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ALL ROADS LEAD TO ROME: HIGH PERFORMANCE FIRMS IN CHINA AND RUSSIA

ERNST & YOUNG
Quality In Everything We Do

SIEMS MONTHLY BRIEFING

SKOLKOVO Institute for Emerging Market Studies
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ONE OF THE PRIMARY GOALS OF MANAGERS IS TO ACHIEVE AND MAINTAIN HIGH PERFORMANCE. THE POPULARITY OF BEST-SELLERS SUCH AS *BUILT TO LAST* AND *GOOD TO GREAT* DEMONSTRATES THE CURRENT ENTHUSIASM FOR HIGH PERFORMANCE FIRMS. AFTER DECADES OF RESEARCH, WHAT DO WE KNOW ABOUT HIGH PERFORMANCE FIRMS? WHAT MEASURES SHOULD WE ADOPT TO EVALUATE FIRM PERFORMANCE, ESPECIALLY IN EMERGING MARKETS? AND FINALLY, WHICH ARE THE HIGH PERFORMANCE FIRMS IN EMERGING MARKETS, SUCH AS CHINA AND RUSSIA, AND WHAT CAN WE LEARN FROM THEIR SUCCESS STORIES? THE OBJECTIVE OF THIS REPORT IS TO PROVIDE MANAGERS WITH GUIDANCE TO EVALUATE FIRM PERFORMANCE IN EMERGING MARKETS AND SUGGESTIONS ON HOW TO ACHIEVE AND MAINTAIN HIGH PERFORMANCE.

I. PERFORMANCE MEASURES

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Performance improvement is the primary focus of scholarly literature in strategic management. To achieve this goal, one must first identify high performance firms to benchmark. Doing so is no easy task because performance is a multi-dimensional concept, and being excellent in one dimension does not guarantee success in others. The scholarly literature recognizes the multi-dimensional nature of performance. Venkatraman and Ramanujam[1] argued that business performance should include both financial performance (such as sales growth and profitability) and operational performance (such as market share and new product introduction). More recently, Richard and his colleagues[2] stated, "Organizational performance encompasses three specific areas of firm outcomes: (a) financial performance (profits, return on assets, return on investment, etc.); (b) product market performance (sales, market share, etc.); and (c) shareholder return (total shareholder return, economic value added, etc.)."

Although management scholars agree that performance is multi-dimensional, they have reached no consensus on which dimensions should be included to measure firm performance. Due to this lack of consensus, even performance is an open question with few consistent definitions and measures. A recent review provided a comprehensive categorization of different performance measures into objective and subjective measures. Objective performance measures are derived from objective sources, such as annual reports or stock market data. In contrast, subjective performance measures are derived from subjective judgment, usually of senior managers.

Although management scholars agree that performance is multi-dimensional, they have reached no consensus on which dimensions should be included to measure firm performance.

The four different types of objective performance measures are accounting, financial market, and mixed accounting/financial market measures, as well as survival. Examples of accounting measures include widely used measures, such as return on assets (ROA), return on equity (ROE), and sales growth. Typical financial market measures include market value and earnings per share (EPS). An example of a mixed accounting/financial market measure is Tobin's Q[3], which incorporates both accounting and financial market data. Survival is also widely used as a measure of firm performance. Quasi-subjective measures are self-reported objective measures. For example, CEOs may be asked to provide ROA data. Fully subjective measures are self-reported subjective measures. For example, a manager may be asked to evaluate his or her

[1] Venkatraman and Ramanujam. 1986. Measurement of Business Performance in Strategy Research: A Comparison of Approaches. Academy of Management Journal, 11: 801-814.
[2] Richard, Devinney, Yip and Johnson. 2009. Measuring organizational performance: Towards methodological best practice. Journal of Management, 35: 718-804.
[3] Tobin's Q is defined as the ratio between market value and replacement value of physical asset.

level of satisfaction in terms of the firm's performance in comparison to that of other firms.

Given this large toolbox, choosing the appropriate performance measures is a challenge. A recent review showed that 53% of the academic studies published in leading management journals from 2003 to 2007 use objective accounting measures, partly due to the availability of accounting data.[4]

Not only scholars but also practitioners try to define high performance firms. Unlike scholars who prefer to adopt accounting measures, managers tend to rely on measures of shareholder return. This is reasonable, since shareholders are the most important stakeholders of a firm, and they have the power to replace managers if managers do not deliver satisfactory returns. In most cases, shareholders delegate the right of appointing and replacing CEOs to boards of directors. A board can decide whether to replace a CEO if certain financial indicators, such as dividends and EPS, do not look good.

A recent project[5] by Accenture identified high performance organizations based on profitability, growth, positioning for the future, longevity, and consistency, as shown in Table 1. Profitability is measured by spread, which is the return on invested capital (ROIC)[6] less the weighted average cost of capital (WACC)[7]. Spread measures a firm's ability to generate ROIC. Growth is measured by revenue expansion, which is growth in size. Future value (FV) is a shareholder value-based measure of investors' expectations of the value of a company's cash flow growth. Longevity is measured by total return to shareholders, which is share price appreciation including dividends. And finally, consistency measures how a firm outperforms in terms of profitability, growth, and positioning for the future in a 5-year period. Accenture's measures well capture the multi-dimensional nature of performance measures and cover a wide range of dimensions; however, many of these measures, such as FV and total return to shareholders, are financial market measures. Consequently, one cannot apply them to measure the performance of unlisted firms, which is a large part of the economy in emerging markets.

TABLE 1: ACCENTURE PERFORMANCE MEASURES

Profitability	
Measured by the spread between the return on invested capital and the cost of capital	3 Yr average spread
	5 Yr average spread
Growth	
Measured by revenue expansion	3 Yr Revenue growth CAGR
	5 Yr Revenue growth CAGR
Positioning for the Future	
Measured by the portion of share price that cannot be explained by current earnings (what we call future value) and by the portion of the industry total that each company's future value represents	5 Yr change in relative future value
	5 Yr level in relative future value
Longevity	
Measured by the duration of out performance in total returns to shareholders, a performance area important to our requirement of sustained value creation over time	3 Yr. total return to shareholders CAGR
	5 Yr. total return to shareholders CAGR
Consistency	
Measured by the percentage of time that a company's performance has been greater than median performance in terms of profitability, growth and positioning for the future	5 Yr. median outperformance in revenue growth
	5 Yr. median outperformance in spread
	5 Yr. median outperformance in future value

Source: "In pursuit of profitable growth: High performance business in China 2007". Accenture. Page 53.

[4] Richard, Devinney, Yip and Johnson. 2009. Measuring organizational performance: Towards methodological best practice. *Journal of Management*, 35: 718-804.
[5] Accenture. 2007. In pursuit of profitable growth.
[6] ROIC=Net operating profit less adjusted taxes (NOPLAT)/Invested capital (capital provided by debt and equity investors).
[7] WACC= Debt/EV*(Kd)*(1-Tr)+Equity/ EV*(Ke), where Kd is the cost of debt, Tr is the marginal tax rate (determined by country of operations), Ke is the cost of equity, and EV is the enterprise value of the company (debt+equity).

II. PERFORMANCE MEASURES IN EMERGING MARKETS

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Building on previous studies and efforts, in this section, we identify performance measures to evaluate firm performance. To select the appropriate performance measures in emerging markets, we first need to consider the environments, which are quite different from those of developed countries.

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Environments can influence various aspects of firm strategy and firm performance. For example, environments can generate exogenous macroeconomic shocks and unexpected changes of rules of the game and thus harm performance. On the other hand, environments can inhibit competition through various regulations and thus generate high performance. The influence of external environments on firm performance is even more salient in emerging markets because emerging markets are characterized by unstable environments with constant economic shocks and government intervention. Consequently, we should consider the unique characteristics of emerging markets when we try to identify performance measures in emerging markets.

SINGLE OR MULTIPLE MEASURES?

As the analyses in the previous section show, there is a consensus in the management literature and among managers that performance is a multidimensional concept. Consequently, it is natural to employ multiple performance measures. Firms in emerging markets often employ multiple performance measures for another reason: the existence of strong stakeholders with different expectations.

Government has a great impact on firm operations in emerging markets, as many firms have some level of state ownership. In state-owned enterprises (SOEs), profit maximization may not be the primary goal. SOEs may pursue other goals, such as administrative tasks, empire-building strategies, and employment. Institutional investors usually invest large amounts of money, making it hard for them to sell their shares even if the firm is performing poorly because their sale will result in a substantial decline in stock price. Due to this lack of liquidity, institutional investors usually monitor and influence firm strategy. The unique feature of state ownership thus creates conflicts among different owners in terms of strategic orientation and priority. Consequently, a firm may pursue multiple goals to respond to the demands of these different stakeholders.

ACCOUNTING OR FINANCIAL MARKET MEASURES?

The next choice to make is whether to use accounting or financial market performance measures. The above discussion suggests that while man-

agement scholars tend to rely on accounting measures to evaluate firm performance, business practitioners prefer financial market measures. Here, we do not use financial market measures for firms in emerging markets for two reasons.

The first reason is the lack of data reliability. The stock markets in emerging markets are newly developed and not well regulated. Consequently, financial market data may not be reliable. Scandals about stock price manipulation and insider trading are not unusual in emerging markets. For example, China Baoan (Stock code 000009) was a listed firm on Shenzhen Stock Exchange. It released information about obtaining graphite mines in September 2010. Several analysts' reports from different institutions verified the information. The stock price increased from around 11 RMB in September 2010 to 26 RMB by the end of February 2011. However, Baoan did not have graphite mines. Many investors were misled by the information and lost money. The China Securities Regulatory Commission is currently investigating the situation. The inaccurate information of listed firms also exists in Chinese firms listed on foreign stock exchanges. The SEC has an ongoing investigation of Chinese stock frauds in the U.S. It is estimated that the losses of the victims of these stock frauds exceed $34 billion[8]. A partial list of these firms includes China Energy Saving Technology, and China Water and Drinks, some of which have been delisted. The U.S. stock markets are known for close monitoring and tight regulation. Even in these well-regulated and monitored stock exchanges, these Chinese firms are able to fool the investors with inaccurate information. The situation would only be worse in stock exchanges in emerging markets. So the stock price in emerging markets may not reflect a firm's true value.

The second reason is the limited number of listed companies. Few firms in emerging markets are listed on stock exchanges. For example, even though millions of firms are operating in China, only about 2000 are listed on Chinese stock exchanges. Due to the strict requirements of listing, many small and mid-size firms cannot go public. Owners' fear of losing control also prevents many private firms from going public. If we use stock market measures, we may miss a large portion of firms in emerging markets. Therefore, we stick to accounting measures.

WHICH PERFORMANCE MEASURES?

Next, we need to decide which dimensions of accounting performance measures we should focus on when evaluating firm performance in emerging markets.

[8] http://en.wikipedia.org/wiki/China_Stock_Frauds#cite_note-1

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GROWTH

Emerging markets are low-income, rapid-growth countries using economic liberalization as their primary growth engine.[9] One of the most important characteristics of emerging markets is rapid economic growth. Their rapid growth has become a global phenomenon in the past two decades. GDP from emerging markets grew from $3,573 billion in 1980 to $17,881 billion in 2009. In 2009, while the GDP growth rate of advanced markets was -3.16%, the GDP growth rate in emerging markets was 2.39%.[10] Many large corporations have been founded in emerging markets, such as Tata and Infosys in India, Cosco and Huawei in China, and Severstal and Sistema in Russia.

The rapid economic growth in emerging markets provides enough room for firms to pursue sustainable growth in terms of sales. Given the fact that the demand from both domestic and foreign customers is rising fast, it is natural to select growth as one of the dimensions with which to evaluate firm performance. Moreover, since many firms in emerging markets are young and at early stages of development, scaling up is an important way to create a competitive advantage. Otherwise, firms may be driven out of the market by those who are able to achieve sustainable growth.

We should note that not every firm is able to achieve sustainable growth due to the lack of firm capabilities and resources. Firms in emerging markets, such as China, do not have these resources or capabilities because many emerging markets have, until recently, experienced rising demand and rapid growth[11]. In such sellers' markets, many firms are new, and most follow market demand. Because they believe they can always sell their products or easily move to more attractive lines of business, they have little incentive to understand and develop core resources or capabilities[12]. In order to overcome the bottleneck, a firm has to develop its own capabilities and resources as it grows through both external search and internal learning. Only those firms that are able to overcome the bottleneck can achieve sustained growth.

MARKET SHARE

The development of resources and capabilities supports continuous growth. Generally, high performance firms carefully choose the market in which they compete based on their resources and capabilities. Careful selection and dedicated focus on certain markets contribute to high market share, as long as firms have resources and capabilities.

[9] Hoskisson, R. E., Eden, L., Lau, C. M., & Wright, M. Strategy in emerging economies. *Academy of Management Journal*, 2000: 249-267.
[10] IMF. 2010. World economic outlook database.
[11] The Economist. 2005. The tiger in front.
[12] Lu, Z., Huang, Q., Lu, T., & Zhou, W. 2007. The Process and Problems of Industrialization and Urbanization in China. Chinese Economy, 40: 6-30.

High market share often leads to high profitability.[13] A meta-analysis of 276 market share-profitability findings from 48 studies found that, on average, market share has a positive effect on business profitability. Several theories explain the positive relationship between market share and profitability. Neoclassical economic studies have conceptualized this positive relationship based on dominant firms' enhanced market power in setting prices and over vertical relationships with suppliers and channel members. Dominant firms are able to mitigate their exposure to risks through controlling capacity utilization and passing the burden of cost fluctuations on to suppliers and customers.

Market share also reflects firm-specific relative competitive advantages resulting from learning effects and other firm-specific assets.[14] Buyers often use market share as a signal for brand quality and a brand's widespread acceptance as an indicator of superior quality when they are imperfectly informed. The signaling effect of market share is even more salient in emerging markets because of the difficulty of acquiring market share. Emerging markets are usually fragmented in terms of both customer demand and geographic area.[15] The gap between the rich and the poor has been increasing in recent years. Consequently, customer demand differs sharply in different markets. Moreover, trade barriers among different provinces impede the development of national markets.[16] Trade barriers arise from protection from local governments and inefficient logistics networks across different regions. The ability to overcome these barriers and difficulties signals the existence of firm resources and capabilities. In this sense, high market share is not only a result of sustainable growth but also a reflection of firm resources and capabilities.

PROFITABILITY

Like other firms in the rest of the world, profitability is important for firms in emerging markets. The importance of profitability does not need much justification because profitability is what managers care about the most. Measures such as ROA and EPS frequently appear in financial and investor analysis reports as key indicators of performance. They are also key indicators of managerial performance. The ultimate goal of a firm is to get the highest return to its shareholders, and a source of high investment return is profits.

Being profitable is even more important in emerging markets, since the profits harvested from previous operations become sources for future growth. Because capital markets in emerging markets are usually

[13] Szymanski, D., S. Bharadwaj, and P. Varadarajan. 'An analysis of the market share-profitability relationship', *Journal of Marketing*, 57: 1-18.
[14] Hansen, G. and B. Wernerfelt. 'Determinants of firm performance: the relative importance of economic and organizational factors', *Strategic Management Journal*, 10: 399-511.
[15] Berkowitz, D. & DeJong, D. N. The evolution of market integration in Russia. *Economics of Transition*, 9: 87-104
[16] Meyer, W. M. & Boisot, M. 2008. Which way through the open door? Reflections on the internationalization of Chinese firms. *Management and Organization Review*, 4: 349-365.

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inefficient,[17] it is relatively hard for firms from emerging markets to raise capital externally. Firms have to rely heavily on internal markets to raise capital. Consequently, profits become the engine for future growth.

THE LOOP OF FIRM DEVELOPMENT

These three dimensions are not isolated, but related to each other. Their relationship is shown in Figure 1.

The relationship of growth, market share, and profitability can be explained by the four stages of firm development. In Stage 1, firms in emerging markets enjoy rapid growth. Rapid growth in sales is supported by fast economic growth. Economic liberalization provides enough room for new ventures to grow and prosper. Along the way, some firms are able to develop their own resources and capabilities. In Stage 2, those firms with resources and capabilities will be able to achieve high market share. Although economies provide ample growth opportunities, high performance firms usually carefully choose the market in which they compete, based on their resources and capabilities. The development of resources and capabilities enables firms to acquire high market share. In Stage 3, firms benefit from their competitive advantages and market positions and enjoy high profitability. In Stage 4, profitability is not only a result of growth and market share but also an engine for future growth. Firms use profits to fund future growth in the same or different businesses. The loop represents a virtuous circle, which supports continuous growth.[18]

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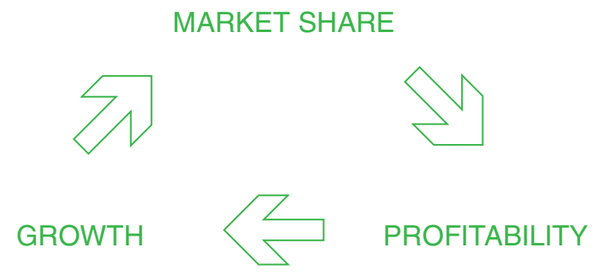
FIGURE 1 The relationship of growth, market share and profitability



Source: SIEMS calculation

[17] Khanna, T. & Palepu, K. 1997. Why focused strategies may be wrong for emerging markets. *Harvard Business Review*, 75: 41-51.
[18] It is not the only way to achieve continuous growth, though.

FINAL SELECTION

We decided to adopt multiple objective accounting performance measures that focus on growth, market share, and profitability to evaluate firm performance in emerging markets. Next, we look at specific measures to use:

We decided to adopt multiple objective accounting performance measures that focus on growth, market share, and profitability to evaluate firm performance in emerging markets.

SALES GROWTH:

- Change in sales over the period, expressed as the difference between sales in the last period and sales in the current period as a percentage of the sales last period

MARKET SHARE:

- Firm's sales revenue in the product market divided by the total sales revenue in that market.

PROFITABILITY:

- ROA/ROE/ROI/ROS: Return on assets/equity/investment/sales, defined as the ratio of net operating profit to the firm's start-of-year assets/to the book value of shareholder's equity/to the net book value of investment/to the sales made by the firm
- Profit margin: the ratio of net operating profit to sales

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III. WHICH METHOD TO USE TO EVALUATE HIGH PERFORMANCE FIRMS?

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A way of evaluating firm performance based on the efficiency of multiple inputs and outputs: frontier analysis.

In the previous section, we selected the appropriate performance measures to evaluate firm performance in emerging markets. The next question is how we compare firm performance using these measures. A common method would be a simple average or weighted average of these measures. However, combining measures of different scales using average values is difficult. We need a method that can compare multiple measures of different scales simultaneously. The lack of resources and capabilities for firms in emerging markets suggests that efficient resource utilization is an important competitive advantage for firms. We need to consider not only outputs but also inputs. Here, we adopt a method that satisfies the criteria, a way of evaluating firm performance based on the efficiency of multiple inputs and outputs: frontier analysis.

EXCERPT 1: FRONTIER ANALYSIS

Frontier analysis is a way to understand the efficiency of decision-making units (DMUs) with specific inputs and outputs. A DMU could be any unit with inputs and outputs, such as a production line or a firm. Data envelopment analysis (DEA) is one simple form of frontier analysis. DEA uses non-parametric linear programming to estimate an input-output function that need not be specified. The efficiency of a DMU is then determined by comparing the difference between the maximum outputs achievable given a set of inputs to the actual outputs achieved by the DMU (or conversely, the minimum inputs required to achieve certain outputs with actual inputs). Characteristics of DEA include:

- No assumption about the input-output function
- No limits to the number of inputs and outputs
- Not required to weight restrictions
- Provide reference sets for benchmarking
- Provide useful information for input-output mix decision

DEA has been used in different areas to evaluate and compare efficiency, such as school performance and marketing productivity. It is able to identify a specific best-performing group for use as a role model and assist managers in setting goals to benchmark. Instead of producing an average line of regression, it produces an efficient frontier that encompasses the best performers. Firms on the frontier are the best performers (with an efficiency score of 1), while firms not on the frontier are the less efficient ones (with an efficiency score of less than 1). Due to these favorable characteristics, we will identify a group of best-performing firms in emerging markets using this method in the next section. From the experience of these best-performing firms, we can learn how to succeed in emerging markets.

IV. TOP 500 FIRMS IN CHINA AND RUSSIA

TARGET FIRMS

In suggesting DEA as the method for evaluating firm performance, we assume that efficiency is a firm's primary goal. This may not always be true because certain firms, such as SOEs, may pursue other goals like administrative tasks. Similarly, foreign-owned subsidiaries may not be efficiency driven because their efficiency could be sacrificed to improve the efficiency of their parent. Therefore, we only focus on private manufacturing firms that are efficiency driven and grow and prosper in emerging markets indigenously. Appendix 1 summarizes how private Chinese and Russian firms are selected.

After we identify private firms, we then focus on the top 500 firms in each year. For Chinese firms, we create a list of top 500 firms by sales value each year from 1999 to 2008. For Russian firms, we create a similar list each year from 2001 to 2009. We want to learn which firms are the best performers among the top 500 firms each year. Although not all large firms are high performers, we believe the best performers are among the large ones because high performers have the ability to grow continuously, which will make them one of the top 500 firms eventually.

For DEA, we choose two input variables – the number of employees and registered capital[19] – because labor and capital are the inputs in most economic models. We choose four output variables: sales growth, market share, ROA, and profit margin. These four measures capture three aspects of performance: growth, market, and profitability. We also focus on 10-year performance to assess sustainable and consistent high performance over a long period.

IDENTIFYING HIGH PERFORMANCE FIRMS

We run a frontier analysis of the top 500 firms in each year. Table 2 reports year, the number of observations (less than 500 due to missing values), mean, and standard deviation of efficiency scores.

COMPARISON WITH FIRMS IN DEVELOPED COUNTRIES

Table 2 shows that the average efficiency score of Chinese firms fluctuates between 0.3 and 0.4, meaning that an average firm on the top 500 list is only 30% to 40% as efficient as the most efficient firms that year. Efficiency is defined by maximizing outputs (sales growth, profitability, and market share) given the inputs (labor and capital). For Russian firms, we discover a similar pattern. The average efficiency score remains within the range of 0.3 and 0.4. A recent study[20] conducted a similar frontier analysis of high perfor-

[19] Here we use registration capital, which is the amount of capital on a firm's business license.
[20] Yip, Devinney and Johnson. 2009. Measuring Long Term Superior Performance: The UK's Long-term Superior Performaners 1984-2003. Long Range Planning, 42: 390-413.

TABLE 2 AVERAGE EFFICIENCY SCORES

Year	Number of observations	Average Efficiency scores	Standard Deviation of efficiency scores
Chinese Firms			
2000	260	0.41	0.25
2001	285	0.33	0.23
2002	402	0.28	0.20
2003	374	0.39	0.23
2004	290	0.32	0.20
2005	366	0.37	0.23
2006	428	0.31	0.22
2007	441	0.33	0.20
2008	402	0.35	0.24
Russian Firms			
2001	409	0.44	0.26
2002	391	0.32	0.22
2003	372	0.33	0.22
2004	391	0.37	0.24
2005	382	0.33	0.24
2006	402	0.37	0.24
2007	433	0.36	0.24
2008	445	0.30	0.24
2009	455	0.29	0.24

Source: SIEMS calculations

mance firms in the United Kingdom from 1984 to 2003. The study reveals that the average efficiency score of UK firms across different industries ranges from 0.52 to 0.96 over the 20-year period, which is much higher than that for Chinese and Russian firms.

The difference in efficiency score means that in emerging markets, such as China and Russia, there are many differences between firms in terms of performance, whereas in developed countries, such as the United Kingdom, there are fewer differences. In emerging markets, many inefficient firms are still operating, while in developed countries, firms are relatively more efficient. This also suggests a broad diffusion of high-performing practices and operations in developed countries. Given the weak managerial capabilities, entrepreneurial firms in emerging markets are slow to adopt advanced management and operational practices.

The difference in efficiency score means that in emerging markets, such as China and Russia, there are many differences between firms in terms of performance, whereas in developed countries, such as the United Kingdom, there are fewer differences.

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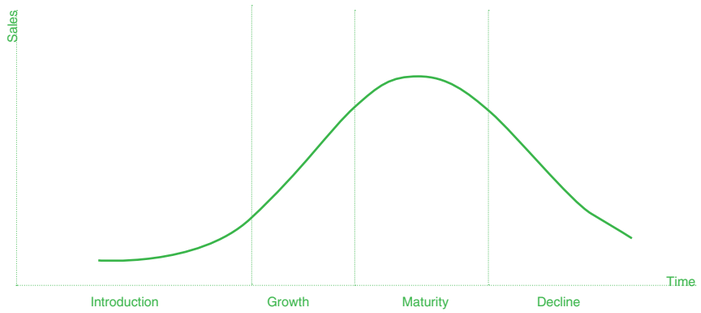
FIGURE 2/ Industry life cycle



Source: Kotler&Armstrong, 1990.

The difference reflects the different stages of industry evolution in emerging markets and developed countries. In general, there are four stages of industry evolution: introduction, growth, maturity, and decline, as shown in Figure 2.

The industry life cycle model was developed in Western countries. Thus, we need to modify it in order to use it in emerging markets. The introduction of new products in emerging markets is usually not based on their technological inventions but on the introduction of products invented in developed countries. Alternatively, it could be the case that these industries have just been privatized. This is the phase when private firms begin to emerge in these industries. In the growth stage, demand is high, and firms grow fast. Manufacturing efficiency also increases as firms gain more experience and technology becomes standardized. In the maturity stage, there is fierce competition in the industry because demand growth has slowed down. Inefficient firms are shaken out of the game, and industry consolidation begins. In the decline stage, demand falls, and there may be replacement products.

Most industries in emerging markets are in the introduction or growth stage, where demand is high. Emerging markets are developing rapidly, providing enough room for firms to grow and survive. In this circumstance, even inefficient firms can survive because there are so many growth opportunities. Emerging markets have not reached the maturity stage, in which inefficient firms are forced out. In developed countries, most industries are in the maturity stage. Firms have already gone through a process of fierce competition and consolidation. Because the environment does not provide much opportunity for growth, the remaining firms have to be efficient.

CHANGE OF EFFICIENCY OVER TIME

In the growth stage, we expect to see an increase in firm efficiency over time. However, the efficiency scores in Table 3 show no sign of increase over time, for either Chinese or Russian firms. Rather, the table shows a substantial gap across firms in capabilities. Inefficient firms are still able to survive in emerging markets because the demand is so high that economies experiences a capacity shortage. Many emerging markets have, until recently, experienced increasing demand and rapid growth. In such sellers' markets, most firms follow market demand. Because they believe they can always sell their products or easily move to more attractive lines of business, they have little incentive to improve their efficiency. However, as industries approach the mature stage, we expect firm efficiency to increase due to stagnating demand.

FIRM SIZE AND EFFICIENCY

Next, we explore the relationship between firm size and efficiency. Doubtlessly, large size means a firm is able to survive and grow; it is successful in this aspect. That is why we choose high performance firms among the top 500 firms in size. However, we should not equate large size to high performance for at least two reasons. First, being large does not necessarily mean being good. Large firms can fail quickly. The recent bankruptcy or near-bankruptcy of auto giants GM, Chrysler, and Saab indicate that large firms can be fragile. Second, many small- and medium-sized firms are hidden champions.[21] They are not known by the public but are enjoying large profits and market share in their niche markets. Although they are not well known today, they may become a big name in the future.

Our results support the above arguments. We do not observe a positive linear relationship between firm size and efficiency. For example, among the top 500 Chinese firms in 2005, the top 10 in efficiency only have an average rank of 244 in terms of size. In fact, the relationship between rank in size and rank in efficiency is only 0.125 for Chinese firms and 0.075 for Russian firms.

We should not equate large size to high performance.

The weak relationship between firm size and efficiency shows that few firms achieve economies of scale. As argued earlier, the fast-growing economy of emerging markets provides great room for firms to pursue growth. Fast growth, however, does not guarantee efficient use of resources. For example, to produce the same amount of output, the Chinese economy is consuming seven times the resources as the Japanese economy. [22]

[21] Simon, Hermann. 1992. Lessons from Germany's Midsize Giants. *Harvard Business Review*, 70: 115-123.
[22] James McGreoger. Talk on April 7th, 2011.

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The analysis of efficiency and firm size reinforces the previous finding that firms in emerging markets are relatively inefficient. The lack of efficiency is partly driven by firms' desire to achieve rapid growth.[23] It is not wrong to pursue growth, however, along the way, firms need to increase efficiency as well. Otherwise, firms may be forced out of the market as competition intensifies.

[23] SEIMS monthly report. 2010. The productivity prize - Accounting for recent economic growth among the BRICs: miracle or mirage?

V. LESSONS FROM HIGH PERFORMANCE FIRMS

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In this section, we will identify a group of high performance firms and try to understand how they are able to achieve high efficiency.

WHO ARE THE TOP PERFORMING FIRMS?

To identify top performing firms, we first note the firms that appear in the top 500 list for more than 5 years out of the 9-year period in both countries. One hundred and eighty-seven Chinese firms and 401 Russian firms satisfy this requirement. The difference in this number shows that the top 500 firms list in China changes fast, while in Russia, it is more stable.

Then, we calculate the average efficiency score of each firm across years. For these firms, we pick firms with an average efficiency score of over 50% and an average efficiency rank of less than 100. Seventeen Chinese firms[24] and 45 Russian firms[25] satisfy this requirement.

Tables 3 and 4 list the information for these firms. We can see from Table 3 that these firms cover a wide range of industries, from clothes and computers to medical supplies and telecommunications. The results show that not a single industry outperforms others. A firm in a sunset industry can be as successful as a firm in a sunrise industry. It is the firm that makes the difference. The industry coverage in Table 4 is a bit more focused because there are more firms in this table. For the hydraulic cement industry are listed six firms. Aside from these, the other 45 firms cover a broad range of industries, providing screw machines, transportation equipment, candies, and more.

Among the firms on the list, we see some familiar names, such as Huawei and Konka in China and Ulyanovskii Avtomobilynyi Zavod (UAZ) in Russia. These firms have already established a reputation. We also see many relatively unknown names, such as Qingdao Taifa Group and Qisheng Leather Corporation. These firms are not as well branded, not because they are not as efficient as the famous ones, but because they are in an industry that is not as visible to the public. For example, Qingdao Taifa Group is the largest manufacturer of trolleys in China.

ARE THEY THE REAL CHAMPIONS?

We next compare the top performing firms with the other top 500 in terms of the input and output variables we used. Table 5 summarizes the comparison.

The comparison of Chinese firms shows that the 17 highest performing firms are similar to the rest of the top 500 in terms of capital and employee inputs. However, they are able to produce higher outputs, in terms of ROA,

[24] One firm (Sanlu Group) is excluded because it has filed bankruptcy due to the milk scandal.
[25] Two firms (PERMGLAVNEFTESNAB and PERMSKAYA PECHATNAYA FABRIKA - FILIAL FEDERALNOGO GOSUDARSTVENNOGO UNITARNOGO PREDPRIYATIYA GOZNAK) are excluded because they appear only before the year of 2006. One firm (EVROTSEMENT GRUP) is excluded because it has missing values of sales growth in several years.

TABLE 3. HIGH PERFORMANCE FIRMS IN CHINA

Name	Industry	Founding year	Frequency in top 500	Average rank of efficiency	Average efficiency score
Qingdao Taifa Group	Trolley	1997	5	1	1
Qisheng Leather Corporation	Leather processing	1996	5	12.2	0.87
Huawei Technology Corporation	Telecommunication devices	1995	8	15.25	0.84
Qishui Land Corns Corporation	Active compound medicine	2000	7	31.57	0.84
Weigao Group	Medical and pharmaceutical substances	1988	6	29.83	0.70
BYD Lithium Battery Corporation	Battery	1998	6	47.67	0.67
Anhui Conch Cement Company Limited	Cement	2000	5	44.8	0.67
VV Group	Solid drinks	1992	9	36.78	0.65
Konka Group	Household electronics	1980	6	33.5	0.65
Sanhe Hopefull Grain & Oil Group	Vegetable oil processing	2003	5	92.8	0.63
Dongguan Founder Technology Computer Corporation	Computer	1998	5	77.2	0.61
Baoxiniao Group	Clothes	1996	8	62.63	0.56
Hebei Chengxin Co.,Ltd	Inorganic salt	1990	5	61.8	0.55
Xiuzheng Pharmaceutical Group	Chinese patent drug	1998	6	66.17	0.54
Jiangsu Guoqiang Zincification Industrial Co, Ltd	Mental finishing	1998	5	74	0.53
Ningbo Haitian Group	Plastic processing machine	1994	5	56	0.52
Shandong Zhaodongfang Paper Group	Machine-made paper	1996	6	82.83	0.50

TABLE 4. HIGH PERFORMANCE FIRMS IN RUSSIA

Company name	Industry	# in Top 500 list	Average rank of efficiency	Average efficiency score
Arzamasskii priborostroitelnyi zavod	Search, detection, navigation, guidance, aeronautical and nautical systems and instruments	5	90.50	0.52
Branch Of Baltika Breweries - Baltika-Yaroclavl	Malt beverages	6	81.50	0.58
Darumsan	Phonograph records and prerecorded audio tapes and disks	6	41.20	0.69
Evrotsement Grup	Cement, hydraulic	6	38.67	0.77
Faberlik	Perfumes, cosmetics and other toilet preparations	7	72.50	0.57
Iskitimtsement	Cement, hydraulic	6	76.67	0.55
Izdatelstvo Sem Dnei	Periodicals : publishing or publishing and printing	7	1.00	1.00
Joint Stock Company Novorossiysk Shipping Company - Novoship	Ship building and repairing	7	42.67	0.71
Kola Gmk	Primary smelting and refining of nonferrous metals, except copper and aluminum	9	51.44	0.72
Kombainovyi Zavod Rostselmash	Lawn and garden tractors and home lawn and garden equipment	6	73.80	0.53
Kommersant.Izdatelskii Dom	Newspapers: publishing or publishing and printing	6	65.40	0.52
Luga Abrazive Plant	Abrasive products	8	67.00	0.58
Magnitogorskii Metizno-Kalibrovochnyi Zavod Mmk-Metiz	Screw machine products	9	29.00	0.78
Mashinostroitelny Zavod	Small arms ammunition	7	1.00	1.00
Metafraks	Industrial organic chemicals, not elsewhere specified manufacturing	9	58.56	0.61
Metallglavsnab	Fabricated structural metal	6	77.00	0.59
Narodnoe Predpriyatie Naberezhnochelninskii Kartonno-Bumazhnyi Kombinat	Setup paperboard boxes	8	70.00	0.54
Nevinnomysskii azot	Nitrogenous fertilizers	9	89.44	0.60
Nizhegorodskii khimiko-farmatsevticheskii zavod	Pharmaceutical preparations	9	66.56	0.62
Nizhnekamskneftekhim incorporated	Chemicals and chemical preparations, not elsewhere specified manufacturing	8	64.83	0.55
Npo Saturn Open Joint-Stock Company	Industrial and commercial machinery and equipment, not elsewhere specified	9	1.29	1.00
Obyedineniya Gosudarstvennykh Predpriyatii I Organizatsii Po Proizvodstvu Gosudarstvennykh Znakov-Obyedineniya Goznak Ministerstva Finansov Rossiiskoi Federatsii - Gosudarstvennoe Predpri	Books : publishing or publishing and printing	5	51.00	0.63
Ojsc Slavneft-Yaroslavnefteorgsintez	Petroleum refining	7	90.50	0.54
Ojscsaratovstroysteklo	Flat glass	9	60.56	0.66
Open Joint Stock Compani Azot	Nitrogenous fertilizers	9	92.44	0.53
Partner I K	Sausages and other prepared meat products	5	83.80	0.55
Proizvodstvennaya Kompaniya Novocherkasskii Elektrovozostroitelnyi Zavod	Hand and edge tools, except machine tools and handsaws	6	30.20	0.72
Russian Innovation Fuel And Energy Company	Petroleum refining	8	12.14	0.89
Saint-Petersburgskii Molochnyi Zavod Piskarevskii		7	48.17	0.63
Salavatcteklo	Flat glass	9	69.13	0.61
Sebryakovskii kombinat asbestotsementnykh izdelii	Cement, hydraulic	9	76.67	0.53
Sebryakovtsement	Cement, hydraulic	9	10.33	0.88

Shchurovskii tsement	Cement, hydraulic	5	41.50	0.69
Sheksninskii kombinat drevesnykh plit	Hardwood veneer and plywood	5	91.60	0.53
Sia International Ltd	Drugs	9	85.56	0.51
Slavyanka Plyus	Candy and other confectionery products	5	47.25	0.63
Telebalt	Household cooking equipment	7	43.20	0.67
Topkinskii Tsement	Cement, hydraulic	8	41.43	0.72
Transpneumatics Co	Railroad equipment	5	60.00	0.55
Trubnyi Zavod Profil-Akras Imeni Makarova V.V.	Steel pipe and tubes	7	37.57	0.70
Trubodetal	Industrial valves	6	69.67	0.53
Ulyanovskii Avtomobilynyi Zavod	Transportation equipment, not elsewhere specified	9	43.63	0.62
Uralskaya Kuznitsa	Iron and steel forgings	5	43.50	0.71
Vimm-Bill-Dann Napitki	Canned fruits, vegetables, preserves, jams and jellies	7	82.67	0.55
Volzhskii Orgsintez	Industrial organic chemicals, not elsewhere specified manufacturing	9	90.56	0.55
Zavolzhsky Engine Plant - Zmz	Transportation equipment, not elsewhere specified	9	52.50	0.62

Source: SIEMS calculation;

TABLE 5 COMPARISON OF HIGH PERFORMANCE FIRMS AND OTHER TOP 500 FIRMS

Variable	Other Top 500 Firms	High Performance Firms
China	Mean	Mean
Capital	11.64	11.70
Employee	7.48	7.74
Sales growth	0.37	0.36
ROA	0.12	0.27
Profit margin	0.06	0.13
Market share	0.06	0.17
Russia		
Capital	9.73	11.15
Sales growth	0.29	0.25
ROA	0.10	0.26
Profit margin	0.06	0.19
Market share	0.06	0.23

Source: SIEMS calculation;

profit margin, and market share. The profitability and market share of high performance Chinese firms are much higher than for the other top 500, while the sales growth rate is similar. The case for Russian firms is slightly different. The 45 high performance Russian firms have higher capital investment than the other top 500 Russian firms.[26] They have slightly slower sales growth but higher ROA, profit margin, and market share. These top Chinese and Russian firms outperform the other top 500 in most of the output dimensions.

The comparison between top performing firms and the rest of top 500 in both China and Russia shows that top performing firms enjoy higher profitability and market share, but similar or slower growth rate. The high market share and profitability are signs that these top performing firms have passed Stages 1 and 2 of development, as shown in Figure 1. They are in Stage 3 or 4, when they benefit from their market position and enjoy high profitability. They will then utilize profits to fund future growth.

The comparison between top performing firms and the rest of top 500 in both China and Russia shows that top performing firms enjoy higher profitability and market share, but similar or slower growth rate.

Unlike Chinese high performance firms, Russian high performance firms are larger than the other top 500 in terms of capital (9.73 vs. 11.15). This is a sign that Russian firms are beginning to enjoy economies of scale, which Chinese high performance firms are still lacking. This difference shows that in terms of industry evolution, Russian industries are moving ahead of Chinese industries. Russian industries may be in a later stage of growth. This is also evident in the comparison of sales growth, profitability, and market share for top performing Chinese and Russian firms. Russian top performing firms enjoy higher profitability (0.19 vs. 0.13) and higher market share (0.23 vs. 0.17) but a lower sales growth rate (0.25 vs. 0.36) than their Chinese counterparts. Higher profitability and market share indicate that industry consolidation is happening and that some inefficient firms have already been shaken out of the market. For example, the consolidation of the steel industry began as early as 1995,[27] and the Russian government endorsed consolidation of the aviation industry in 2001.[28] As a result, we see a surge in the Russian mergers and acquisitions (M&A) market. The value of M&A deals increased from $10 billion in 1997 to $159.4 billion in 2007. [29]

One important factor that impedes industry consolidation in China is the unwillingness of local governments to approve M&As. Since firms pay taxes to the local government that endorses them, the acquisition of a firm means a loss of revenue for another local government. The case of Shandong Iron and Steel Group is an illuminating one. Shandong Iron and Steel Group pays taxes to the Shandong province government. When it tried to

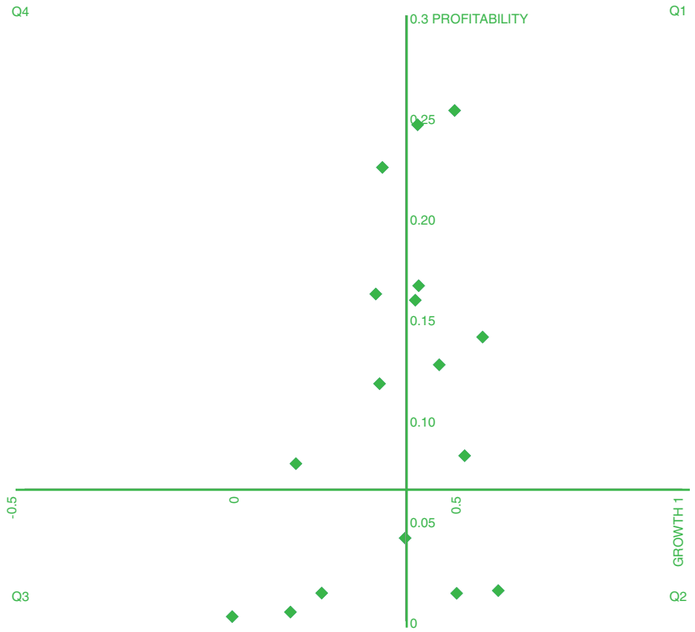
[26] One firm (Sanlu Group) is excluded because it has filed bankruptcy due to the milk scandal.
[27] Holman, Richard. 1995. Russia sets steel consolidation. Wall Street Journal - Eastern Edition, 226: page A14.
[28] Komarov, Alexey. 2001. Russia approves industry consolidation. Aviation Week & Space Technology, 154: page 49.
[29] KPMG. M&A in Russia, 2006, 2009.

acquire the Qingdao Iron and Steel Group, which pays taxes to the Qingdao municipal government, the Qingdao municipal government refused the acquisition proposal even though the provincial government agreed to repay the taxes, simply because it was not convenient for them to collect taxes in this way. [30]

HOW DID THEY GET THERE? CHINESE STORY

The previous section shows that top performing Chinese and Russian firms do outperform the other top 500. However, it is unclear how they achieve high efficiency. In order to understand how each firm grows and develops, in Figure 3, we plot each of these 17 top performing Chinese firms in terms of sales growth and profitability.

FIGURE 3/ Top Chinese firms



Source: SIEMS calculations

[30] Zhang Wenkui. Talk on April 19th, 2011.

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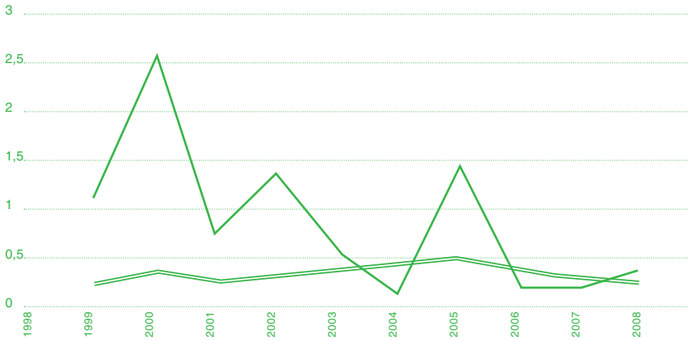
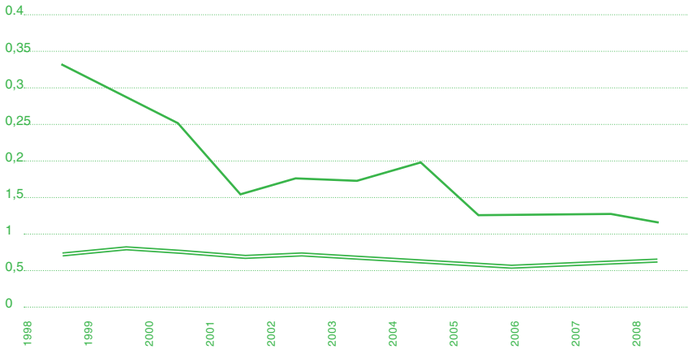
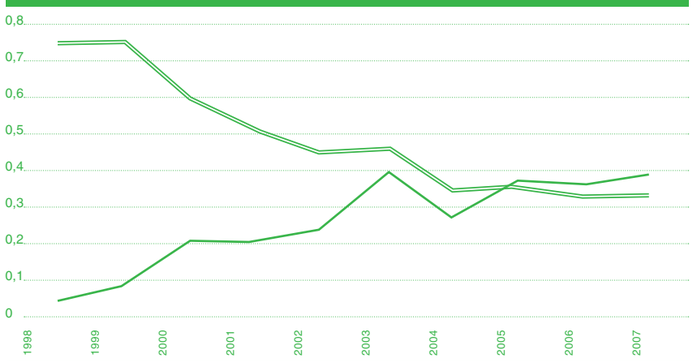
Q1 Sales Growth



Q1 Profitability



Q1 Market Share



Source: SIEMS calculations

The intersection of the x and y-axis is the average sales growth rate and profitability (profit margin) of the top 500 firms in each year:

$$\text{Average Sales Growth} = \sum_{t=1999}^{2008} [(\sum_{k=1}^{500} \text{Sales Growth in year t})/500]/10$$

$$\text{Average Profitability} = \sum_{t=1999}^{2008} [(\sum_{k=1}^{500} \text{Profitability in year t})/500]/10$$

The numbers are 36.9% and 6.5%, respectively.

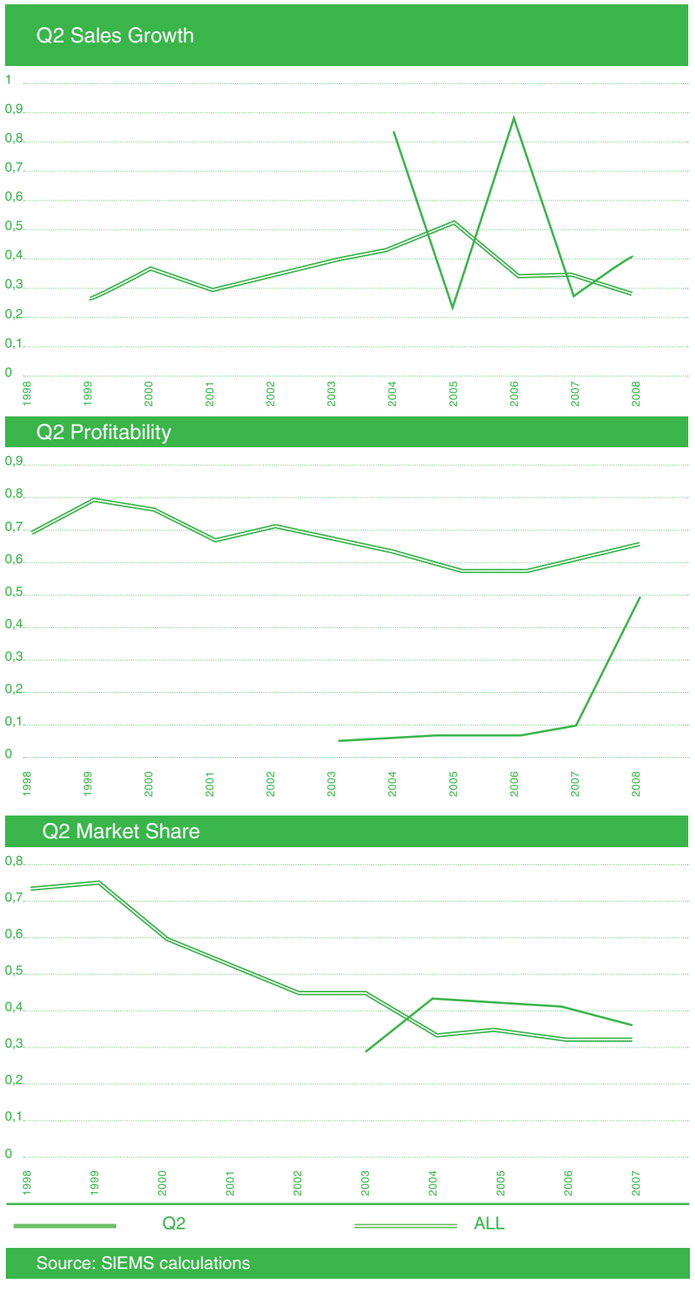
Four scenarios exist depending on different levels of sales growth and profitability. Firms in Q1 are high in both profitability and growth rate. Seven Chinese firms fall into this category. Firms in Q2 enjoy a high growth rate in relatively low profitability industries. Two firms fall into this category. Firms in Q3 have lower sales growth, but profit is high. Four firms fall into this category. Firms in Q4 are low in both profitability and growth. Four firms fall into this category.

Q1: ENTREPRENEURIAL GROWTH

Firms in Q1 enjoy high sales growth and high profitability. Their sales growth and profitability are consistently higher than the averages for the top 500 firms. However, their market share is much lower at the very beginning. During the 10-year period, the market share of these firms constantly increases, while the market share of an average top 500 firm declines. The market share of these firms for 2005 exceeds the average and keeps on increasing.

Firms in Q1 pursue entrepreneurial growth. All seven firms within this category start small with a low market share. They are able to enjoy high sales growth and high profitability, but the high profitability is certainly not derived from high market share. It is possible that these firms achieve high profitability through other means, such as access to cheap raw materials, government contracts, or new innovative products. For example, Xiuzheng Pharmaceutical is located near Long White Mountain, where many valuable drug ingredients grow. Similarly, Anhui Conch Cement has access to many high-quality limestone mines.

During the growth period, these firms sacrifice profitability to gain market share. Some firms try to increase market share by building their own resources and capabilities. Such investments may drag down profitability, however, the existence of resources and capabilities will support continued sales growth. For example, Weigao Group invested heavily in R&D



Source: SIEMS calculations

by setting up joint research institutes with universities. [31] It established nine research centers and hired many well-known scientists. Other firms started a price war to drive out competitors. The case of Xiuzheng Pharmaceutical well explains this point. The rhizoma gastrodiae pill is one of the very first products Xiuzheng introduced to markets. To compete, Xiuzheng lowered its prices but kept quality high. Its products were well accepted in markets, and it gained many return customers. After gaining market share, Xiuzheng slowly increased its prices. Customers were willing to pay higher prices because of the products' high quality. Although its profitability will suffer for a time, the firm will gain market power after dominating in the market. Once it achieves market domination, its profitability will begin to stabilize.

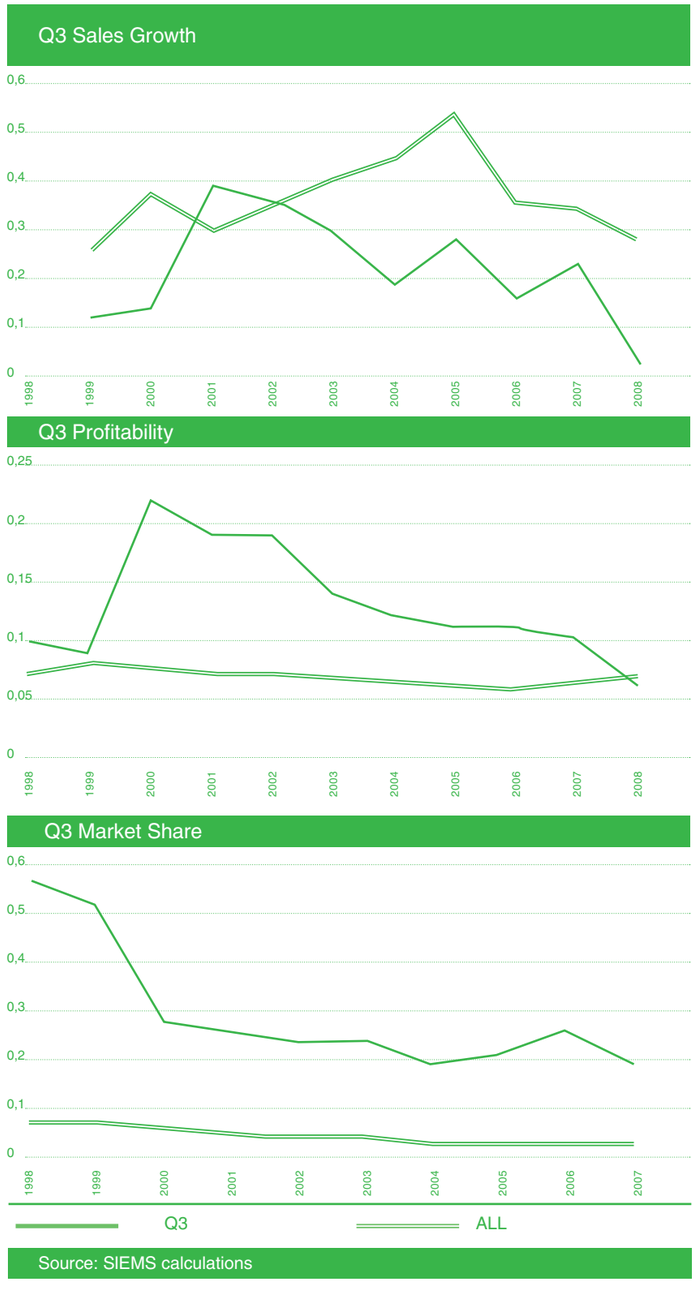
Q2: GROWTH FOR MARKET DOMINANCE

Firms in Q2 enjoy high sales growth but low profitability. They also have a slightly above average market share. These firms are able to achieve high sales growth mostly because demand is increasing fast. For example, Jiangsu Guoqiang Zincification Industrial Co, Ltd specialized in metal surface finishing. The demand for its products surged with the construction boom. Market share of firms in Q2 increases with sales growth. Meanwhile, profitability, although lower than average, also starts to increase. The growth-orientated strategy pays off. These firms are going through the loop described in Figure 1: experiencing sales growth, dominating markets, and then benefiting from their market position.

Profitability is still low, even though it has been increasing slightly. This low profitability can be attributed to the low profitability nature of the industry. The industry average profitability level for vegetable oil processing was -5% from 1998 to 2008. However, Sanhe Hopefull Grain & Oil Group has been able to achieve a profitability level of 1.5%. Although their profitability level is lower than that for the average top 500 firms, firms in Q2 already outperform their industry peers in terms of profitability.

Operating in low profitability industries, firms in Q2 must increase profitability by lowering costs. Jiangsu Guoqiang Zincification Industrial Co, Ltd adopted lean total productive maintenance (LTPM) to reduce manufacturing and maintenance costs. Consequently, the percentage of costs to sales decreased from 93% in 2003 to 79% in 2008. Alternatively, they could invest in other businesses with higher profitability. Sanhe Hopefull explored other markets in terms of both product and geography. It entered different industries, such as real estate and hotels. [32] It also explored various foreign markets, such as Argentina and the United States. [33]

[31] http://www.weigaogroup.com/h/jtgs/
[32] http://www.hope-full.com.cn/htdocs/pages.asp?id=70
[33] http://www.hope-full.com.cn/htdocs/pages.asp?id=15



Source: SIEMS calculations

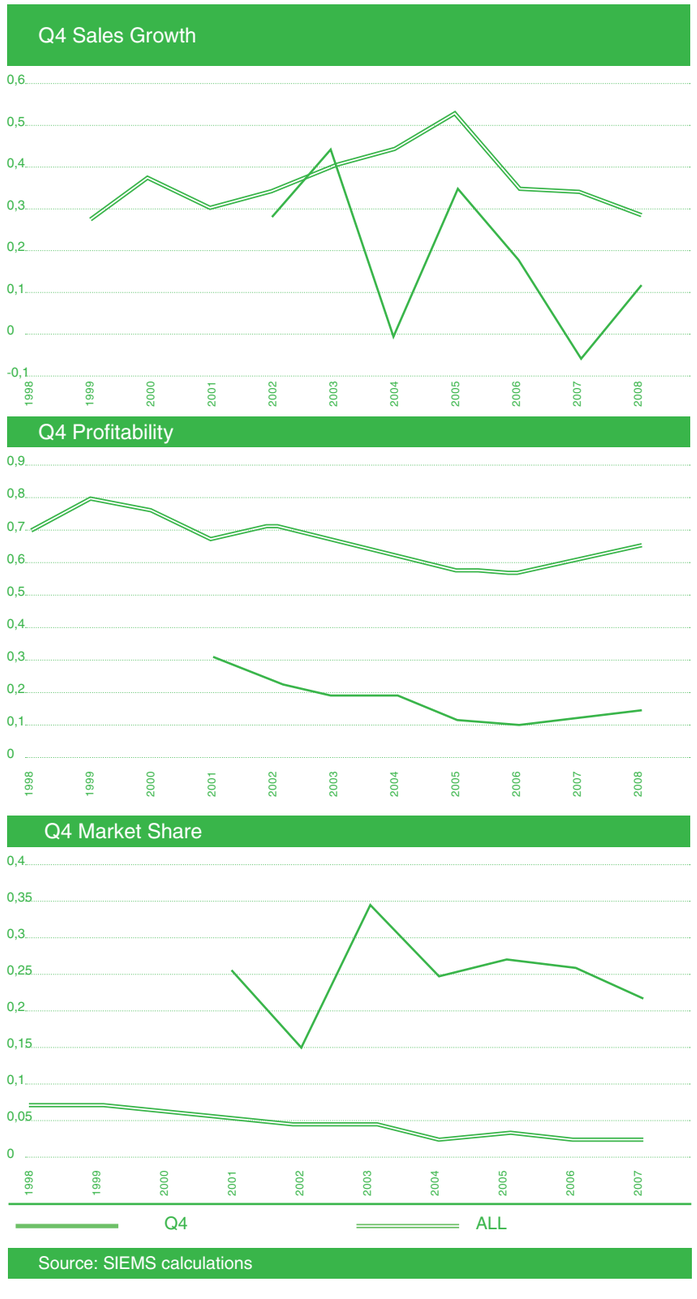
Q3: ORGANIC GROWTH

Firms in Q3 have slower sales growth but higher than average profitability and market share. These firms are market leaders in their industries and enjoy the benefits of their market dominance. The slower sales growth is not attributable to these firms' incapability but rather a result of their large size. The average size rank for these firms is 81.81, whereas the average size rank for the rest of top performing firms is 227.67.

All four firms in this category started by entering an overlooked niche market. BYD started in the lithium battery market, and the VV group succeeded in soy milk markets, Huawei started as a private branch exchange, and Ningbo Haitian focused on plastic processing machines. Since they were first movers in these markets, they were able to enjoy high market share and high profitability. However, as more and more firms enter these overlooked markets, competition begins to increase. Consequently, profitability and market share are showing signs of decline. In order to survive the competition, these firms need to develop their own competitive advantages. Their favorable position as market leaders provides them with enough resources to achieve this goal.

The case of Huawei well explains how to develop a firm's resources and capabilities. Huawei's success, in part, derives from the telecom industry's rapid growth in the domestic market. China's telecom equipment market saw soaring growth in the last 20 years. Many companies encountered similar opportunities but ultimately failed, while Huawei has grown to be an industry leader. Many wonder how it could manage to do so in such a capital-intensive and talent-intensive high-tech field. If we take a closer look at Huawei, we will find that its success formula is neither mysterious nor complicated: heavy spending on research and development (R&D). Chinese companies generally invest little in R&D because doing so lowers profit margins. However, Huawei has spent annually more than 10% of its revenue on R&D over a decade. It spent around 13.34 billion RMB on R&D in 2009. Huawei has already set up 17 R&D centers worldwide and 22 joint R&D centers with other carriers. It also ranked No. 2 in global patent filings, with 1,847 in 2009, according to the United Nations World Intellectual Property Organization patent list. Approximately 43,700 employees, accounting for 46% of the workforce, are dedicated to R&D functions. Engineers in Huawei generally earn about one-fifth to one-fourth of their counterparts in European or American companies, and their working hours are sometimes 1.5-2 times longer. This makes Huawei incredibly cost effective in competing with its global rivals.

During the growth stage, these market leaders also try to discover other opportunities. Huawei explored overseas markets. By the end of 2009, its market share in Europe, the backyard of key telecom giants like Erics-



Source: SIEMS calculations

son, Nokia Siemens, and Alcatel, and in the world have amounted to 10% and 14.2%, respectively. Firms in Q3 also want to replicate their success in other businesses. Their declining profitability and market share could also be attributed to the fact that these firms are switching to other businesses. The case of BYD is an illuminating example. As the lithium battery market is approaching maturity, BYD Group is venturing into other promising businesses, such as automobiles and solar energy. [34] The slowed sales growth, decreasing profitability, and market share reflect the strategic shift of the BYD Group.

Q4: SUSTAINING MARKET LEADERSHIP

Firms in Q4 have slower sales growth and lower profitability, but higher market share. Their high market share is a sign that these firms entered the industries early, similar to firms in Q3. Konka Group was founded in 1980 when electric appliances were still rare in China. Similarly, Founder technology produced computers as early as 1998, when personal computers were not widespread in China. However, slowed sales growth and declining profitability suggest that the industries in which these firms operate are approaching saturation. Although these firms are market leaders in their industries, they face fierce competition. In order to maintain market leadership in these industries, they have to grasp markets from competitors.

Firms in these industries usually buy technologies from foreign firms.[35] In other words, they do not possess their own technology. Consequently, they may participate in price wars to maintain market dominance, driving down profitability. Konka competes in household electronics industries. It faces fierce competition from both domestic players, such as Changhong and Haier, and foreign multinationals, such as Samsung and Sony. The market is saturated because China has passed the point where every family owns a TV. Constantly changing technology and increasing labor costs make profit margins low. Price wars are a common phenomenon in household electronics industries. The TV industry was one of the first industries to engage in a price war. Six price wars occurred between 1989 and 2000.[36]Konka was an active player in these price wars. In June 1998, Konka started a price war by reducing the price of several of its models, resulting in an overall reduction in industry profit of 5.2 billion RMB, but Konka's market share increased by 9.5%.[37] Dongguan Founder Computer Technology faces a similar situation, as the personal computer market is saturated and full of domestic and foreign competitors. Firms in the personal computer market in China are thriving because they adopted a dominant design.[38] In other words, Chinese firms in this industry rarely possess the technology to compete with foreign firms, such as Apple. Consequently, they have to sacrifice profitability to maintain market share.

An alternative way to deal with stiff competition in saturated markets is to explore other geographic or product markets with high demand. For example, Taifa Group, the largest hand trolley manufacturer in China, exports 46% of its products to the United States.[39] Konka diversified into several businesses, such as real estate and large LED monitors.[40]

Table 6 summarizes the analyses of these four different types of high performance firms. By looking at sales growth, profitability, and market share, we are able to discover some patterns in initial advantages, challenges, goals, and strategies. Although firms differ in terms of these aspects, they excel in one or more of these three dimensions. Focusing on one or more dimensions of sales growth, profitability, and market share can lead to success in emerging markets, such as China.

Although firms differ in terms of these aspects, they excel in one or more of these three dimensions.

One overall pattern across different quadrants is that high performance firms have higher market share than the other top 500, no matter which category the firm belongs to.

TABLE 6: SUMMARY OF FOUR DIFFERENT TYPES OF FIRMS

	Initial Advantages	Major challenge	Goal	Strategy
Q1	Access to rare resources	Low market share	Sacrificing profitability to increase market share	Invest to build resources and capabilities; price war to gain market share
Q2	Growing demands	Low profitability	Pursuing growth to increase market share and profitability	Cost reduction; explore other markets
Q3	Targeting in overlooked markets	Declining market share	Increasing efficiency to compete; seeking other opportunities	Invest to build resources and capabilities; explore other markets
Q4	High market share	Slowed sales growth	Sacrificing profitability to maintain high market share	Price war; explore other markets

Source: SIEMS calculations

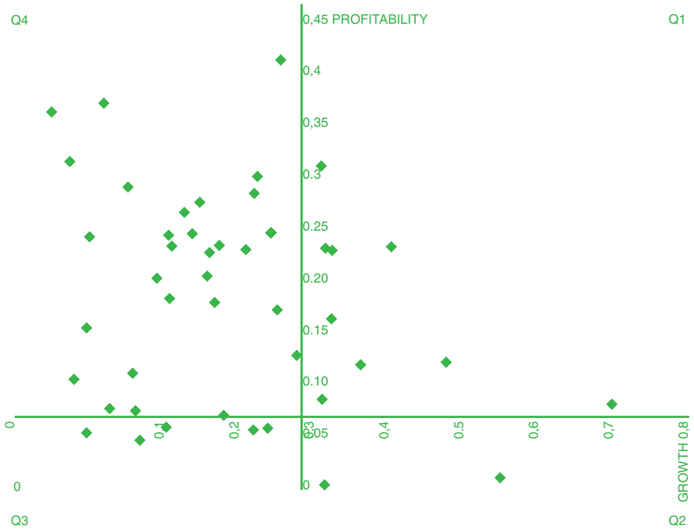
RUSSIAN STORY

Next, we conduct similar analyses for Russian firms.

Figure 4 shows that more firms lie in Q3, where firms enjoy higher profitability and a slower growth rate. This is consistent with the numbers in Table 5, which

[34] http://www.3158.cn/news/20101228/13/84-58932657_1.shtml
[35] Gao Xudong. Talk on April 15th, 2011.
[36] http://wenku.baidu.com/view/462cc70f7cd184254b353539.html
[37] http://wenku.baidu.com/view/462cc70f7cd184254b353539.html
[38] Gao Xudong. Talk on April 15th, 2011.
[39] http://www.qingdaonews.com/gb/content/2004-12/06/content_3988846.htm
[40] http://www.konka.com/cn/ProductCenter.html

FIGURE 4 / Top Russian Firms



Source: SIEMS calculations

show that Chinese firms have a higher sales growth rate but lower profitability than Russian firms.

We then look into the pattern of sales growth, profitability, and market share for firms in each quadrant. One overall pattern across different quadrants is that high performance firms have higher market share than the other top 500, no matter which category the firm belongs to. This reflects the fact that maintaining high market share is the key to success for firms in Russia. Since many of these firms are privatized former SOEs, this high market share is the legacy of these firms' history. With their favorable market positions, their primary challenge is to sustain their high market share. We can see that market share remained stable or increased during the period of study (i.e., 2000-2009). Firms in Q2 and Q4 sacrifice profitability to increase market share, either by investing heavily to develop their competitive advantages or by participating in price wars, like their Chinese counterparts. Firms in Q1 were able to achieve growth in all three dimensions from 2003 to 2007. The decline in 2008 and 2009 was due to the global financial crisis. The increases in all three dimensions suggest that these firms are going through the loop described in Figure 1. Firms start from high growth, leading

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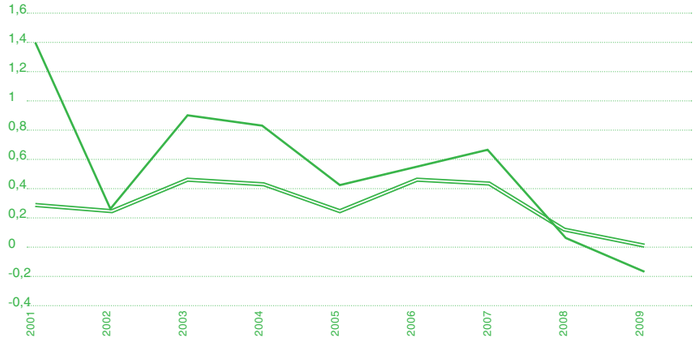
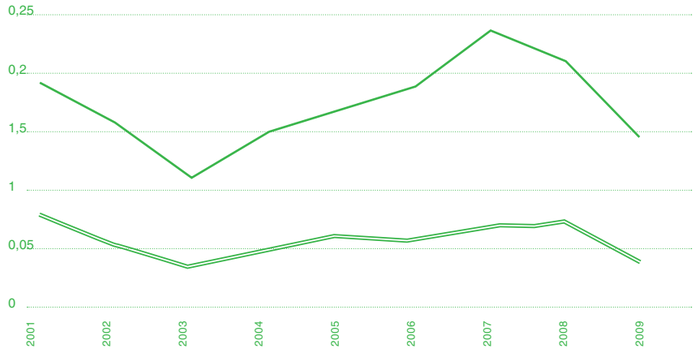
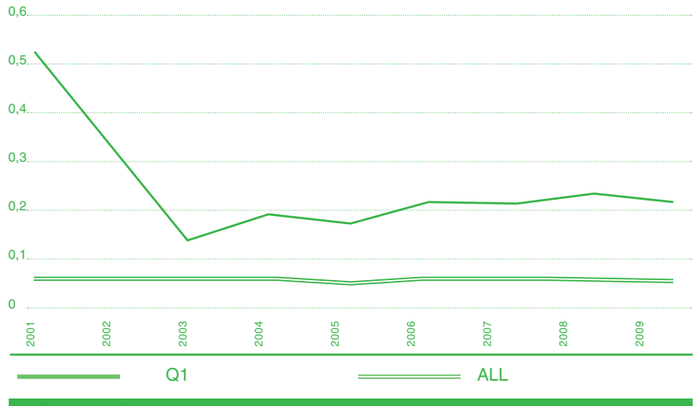
Q1 Sales Growth



Q1 Profitability

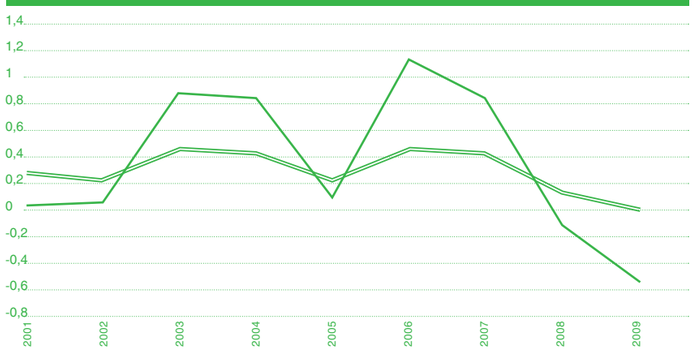


Q1 Market Share

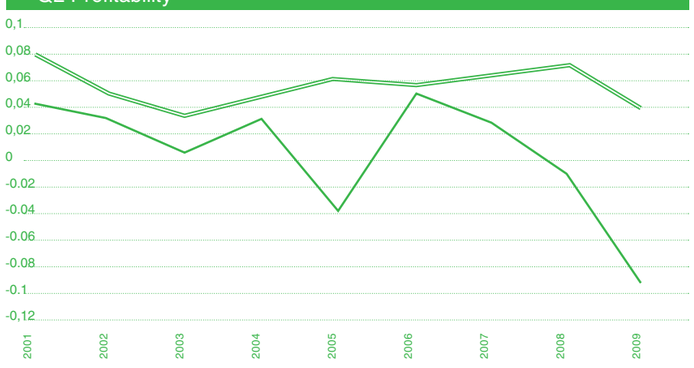


Source: SIEMS calculations

Q2 Sales Growth



Q2 Profitability



Q2 Market Share

Source: SIEMS calculations

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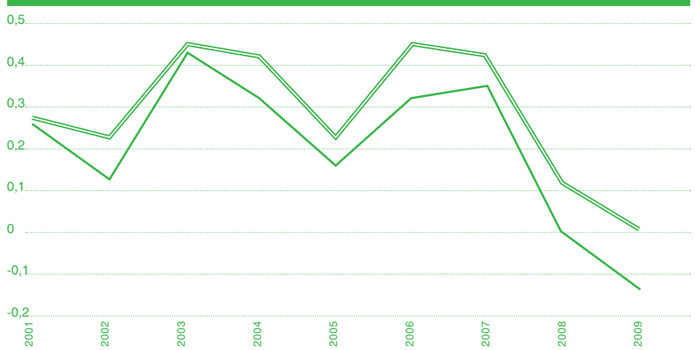
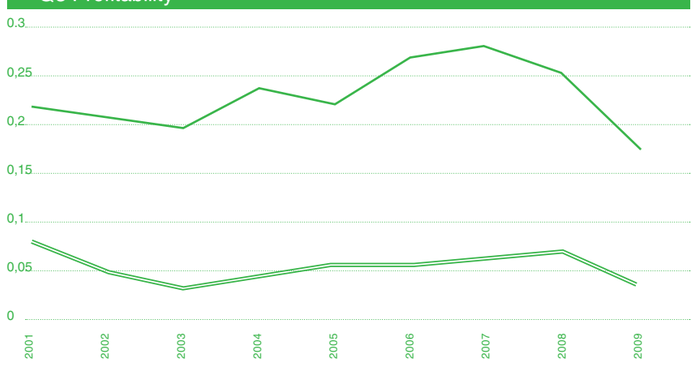
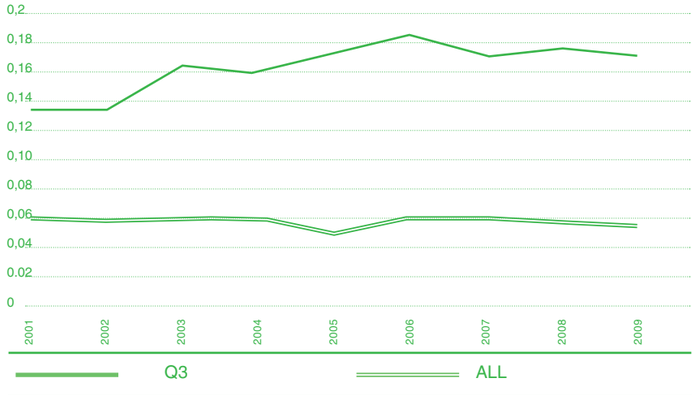
Q3 Sales Growth



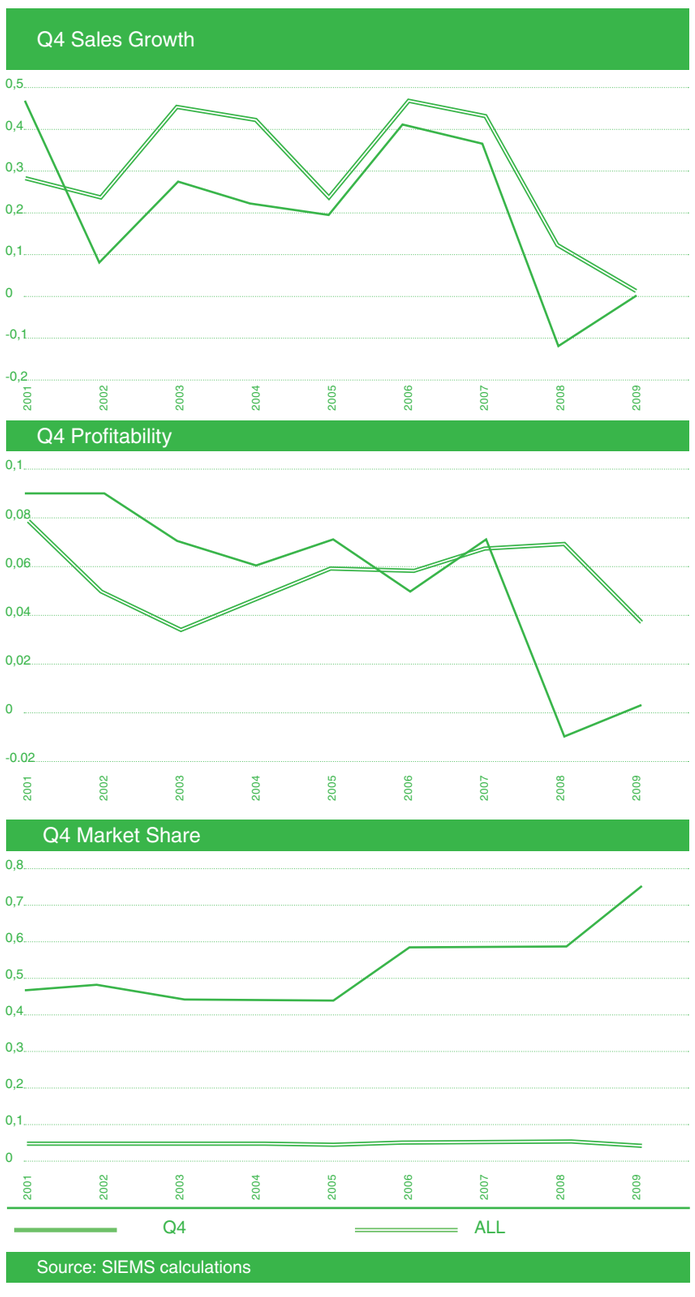
Q3 Profitability



Q3 Market Share



Source: SIEMS calculations



Source: SIEMS calculations

to higher market share first and then to higher profitability.

Firms in Q3 represent most high performance firms in Russia. They enjoy high profitability and market share, but slightly lower sales growth. These firms are in a stable position where profitability and market share remain at relatively high levels. Sales growth is not very high but is close to the average for the top 500 firms. These firms are enjoying their favorable positions with high profitability and market share and face few challenges from competitors. They may be in industries with high entry barriers or enjoy economies of scale helping them to be cost efficient.

One of the primary differences between these leading businesses in Russia and China lies in their origins. Many Chinese firms are small entrepreneurial firms, township enterprises, or privatized SOEs,[41] while many Russian firms are large privatized SOEs. This difference in their origins leads to a difference in their initial market positions, which further determines their strategy. In general, competition in the Chinese market is fiercer than that in the Russian market. Chinese firms place more emphasis on pursuing growth, while Russian firms place more emphasis on maintaining market share.

[41] The result of "grasp the large, release the small" policy in Chinese privatization.

VI. CONCLUSIONS

This report focused on three issues: determining the appropriate performance measures to evaluate firm performance in emerging markets, identifying a group of high performance firms in China and Russia using frontier analyses, and learning from the success stories of these high performance firms.

First, after analyzing the different market environments, we proposed multiple objective accounting performance measures to evaluate firm performance in emerging markets. More specifically, we suggested focusing on growth, market share, and profitability.

Second, we ran frontier analyses on the top 500 firms in China and Russia. The analyses show that most industries in Russia and China are going through the growth stage of industry evolution. Firms in emerging markets are in general less efficient than firms in developed countries. Russian firms, however, are showing signs of economies of scale. This means that Russian industries are slowly entering the early part of the maturity phase where efficiency begins to increase. High profitability and market share for Russian high performing firms also show that industry consolidation is happening in Russia and that some inefficient firms have already been shaken out of the markets.

Third, we analyzed the strategies of Chinese and Russian high performance firms. We placed Chinese high performance firms into four different categories according to their sales growth and profitability level. These firms started with different initial advantages and faced different challenges. However, they were able to overcome obstacles and became successful by focusing on one or more dimensions among sales growth, profitability, and market share. There is no single formula for success because every success is path dependent. All roads lead to Rome.

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APPENDIX 1 IDENTIFICATION OF PRIVATE FIRMS

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Chinese private firms are identified by the following procedures:

1- The registration type of the firm is one of the following:

a) Limited liability company (non-state owned)
b) Joint stock limited company
c) Private single proprietorship
d) Private joint proprietorship
e) Private limited liability company
f) Private joint stock limited company

2- It is still possible that firms have some level of state ownership after step 1, therefore, we further exclude firms with state control.

3- To make sure that we do not have SOEs in our sample, we next exclude certain industries that we believe are dominated by SOEs. We choose these industries based on the industry distribution of SOEs directly controlled by SASAC (State-owned Assets Supervision and Administration Commission). Out of 121 SASAC-controlled SOEs, we find more than five SOEs operate in each of the following industries:

a) Petroleum processing and coking (N=12)
b) Ferrous metals smelting and rolling (N=8)
c) Nonferrous metals smelting and rolling (N=7)
d) Aerospace equipment (N=5)

4- We further exclude weapon manufacturing because it is exclusively controlled by the government.

Russian private firms are identified by the following procedures:

1- Government/state ownership should not exceed 50%. This step ensures that we do not include firms controlled or owned by the government/state.

2- Foreign ownership should not exceed 30%. This step ensures that we do not include firms controlled by foreign entities.

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