may offer little efficiency gains and performance improvements because the privatized firms may face less market monitoring. This implies that privatization announcements in those countries may not elicit strong reaction from rival firms as they would in developed capital markets. We test this conjecture by examining the rival firms' reaction to privatization announcements in high and low economic freedom countries. The results are presented in Table 3. We find that while shareholders of rival firms in both high economic freedom and low economic freedom countries earned statistically significant abnormal returns of -0.43% and -0.70% respectively on the announcement day, the difference is not significant. However, we document significant abnormal returns of -0.45% (-0.38%) two (five) days prior to the privatization announcement for rivals in low economic freedom countries. These pre-announcement abnormal returns could be due to leakage of information relating to the privatization announcement. No such information effect is observed for rival firms in the high economic freedom countries.

In terms of cumulative abnormal returns, we document negative abnormal returns for the rival firms in low economic freedom countries during most of the event windows. For the 3-days (21-days) surrounding the announcement date, shareholders of the rival firms in low economic freedom countries lost 0.73% (1.81%) of their wealth, while the rivals of privatized firms in the high economic freedom countries earned negative, albeit insignificant, returns of 0.34% (-0.21%). We also observe that a higher percentage of the rival firms in low economic freedom countries reacted negatively to the privatization announcement than in the high economic freedom countries especially in the two days leading up to the privatization announcement, with 58% (60%) of the industry counterparts realizing negative abnormal returns on the announcement date (two days prior to the announcement date). The small size of the rivals' reaction to privatization announcements in high economic freedom countries could be due to the fact that information is readily available in these countries that enables investors to correctly evaluate the impact of the privatization on the rival firms. If the expected impact of privatization on the performance of the privatized firm can be inferred from the rival firms' stock price reaction, then our results support the hypothesis that investors expected the privatized firms in low economic freedom countries to realize greater gains than those in high economic freedom countries. This assertion finds support in the findings of Boubakri and Cosset (1998) and D'Souza, Megginson and Nash (2000) who find evidence of stronger performance improvements for privatized firms in developing countries than in developed countries. As a robustness check, we use the country risk measure compiled by the International Country Risk Guide (ICRG) and the World Bank's country classification (high and low income countries) as proxies for the stability of the government and its ability to honor its commitment regarding privatization. The results are however qualitatively similar and are not reported here. Thus our study provides additional evidence on the differential effects of privatization from a different perspective.

Table 3
Differential reaction rival firms to privatization announcements

Panel A: Returns of rivals of privatized firms in high and low economic freedom countries								
Day(s)	HEFI (<i>N</i> =182)			LEFI (<i>N</i> =132)			Difference (HEFI-LEFI)	
	% Return	<i>t</i> -statistics	% Negative	% Return	<i>t</i> -statistics	% Negative	% Return	<i>t</i> -statistics
−5	0.22	0.92	49	−0.38	−1.83	58*	0.60	1.89*
−4	0.07	0.26	49	−0.03	−0.13	55	0.10	0.27
−3	0.02	0.03	54	0.07	0.25	51	−0.06	−0.10
−2	0.25	0.67	55	−0.45	−2.16	60**	0.70	1.65*
−1	0.17	0.67	50	−0.16	−0.70	49	0.34	0.96
0	−0.43	−1.77*	51	−0.70	−2.44**	58*	0.27	0.72
1	0.05	0.28	53	0.13	0.64	46	−0.09	−0.32
2	−0.38	−1.44	55	0.29	0.92	44	−0.68	−1.63*
3	0.18	0.87	47	−0.38	−1.33	54	0.56	1.59
4	−0.37	−1.43	57*	0.60	1.45	44	−0.97	−1.98**
5	0.28	0.66	51	0.13	0.39	48	0.15	0.27
CAR _(−1,1)	−0.21	−0.69	52	−0.73	−1.75*	55	0.52	1.01
CAR _(−2,2)	−0.34	−0.72	53	−0.88	−1.76*	53	0.54	0.78
CAR _(−5,5)	0.06	0.07	53	−0.86	−1.02	52	0.92	0.80
CAR _(−10,10)	−0.60	−0.47	54	−1.81	−1.64*	52	1.22	0.72
CAR _(−20,20)	−0.21	−0.11	52	−1.34	−0.75	52	1.14	0.44

Panel B: Rival firm's reaction to privatization of firm in competitive and non-competitive industries

Day(s)	Non-competitive (<i>N</i> =145)			Competitive (<i>N</i> =169)			Difference in means		
	% Return	<i>t</i> -statistic	% Negative	% Return	<i>t</i> -statistic	% Negative	Difference	<i>t</i> -statistic	<i>p</i> -value [♦]
−5	0.08	0.26	55	−0.13	−0.76	51	0.20	0.60	0.28
−4	−0.17	−0.52	51	0.19	1.03	52	−0.37	−0.96	0.17
−3	0.44	0.74	52	−0.30	−1.36	54	0.73	1.17	0.12
−2	0.20	0.43	53	−0.25	−1.42	60	0.45	0.92	0.18
−1	0.07	0.23	50	0.003	0.001	50	0.07	0.19	0.42
0	−0.77	−2.39**	55	−0.34	−1.70*	52	−0.42	−1.12	0.13
1	0.17	0.81	45	0.010	0.05	54	0.16	0.61	0.27
2	−0.13	−0.38	51	−0.08	−0.30	50	−0.05	−0.12	0.45
3	−0.12	−0.41	49	−0.01	−0.02	50	−0.11	−0.32	0.37
4	0.01	0.00	52	0.07	0.35	51	−0.07	−0.15	0.44
5	0.02	0.03	52	0.39	1.39	48	−0.38	−0.63	0.27
CAR _(−1,1)	−0.53	−1.34	54	−0.34	−1.09	53	−0.19	−0.39	0.35
CAR _(−2,2)	−0.46	−0.77	52	−0.67	−1.67*	54	0.21	0.29	0.39
CAR _(−5,5)	−0.21	−0.22	54	−0.43	−0.66	52	0.22	0.19	0.43
CAR _(−10,10)	−0.91	−0.61	50	−1.28	−1.30	56	0.37	0.20	0.42
CAR _(−20,20)	1.84	0.88	44	−2.85	−1.73*	59	4.68	1.77	0.04**

♦ These are one-tail test; ***,**,* denote significance at 1%, 5% and 10% respectively.

This table presents the differential reaction of rival firms to privatization announcements. Panel A shows the returns of rivals of privatized firms in high and low economic freedom countries. Panel B presents the reaction of rival firms to privatization announcements in competitive and non-competitive industries. The competitive industries include telecommunication, utilities and banking industries. All other industries are considered as competitive industries. Abnormal returns are calculated (using the market model) as the difference between the rival firm's returns and the returns of the market index in the respective country.

4.3. Rival firms' reaction to privatization announcements in competitive and non-competitive industries

We conjecture that privatized firms operating in non-competitive sectors may not have the incentive to restructure and aggressively pursue business opportunities because of lack of competitive pressures. Hence, the expected effects of privatization, and therefore the rival firms' reaction to privatization announcements, will be less in non-competitive industries than in competitive industries. Alternatively, we submit that privatized firms operating in non-competitive sectors may dominate the product market through their ownership of the infrastructure and this could give them an advantage over competitors who may have to depend on the infrastructure of the former monopolies for business. The competitiveness of rival firms could thus be hampered. We present the abnormal returns earned by the rivals of privatized firms in competitive and non-competitive industries in Panel B of Table 3. We find that while shareholders of both sub-samples earned significantly negative abnormal returns on the announcement day, the magnitude of the returns and the significance level are generally larger for the rivals of privatized firms in competitive industries than in non-competitive sectors. For example, the 5-day (21-day) cumulative abnormal returns earned by the rivals of firms privatized in competitive sectors are -0.67% (-1.28%), while those of rivals in non-competitive sectors are -0.46% (-0.91%). However, the abnormal returns are statistically identical except for the day -20 to 20 window abnormal returns.

The lack of significance between the returns of the two samples may reflect the fact that sometimes prior to privatization these firms go through a corporatization phase, a period in which the SOE is allowed to operate as a profit maximizing firm. Thus, the management of the privatized firm in a non-competitive industry may not have much scope to realize monopoly rents anymore than what those in competitive sectors can realize. This assertion is consistent with the predictions of a theoretical model developed by Errunza and Mazumdar (2000) and the empirical evidence documented by Megginson et al. (1994) and Boubakri and Cosset (1998) who find no statistically significant difference in efficiency gains for privatized firms in competitive and non-competitive markets.¹¹ As argued earlier, for privatized firms that continue to dominate the (non-competitive) product market, privatization may bode ill for the rival firms. The privatized firms' dominance of the product market resulting in part from their ownership of the infrastructure could however give them an advantage over competitors who may have to depend on the infrastructure of the former monopoly. As mentioned earlier, the pricing behavior of such privatized firm could be akin to a trucking company that owns a nation's road network and charges its competitors for access. This is particularly the case in the telecommunication sector where the newly privatized firm may own the telephone network and may have to lease it to its rivals.

The negative abnormal returns earned by the rivals of privatized firms in non-competitive sectors are driven by the telecommunication and utilities sectors. Though not shown here, we find that on the announcement day, rival firms in the telecommunication and utilities sectors lost 2.65% and 1.53% respectively, although the returns of the rivals in the utilities sector are not statistically significant. About 67% of rival telecommunication firms and 78% of rival utilities experienced negative abnormal returns. The rivals of privatized utilities earned a significant return

¹¹ Errunza and Mazumdar (2000) show that SOEs that were better managed prior to privatization and have fully exploited any monopoly power in the product market are less attractive to investors and this tendency is likely to be acute in non-competitive industries. However, for state-owned enterprises that operated competitively even in government hands, the anticipated gains after privatization could be small. Thus there could be no significant difference between the post privatization efficiency gains for privatized firms in non-competitive and competitive sectors and the rival firms' reaction to privatization announcements in competitive and non-competitive sectors would not be significantly different.

of -3.70% in the 5 days surrounding the announcement date.¹² The sign, magnitude and significance of the rival firms' reaction to privatization announcements in the telecommunication and utilities sectors generally support the conjecture that in non-competitive industries where privatized firms may continue to dominate the product market and industry counterparts may have to depend on the former monopoly for access to infrastructure, privatization could hurt the rivals.

4.4. Degree of privatization and rivals firms' reaction

4.4.1. Rival firms' reaction to full and partial privatization announcement

Partial privatization may not achieve the intended objective of improving efficiency because continued state ownership may hinder the operations of the firm. A fully privatized firm on the other hand is more likely to restructure and become aggressive and competitive in its operations. D'Souza et al. (2000) suggest that privatizations that result in the largest amount of private ownership generate the greatest performance improvements. We conjecture that rival firms will react differently to different degrees of privatization, with full privatization eliciting the strongest stock market reaction by industry counterparts. Panel A of Table 4 shows the rival firms' reaction to full and partial privatization announcements. We find that for both full and partial privatizations, the announcements elicited negative stock price reaction from the rivals on the announcement day. Interestingly however, privatizations where government ownership is completely eliminated generated larger negative abnormal returns for rivals of the privatized firms than partial privatization. The announcement day abnormal returns accruing to rivals of fully privatized firms are -1.25% while those of partially privatized firms are -0.43% .

For partial privatizations, the rival firms reacted positively on days 1 and 2. For the 5-day ($CAR_{(-2,2)}$) event window, the rivals of fully privatized firms earned a return of -0.84% but rivals of partially privatized firms earned a positive return of 0.73% , thus generating a statistically significant difference in return of 1.56% . These results suggest that investors expect rival firms to benefit from the continued government ownership of the partially privatized firm. If the market's expectation of the efficiency and competitiveness of the privatized firms can be inferred from the competitors' stock price reaction, then the rival firms' results are consistent with the argument that partially privatized firm would be less efficient and competitive than fully privatized firms. Since the government still controls the partially privatized firms and could use them to pursue social objectives, the rival firms' reaction is not as strong as the case where governments completely surrender control and cash flow rights. The results are consistent with those of Sun and Tong (2003) who found that partial privatization hurts the firm's performance.

The preceding discussion relating to partial privatization needs further elaboration. Although the results and the preceding discussion suggest that government ownership could hurt the partially privatized firms' performance, under certain circumstances partial privatization may be necessary. For example, there can be a signaling effect for continued state ownership. Perotti (1995) shows that governments tend to privatize a small proportion of some firms initially. Thus, the government, as the largest shareholder of the partially privatized firm, sends a credible signal to the market that it is not expropriating shareholders' wealth. Mok and Hui (1998) also argue that high equity retention by the state lowers the ex-ante uncertainties of investors. Investors interpret

¹² For the banking industry, privatization appears to be good news for the industry members since the shareholders of the rival banks earned positive, albeit insignificant, abnormal returns. The results for the rival firms in the utilities sector should be interpreted with caution because of the small sample size.

Table 4
Degree of privatization and rivals firms' reaction

Panel A: Rival firms' reaction to full and partial privatization announcements

Day(s)	Full privatization ($N=58$)			Partial privatization ($N=99$)			Difference in means		
	% Return	t -statistic	% Negative	% Return	t -statistic	% Negative	Difference	t -statistic	p -value [♦]
–5	0.54	0.96	60	–0.58	–2.23**	56	1.12	1.80	0.04**
–4	–0.54	–1.09	47	0.11	0.36	52	–0.64	–1.12	0.13
–3	–0.03	–0.02	59	0.17	0.57	55	–0.19	–0.14	0.45
–2	0.78	0.83	55	0.13	0.50	54	0.65	0.67	0.25
–1	–0.24	–0.63	53	–0.35	–1.43	57	0.11	0.25	0.40
0	–1.25	–1.86*	55	–0.43	–1.96**	58	–0.82	–1.16	0.13
1	0.13	0.38	47	0.89	3.46***	37	–0.76	–1.78	0.04**
2	–0.27	–0.85	55	0.49	1.72*	52	–0.76	–1.78	0.04**
3	0.17	0.45	45	–0.17	–0.63	57	0.34	0.73	0.23
4	–0.63	–1.33	60	–0.04	–0.14	57	–0.59	–1.07	0.14
5	1.17	1.06	48	0.36	1.45	44	0.81	0.72	0.29
CAR _(–1,1)	–1.35	–1.60	57	0.11	0.31	47	–1.46	–0.72	0.24
CAR _(–2,2)	–0.84	–0.99	53	0.73	1.51	40	–1.56	–1.61	0.06*
CAR _(–5,5)	–0.15	–0.08	55	0.57	0.63	51	–0.73	–0.35	0.36
CAR _(–10,10)	–0.29	–0.11	50	–1.04	–0.79	54	0.74	0.25	0.40
CAR _(–20,20)	2.05	0.82	48	3.08	1.49	45	–1.03	–0.32	0.38

Panel B: Rival firms' reaction to first (full and initial) privatization and subsequent partial privatization announcements

Day(s)	First (full and initial) Privatization			Subsequent Privatization			Difference in means		
	% Return	<i>t</i> -statistic	% Negative	% Return	<i>t</i> -statistic	% Negative	Difference	<i>t</i> -statistic	<i>p</i> -value [♦]
–5	0.17	0.74	51	–0.11	–0.40	54	0.28	0.79	0.22
–4	–0.09	–0.30	50	–0.19	–0.75	52	0.10	0.26	0.40
–3	–0.16	–0.53	52	0.30	0.56	54	–0.46	–0.75	0.23
–2	–0.49	–1.41	61	0.41	1.06	55	–0.90	–1.73	0.04**
–1	0.29	0.75	51	–0.19	–0.91	52	0.48	1.10	0.14
0	–0.36	–1.20	52	–0.70	–2.49**	56	0.34	0.83	0.20
1	–0.46	–2.22**	64	0.52	2.61**	43	–0.98	–3.41	0.00***
2	–0.02	–0.04	46	0.23	1.06	54	–0.24	–0.51	0.31
3	–0.06	–0.24	47	–0.03	–0.12	54	–0.04	–0.10	0.46
4	0.37	0.81	49	–0.17	–0.68	57	0.54	1.04	0.15
5	0.14	0.23	52	0.36	0.95	47	–0.22	–0.30	0.38
CAR _(–1,1)	–0.53	–1.36	60	–0.37	–0.99	51	–0.16	–0.29	0.39
CAR _(–2,2)	–1.04	–1.50	60	0.26	0.61	47	–1.31	–1.59	0.06*
CAR _(–5,5)	–0.67	–0.80	54	0.43	0.47	52	–1.09	–0.89	0.19
CAR _(–10,10)	–0.16	–0.10	53	–0.87	–0.68	51	0.72	0.36	0.36
CAR _(–20,20)	–0.67	–0.27	52	1.88	1.13	48	–2.55	–0.86	0.20

♦ These are one-tail test; ***,**,* denote significance at 1%, 5% and 10% respectively.

This table presents the abnormal returns of rival firms to different degrees of privatization. Abnormal returns are calculated (using the market model) as the difference between the firm's returns and the return of the market index in the respective country. The abnormal returns are cumulated over the –20 to +20 interval. The percentage negative is the ratio of firms with negative abnormal returns to the total number of firms.

state retention of shares in the privatized firm as a sign of the government's confidence in the company and as an implicit business guarantee.

Moreover, privatization represents a reversal of prior policy that involved governments controlling key sectors that were once considered mandatory for social welfare and the smooth supply of essential goods and services to the economy or sectors where private entrepreneurs had failed to provide these services or goods (Errunza and Mazumdar, 2000). Therefore, from the perspective of viewing SOEs as public good, a quick and complete privatization is not desirable especially in developing countries. Since capital markets and property-rights are not well-developed in those countries, complete privatization can result in the transfer of public assets to private agents who do not use them more efficiently than the government. In that case, high equity retention by the state allows the government to monitor managers in the partially privatized firm. A corollary of the foregoing argument is that, in developing countries capital markets function less efficiently, the market for corporate control does not exist, and shareholder activism is weak; therefore, the capital market cannot provide effective monitoring of management who may engage in opportunistic behavior. Thus, expanding managerial autonomy in privatized firms could worsen the agency problem that exists between managers and shareholders (Stiglitz, 1997). Government ownership helps to monitor management of the privatized firm and hence helps reduce this agency problem.

Furthermore, governments may retain ownership of privatized firms for strategic reasons. For example, a partial sale of an enterprise may be necessary to prevent the takeover of the privatized firm before it establishes itself in the new competitive environment. According to Megginson and Netter (1998), about 90% of the UK share issue privatizations had golden shares, and these special shares held by the government enable it to veto mergers, liquidation and asset sales. Also, a partial sale of an enterprise that plays a strategic role in the economy (e.g., a firm that is in the military industry) may be necessary because of the strategic role of the enterprise in national security. In these cases, partial privatization may be associated with lower profitability but this state of affairs may reflect government strategic goals which in turn explain why the privatization was partial.¹³

4.4.2. Does the initial privatization announcement generate significantly greater reaction than subsequent privatization announcements?

The rival firms' reaction to privatization announcements could depend on whether the privatization is part of a continuing program of sell-off. If the market perceives that the government is embarking on a privatization program that entails the gradual sale of the SOE, then the valuation effects of the initial and subsequent privatization announcements on the rival firms' stock price would be different. For privatizations that occur in tranches, the market may learn from the first announcement and would expect that further sale of shares by the government is imminent, hence, the initial privatization announcement is likely to contain more surprise and, therefore, it could elicit stronger reaction from rivals than subsequent partial privatization announcements. Alternatively, it is possible that as the proportion of government ownership reduces in subsequent partial privatization announcements, the privatized firm may become more efficient and hence, the rival firms could react more strongly to subsequent privatization announcements. To test these arguments, we examine the rival firms' reaction to the first and subsequent privatization announcements.

¹³ I thank an anonymous referee for raising this point.

The results presented in Panel B of Table 4 generally support the learning effect argument. We find that although the magnitude of the rival firms' announcement day abnormal returns associated with the first privatization is smaller than that of subsequent privatization announcements, the rivals firms continued to react negatively to the initial privatization announcement in the days immediately following the announcement. Their reaction to subsequent partial privatization announcements is however positive. The difference in returns on day +1 of about 1% is strongly significant (t -statistic = 3.41; p -value = 0.0001). Similar results are obtained when we examine the cumulative abnormal returns. Generally, the magnitude of the rival firms' abnormal returns following the first privatization announcement is greater than that associated with subsequent partial privatization announcements. For example, in the 5-days surrounding the announcement date, the rival firms' reaction to the first privatization was -1.04% while their reaction to subsequent partial privatization announcements was 0.26 . These results provide marginal support for the conjecture that the first privatization announcement contains more surprise than subsequent privatization announcements.

4.4.3. Is the rival firms' reaction to partial privatization announcements increasing in the degree of government ownership of the privatized firm?

We also examine whether the rival firms' reaction to partial privatization announcements is related to the degree of privatization. As the percentage of government ownership reduces with each subsequent partial privatization, the privatized firms would gain greater autonomy and could pursue profitable but politically unpopular business opportunities with less interference from the government. The rival firms' reaction could reflect this new and increasing degree of autonomy that the firm gains with every subsequent partial privatization. Though not shown here (because of space constraints and the small sample size), we find that consistent with the evidence presented in Panel A, the initial partial privatization announcement generates a larger fall in wealth for the rival firms' shareholders than the second partial privatization announcement. We also find that as the proportion of government ownership reduces, subsequent partial privatization announcements generate stronger market reaction from rival firms. For example, in the 3 days surrounding the third, fourth and final privatization announcement date, the rival firms realized abnormal returns of 0.46% , -0.62% and -1.63% respectively. Thus the results support the conjecture that the rival firms' reaction to privatization announcements is negatively related to the extent of government ownership of the privatized firms.

5. Examination of possible alternative explanations for the rival firms' reaction

In this section, we examine some alternative explanations for our results since there could be other reasons (apart from competitive considerations) that account for the rival firms' reaction to the privatization announcements. First, share issue privatization expands the investment opportunity set of investors. The newly privatized firms could attract investors who had invested in the existing rival firms. The movement of funds from the rivals firms could account for the documented negative abnormal returns. Similarly, in order to minimize tracking error, fund managers who track sector indices could move some of their funds from the existing firms into the newly privatized firms in anticipation of the inclusion of the privatized firm in the index. Thus, portfolio rebalancing and the attendant price pressure could cause a decrease in the share price of the existing firms. We examine the possibility that flow of funds accounts for the rival firms' stock price reaction.

Investors may move their capital to the newly privatized firms if they believe that the prospects of the newly privatized firms are better than those of existing rivals. In that case, the attendant decrease in price of the rival firms would be consistent with our hypothesis that investors'

expectation about the competitiveness, efficiency and profitability of the privatized firms can be inferred from the rival firms' reaction to privatization announcements. However, if fund managers move funds from existing firms to the newly privatized firms with a view to maintaining their exposure to that sector, then portfolio rebalancing, and the attendant price pressure will lead to a decrease in the share price of the existing firms and a corresponding increase in the share price of the newly privatized firms. To test this conjecture, we calculated the returns of the privatized firms following the initial and subsequent partial privatization announcements to ascertain whether the stock price increases especially following the subsequent privatization. The results are presented in [Table 5](#).¹⁴

We note that while most of the daily abnormal returns are not significant, the cumulative abnormal returns following the initial public offering (i.e., $CAR_{(1,30)}$, $CAR_{(1,40)}$, $CAR_{(1,50)}$ and $CAR_{(1,60)}$) are positive and significant. However, the positive abnormal returns of the privatized firms could be due to price pressure effects or underpricing. For government IPOs, underpricing associated with the initial privatization could be widespread since it would ensure that subsequent government privatizations are well subscribed. The privatized firms' abnormal returns following subsequent privatizations provide a benchmark for evaluating the price pressure hypothesis. If portfolio rebalancing explains the privatized firms' initial positive abnormal returns and the rival firms' negative abnormal returns, then subsequent privatizations that lead to an increase in the weight of the privatized firms in the index would elicit significantly positive increases in the share price of the privatized firms, as fund managers will have to buy more of the shares.

The results presented in [Table 5](#) do not support the portfolio rebalancing hypothesis. The privatized firms' shares underperformed the market index in the period leading up to and following the subsequent privatization announcements as the privatized firms realized negative market-adjusted abnormal returns for the different event windows. The finding that subsequent partial privatizations that led to an increase in the weights of the privatized firms in the index generated negative abnormal returns for the privatized firms suggests that the rival firms' abnormal returns are not due to price pressure effects. Thus the negative effects observed for the rival firms reflect investors' concerns about the expected gains in efficiency and competitiveness of the privatized firms.

6. Further discussion

The results documented in this study relate to the literature on the competitive effects of mergers and acquisitions.¹⁵ The existing literature provides evidence to suggest that mergers have intra-industry effects. [Otchere and Ip \(2006\)](#) for example conjecture that to the extent that rival firms compete with each other and share similar characteristics, mergers and acquisitions that are likely to impact on the operations and structure of the bidders and target firms can affect the competitive position of other firms in the industry. Mergers and acquisitions could elicit positive effects for the target firms while generating negative (competitive) effects for target firm's rivals. However, the bulk of the mergers studies, including [Song and Walking \(2000\)](#), [Akhigbe and Martin \(2000\)](#) and [Otchere and Ip \(2006\)](#) that examine the competitive effects of mergers find that rivals of acquisition targets earn significantly positive abnormal returns, evidence inconsistent

¹⁴ For the purpose of determining whether price pressure hypothesis explains our results, we calculate market adjusted abnormal returns for different windows from day 1 to day 60.

¹⁵ The primary results documented in this study also parallel previous evidence that shows that a number of corporate events have information transfer effects on rival firms, including going private transactions ([Slovin et al., 1991](#)), bankruptcy announcements ([Lang and Stulz, 1992](#)), security offerings ([Szewczyk, 1992](#)), dividend changes announcement ([Firth, 1996](#); [Laux et al., 1998](#)).

Table 5
Abnormal returns earned by the privatized firms

Initial privatization ($N=27$)			Subsequent privatization ($N=36$)		
Day(s)	% Returns	% Positive	Day(s)	% Returns	% Positive
–5	–	–	–5	–0.13	42
–4	–	–	–4	–0.17	58
–3	–	–	–3	–0.09	50
–2	–	–	–2	–0.86***	28
–1	–	–	–1	–0.11	33
0	–	–	0	–0.36	39
1	0.99	56	1	0.21	53
2	0.99	48	2	0.27	47
3	–0.77	30	3	0.05	44
4	0.14	44	4	0.23	47
5	0.39	63	5	0.40	47
$CAR_{(1,10)}$	2.15	70	$CAR_{(-1,1)}$	–0.26	42
$CAR_{(1,20)}$	3.35	70	$CAR_{(-2,2)}$	–0.85	42
$CAR_{(1,30)}$	6.86*	67	$CAR_{(-5,5)}$	–0.57	39
$CAR_{(1,40)}$	8.08**	67	$CAR_{(-10,10)}$	–1.41	42
$CAR_{(1,50)}$	9.11**	67	$CAR_{(-20,20)}$	–4.29	44
$CAR_{(1,60)}$	8.43*	74			

***, **, * denote significance at 1%, 5% and 10% respectively.

This table presents the abnormal returns of privatized firms following the initial privatization and subsequent privatization announcements. Abnormal returns are calculated using the market-adjusted model. The percentage positive is the ratio of firms with positive abnormal returns to the total number of firms.

with the competitive effect hypothesis. For example, [Song and Walking \(2000\)](#) find that rivals of acquisition targets earn positive abnormal returns in response to merger announcements and attribute the results to the acquisition probability hypothesis.

[Akhigbe and Martin \(2000\)](#) examine information signaling and competitive effects of successful cross border acquisitions on industry counterparts and find that favorably industry conditions conveyed through cross border acquisitions dominate any perceived competitive effects. [Otchere and Ip \(2006\)](#) examine the intra-industry effects of completed and cancelled cross border acquisitions and find that rival firms exhibit significantly positive stock price reactions to news of cross border acquisition proposal and the subsequent termination of the proposal.¹⁶ Cancelled cross border acquisition attempts generated positive net effects for the rival firms. They also find that the magnitude of the rival firms' abnormal returns associated with the termination of the cross border acquisition attempt is greater than that associated with the acquisition proposal announcements. On account of the positive reaction of the rival firms to the acquisition proposal and termination announcements and the positive net effects of the unsuccessful acquisition on both the targets and their rivals, the authors rule out the competitive hypothesis in favor of the acquisition probability hypothesis. The majority of the studies that examine the effects of mergers and acquisitions on rival firms document evidence that is inconsistent with the competitive effect hypothesis. The current study extends the intra-industry effects literature by

¹⁶ The centerpiece of their argument is that following successful cross border acquisition, many of the technological or marketing characteristics that have been internalized by the foreign bidder would be incorporated into goods produced by the target. These advantages may give the target a competitive edge over domestic rivals, as production on a world scale would allow the target to reduce its prices. Thus, the presence of the foreign bidder could disturb competitive balance and depress rivals' profits, at least temporarily.

providing evidence on the competitive effects of privatization announcements, an important regulatory event that has been embarked upon by governments of both developed and developing countries.

7. Summary and conclusion

In this study, we analyze the rival firms' reaction to privatization announcements using a sample of privatized firms and their rivals from 29 countries with a view to ascertaining whether the information contained in privatization announcements reflects competitive considerations or industry-wide effects. We find that the rival firms reacted negatively to the privatization announcements, thus suggesting that their reaction to privatization announcements reflects competitive rather than positive industry-wide effects. The reaction of rival firms in low economic freedom countries is stronger than that in high economic freedom countries. Interestingly, we find that the magnitude of the rival firms' reaction to full privatization announcements is greater than that of partial privatization announcements. The initial privatization announcement also contains more surprise than the second partial privatization announcement. However, for subsequent partial privatization announcements, we find a somewhat negative (positive) relationship between the rivals' reaction and the extent of government ownership (degree of privatization). As the proportion of government ownership of the state enterprise reduces with subsequent partial privatization (and the degree of privatization increases), the announcement generates stronger negative reaction from rival firms. The results of further analysis do not support the conjecture that price pressure resulting from portfolio rebalancing accounts for the rival firms' negative abnormal returns. Our results provide additional evidence on the impact of privatization from a different perspective.

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