Capital Allocation Outside the U.S.

Evidence, Analytical Methods, and Assessment Guidance

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Authors

Michael J. Mauboussin
michael.mauboussin@credit-suisse.com

Dan Callahan, CFA
daniel.callahan@credit-suisse.com

- Capital allocation is a senior management team's most fundamental responsibility. The problem is that many CEOs don't know how to allocate capital effectively. The objective of capital allocation is to build long-term value per share.
- In this report we examine the sources and uses of capital for Japan, Europe, Asia/Pacific excluding Japan, and Global Emerging Markets. This extends our analysis beyond the United States, which we discussed in a prior report.
- Countries or regions with a high return on invested capital (ROIC) can fund a substantial percentage of investment internally whereas those with low ROICs must rely more on external financing.
- Capital allocation is also determined by the largest sectors in a country's or a region's economy, the stage of economic development, cultural norms, and regulations.
- We provide a framework for assessing a company's capital allocation skills, which includes examining past behaviors, understanding incentives, and considering the five principles of capital allocation.

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Executive Summary

- We extend our analysis of capital allocation beyond the United States to other major world regions, including Japan, Europe, Asia/Pacific excluding Japan (APEJ), and Global Emerging Markets (GEM). For the prior report, see Michael J. Mauboussin and Dan Callahan, "Capital Allocation: Evidence, Analytical Methods, and Assessment Guidance," *Credit Suisse Global Financial Strategies*, August 5, 2014.

- Capital allocation is the most fundamental responsibility of a senior management team of a public corporation. The problem is that many CEOs, while almost universally well intentioned, generally don't know how to allocate capital effectively. The proper goal of capital allocation is to build long-term value per share. The emphasis is on building value and letting the stock market reflect that value. Companies that dwell on boosting their short-term stock price frequently make decisions that are at odds with building value.

- Regions and countries vary in the source of funding for capital. In general, high return on investment is associated with an ability to internally fund a substantial percentage of investments. Countries that largely finance investments internally include the U.S., the U.K., and Germany. Countries that require a higher proportion of external financing include France, Japan, and China.

- Academic research shows that rapid asset growth is associated with poor total shareholder returns in most regions of the world. Further, companies that contract their assets often create substantial value per share. But these findings are more robust in developed markets than in developing markets. Making investments that earn a return in excess of the opportunity cost is the key to creating value.

- Ultimately, the answer to all capital allocation questions is, "It depends." Most actions are either foolish or smart based on the price and value. Similar to investors, companies tend to buy when times are good and retreat when times are challenging, failing to take advantage of gaps between price and value.

- Past spending patterns are often a good starting point for assessing future spending plans. Once you know how a company spends money, you can dig deeper into management's decision-making process. Further, it is useful to calculate return on invested capital and return on incremental invested capital. These metrics can provide a sense of the absolute and relative effectiveness of management's spending.

- Understanding incentives for management is crucial. Assess the degree to which management is focused on building value and addressing agency costs.

- The five principles of capital allocation include: zero-based capital allocation; fund strategies, not projects; no capital rationing; zero tolerance for bad growth; and know the value of assets and be prepared to take action.

Summary of Global Capital Allocation

- Mergers and acquisitions (M&A), capital expenditures, research and development (R&D), and net working capital are the uses of capital for internal investment. How companies invest internally varies substantially by region. (See Exhibit 1.) Here are some of the main observations based on spending in recent decades:
  - M&A is the largest use of capital in the U.S., Europe, and GEM, the second largest use in APEJ, and the fourth largest use in Japan. The rarity of M&A in Japan is of particular note.
  - Capital expenditures are the largest use of capital in Japan and APEJ and the second largest use in the U.S., Europe, and GEM. The range in spending, measured as a percentage of sales, was twice as large for M&A as it was for capital expenditures.
  - R&D is the second largest use of capital in Japan, the third largest in the U.S. and Europe, and the fourth largest in APEJ and GEM. Developed markets spend substantially more on R&D than developing markets do.
  - Net working capital is the third largest use of capital in Japan, APEJ, and GEM, and the smallest use in the U.S. and Europe. This disparity likely reflects the differences in the businesses in the respective economies.

- Divestitures play a significant role in each of the regions, constituting roughly one-third to one-half the level of total M&A. They are also larger than dividends and share buybacks in all regions but Japan.

- Dividends substantially exceed share buybacks in all regions except the U.S., where they have been roughly equivalent on average. Buybacks are modest in Europe and fairly insignificant in Japan, APEJ, and GEM.

- Share buybacks have been meaningful in countries that embrace the Anglo-Saxon model and inconsequential in nearly all other regions. This pattern reflects cultural and regulatory constraints.

Exhibit 1: Capital Deployment – Historical Averages for U.S., Japan, Europe, APEJ, and GEM

	Uses of Capital (As a Percentage of Sales)							Economic Returns and Growth	
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends	CFROI*	Real Asset Growth Rate
U.S.	10.4%	7.1%	2.2%	0.8%	2.1%	3.3%	2.2%	8.5%	5.6%
Japan	1.2%	4.6%	2.1%	1.2%	0.2%	0.4%	0.6%	3.0%	3.3%
Europe	9.7%	7.0%	2.0%	1.5%	0.6%	5.1%	2.2%	6.7%	3.9%
APEJ	10.2%	10.5%	0.8%	2.8%	0.4%	5.1%	2.6%	6.4%	9.8%
GEM	15.8%	12.1%	0.3%	3.7%	0.5%	6.5%	3.2%	6.3%	9.3%

Source: Credit Suisse HOLT.
Note: For uses of capital, historical averages are based on the following years: U.S. (1980-2013), Japan (1985-2013), Europe (1985-2013), APEJ (1992-2013), GEM (1992-2013), For CFROI®* *and Real Asset Growth Rates, historical averages are based on the years 1993-2013 for all regions.*

* Cash Flow Return on Investment, or CFROI,® is a registered trademark in the United States and other countries (excluding the United Kingdom) of Credit Suisse Group AG or its affiliates.

Introduction

Capital allocation is the most fundamental responsibility of a senior management team of a public corporation. Successful capital allocation means converting inputs, including money, things, ideas, and people, into something more valuable than they would be otherwise. The net present value (NPV) test is a simple, appropriate, and classic way to determine whether management is living up to this responsibility. Passing the NPV test means that $1 invested in the business is worth more than $1 in the market. This occurs when the present value of the long-term cash flow from an investment exceeds the initial cost.

Why should value determine whether a management team is living up to its responsibility? There are two reasons. The first is that companies must compete. A company that is allocating its resources wisely will ultimately prevail over a competitor that is allocating its resources foolishly. The second is that inputs have an opportunity cost, or the value of the next best alternative. Unless an input is going to its best and highest use, it is underperforming relative to its opportunity cost.

The process of making inputs more valuable has a number of aspects. A logical starting point is a strategy. Properly conceived, a strategy requires a company to specify the trade-offs it will make to establish a position in the marketplace that creates value. A strategy also requires a company to align its activities with its positioning and to execute effectively.[1]

Since a company's strategy is often already in place when a new chief executive officer (CEO) takes over, capital allocation generally becomes his or her main responsibility. While a proper and comprehensive discussion of capital allocation requires a consideration of intangible and human resources, our focus here is on how companies spend money.

The problem is that many CEOs, while almost universally well intentioned, don't know how to allocate capital effectively. Warren Buffett, chairman and CEO of Berkshire Hathaway, describes this reality in his 1987 letter to shareholders. He discusses the point of why it is beneficial for Berkshire Hathaway's corporate office to allocate the capital of the companies it controls. Buffett is worth quoting at length:[2]

> This point can be important because the heads of many companies are not skilled in capital allocation. Their inadequacy is not surprising. Most bosses rise to the top because they have excelled in an area such as marketing, production, engineering, administration or, sometimes, institutional politics.
>
> Once they become CEOs, they face new responsibilities. They now must make capital allocation decisions, a critical job that they may have never tackled and that is not easily mastered. To stretch the point, it's as if the final step for a highly-talented musician was not to perform at Carnegie Hall but, instead, to be named Chairman of the Federal Reserve.
>
> The lack of skill that many CEOs have at capital allocation is no small matter: After ten years on the job, a CEO whose company annually retains earnings equal to 10% of net worth will have been responsible for the deployment of more than 60% of all the capital at work in the business.
>
> CEOs who recognize their lack of capital-allocation skills (which not all do) will often try to compensate by turning to their staffs, management consultants, or investment bankers. Charlie [Munger] and I have frequently observed the consequences of such "help." On balance, we feel it is more likely to accentuate the capital-allocation problem than to solve it.
>
> In the end, plenty of unintelligent capital allocation takes place in corporate America. (That's why you hear so much about "restructuring.")

Intelligent capital allocation requires understanding the long-term value of an array of opportunities and spending money accordingly. It also includes knowing the value of a firm's individual assets and being willing to sell them when they are worth more to others.

We believe that long-term growth in value per share should guide capital allocation decisions. A necessary corollary is that there is a time when shrinking the business is the most beneficial course for ongoing shareholders. In some cases, for instance, buying back shares is a wiser choice than expanding by means of capital expenditures or acquisition.

Capital allocation is a dynamic process, so the correct answer to most questions is, "It depends." Sometimes acquiring makes sense and other times divesting is the better alternative. There are times to issue equity and times to retire it. Because the components that determine price and value are changing constantly, so too must the assessments that a CEO makes. As Buffett says, "The first law of capital allocation—whether the money is slated for acquisitions or share repurchases—is that what is smart at one price is dumb at another."[3]

Buffett also discusses what he calls the "institutional imperative," a force that is also pertinent.[4] The force has multiple aspects as he describes it, but a pair of them are relevant here. One is that subordinates will readily create spreadsheets and studies to support the business craving of the leader. Another is that companies will "mindlessly" imitate one another, whether in M&A or executive compensation.

The message here should be clear. A decision isn't good just because someone in the organization can justify it or because some other company is doing it. Proper capital allocation requires a sharp analytical framework and independence of mind.

In our experience, very few CEOs, and chief financial officers for that matter, have what we call the "North Star of value." The North Star is not the brightest star, but it doesn't move much throughout the night or year. As a result, it provides a reliable sense of direction. Likewise, companies that have a North Star of value have an unwavering view of value no matter what is going on. It is common for executives to solicit input from a range of stakeholders, hear varying points of view, and walk away confused and unsure about the proper course of action. This doesn't happen to executives with the North Star of value, especially since they may have better information about their company's prospects than the market does.

Incentives are another barrier to proper capital allocation. An executive who is paid to deliver a target based on short-term earnings per share may well act very differently than an executive who is focused on building long-term value per share. In assessing management, ask a fundamental question: If there is a conflict between maximizing a reward based on the incentive plan and creating long-term value per share, which route will the executive select?

William Thorndike's excellent book, *The Outsiders: Eight Unconventional CEOs and Their Radically Rational Blueprint for Success*, inspired our reports on capital allocation.[5] Thorndike shares the stories of eight CEOs who created tremendous value per share during their tenures. One theme that comes out clearly in the book, and is explicit in the subtitle, is that these CEOs appeared out of step with conventional wisdom as they were building value. The North Star of value guided their decisions and they had the independence of mind to make the best choices.

This report has three parts:

1. **Groundwork.** This part starts by showing the sources of capital by region. We then specify a framework for considering the economic virtue of each form of capital allocation based on academic research.

2. **Capital allocation by region**. This section documents capital allocation by region, providing historical context, CFROIs and rates in asset growth, and the trends in capital allocation.

3. **Assessing a company's capital allocation skills**. This part discusses methods to assess past capital allocation choices, how to evaluate incentives, and the five principles of capital allocation.

Part I: Groundwork – Where Does the Money Come From and Where Has It Gone?

If the job of management is to deploy capital so as to add value, it makes sense to start with a discussion of where capital comes from and how management teams have spent it in the past. The sources of capital include the cash the business generates and access to the capital of claimholders, including debtors and shareholders. A company can also sell an asset, which is a one-time realization of the cash flow the asset is expected to generate over its life.

Businesses that grow rapidly generally require a sizeable amount of investment. For example, imagine a restaurant concept that is highly successful. To satiate demand that firm must build lots of restaurants and hence invest a substantial sum in order to expand. The rate of return on incremental capital is the maximum growth rate in operating profit a business can reach without external financing. By extension, a company with a return on invested capital (ROIC) higher than its growth rate will generate surplus capital.[6]

Companies that cannot fund their growth internally must access cash externally, either by borrowing or selling equity. The pecking order theory is an idea in corporate finance that says that managers of companies will typically choose to fund investments first with cash that the company generates internally, next with debt, and finally with equity.[7] One essential tenet of thoughtful capital allocation is that all capital has an opportunity cost, whether the source is internal or external.

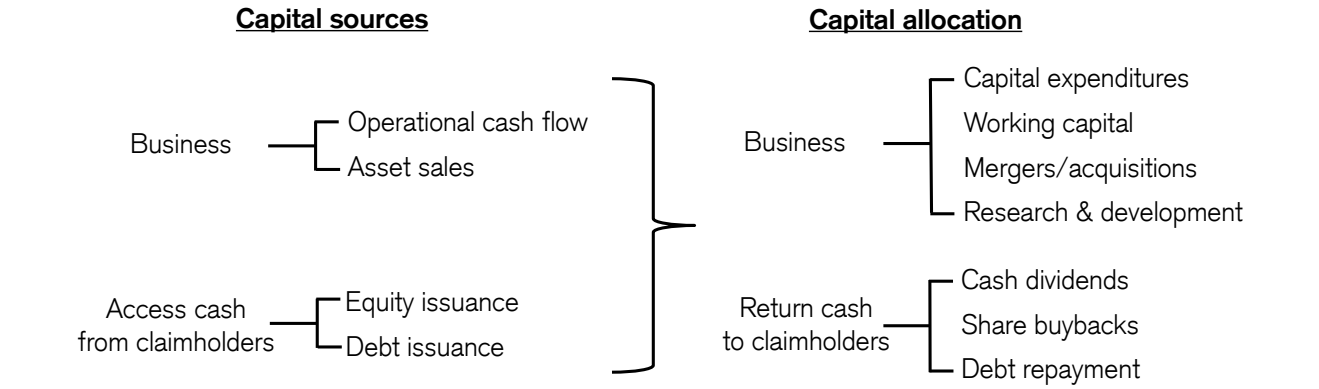
The uses of capital are where money goes. Executives can invest in the business through capital expenditures, increases in working capital, research and development, or mergers and acquisitions. These investments allow a company to grow. But growth, in and of itself, is never the goal of a thoughtful capital allocator. The proper metric of success is an increase in long-term value per share.

A company can also return cash to debt and equity holders. Debt repayment, a return of some or all principal and interest a company owes, is straightforward. A company can return cash to shareholders either by paying a dividend, where all holders receive the same amount, or by buying back stock. In a buyback, shareholders sort themselves. Those who want cash sell their shares and those who want to increase their stake in the company hold their shares. A dividend treats all shareholders the same no matter what the stock price.

In a buyback, selling shareholders benefit at the expense of ongoing shareholders if the stock is overvalued, and ongoing shareholders benefit at the expense of selling shareholders if the stock is undervalued. All shareholders are treated uniformly only if the stock price is at fair value.[8]

Exhibit 2 summarizes the sources and uses of financial capital. These follow closely the alternatives and choices that Thorndike specifies in *The Outsiders*.

Exhibit 2: Sources and Uses of Financial Capital



Source: Credit Suisse.

Sources of Capital

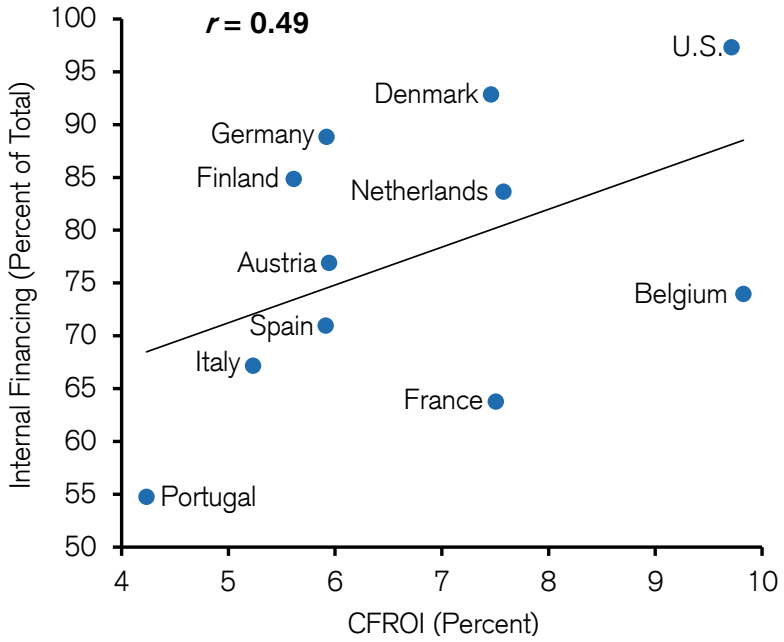
Internal financing, or the cash generated by the businesses, is the largest source of capital for most countries and regions and typically falls in the range of 60 to 90 percent. Issuance of new debt is the next most significant source of capital. The issuance of equity varies a great deal by region, and companies in developed economies commonly retire as much equity as they issue.

The ratio of internal financing to the total source of capital tends to correlate with the underlying return on invested capital for the country. A country with a high ROIC can fund a higher percentage of its investments with internally-generated cash than a country with a low ROIC. Exhibit 3 shows this correlation, using cash flow return on investment (CFROI) as a measure of return on investment. The data reflect the average of the ten years ended 2013.[9]

There are pros and cons to having internal financing represent a high percentage of investment funding. The pro is that companies are earning high returns on capital in general and need not rely on capital markets to fund their growth. The con is that companies can deploy internally-generated funds into value-destroying investments. The need to raise money from the capital markets creates a check on management's spending plans.

Indeed, Peter Bernstein, the renowned financial historian and economist, once suggested that all companies should be required to pay out 100 percent of their earnings and then appeal to the markets when they want funds for investment. He argued that markets are more effective than companies at allocating capital, and as a result the overall effectiveness of capital allocation would improve if left to the devices of the market.[10]

Exhibit 3: Relationship between CFROI and Internal Financing Capability (2004-2013 Average)



Source: Europe: Eurostat European Sector accounts; U.S.: Board of Governors of the Federal Reserve System, Division of Research and Statistics, Flow of Funds Accounts Table F.102; Credit Suisse.

Before delving into each of the specific uses of capital, it is worth considering what the academic research says about capital allocation. A key finding is that asset growth rates are strong predictors of future abnormal returns to shareholders in countries with developed financial markets. The effect is weaker, if present, in developing economies.[11]

More specifically, developed markets firms with low asset growth rates earn substantially higher shareholder returns, after adjusting for risk, than firms with high asset growth rates. Further, companies that contract their assets tend to generate higher shareholder returns than companies that expand their assets.

High returns to shareholders tend to follow events such as spin-offs, dividend initiations, share repurchases, and debt prepayments, whereas low returns to shareholders generally follow events such as acquisitions and stock and debt issuance.

A global study of 40 countries reveals that from 1982-2010 the relationship between asset growth and shareholder results was strong in Europe, with 14 of the 17 countries in the study showing the relationship (Greece, Italy, and Portugal were the exceptions). The economies in APEJ also overwhelmingly exhibit the asset growth effect, including 10 of the 13 countries in the study (the result didn't hold for China, Taiwan, or the Philippines).

Unlike most developed countries, developing economies do not demonstrate a significant asset growth effect. Of the 14 developing economies in the study, only 2 exhibited a strong asset growth effect.

The academic research also supports the point that growth is not inherently good. We must recognize that context is very important. The correct answer to almost every capital allocation question is, "It depends." We need to look beyond base rates, as informative as they are, to understand what truly drives or impedes value creation.

Uses of Capital

We now turn to the details of the major uses of capital. We discuss how to assess each alternative from an economic standpoint and summarize the findings of the empirical research. The subsequent part reviews the details of the historical trends for the uses of capital in each region.

Mergers and Acquisitions. M&A is a major source of redistribution of corporate resources. For many companies, M&A is the most significant means to pursue strategic goals and the most costly way to do so. Nearly all companies and investment portfolios will feel the effect of M&A at some point. Consider that over the past twenty years, M&A volume as a fraction of the total equity market capitalization has averaged 12 percent in Europe, 9 percent in the U.S., 8 percent in GEM, 7 percent in APEJ, and 3 percent in Japan.

M&A tends to follow the stock market closely, with more M&A activity when the stock market is up. It comes as no surprise that companies that act early in an M&A cycle tend to generate higher returns than those that act later. The first movers in an M&A wave enjoy the benefits of a larger pool of acquisition targets and cheaper valuations than companies that acquire later in the cycle. Later acquirers are encouraged to act based on bandwagon effects, or what Buffett calls the institutional imperative, and an accommodating environment for financing.[12]

One of the most effective ways to assess the merit of a deal is to compare the present value of incremental cash flow, the result of synergy, to the premium the acquirer agrees to pay.[13] If the synergy exceeds the premium, the deal will add value for the buyer. If the synergy is less than the premium, the buyer will see its shares decline. The relationship between synergy and premium is more explanatory than the measures that companies and investors commonly use, including earnings accretion or dilution.[14]

Here's an example. Assume that the market capitalization is $2,000 for the buyer and $800 for the seller. The buyer bids $1,000 for the seller, representing a $200 premium. If the synergy is only $100, the market capitalization of the buyer will slump to $1,900 and the seller will receive $1,000. If, on the other hand, the synergy is $300, the market capitalization of the buyer will rise to $2,100 as the seller receives $1,000.

Although the key factors in judging M&A are the synergy and the premium, only the premium is explicit. While companies today generally provide some guidance for expected synergy, the investor must still assess the likelihood that the company will achieve the objective. M&A creates value in the aggregate as the combined value of the buyer and target is almost always higher after a deal is announced than before. But buyers commonly overpay, which means the seller's shareholders often capture the value of the synergy.

Capital Expenditures. Capital expenditures have been the largest source of investment in Japan and APEJ, and are a large percentage of spending in GEM. As a broad rule of thumb, spending on capital expenditures, measured as a percentage of sales, is larger in developing countries than in developed countries. Further, the growth in capital expenditures tends to come with low variance, which means that executives want to keep the spending steady.

Executives and investors frequently distinguish between "maintenance" capital expenditures and total capital expenditures. Maintenance spending is the minimum required to maintain or replace the long-term assets in place. We can assume that capital expenditures beyond the maintenance level are in pursuit of growth.

Depreciation expense serves as a rough proxy for maintenance capital spending.[15] Measured as a percentage of sales, growth capital expenditures range from one-fifth to one-half of overall capital expenditures across the different regions. That maintenance capital expenditures are essential explains a good deal of the stability of

spending. Further, it suggests that in assessing the value creation prospects of capital expenditures, you are best served to focus on the component that supports growth.

The stock market tends to favorably greet increases in capital expenditures for companies that have attractive returns on invested capital and a good record of past spending. The market expresses skepticism at increases for low return on capital businesses or businesses that are at or near a cyclical peak.[16]

Research and Development. Unlike M&A and capital expenditures, R&D is an expense on the income statement rather than invested capital on the balance sheet. Accountants expense R&D in the period the company incurs it, notwithstanding the potential long-term benefits, because they deem the outcomes too uncertain and difficult to quantify. We can define R&D as a set of activities that seeks to develop new products or the tools to create new products.

In the U.S., businesses account for about 70-75 percent of total R&D spending, with the government and academia splitting the other 25-30 percent. The industries that spend the most include information technology, healthcare, materials, and aerospace and defense. Technology and healthcare combined represent more than two-thirds of all R&D spending in the U.S., and technology R&D spending is roughly 1.5 times that of healthcare.

R&D spending averages about two percent of revenues in developed economies including the U.S., Japan, and Europe. That ratio is less than one percent in APEJ and GEM. The U.S., China, and Japan together represent more than half of global R&D spending, and ten countries account for about 80 percent of the total. At current rates of funding and growth, China will surpass the U.S. as the largest spender on R&D in the year 2022.[17]

The academic research on the effectiveness of R&D spending is somewhat equivocal, in part because of the measurement challenges and the decline in R&D productivity in the pharmaceutical industry. One of the best ways to study the market's reaction to any form of investment is to examine unexpected changes. In one such study, finance professors studied more than 8,000 unexpected increases in R&D spending over a 50-year period ended in 2001 and found that the stocks of those companies rose.[18] Other researchers conclude that the returns to R&D are positive and higher than other capital investments.[19]

A reasonable question is whether the stock market effectively reflects R&D spending. One large study found that the market does it well. This means that companies that spend a large percentage of sales on R&D realize similar stock market returns as companies that spend a small percentage of sales on R&D. The researchers came to similar conclusions for advertising expenses, which are about one-half as large as R&D expenses in the aggregate.[20]

Academics have also found that larger companies that acquire their R&D by buying businesses that are R&D intensive tend to fare poorly in the stock market.[21] This is consistent with the view that the value of R&D in an acquisition ultimately accrues to the seller, not the buyer. That said, companies with strong execution capabilities can create value by enhancing R&D effectiveness.[22]

One study focused specifically on Japan found that the stock market properly reflected R&D spending. Specifically, it showed that companies that spent a large percentage of sales on R&D realized similar total shareholder returns as companies that spent a small percentage.[23]

Some recent research suggests that the technology companies in the U.S. that are in the bottom one-third of R&D spending as a percentage of sales deliver higher returns to shareholders than those in the top third.[24]

This finding underscores how tricky it is to assess R&D spending because a number of technology companies have benefitted from R&D that was funded by the government.

Mariana Mazzucato, a professor of economics at the University of Sussex, addresses this issue in her provocative book, *The Entrepreneurial State*.[25] Her thesis is that the government funds a great deal of high-risk R&D that companies go on to exploit commercially.

She uses the vivid example of the iPhone from Apple Inc., a company that has created a huge amount of shareholder value in the past decade. Four of the main technologies inside the iPhone, including the Global Positioning System (GPS), the Internet, touch screen, and voice recognition software, were developed by the U.S. government. As Mazzucato notes, Apple did a brilliant job of integrating these technologies, designing an attractive and intuitive product, and marketing effectively. But it did not develop some of the key technologies inside the phone, which means the company's shareholders did not have to shoulder those expenses.

Net Working Capital. Net working capital is the capital a company requires to run its day-to-day operations. It is defined as current assets minus non-interest-bearing current liabilities. The primary components of net working capital include inventory, accounts receivable, and accounts payable. Interest-bearing current liabilities, which include short-term debt and the current maturities of long-term debt, are a form of financing and are therefore not part of net working capital.

For the purpose of capital allocation, we analyze the change in net working capital. Net working capital is a substantially larger use of capital in developing markets than in developed markets. For instance, changes in net working capital were 3.7 percent of sales in GEM and 2.8 percent in APEJ compared to 1.5 percent of sales or less in Europe, Japan, and the U.S.

Divestitures. Companies use divestitures to adjust their business portfolio. Actions include the sale of divisions, spin-offs, and equity carve-outs. A company will divest an operation when it perceives the value to another owner to be higher, or if the divestiture adds focus to the parent and hence improves results.

There are a few considerations in assessing divestitures. First, research has established that most of the value creation for a typical company comes from a relatively small percentage of its assets.[26] This means that most companies have businesses or assets that do not earn the cost of capital and that may be more valuable to another owner.

Divestitures can lead to "addition by subtraction" when a company that divests an operation with a low return on invested capital receives more than what the business is worth as an ongoing part of the firm. So there's an addition of value to the company even as there's a subtraction in the size of the firm.

Second, we have already reviewed the evidence showing that M&A creates value in the aggregate but that acquirers struggle to capture much, if any, of that value. This suggests that it is better to be a seller than a buyer on average. This point is particularly relevant when there are multiple bidders for an asset. Contested deals frequently lead to what economists call the "winner's curse."[27] When this occurs, the "winner" of the bidding pays too much for the asset, hence the "curse." The winner's curse means that there is a wealth transfer, above and beyond the value of the asset, from the buyer to the seller.

Finally, most companies have a natural tendency to want to grow rather than shrink. As companies grow and diversify, capital allocation and strategic control can become more challenging. When a CEO who understands capital allocation takes the helm of a company with underperforming assets, there is a great opportunity to create value through divestitures.[28]

Notwithstanding their significance in capital allocation, divestitures have received substantially less attention than M&A in the academic literature. Research for the most part concludes that divestitures create value. A meta-analysis of nearly 100 studies on divestitures concludes: "In the broadest possible terms, our results suggest that on average, divestiture actions are associated with positive performance outcomes for the divesting parent firm."[29]

Analysis also shows that spin-offs create value for the spin-offs themselves as well as the corporate parents.[30] Researchers who did a meta-analysis of more than 25 papers in the spin-off literature summed up their findings this way: "The main conclusion is consistent: spin-offs are associated with strongly significant abnormal returns."[31] They suggest the factors that explain these wealth effects include sharpened focus, better information, and in some cases tax treatment.

Dividends. A dividend is a cash payment to a shareholder that is generally paid from profits. Dividends and share buybacks are the main ways companies return cash to shareholders. Companies can also return cash to shareholders by selling the company for cash.

The most profound difference between buybacks and dividends may be the attitude of executives. Most executives believe that once a dividend is established, paying it is on par with investment decisions such as capital spending. In contrast, they tend to view buybacks as something to do with residual cash flow after the company has made all investments that are appropriate.[32]

There are a couple of consequences of this difference in attitude. The first is that dividend payments are vastly less volatile than buybacks. Indeed, of all the capital allocation options, dividends have among the lowest standard deviation in growth.

How should investors assess dividends? First, dividends are useful to consider in the context of cash flow. To sustain a cash dividend, a company has to generate cash flow beyond the basic needs to maintain the business and support its growth. So an investor should gauge a company's cash flow prospects in order to anticipate a company's ability to pay dividends.[33]

Second, dividends can play an important role in the capital accumulation rate, also known as total shareholder return (TSR). From time to time you hear that dividends provide the bulk of shareholder returns for equities in the long run. That assertion is wrong if you assume the goal of an investor is to accumulate capital. In fact, price appreciation is the only source of investment return that increases accumulated capital over time.[34]

The equity rate of return is a one-period measure and is simply the sum of stock price appreciation and the dividend. The capital accumulation rate, or TSR, is a multi-period measure that assumes all dividends are reinvested in the stock. Knowing price appreciation and dividend yield, the following equation allows you to calculate TSR:

Total shareholder return (TSR) = Price appreciation + [(1 + price appreciation) * dividend yield]

The value of the compounding reinvested dividends means that the equity rate of return is always lower than the TSR as long as price appreciation is positive. For example, assume price appreciation of 7 percent and a dividend yield of 2 percent. The equity rate of return is 9 percent (.07 + .02) and the TSR is 9.14 percent (.07 + [(1 + .07)*.02]).

The key is that for an investor to actually earn the TSR, all of the dividends they receive must be reinvested back into the stock. That's why price appreciation only determines the TSR.

It's crucial to acknowledge that almost no one earns the full TSR because most individuals do not reinvest the dividends they receive, and dividends are generally taxable. While there are no clear-cut data on the topic, it appears that only one-tenth of all dividend proceeds are reinvested. Naturally, investors can use dividends to consume. But if they do, they can't earn the TSR.

Further, most investors must pay taxes on the dividends they receive. The TSR declines when you assume that only a fraction is reinvested in the stock. Academic research supports the view that the tax rate on payouts affects shareholder returns.[35]

Academic research on dividends supports a few points. To begin, older companies are more likely to pay dividends than younger companies. So any analysis of dividend yields must take into account the maturity of the population of companies under consideration.[36]

Second, dividends provide a strong signal about management's commitment to distribute cash to shareholders and its confidence in the future earnings of the business. This is consistent with the managerial attitude that dividends are sacrosanct once declared. For this reason, companies are very deliberate about the decision to initiate a dividend.[37]

Dividend payouts are generally more generous in developing markets than in developed markets. Dividends as a percentage of sales averaged 3.2 percent in GEM and 2.6 percent in APEJ in the past couple of decades, higher than the 2.2 percent in the U.S. and Europe. Japan's payout rate has been consistently below the average of other regions of the world, with dividends as a percentage of sales of 0.6 percent in the past 30 years.

Share Buybacks. A share buyback is the second way that a company can return cash to its shareholders. Whereas all shareholders are treated equally with a dividend, only shareholders who sell to the company receive cash. This means that shareholders realize very different outcomes based on whether they choose to sell or hold the stock when they deem it to be overvalued, fairly valued, or undervalued.

When assessing a repurchase program, investors and executives should consider the golden rule of share buybacks, which states: A company should repurchase its shares only when its stock is trading below its expected value and when no better investment opportunities are available.[38]

The golden rule addresses both absolute and relative value. Companies should only invest where they anticipate a payoff that has a positive net present value. This is a fancy way of saying "you will get more than what you pay for." This absolute benchmark applies to all of a company's capital allocation decisions, including M&A, capital expenditures, and R&D.

The rule also addresses relative value when it emphasizes that companies should prioritize higher return internal investment opportunities over buybacks. Ideally, executives should rank their investment opportunities by expected return and fund them from highest to lowest. A company should expect that all of the investments it funds will earn above the cost of capital. There can be cases when buybacks are more attractive than investing in the business.[39]

The second aspect of assessing a buyback is its impact on various shareholders under different conditions. Only if a stock trades exactly at intrinsic value do buybacks and dividends treat all shareholders the same. If a stock is overvalued or undervalued, the effect of a buyback is different for selling shareholders than it is for those who continue to hold.

From the company's standpoint, corporate value is conserved no matter how the company chooses to pay out cash. What differs is who wins and who loses as the result of buying stock below or above intrinsic value. Since management should focus on building value per share for continuing shareholders, it should always try to buy back shares that are undervalued.

To be more concrete, if a company buys back shares that are overvalued the selling shareholders gain at the expense of ongoing shareholders. The premium to intrinsic value accrues to the sellers and the value per share for the ongoing holders goes down accordingly.

If a company buys back shares that are undervalued the selling shareholders lose at the expense of ongoing shareholders. The discount to intrinsic value accrues to the ongoing shareholders and the selling shareholders fail to realize value.

This analysis suggests a couple of points that investors commonly overlook. First, if you are the shareholder of a company that is buying back stock, doing nothing is doing something. By choosing to hold the shares instead of selling a pro-rated amount, you are effectively increasing your percentage ownership in the company. One alternative is to sell shares in proportion to your stake, creating a homemade dividend and maintaining a steady percentage ownership in the business.

Second, it is logical that you would prefer that the companies you hold in your portfolio buy back stock rather than pay a dividend. If you own shares of companies that you think are undervalued, buybacks will increase value per share by definition. The only instance where this may not be true is if you believe that a dividend would provide a more powerful signal to the market, hence creating more value than a buyback.

Tying together these thoughts, there are basically three schools of thought regarding buybacks: fair value, intrinsic value, and accounting-motivated. The intrinsic value school is where you want to be if possible.

The fair value school takes a steady and consistent approach to buybacks. Management believes that over time it will buy back shares when they are both overvalued and undervalued, but for the most part when they are about fairly priced. This approach offers shareholders substantial flexibility as it allows them to hold shares and defer tax liabilities or create homemade dividends by selling a pro-rated number of shares.

The fair value school is consistent with the free cash flow hypothesis, which says that managers who have excess cash will invest it in projects with a negative net present value. By disbursing cash, a company buying back its shares reduces the risk of doing something foolish with the funds.[40] Research suggests that most companies would have been better off buying back stock consistently versus their actual behavior of buying heavily in some periods and lightly, or not at all, in others.[41]

The intrinsic value school believes a company should only buy back shares when it deems them to be undervalued. A company must have asymmetric information or beliefs, as well as analytical prowess, to profitably pursue this approach. Asymmetric information means that company management has information that the stock price fails to reflect. Differing beliefs occur when management has the same information as the market but comes to different conclusions about what that information means.

Analytical prowess means that the executives at the company know how to translate their differential view into an estimate of the relationship between the stock price and intrinsic value. Investors should not assume that management has this ability. Indeed, surveys consistently show that executives believe their stock to be cheap.

Management can act on its conviction by being bold with its buyback program, buying back a substantial percentage of the shares or even buying them at a premium to the prevailing price through a tender offer.[42] This school fits the signaling hypothesis, which suggests that companies buy back shares when they deem them to trade below intrinsic value. Further, it is important to focus on actual share buybacks versus buyback announcements. The evidence supporting the signaling hypothesis is mixed, but 85 percent of CFOs believe that their buyback decision conveys information.[43]

Boosting short-term accounting results, especially earnings per share (EPS), is what motivates the final school.[44] When surveyed, three-fourths of CFOs cite increasing EPS as an important or very important factor in the decision to buy back shares. Two-thirds of CFOs say that offsetting the dilution from option or other stock-based programs is important. This underscores another essential point: you should consider buybacks net of equity issuance.

The problem with the accounting-motivated school is that its actions are not necessarily aligned with the principle of value creation.[45] For example, there may be a case where buying back overvalued stock boosts EPS and helps management reach a financial objective that prompts a bonus. In this case the motivation is impure because management's proper goal is to allocate capital in an economically sound fashion for shareholders.

Investors assessing companies buying back stock should make an effort to determine which school the management is in. It can be the case that management buys back stock for the right reason and realizes accounting benefits as a result. That's fine. But investors should be on the lookout for companies that make decisions based on the accounting results without sufficient regard for the economic merits.

A couple of findings from the academic research are worth highlighting. The first is that it appears companies are increasingly using buybacks as a substitute for dividends.[46] As a result, total shareholder yield (sum of dividends and buybacks divided by equity market capitalization) may be a better indicator of a company's proclivity to pay out than a simple dividend yield.

Second, a global study found that share buybacks generate positive excess returns on balance, but that the results differed across regions. Buybacks led to positive excess returns in Japan, APEJ, and several prominent GEM countries, but did not do so in Europe. The researchers suggest the source of the positive returns is the ability of management teams to take advantage of undervalued stock prices.[47]

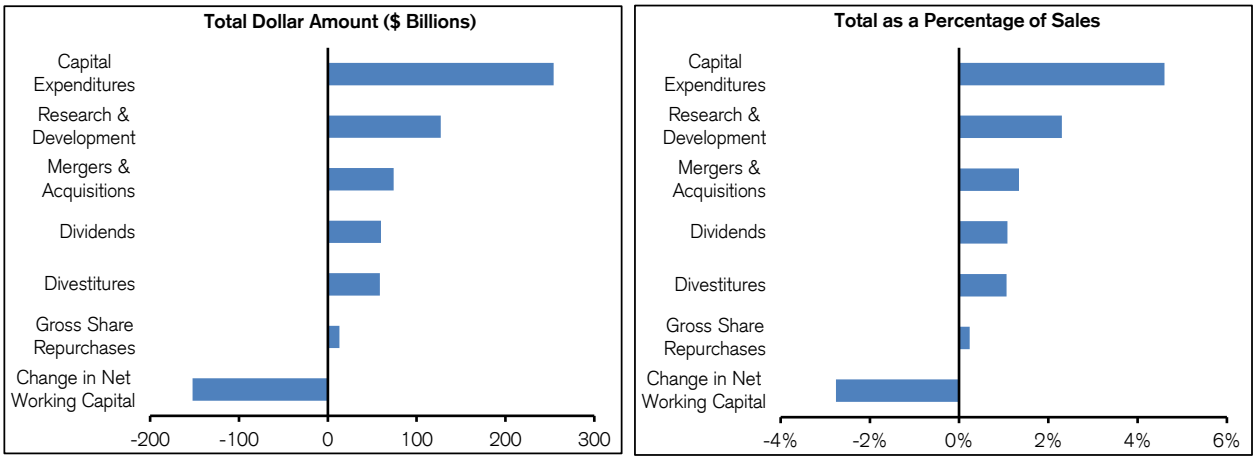
We now turn to capital allocation by region. Before we do, here's a quick comment on currency. Credit Suisse HOLT® converts the numbers based on local currencies into U.S. dollars using year-end exchange rates. This applies to R&D, capital expenditures, buybacks, dividends, and net working capital data. For M&A and divestitures, Thomson Reuters Datastream converts values in local currencies into U.S. dollars as of the effective date of the deal.

Part II: Capital Allocation by Region

Japan

Uses of Capital. Exhibit 4 shows how the top 1,000 companies in Japan, excluding companies in the financial services and regulated utility industries, deployed capital in 2013. While just a snapshot for a particular year, the ranking reasonably reflects how companies in Japan have allocated capital over time.

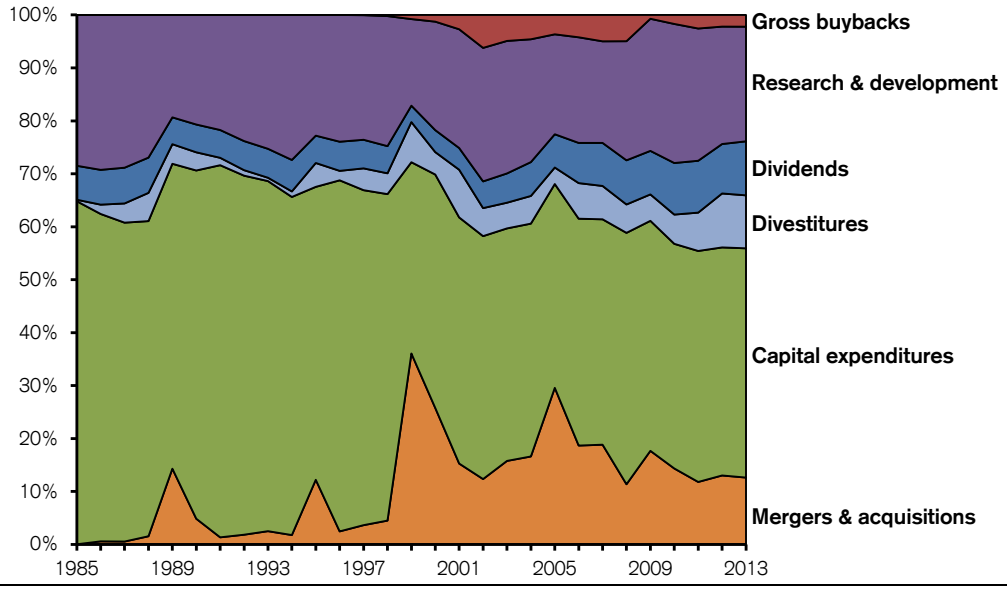
Exhibit 4: Japan Capital Deployment, 2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Exhibit 5 shows the breakdown of spending by source from 1985-2013. This graph excludes changes in net working capital because those values are negative in many years.

Exhibit 5: Japan Capital Deployment, 1985-2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, and dividends exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Similar to 2013, capital expenditures and research and development (R&D) are the largest uses of capital over time. An examination of the changes from 1985 through 2013 reveals some noteworthy patterns:

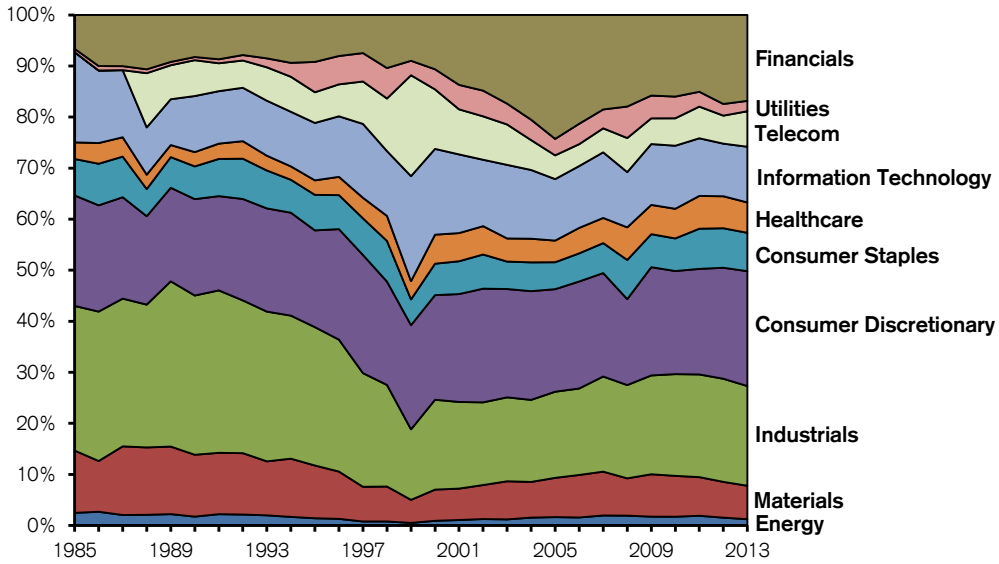
- Capital expenditures are by far the largest use of capital. Historically, capital expenditures have been more than double the level of R&D spending and nearly four times that of M&A. Capital expenditures have been fairly steady over time. In 2013, they were 4.6 percent of total sales, in line with the long-term average. But the fraction of capital expenditures to the total sum that companies allocate has declined over the decades. This reflects a change in the composition of the economy, with businesses that require less capital investment replacing those that require more. (See Exhibit 6.) For example, the energy, materials, and industrial sectors represented 43 percent of the market capitalization of the top 1,000 companies in the Japanese market in 1985 but just 27 percent in 2013.

- R&D spending has shown a gradual rise from 1.6 percent of sales in 1985 to 2.3 percent in 2013. These levels make Japan one of the world's leaders in R&D spending, and the ratio has been steady over the years. Japan's large presence in R&D-intensive sectors explains its level of spending.

- M&A plays a much smaller role in Japan than it does in other major countries and regions. M&A volume was only 1.3 percent of sales in 2013, slightly above its long-term average. Legal and cultural factors explain why M&A was negligible until the late 1990s. For much of Japan's history, society frowned on M&A and gaining approval for deals was difficult because of the interlocking and diffuse ownership structure of corporations. M&A activity picked up when Japan instituted new laws to increase investor protection and as the legacy corporate ownership structure began to change.

- The return of cash to shareholders through dividends and buybacks was paltry before Japan adopted a series of regulatory reforms in the 1990s. The government first made buybacks legal in 1994 and then made their tax treatment less punitive a few years later. Further, corporate governance reforms that were friendly to investors spurred more M&A activity and boosted corporate payouts overall. The buyback yield (buybacks as a percentage of total market capitalization) went from zero in 1985-1999 to 0.7 percent in 2000-2013, while the dividend yield rose from 0.8 percent to 1.5 percent.

Exhibit 6: Japan Sector Composition, 1985-2013



Source: Credit Suisse HOLT.
Note: Data for telecom sector not available for 1985-1987.

Exhibit 7 shows a detailed history of capital deployment from 1985-2013. It is worth noting that the standard deviations of the growth rates, which appear in the bottom row, are small for R&D, capital spending, and dividends, relative to those of M&A, buybacks, and divestitures. Standard deviation is a measure of how much something varies from an average. These standard deviations provide a glimpse into how managers think about each use of capital. The lower the standard deviation, the more sacrosanct management deems that investment. Exhibit 8 represents the same deployment numbers as a percentage of sales.

Exhibit 7: Japan Capital Deployment, 1985-2013

	Total Amount (in Millions of U.S. Dollars, Nominal)						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1985	16	44,556	19,587		0	195	4,410
1986	490	52,818	24,989	88,196	0	1,506	5,610
1987	641	71,607	34,297	176,415	0	4,317	8,027
1988	2,318	89,859	40,667	84,746	0	8,050	10,056
1989	29,187	117,537	39,471	59,385	0	7,563	10,340
1990	10,796	146,516	46,093	94,765	0	7,656	11,691
1991	3,333	175,620	54,291	79,912	0	3,490	13,117
1992	4,235	156,984	55,134	-9,894	0	2,407	12,721
1993	6,091	161,217	61,629	59,731	0	1,541	13,320
1994	4,544	164,543	70,556	105,540	0	2,690	15,323
1995	38,939	176,516	72,727	32,170	0	14,400	16,471
1996	7,018	189,588	68,429	-94,761	12	5,117	15,742
1997	9,858	171,616	63,842	-80,287	99	11,177	14,646
1998	14,046	192,795	76,786	84,146	657	12,286	16,058
1999	199,963	200,309	90,712	46,405	4,293	42,061	17,170
2000	108,727	186,093	86,484	-172,521	5,331	17,875	17,506
2001	53,169	161,875	78,119	-122,453	9,406	31,392	14,263
2002	43,187	160,612	88,275	43,165	21,763	18,533	17,659
2003	64,538	179,768	102,443	99,918	20,062	19,881	22,624
2004	79,910	211,615	111,609	79,118	22,091	25,151	30,788
2005	161,370	210,119	103,010	-66,505	19,943	17,011	34,298
2006	100,628	231,025	107,552	48,028	22,736	36,246	40,930
2007	117,557	265,739	119,782	76,740	31,077	39,308	50,749
2008	74,231	310,337	147,072	231,476	32,375	35,061	54,492
2009	92,125	226,488	130,087	-10,492	3,754	26,033	42,854
2010	83,900	248,281	153,694	206,884	9,931	32,351	56,961
2011	76,818	284,180	162,703	117,679	16,676	47,187	63,800
2012	85,784	283,860	146,160	-72,466	14,477	67,142	61,536
2013	74,102	254,230	127,127	-152,247	13,002	58,761	59,875
CAGR	**35.3%**	**6.4%**	**6.9%**	**-202.0%**	**NA**	**22.6%**	**9.8%**
St. Dev.	**650.1%**	**14.4%**	**13.3%**	**428.0%**	**243.1%**	**159.5%**	**15.7%**

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Dollar amounts not inflated. Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries. The standard deviation for buybacks covers 1996-2013.

Exhibit 8: Japan Capital Deployment, 1985-2013

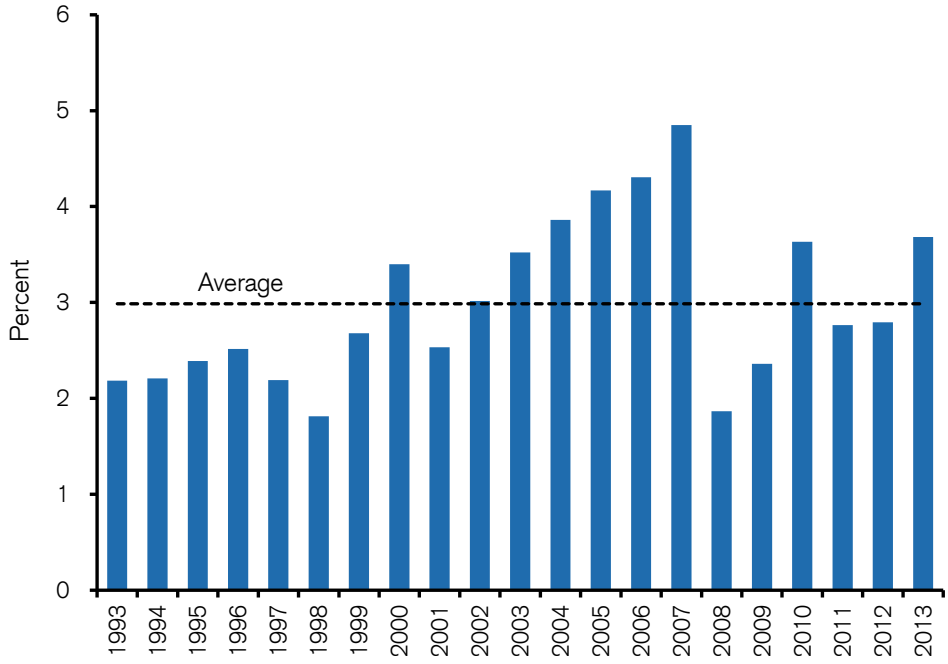
	As a Percentage of Sales						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1985	0.0%	3.7%	1.6%		0.0%	0.0%	0.4%
1986	0.0%	3.9%	1.8%	6.4%	0.0%	0.1%	0.4%
1987	0.0%	3.7%	1.8%	9.2%	0.0%	0.2%	0.4%
1988	0.1%	4.1%	1.9%	3.9%	0.0%	0.4%	0.5%
1989	1.3%	5.1%	1.7%	2.6%	0.0%	0.3%	0.4%
1990	0.4%	5.4%	1.7%	3.5%	0.0%	0.3%	0.4%
1991	0.1%	5.8%	1.8%	2.6%	0.0%	0.1%	0.4%
1992	0.1%	5.3%	1.8%	-0.3%	0.0%	0.1%	0.4%
1993	0.2%	5.0%	1.9%	1.8%	0.0%	0.0%	0.4%
1994	0.1%	4.4%	1.9%	2.8%	0.0%	0.1%	0.4%
1995	1.0%	4.6%	1.9%	0.8%	0.0%	0.4%	0.4%
1996	0.2%	5.3%	1.9%	-2.6%	0.0%	0.1%	0.4%
1997	0.3%	5.2%	1.9%	-2.5%	0.0%	0.3%	0.4%
1998	0.4%	5.3%	2.1%	2.3%	0.0%	0.3%	0.4%
1999	5.0%	5.0%	2.3%	1.2%	0.1%	1.1%	0.4%
2000	2.9%	4.9%	2.3%	-4.5%	0.1%	0.5%	0.5%
2001	1.6%	4.9%	2.4%	-3.7%	0.3%	1.0%	0.4%
2002	1.2%	4.3%	2.4%	1.2%	0.6%	0.5%	0.5%
2003	1.5%	4.2%	2.4%	2.3%	0.5%	0.5%	0.5%
2004	1.7%	4.4%	2.3%	1.6%	0.5%	0.5%	0.6%
2005	3.6%	4.6%	2.3%	-1.5%	0.4%	0.4%	0.8%
2006	2.0%	4.7%	2.2%	1.0%	0.5%	0.7%	0.8%
2007	2.1%	4.7%	2.1%	1.4%	0.6%	0.7%	0.9%
2008	1.2%	4.8%	2.3%	3.6%	0.5%	0.5%	0.9%
2009	1.7%	4.2%	2.4%	-0.2%	0.1%	0.5%	0.8%
2010	1.3%	3.9%	2.4%	3.2%	0.2%	0.5%	0.9%
2011	1.1%	4.1%	2.4%	1.7%	0.2%	0.7%	0.9%
2012	1.4%	4.6%	2.3%	-1.2%	0.2%	1.1%	1.0%
2013	1.3%	4.6%	2.3%	-2.8%	0.2%	1.1%	1.1%

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Recent Trends in Cash Flow Return on Investment and Asset Growth. The maximum earnings growth rate a company can achieve through internal funding is a function of its ROIC and payout ratio. High ROICs and low payout ratios allow for higher achievable growth rates than low ROICs and high payout ratios. Low ROIC or high payout businesses can certainly grow but need to access debt or equity capital to do so.

Part of the explanation for Japan's low payout ratio is the country's low CFROI. CFROI measures the cash return a business earns on the investments it makes. Since CFROI is also adjusted for inflation, it is an ideal tool for comparing results over time. Exhibit 9 shows that today's CFROI of 3.7 percent is above the twenty-year average of 3.0 percent. But Japan's CFROI is well below the U.S. level of nearly 10 percent and an average of more than 6 percent in Europe. Further, Japan's current CFROI remains below the peak years of the mid-2000s.

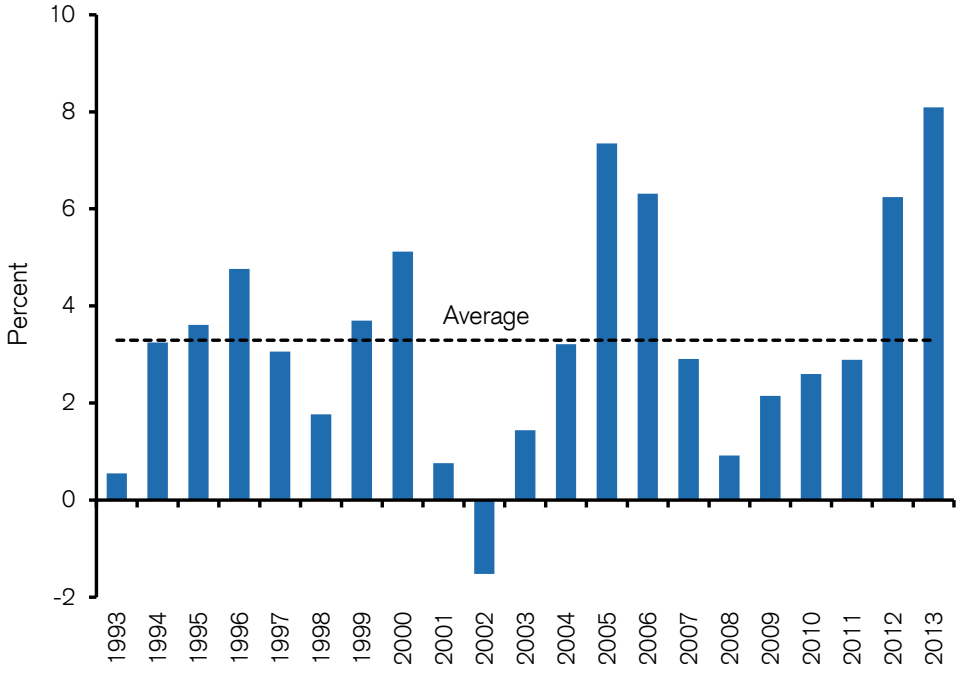
Exhibit 9: Japan CFROI, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of Japanese firms excluding financials and regulated utilities.

Exhibit 10 shows the annual rate of asset growth, adjusted for inflation, over the past twenty years. In recent years, some easing of regulatory burdens for companies along with stimulative fiscal and monetary policy have encouraged companies to grow.

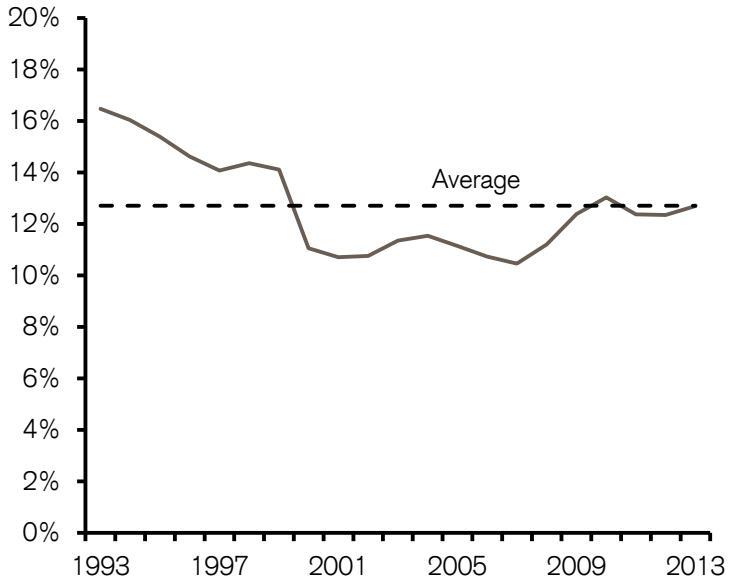
Exhibit 10: Japan Real Asset Growth Rate, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of Japanese firms excluding financials and regulated utilities.

Exhibit 11 shows that at 13 percent, today's cash as a percentage of assets is exactly at the long-term average, but below the peak of 16 percent in 1993.

Exhibit 11: Japan Cash as a Percentage of Total Assets, 1993-2013

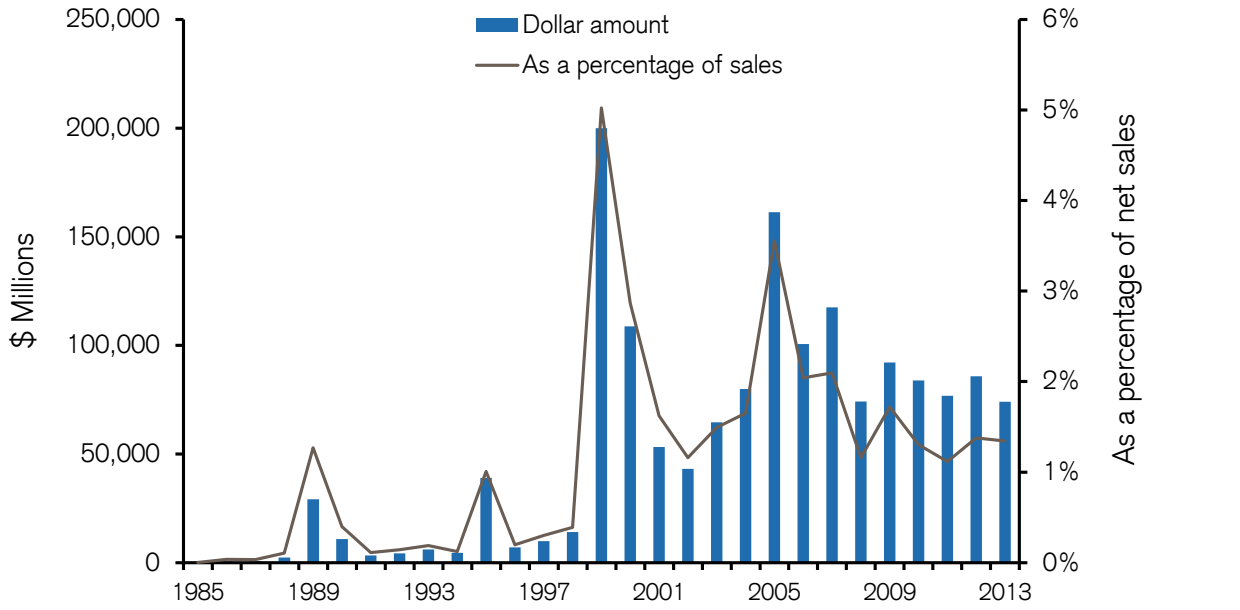


Source: Credit Suisse HOLT.
Note: Top 1,000 industrial firms.

Mergers and Acquisitions. Exhibit 12 shows the dollar amount of M&A as well as M&A as a percentage of sales from 1985 to 2013. M&A volume was only 1.3 percent of total sales in 2013, slightly above its long-term average of 1.2 percent. M&A plays a much smaller role in Japan than it does in other regions. For example, M&A averaged 11 percent of sales in the U.S. and 10 percent of sales in Europe over the same period. A look at the relative dollar amounts is also revealing. In 2013, M&A volume in Japan was just one-tenth the level of the U.S. and one-seventh that of Europe.

In Japan, M&A displays cyclicality at times—note the peaks in 1999 and 2005, two strong years for the Nikkei. But legal and cultural factors have played a larger role in explaining the country's M&A activity.[48] M&A was negligible until the late 1990s because it was not societally accepted. The interlocking and diffuse ownership structure of corporations, known as *keiretsu*, made it difficult to get approval for deals. Spurred in part by a sputtering economy and a declining stock market, Japan instituted new laws to increase investor protection and to finance deals. At the same time, the *keiretsu* system eroded and banks began to restructure, paving the way for more M&A activity.

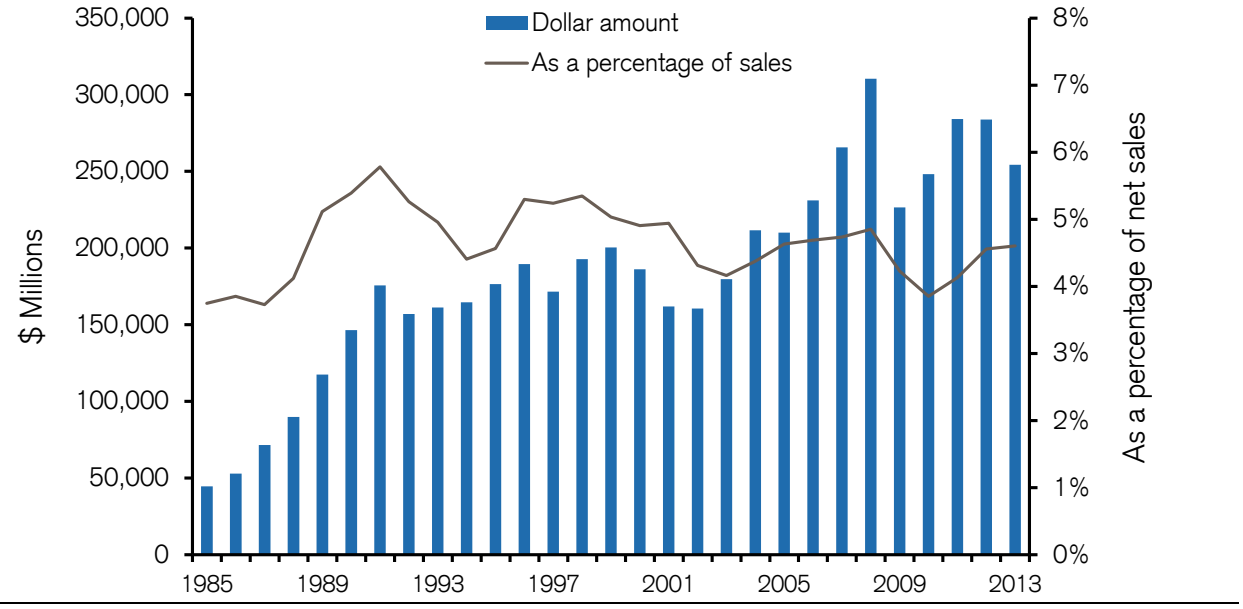
Exhibit 12: Japan Mergers and Acquisitions, 1985-2013



Note: Dollar amounts not inflated. Japan announced domestic mergers; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Capital Expenditures. Exhibit 13 shows capital expenditures, as well as capital expenditures as a percentage of sales, in Japan from 1985 to 2013. Capital expenditures have been fairly steady over time. In 2013, they were consistent with the long-term average of 4.6 percent of sales. Notwithstanding the recent rise in M&A, spending on capital expenditures in 2013 was nearly four times that of M&A. Even though capital expenditures are Japan's largest use of capital, that form of investment still lags other regions when measured as a percentage of sales.

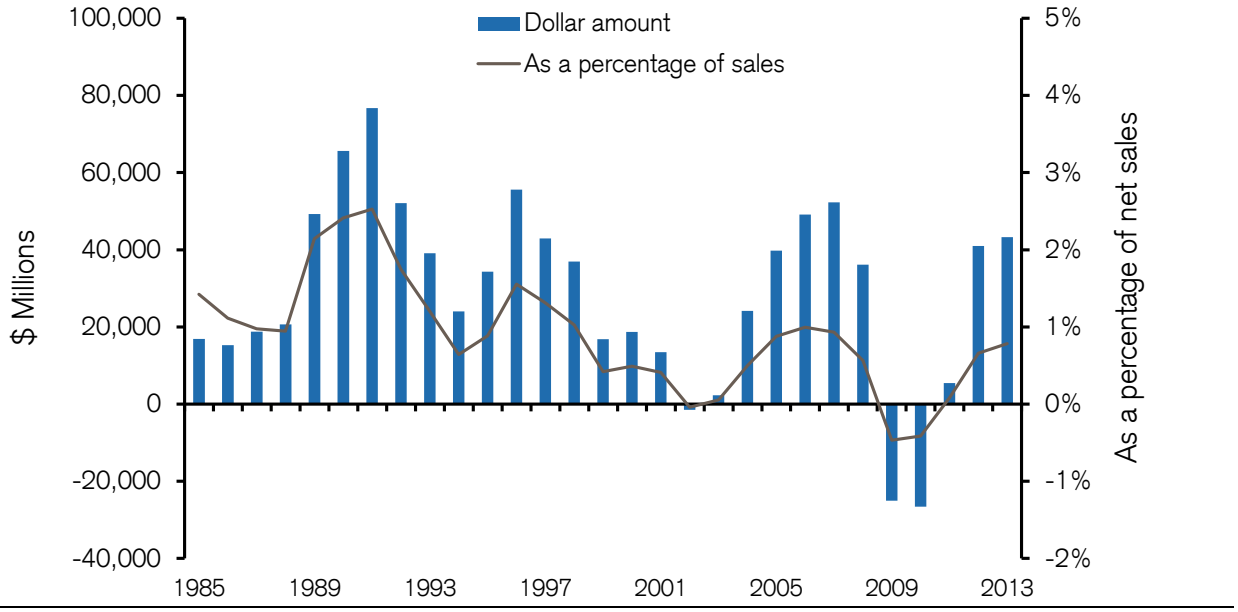
Exhibit 13: Japan Capital Expenditures, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Exhibit 14 shows capital expenditures net of depreciation. Measured as a percentage of sales, growth capital expenditures have averaged roughly one-fifth of overall capital expenditures.

Exhibit 14: Japan Capital Expenditures Net of Depreciation, 1985-2013



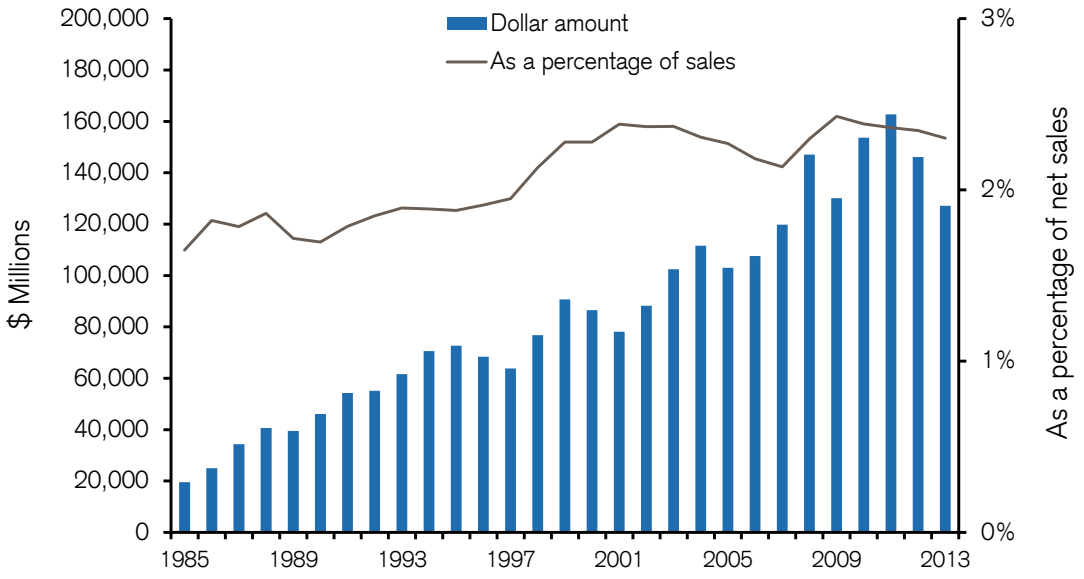
Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Research and Development. Exhibit 15 shows the dollar amount of R&D since 1985 as well as R&D as a percentage of sales. R&D doesn't typically shift much from year to year in Japan, but shows a gradual rise from 1.6 percent of sales in 1985 to a peak of 2.4 percent of sales in 2009, only to settle slightly lower at 2.3 percent in 2013.

Japan is one of the world leaders in R&D spending. In Japan, businesses account for 77 percent of total R&D spending, with the government, academia, and private nonprofit companies accounting for the other 23 percent. Its R&D spending as a percentage of sales is comparable to that of the U.S. at 2.3 percent, but well above Europe at 1.7 percent, APEJ at 0.9 percent, and GEM at 0.4 percent.

Japan's large presence in sectors that are R&D intensive, such as automobiles and electronics, explains these levels of spending. Japan's R&D spending has been stable in recent years despite the fact that information technology, the country's most R&D-intensive sector, went from roughly 20 percent of the country's market capitalization in 1999 to half that amount about a dozen years later.

Exhibit 15: Japan Research and Development, 1985-2013

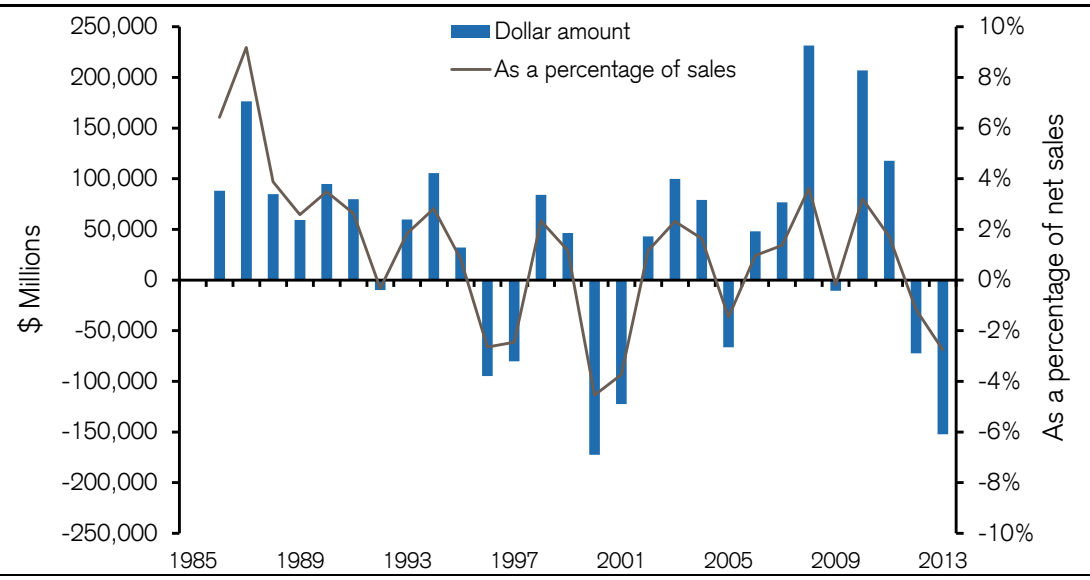


Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Net Working Capital. Net working capital, current assets minus non-interest-bearing current liabilities, is the capital a company requires to run its day-to-day operations. Net working capital equals about one-quarter of assets, on average, for companies in Japan.

Exhibit 16 shows the annual change in net working capital from 1985 through 2013. At year-end 2013, net working capital stood at $1.3 trillion for the top 1,000 public firms in Japan. We consider changes in net working capital as opposed to the absolute amount, because changes are what you should consider to be an incremental investment. Net working capital investments are highly volatile in Japan, albeit smaller in absolute size than capital expenditures and R&D.

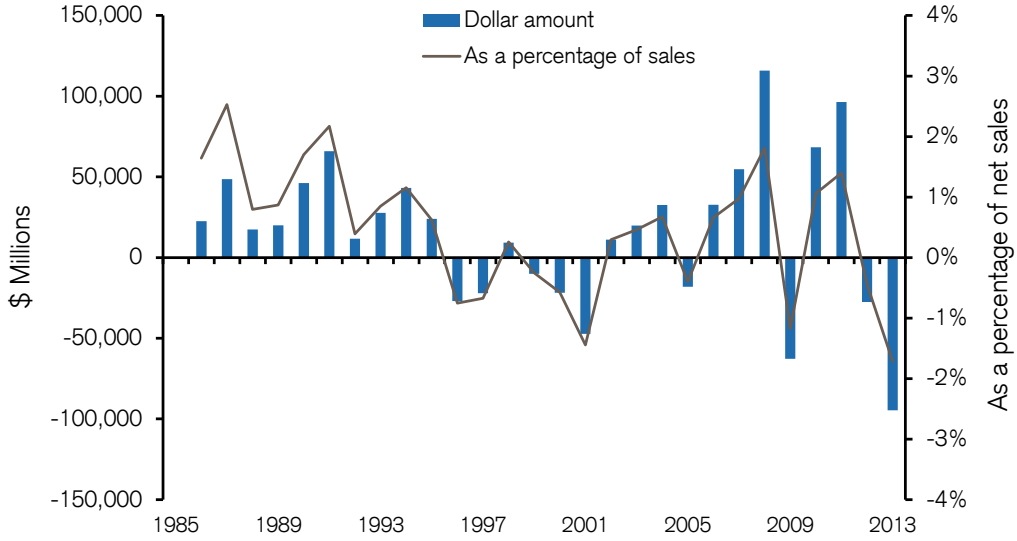
Exhibit 16: Japan Change in Net Working Capital, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Our definition of net working capital includes cash. The picture changes dramatically if we exclude cash. At the end of 2013, net working capital excluding cash was about $535 billion for the top 1,000 Japanese industrial companies, roughly two-fifths of the total net working capital sum. Exhibit 17 shows the change in net working capital excluding cash.

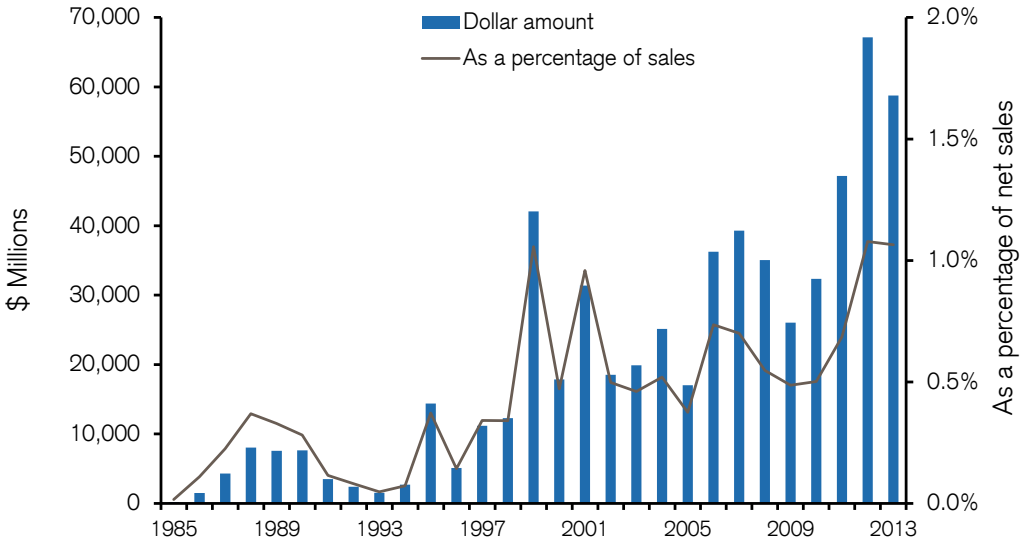
Exhibit 17: Japan Change in Net Working Capital Excluding Cash, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Divestitures. Exhibit 18 shows the magnitude of divestitures from 1985-2013. Similar to M&A, divestiture activity varies a lot from year to year, ranging from none in 1985 to a high of 1.1 percent of sales in 2013. Overall, divestitures have averaged 0.4 percent of sales, which is below all other alternatives except buybacks. These low levels are not surprising considering Japan's modest M&A activity. Since divestitures are correlated with M&A, many of the same legal and cultural factors that constrained M&A also limited divestitures.

Exhibit 18: Japan Divestitures, 1985-2013



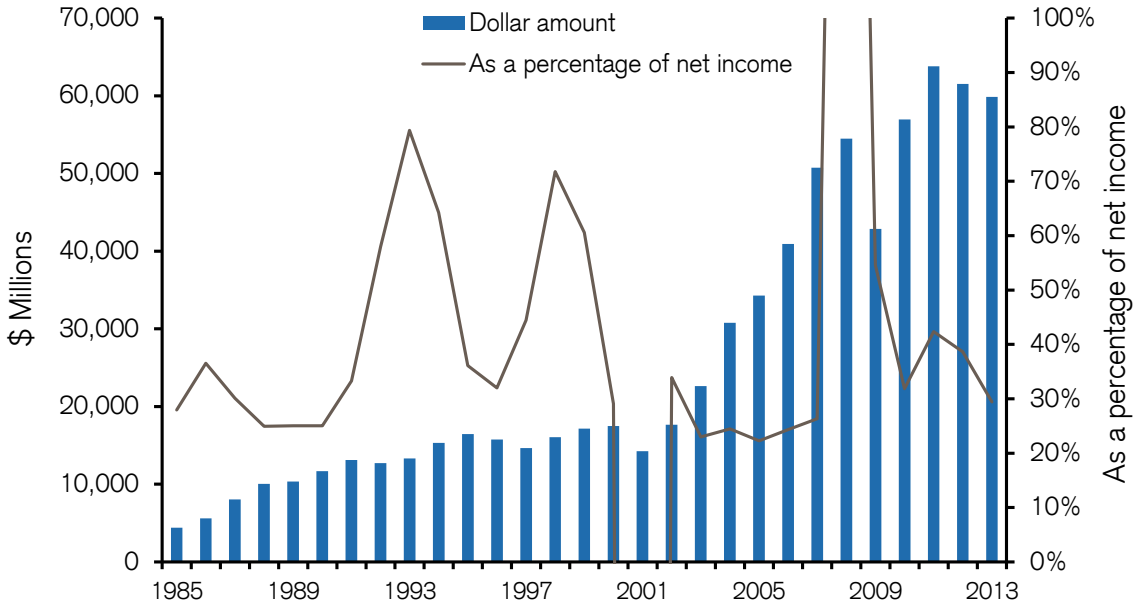
Note: Announced divestitures; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases; Dollar amounts not inflated.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Dividends. Exhibit 19 shows the annual amount of dividends on common and preferred stock for the top 1,000 companies in Japan, excluding the financial services and regulated utility industries, from 1985 to 2013. The average dividend payout ratio, or dividends as a percentage of net income, was roughly 35 percent. The average dividend yield, or dividend payment as a percentage of total market capitalization, was 1.1 percent.

In general, dividends do not move around too much from year to year in Japan, but they do show a notable uptick beginning in the early 2000s. From 1985-1999, the average dividend yield was only 0.8 percent. From 2000-2013, that figure almost doubled to 1.5 percent.

The corporate governance reform that led to greater M&A activity also unleashed a surge in corporate payout.[49] These legislative reforms, which gained momentum in 1999, created a better environment for companies and shareholders, including new laws that increase investor protection. The result has been more generous dividends and buybacks across the board. However, *keiretsu* firms still continue to favor dividends over buybacks, and their payouts remain more sensitive to fluctuations than those of non-*keiretsu* companies.

Exhibit 19: Japan Common and Preferred Dividends, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Share Buybacks. Exhibit 20 shows the annual amount of gross buybacks for the top 1,000 companies in Japan from 1985 to 2013. Buybacks totaled roughly 10 percent of net income over the full period. The average buyback yield, or buybacks as a percentage of total market capitalization, was 0.3 percent, well below the 1.1 percent dividend yield.

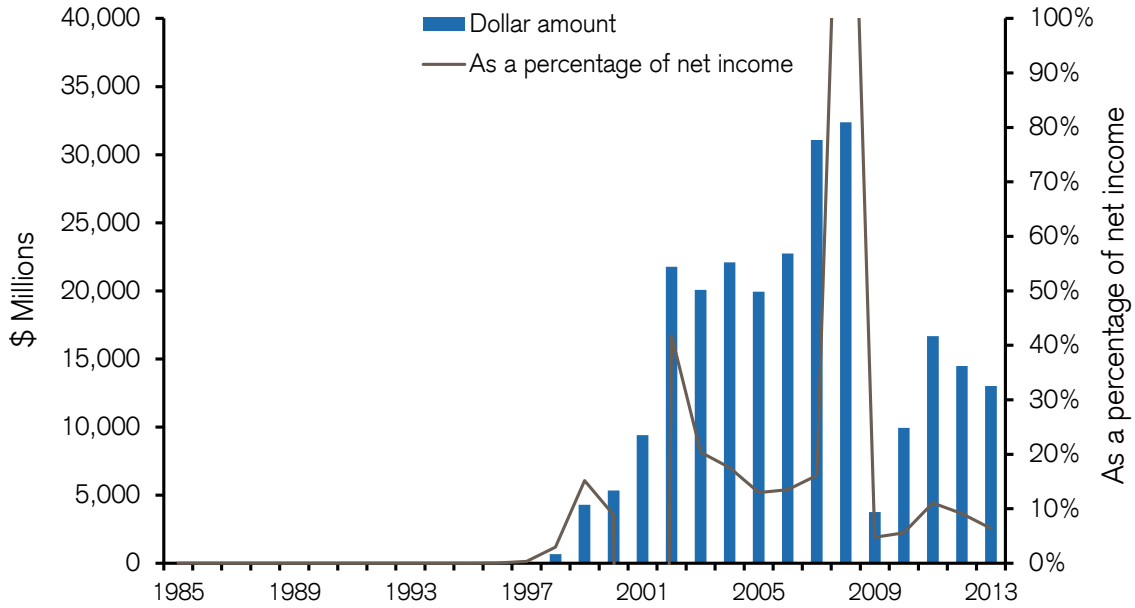
But the average belies the fact that buybacks were virtually nonexistent until the late 1990s because they were illegal until 1994. Even after the government legalized buybacks, significant tax disadvantages and regulatory hurdles remained for several years. Only the removal of these limitations and a wave of shareholder-friendly corporate governance reforms led to the recent surge in buybacks.

The numbers tell the story. From 1985-1999, the average buyback yield was zero. From 2000-2013, it was 0.7 percent. This yield is less than one half the 1.5 percent dividend yield during the same period, but the

disparity is far less. The balance remains in favor of dividends because the *keiretsu* firms are reluctant to embrace buybacks.

The rise in buybacks also appears tentative. As exhibit 20 demonstrates, buybacks rose considerably through the early 2000s but plummeted when Japan fell into a recession in 2008. Buybacks are also much more cyclical than dividends, consistent with the attitude many executives adopt that a company should fund a buyback only with cash that's left over after the company has exhausted all other uses, including dividends.

Exhibit 20: Japan Gross Share Buybacks, 1985-2013

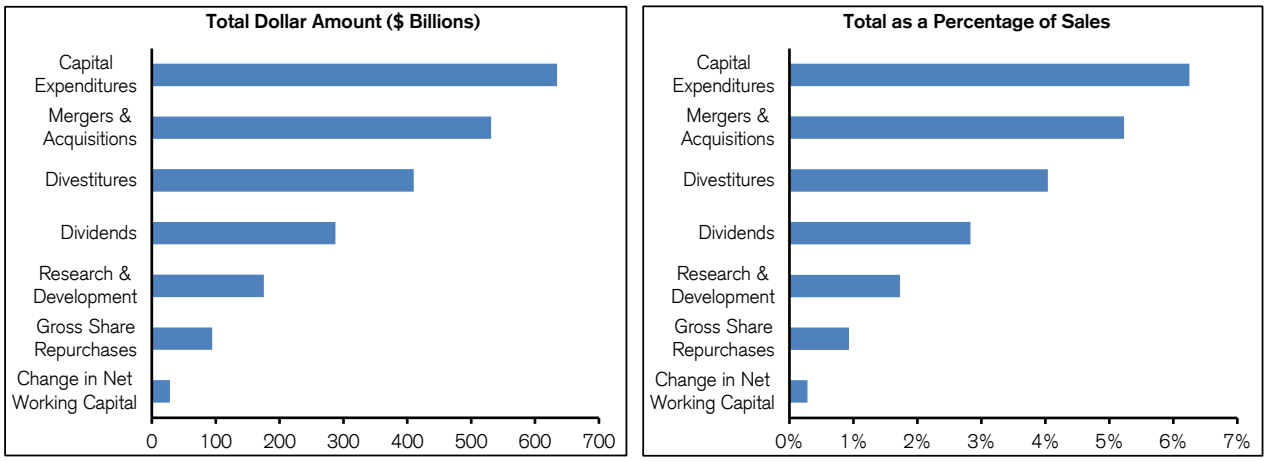


Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Europe

Uses of Capital. Exhibit 21 shows how the top 1,000 companies in Europe, excluding companies in the financial services and regulated utility industries, deployed capital in 2013. While just a snapshot for a particular year, the ranking reasonably reflects how companies in Europe have allocated capital over time.

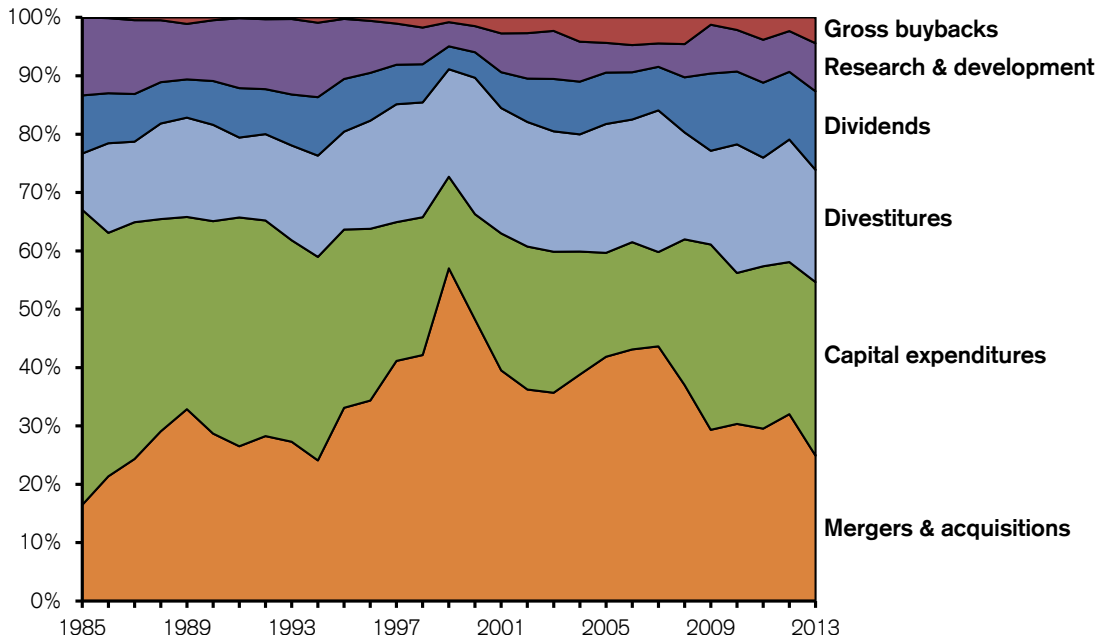
Exhibit 21: Europe Capital Deployment, 2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Exhibit 22 shows the breakdown of spending by source from 1985-2013. Again, we exclude changes in net working capital.

Exhibit 22: Europe Capital Deployment, 1985-2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, and dividends exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

M&A has been the biggest use of capital over time but capital expenditures are not far behind. An examination of the results from 1985 through 2013 reveals some noteworthy patterns:

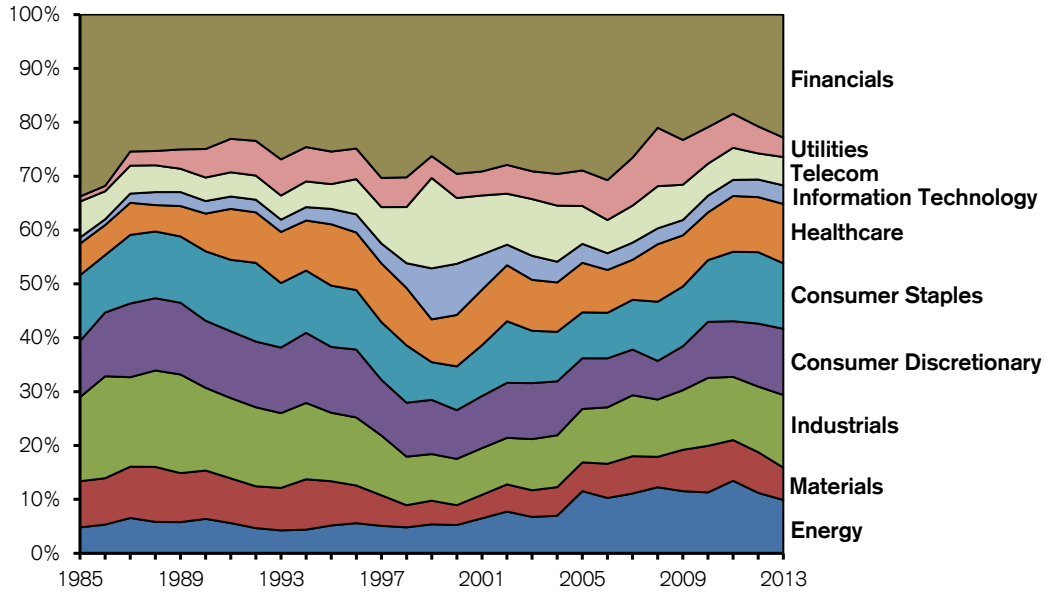
- M&A is has been the largest use of capital, but it is very cyclical. M&A has been in a range of 2 percent of sales in 1985 to 31 percent at the peak in the late 1990s. M&A activity in Europe substantially lagged that of the U.S. in the late 1980s, but has since closed the gap as the result of political and economic factors. The introduction of the euro, globalization, and privatization stimulated M&A activity, especially for cross-border deals within the region. Greater participation from countries in Continental Europe also pushed volumes higher.

- Capital expenditures have been in a tight range of roughly 6 percent to 9 percent over the period. In 2013, they were 6.3 percent of total sales, modestly below the long-term average of 7 percent. One explanation for this stability is that the composition of the economy has been steady over time. (See Exhibit 23.) For example, the energy, materials, and industrial sectors, which tend to require more capital investment, represented 29 percent of the market capitalization in 1985 and 2013.

- Share buybacks were extremely rare until the mid-1990s as the result of legal bans and strict regulations on implementation and disclosure. European governments have largely overturned these bans and loosened the constraints, although many restrictions remain in place regarding the timing, price, and allowed amounts of buybacks. Companies have shifted their method of payouts following these changes, but they still heavily favor dividends. The volume of buybacks reached 60 percent of dividends in 2007, but has since retreated to one-third in 2013.

- R&D expenditures have been between 1.6 percent and 2.4 percent of sales, and have averaged 2.0 percent of sales over the full period. This level is below both the U.S. and Japan. Europe's small information technology sector contributes to the gap. Historically, IT has constituted just 3 percent of Europe's economy, compared to 14 percent in the U.S. and 13 percent in Japan. European corporations only account for about 60 percent of the overall R&D spending for their economy, well below the roughly 70 percent in the U.S. and 80 percent in Japan.

Exhibit 23: Europe Sector Composition, 1985-2013



Source: Credit Suisse HOLT.

Exhibit 24 shows a detailed history of capital deployment from 1985-2013. Again we see that the standard deviations of the growth rates are small for R&D, dividends, and capital spending relative to those of buybacks, M&A, and divestitures. Exhibit 25 represents the same deployment numbers as a percentage of sales.

Exhibit 24: Europe Capital Deployment, 1985-2013

	Total Amount (in Millions of U.S. Dollars, Nominal)						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1985	16,662	51,286	13,540		2	9,754	10,103
1986	33,808	66,049	20,370	56,907	188	24,306	13,568
1987	65,232	108,804	33,930	150,509	1,261	37,010	21,894
1988	104,214	130,444	38,050	66,845	1,734	58,737	25,402
1989	159,389	159,799	46,145	102,709	5,351	82,534	31,797
1990	165,507	210,080	60,093	136,681	2,770	95,289	43,336
1991	141,941	209,937	64,151	33,390	725	73,348	45,345
1992	139,517	182,456	59,179	-67,322	1,525	73,066	38,054
1993	127,405	161,220	60,405	19,108	1,254	75,881	40,807
1994	129,602	187,691	68,685	85,552	4,859	93,363	53,916
1995	249,526	230,266	77,609	83,135	1,887	126,487	68,023
1996	302,555	259,345	78,576	-40,401	5,149	163,244	72,164
1997	443,296	256,254	75,946	-84,396	11,376	217,727	72,964
1998	571,964	320,591	85,395	58,656	23,530	267,060	88,764
1999	1,165,024	320,920	84,589	-42,031	16,611	376,348	80,168
2000	971,338	363,695	90,102	16,017	30,101	470,985	88,117
2001	527,989	313,690	88,971	-45,598	36,526	287,118	82,101
2002	457,954	309,651	98,425	67,776	34,021	269,803	94,044
2003	490,203	332,044	113,180	162,717	31,686	283,514	123,303
2004	690,606	375,213	121,836	49,921	73,992	357,431	160,875
2005	937,001	398,555	114,072	-33,752	97,564	494,403	197,212
2006	1,239,207	528,434	133,941	118,522	136,203	604,354	232,726
2007	1,658,002	614,093	152,457	139,103	169,172	922,557	283,643
2008	971,147	655,218	149,474	-145,110	119,885	480,884	247,826
2009	529,237	573,017	150,895	66,956	22,493	289,887	238,879
2010	649,398	553,678	152,652	27,551	45,831	471,599	267,178
2011	632,749	596,082	157,612	17,111	81,896	398,718	275,373
2012	782,491	636,980	170,750	98,972	57,120	513,360	283,421
2013	531,122	634,553	175,596	28,530	94,538	410,119	287,387
CAGR	**13.2%**	**9.4%**	**9.6%**	**-2.5%**	**47.2%**	**14.3%**	**12.7%**
St. Dev.	**43.1%**	**17.1%**	**16.2%**	**200.2%**	**1877.6%**	**39.4%**	**17.5%**

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Dollar amounts not inflated. Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

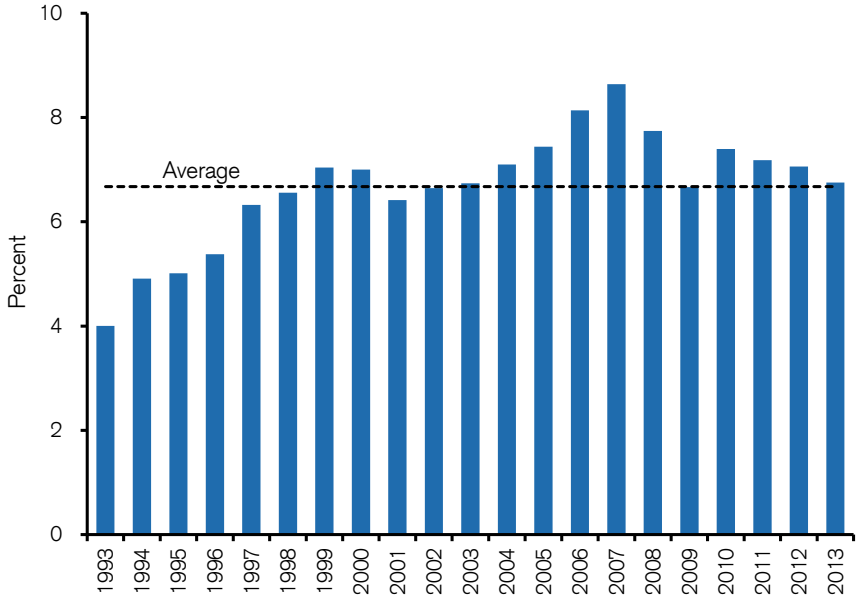
Exhibit 25: Europe Capital Deployment, 1985-2013

	As a Percentage of Sales						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1985	2.2%	6.8%	1.8%		0.0%	1.3%	1.3%
1986	3.8%	7.4%	2.3%	6.4%	0.0%	2.7%	1.5%
1987	4.7%	7.8%	2.4%	10.7%	0.1%	2.6%	1.6%
1988	6.5%	8.2%	2.4%	4.2%	0.1%	3.7%	1.6%
1989	8.0%	8.0%	2.3%	5.1%	0.3%	4.1%	1.6%
1990	6.5%	8.2%	2.3%	5.3%	0.1%	3.7%	1.7%
1991	5.1%	7.6%	2.3%	1.2%	0.0%	2.7%	1.6%
1992	5.4%	7.1%	2.3%	-2.6%	0.1%	2.9%	1.5%
1993	5.0%	6.3%	2.4%	0.7%	0.0%	3.0%	1.6%
1994	4.3%	6.2%	2.3%	2.8%	0.2%	3.1%	1.8%
1995	7.2%	6.7%	2.2%	2.4%	0.1%	3.7%	2.0%
1996	8.4%	7.2%	2.2%	-1.1%	0.1%	4.5%	2.0%
1997	12.9%	7.4%	2.2%	-2.5%	0.3%	6.3%	2.1%
1998	14.7%	8.2%	2.2%	1.5%	0.6%	6.9%	2.3%
1999	31.3%	8.6%	2.3%	-1.1%	0.4%	10.1%	2.2%
2000	23.7%	8.9%	2.2%	0.4%	0.7%	11.5%	2.1%
2001	12.4%	7.4%	2.1%	-1.1%	0.9%	6.7%	1.9%
2002	9.4%	6.3%	2.0%	1.4%	0.7%	5.5%	1.9%
2003	8.5%	5.8%	2.0%	2.8%	0.6%	4.9%	2.1%
2004	11.0%	6.0%	1.9%	0.8%	1.2%	5.7%	2.6%
2005	14.0%	6.0%	1.7%	-0.5%	1.5%	7.4%	3.0%
2006	15.3%	6.5%	1.7%	1.5%	1.7%	7.5%	2.9%
2007	18.0%	6.7%	1.7%	1.5%	1.8%	10.0%	3.1%
2008	10.4%	7.0%	1.6%	-1.6%	1.3%	5.2%	2.7%
2009	6.3%	6.8%	1.8%	0.8%	0.3%	3.5%	2.8%
2010	7.3%	6.2%	1.7%	0.3%	0.5%	5.3%	3.0%
2011	6.6%	6.2%	1.6%	0.2%	0.9%	4.1%	2.9%
2012	7.7%	6.3%	1.7%	1.0%	0.6%	5.0%	2.8%
2013	5.2%	6.3%	1.7%	0.3%	0.9%	4.0%	2.8%

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Recent Trends in Cash Flow Return on Investment and Asset Growth. Today's CFROI is in line with the long-term average of 7 percent, but below the peak years of the mid-2000s. (See Exhibit 26.)

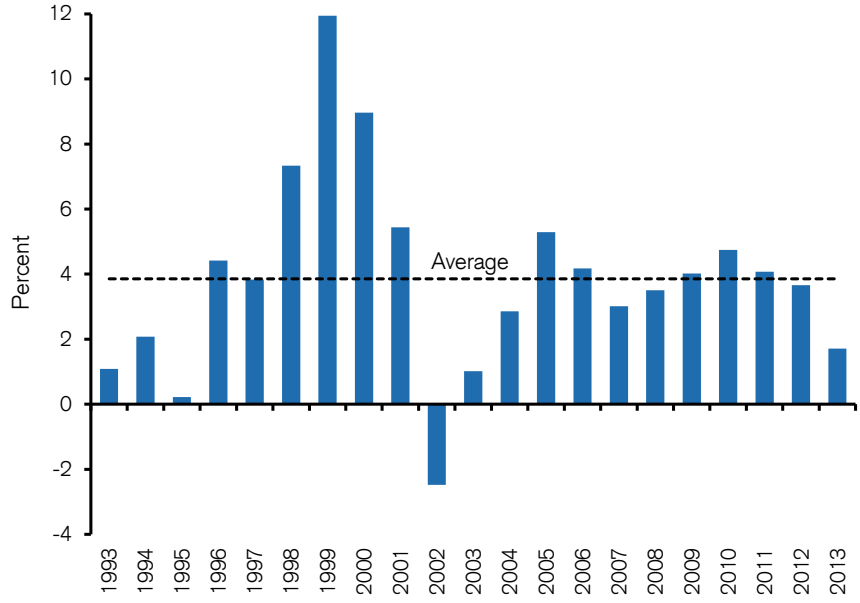
Exhibit 26: Europe CFROI, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of European firms excluding financials and regulated utilities.

Exhibit 27 shows the annual rate of asset growth, adjusted for inflation, over the past twenty years. Asset growth was very low in 2013, reflecting the reluctance of companies to invest. Asset growth in 2013, at 1.7 percent, was well below the long-term average of 3.9 percent, and asset growth in the past decade is also below average.

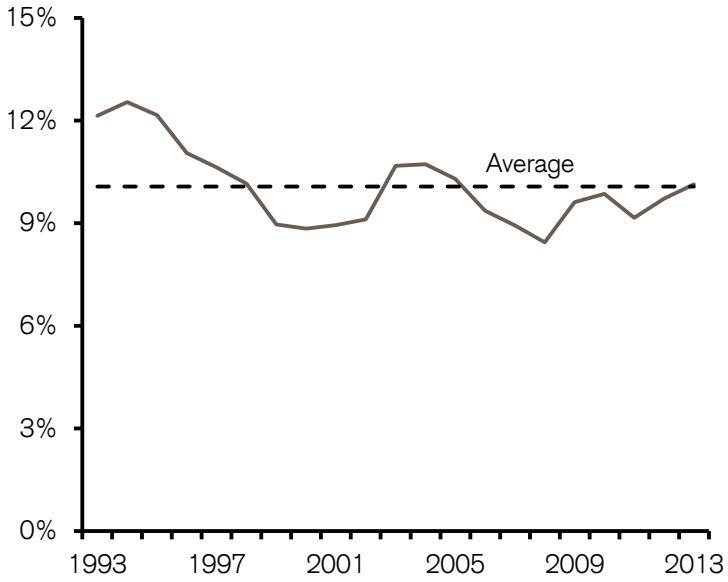
Exhibit 27: Europe Real Asset Growth Rate, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of European firms excluding financials and regulated utilities.

Exhibit 28 shows that at 10 percent, today's cash as a percentage of assets is exactly at the long-term average, but below the peak of 13 percent in 1994.

Exhibit 28: Europe Cash as a Percentage of Total Assets, 1993-2013



Source: Credit Suisse HOLT.
Note: Top 1,000 industrial firms.

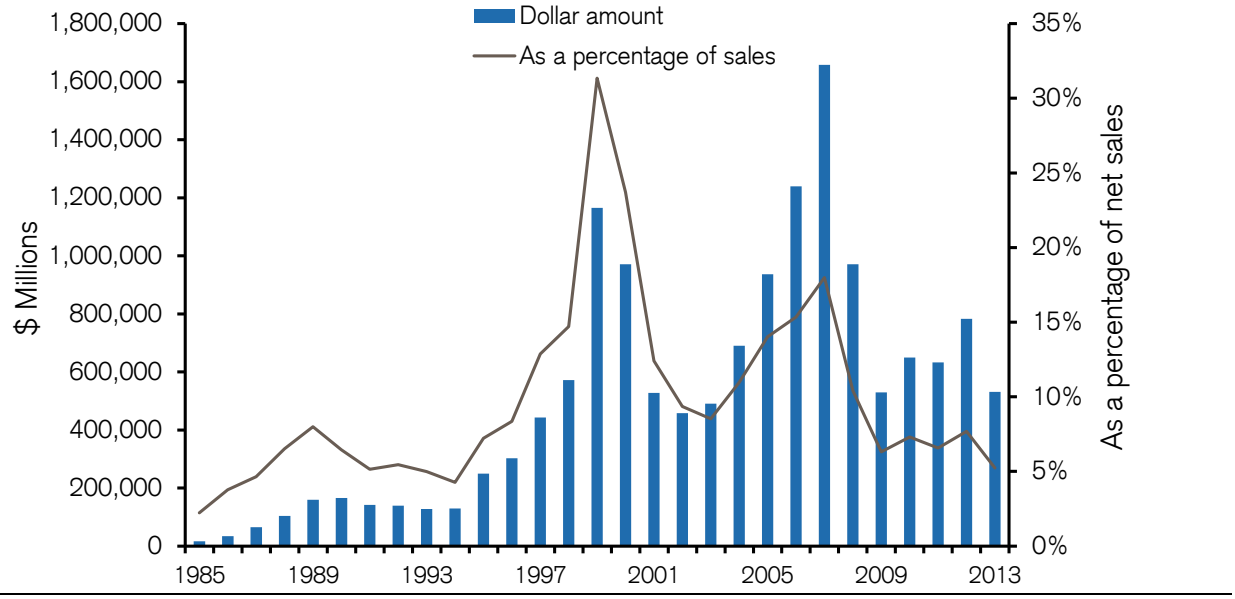
Mergers and Acquisitions. Exhibit 29 shows the dollar amount of M&A as well as M&A as a percentage of sales from 1985 to 2013. M&A volume was 5.2 percent of total sales in 2013, well below its long-term average of roughly 10 percent. Over the full period, M&A in Europe and the U.S. has been equivalent as a percentage of sales.

While comparable as a fraction of sales, the absolute level of M&A in Europe still lags that of the U.S. From 1985 to1989, M&A volume in Europe was less than one-third the level of the U.S., but has since risen to nearly three-fourths the level of the U.S. in recent years.

M&A in Europe has followed the stock market but research shows that several factors, including the introduction of the euro, globalization, deregulation, and privatization, have stoked the general rise since the late 1980s. In particular, these factors helped drive cross-border deals within Europe.[50]

Greater participation from countries in Continental Europe also drove the increased deal activity. The U.K. once dominated total European M&A volume, accounting for roughly two-thirds of the total volume in the late 1980s. But in recent years (2010-2013), the U.K. accounted for just one-fifth of the total volume in Europe. Countries on the continent with the largest M&A activity in 2013 included Germany at 18 percent of the total, Russia at 11 percent, France at 10 percent, and the Netherlands at 9 percent.

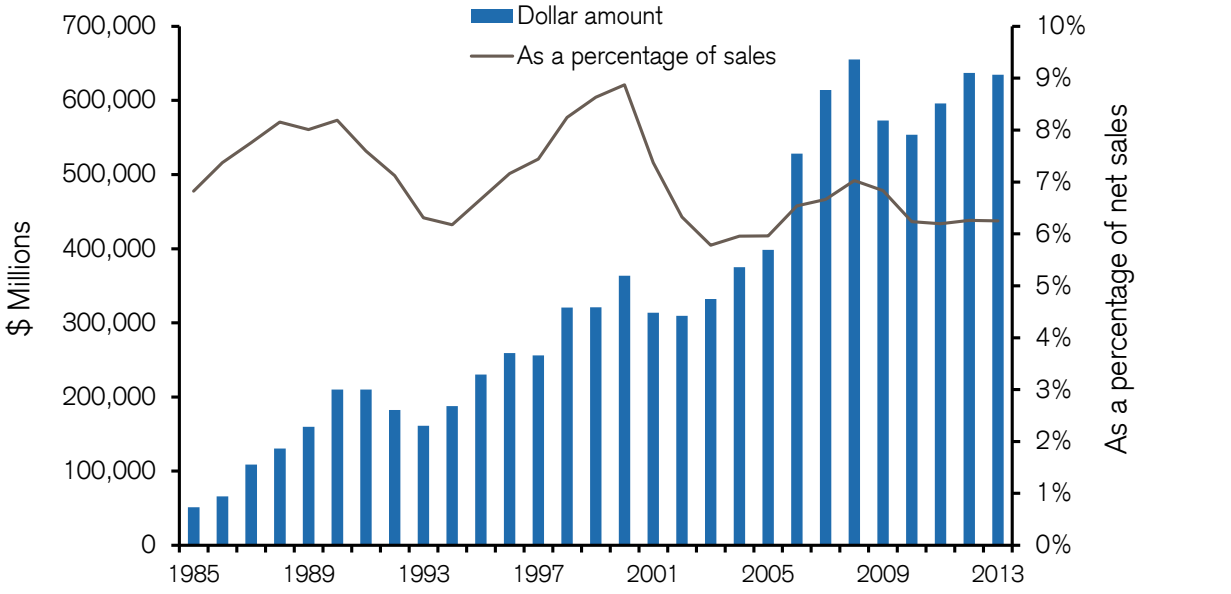
Exhibit 29: Europe Mergers and Acquisitions, 1985-2013



Note: Dollar amounts not inflated. Europe announced domestic mergers; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Capital Expenditures. Exhibit 30 shows the dollar amount of capital expenditures, as well as capital expenditures as a percentage of sales, from 1985 to 2013. Capital expenditures were 6.3 percent of total sales in 2013, below the long-term average of 7.0 percent. In 2013, capital expenditures were the largest use of capital in Europe. M&A is usually the largest use of capital, but M&A volume in Europe was unusually low. Measured as a ratio of sales, Europe's capital expenditure spending exceeds that of Japan, is roughly in line with the U.S., and is well below that of APEJ and GEM. The exhibit reveals that capital expenditures are fairly steady from year to year.

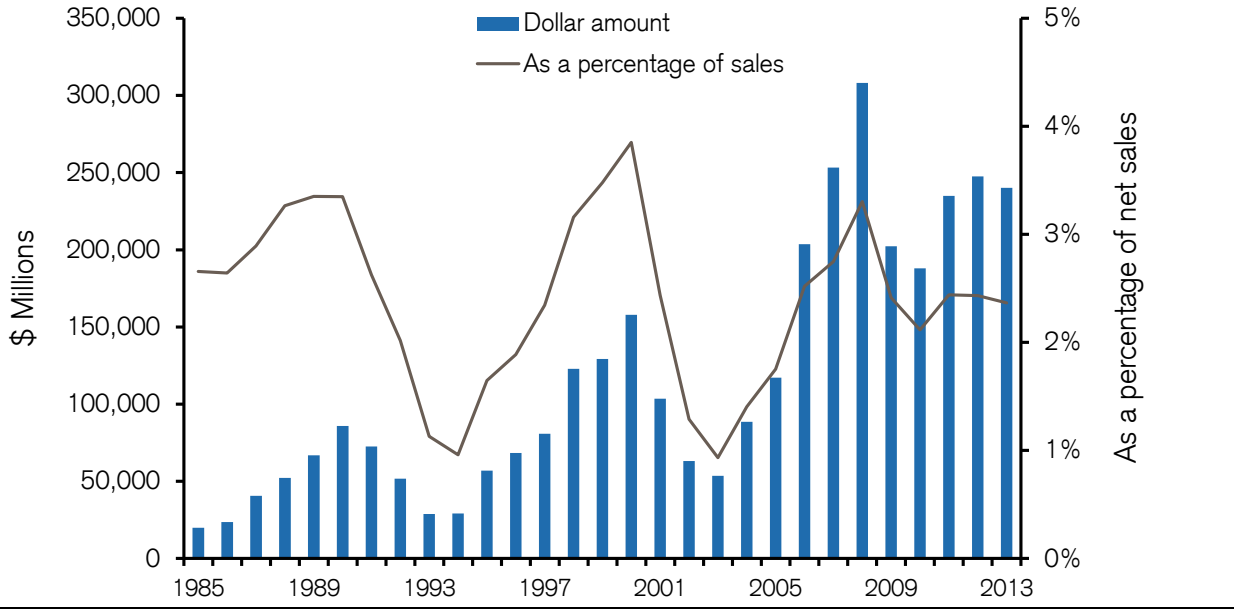
Exhibit 30: Europe Capital Expenditures, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Exhibit 31 shows capital expenditures net of depreciation. Measured as a percentage of sales, growth capital expenditures have averaged roughly one-third of overall capital expenditures.

Exhibit 31: Europe Capital Expenditures Net of Depreciation, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

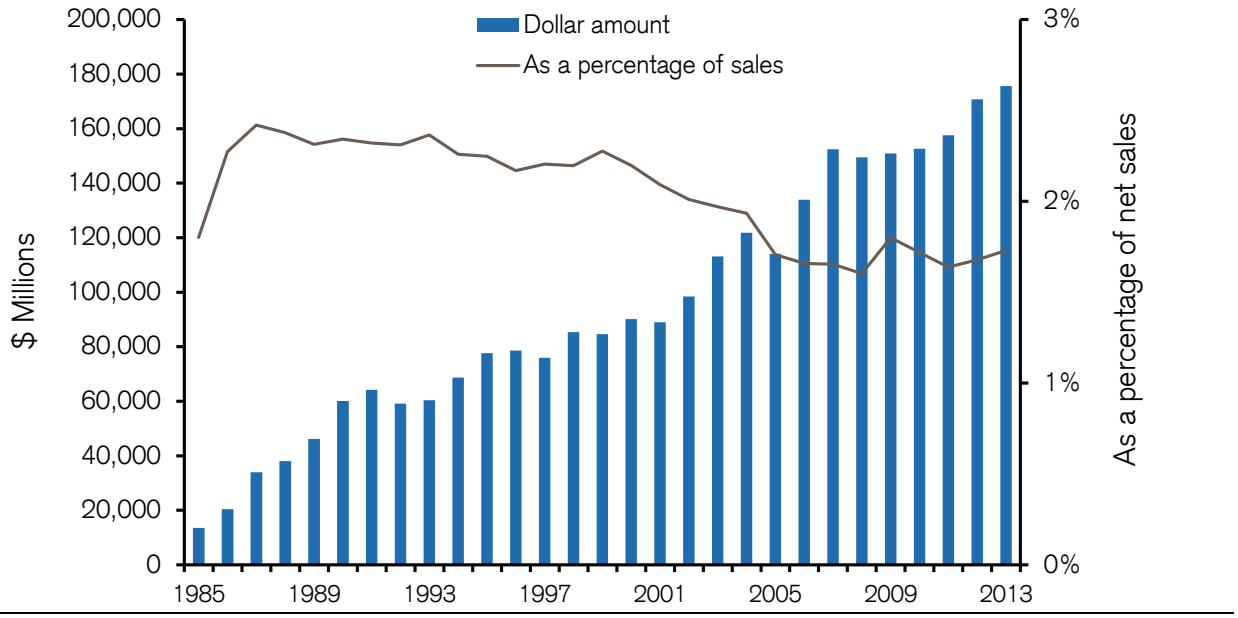
Research and Development. Exhibit 32 shows the dollar amount of R&D since 1985 as well as R&D as a percentage of sales. The ratio jumped to a peak of 2.4 percent of sales in 1987 only to steadily decline to 1.7 percent of sales in 2005, where it has remained. This level is well below both that of the U.S. and Japan at 2.3 percent. Sector composition largely explains the difference. Europe has a very low concentration in IT, the most R&D-intensive sector, and a higher concentration in industries that rely more heavily on capital investments. Academic research supports this conclusion.[51]

Yet, sector composition isn't the whole story. R&D as a percentage of sales has fallen since the late 1980s despite a modest rise in R&D-intensive sectors. For example, healthcare, one of the most R&D-intensive sectors, grew considerably during the period, while IT expanded to a lesser extent.

Based on 2013 figures, European countries with companies that spent the most on R&D as a percentage of sales included Switzerland at 5.1 percent (heavily influenced by the pharmaceutical industry), Sweden at 3.1 percent, and Germany at 2.5 percent. Notable laggards included the U.K. and Italy at 0.8 percent of sales and Spain at 0.6 percent.

In European countries, businesses account for just under two-thirds of total R&D spending on average, with the government, academia, and private nonprofit companies sharing the balance.[52] Corporations in Europe account for a smaller share of the total R&D spending than they do in the U.S. and Japan, where businesses spend around 70-75 percent. The business share of total R&D spending ranges from a low of 34 percent in Greece to a high of 74 percent in Switzerland. Among larger European economies, the business share of R&D spending is 63 percent in the U.K., 64 percent in France, and 67 percent in Germany.

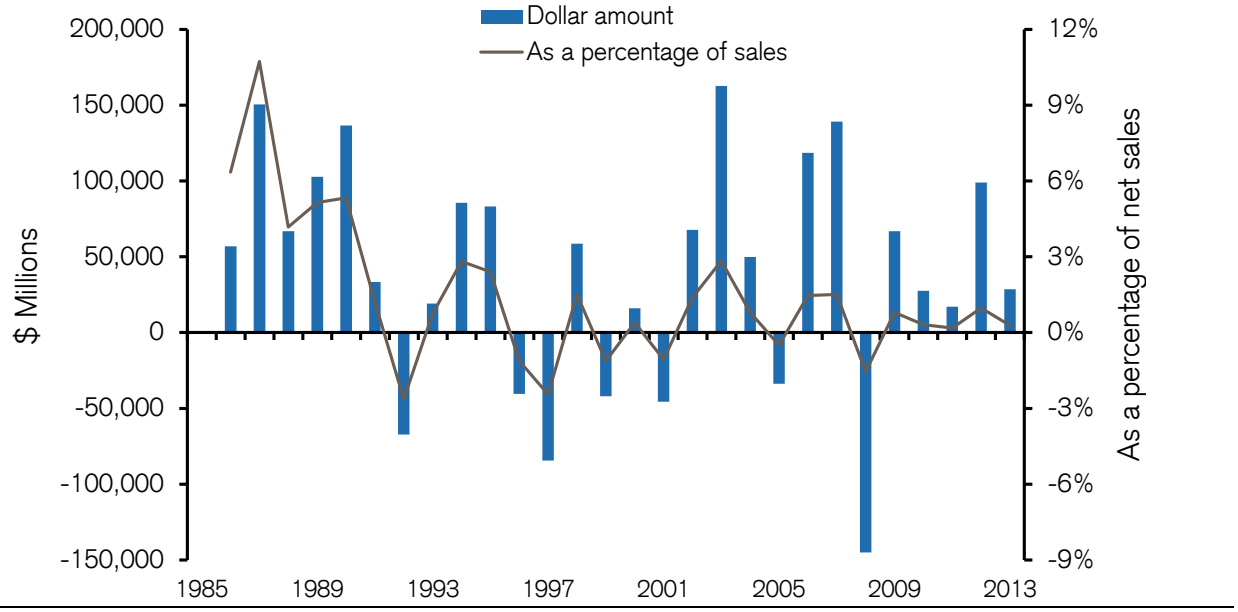
Exhibit 32: Europe Research and Development, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Net Working Capital. Net working capital is about 15 percent of assets, on average, for companies in Europe. Exhibit 33 shows the annual change in net working capital from 1985 through 2013. At year-end 2013, net working capital stood at $1.2 trillion for the top 1,000 public firms in Europe. We consider changes in net working capital as opposed to the absolute amount, because changes are what you should consider to be an incremental investment. Net working capital investments are highly volatile in Europe and are a smaller sum than M&A, capital expenditures, or R&D.

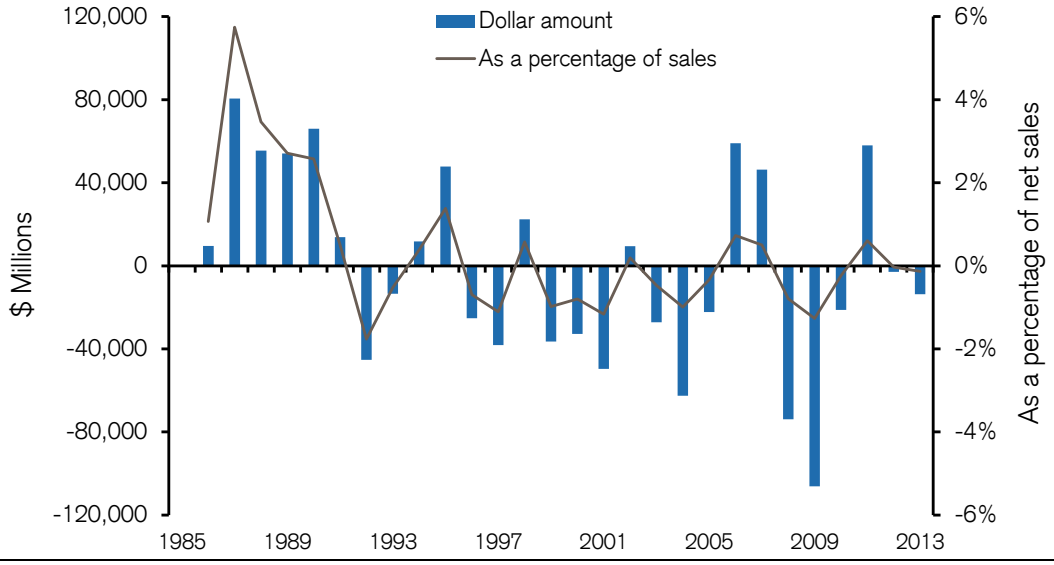
Exhibit 33: Europe Change in Net Working Capital, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

The situation changes significantly if we exclude cash. At the end of 2013, net working capital excluding cash was only $7 billion for the top 1,000 European industrial companies, less than 1 percent of total net working capital. Exhibit 34 shows the change in net working capital excluding cash.

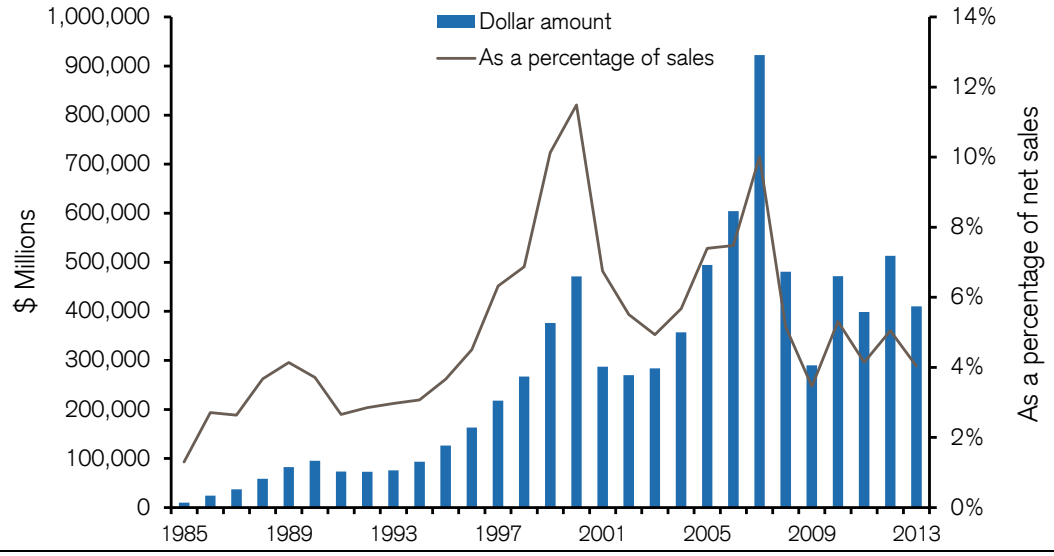
Exhibit 34: Europe Change in Net Working Capital Excluding Cash, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Divestitures. Exhibit 35 shows divestitures from 1985-2013. Similar to M&A, divestiture activity varies a great deal from year to year, ranging from a low of 1 percent of sales in 1985 to a high of 11 percent in 2000. While divestitures generally draw less attention than M&A, they represent a substantial component of capital allocation. Overall, divestitures have averaged 5.1 percent of sales over time, which is slightly more than one half the level of M&A and much higher than gross buybacks, dividends, and R&D spending.

Exhibit 35: Europe Divestitures, 1985-2013



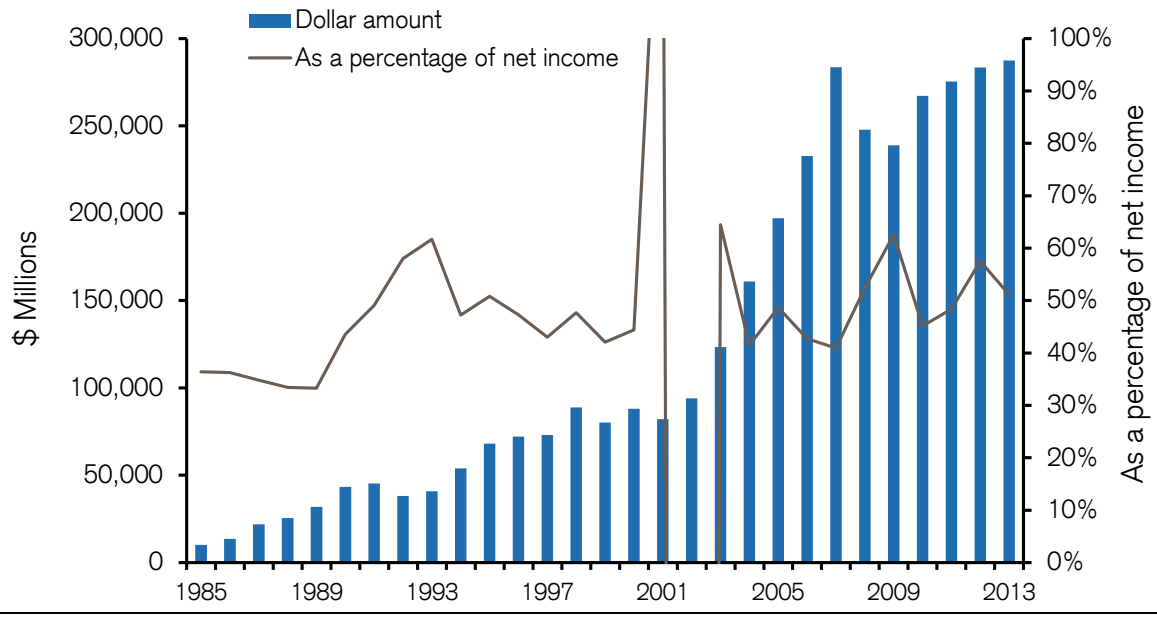
Note: Announced divestitures; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases; Dollar amounts not inflated.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Dividends. Exhibit 36 shows the annual amount of dividends on common and preferred stock for the top 1,000 companies in Europe, excluding the financial services and regulated utility industries, from 1985 to 2013. Dividends are very stable in Europe and were particularly resilient during the recent financial crisis.

The average dividend payout ratio, or dividends as a percentage of net income, was roughly 50 percent from 1985-2013. The average dividend yield, or dividend payment as a percentage of total market capitalization, was 2.7 percent over the same period. In 2013, the dividend yield was 2.9 percent. Countries with yields that were above average in 2013 included Norway at 4.4 percent, the U.K. at 3.2 percent, and Sweden at 3.2 percent. Countries with below-average yields included the Netherlands at 2.2 percent, Spain at 2.2 percent, and Germany at 2.4 percent.

Academic research shows that the trend in dividend policy in Europe and the U.S. is similar.[53] In both regions, there has been a decline in the fraction of firms paying dividends. In Europe, that fraction has fallen from 88 percent in 1989 to 51 percent in 2005. In the U.S., that fraction fell from more than 80 percent in the 1950s to roughly 20 percent in 1999. At the same time, dividends are becoming more concentrated among fewer firms in both regions.

Exhibit 36: Europe Common and Preferred Dividends, 1985-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Share Buybacks. Exhibit 37 shows the annual gross buybacks for the top 1,000 companies in Europe from 1985 to 2013. Buybacks were negligible until the late 1990s, rose considerably through 2007, and fell sharply during the recent recession. Similar to the results in other regions, buybacks are much more cyclical than dividends. The ratio of buybacks to dividends peaked in 2007 at three-fifths and declined to one-third in 2013.

Buybacks have totaled roughly 15 percent of net income, on average, from 1985-2013. The average buyback yield, or buybacks as a percentage of total market capitalization, was 0.6 percent over the same period, well below the 2.7 percent dividend yield. In 2013, the buyback yield was 0.9 percent. Countries with above-average buyback yields in 2013 included the U.K. at 2.1 percent, Denmark at 1.4 percent, and the

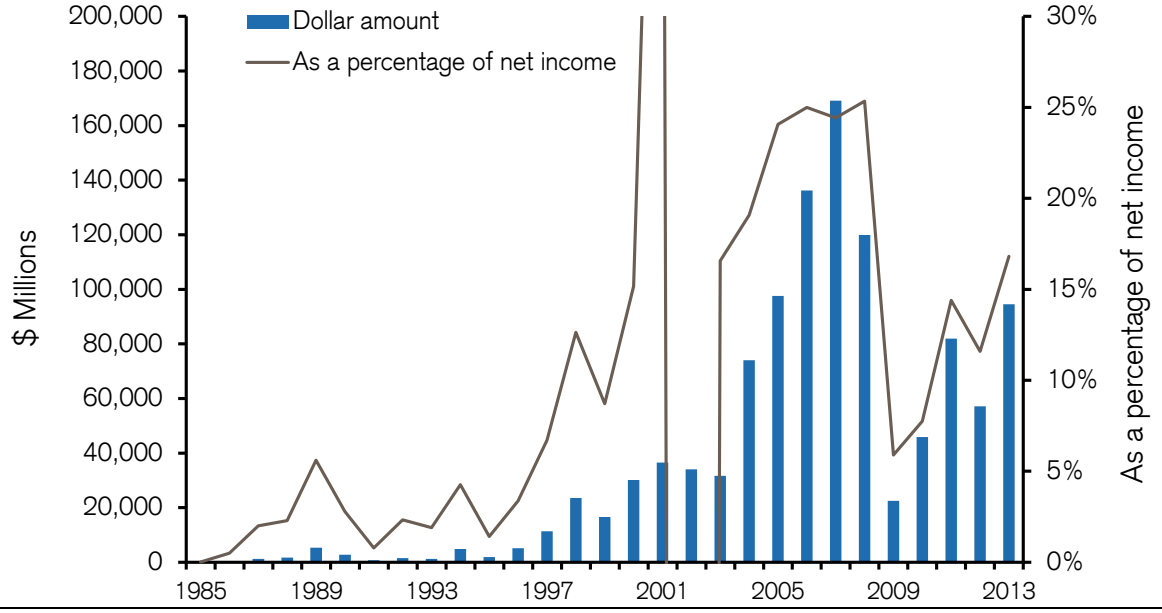
Netherlands at 1.2 percent. Countries with below-average yields included Italy at 0.1 percent, Germany at 0.3 percent, and Sweden and Switzerland at 0.5 percent.

Whereas the propensity for European firms to pay dividends has fallen, the fraction of firms repurchasing shares has risen. Similar to dividends, share repurchases are becoming concentrated among fewer firms in Europe.

Buybacks have been smaller in Europe than in the U.S. due to legal bans as well as stricter regulations on how companies have to implement and disclose them.[54] For example, open market share repurchases were not legal until 1981 in the U.K., until 1992 in Switzerland, and until 1998 in Germany. In France, buybacks were very difficult to implement until a change in the law in 1998.

In addition, whereas board approval is sufficient to initiate a buyback program in the U.S., companies must obtain shareholder approval for open market repurchases in the U.K., France, Germany, Italy, the Netherlands, and Switzerland. Even then, significant restrictions remain regarding the terms of timing, price, and amount of buybacks. Finally, companies in many of these countries also have additional reporting requirements on top of basic disclosure in financial statements.

Exhibit 37: Europe Gross Share Buybacks, 1985-2013

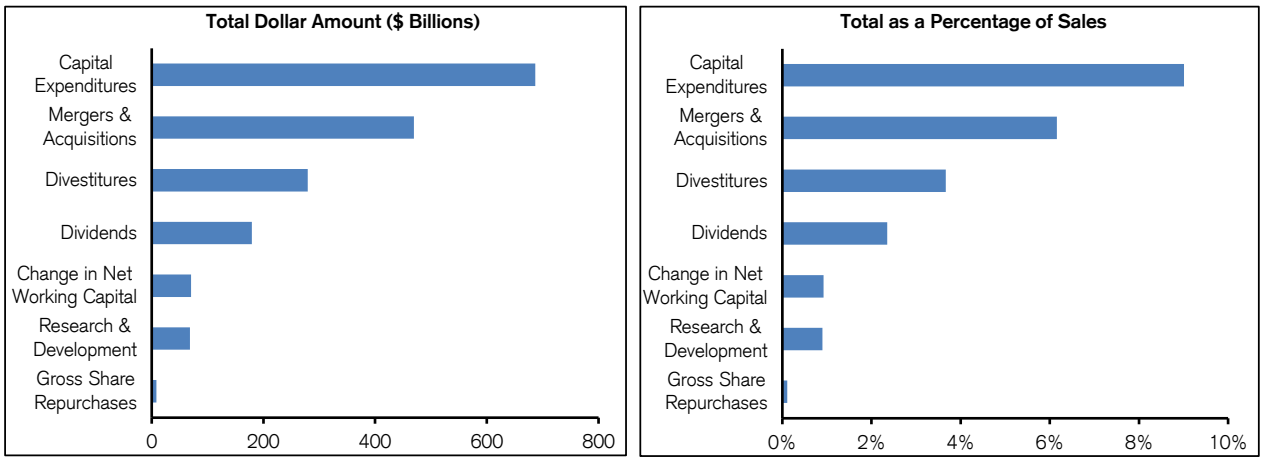


Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Asia/Pacific excluding Japan (APEJ)

Uses of Capital. Exhibit 38 shows how the top 1,000 companies in APEJ, excluding companies in the financial services and regulated utility industries, deployed capital in 2013. While just a snapshot for a particular year, the ranking reasonably reflects how companies in APEJ have allocated capital over time.

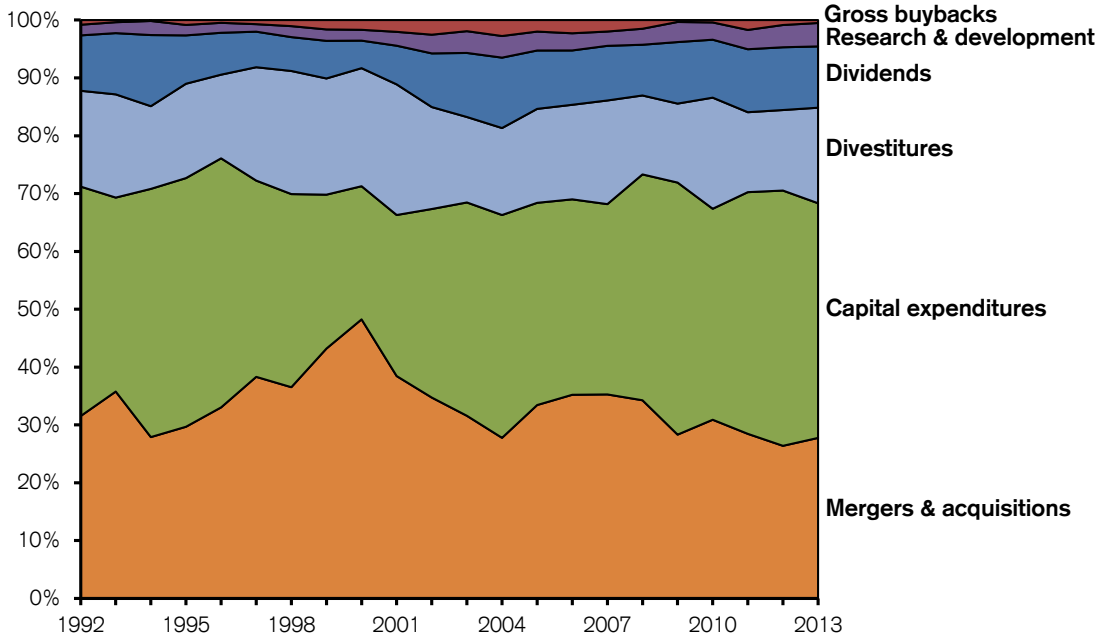
Exhibit 38: APEJ Capital Deployment, 2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Exhibit 39 shows the breakdown of spending by source from 1992-2013. Again, we exclude changes in net working capital.

Exhibit 39: APEJ Capital Deployment, 1992-2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, and dividends exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Similar to 2013, capital expenditures and M&A are by far the largest uses of capital over time. An examination of the changes from 1992 through 2013 reveals some noteworthy patterns:

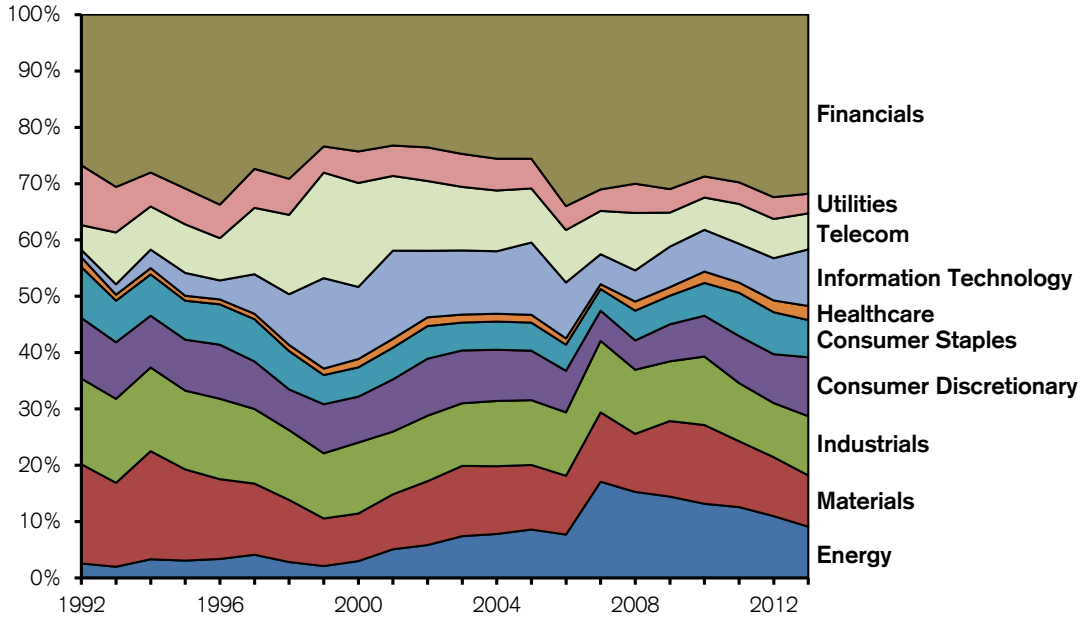
- Capital expenditures are the largest use of capital. Capital expenditures were 9 percent of total sales in 2013, modestly below the long-term average of 10.5 percent. In 2013, they were APEJ's largest use of capital, which is typically the case except for very big years for M&A. Measured as a percentage of sales, APEJ's capital expenditures greatly exceed those of the U.S., Japan, and Europe.

- M&A is very cyclical, ranging from a low of 5.5 percent of sales in 2012 to a high of 22.7 percent in 2000. The long-term average is roughly 10 percent, consistent with the levels of the U.S. and Europe. China really stands out, as its share of the region's total M&A went from less than 5 percent in the early 1990s to just over one-half in recent years.

- R&D spending has slowly trended higher over time but remains well below that of the U.S., Japan, and Europe both on an absolute basis and relative to sales. R&D rose steadily from 0.5 percent of sales in 1992 to a peak of 1.0 percent of sales in the mid-2000s, and stands at 0.9 percent of sales today. This rise reflects the change in the composition of the market, with the information technology sector growing from just 1 percent of the market in 1992 to 10 percent in 2013. (See Exhibit 40.)

- Share buybacks have historically been very modest and remain a small component of corporate payouts. Buybacks have averaged just 0.3 percent of total market capitalization over time, well below dividends at 2.2 percent. Regulatory constraints have contributed to the lower level of buybacks, particularly in the earlier years. For example, the governments didn't legalize buybacks in Australia until 1989 and in Hong Kong until 1991. These are among the largest economies in the region. In 2013, buybacks in China, India, and Taiwan were negligible.

Exhibit 40: APEJ Sector Composition, 1992-2013



Source: Credit Suisse HOLT.

Exhibit 41 shows a detailed history of capital deployment from 1992-2013. Again we see that the standard deviations of the growth rates are small for R&D, dividends, and capital spending relative to those of buybacks, M&A, and divestitures. Exhibit 42 represents the same deployment numbers as a percentage of sales.

Exhibit 41: APEJ Capital Deployment, 1992-2013

	Total Amount (in Millions of U.S. Dollars, Nominal)						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1992	24,273	30,558	1,418		622	12,758	7,375
1993	33,385	31,311	1,764	27,498	346	16,661	9,887
1994	30,119	46,350	2,628	32,931	171	15,441	13,287
1995	62,408	90,430	3,810	59,566	1,763	34,322	17,584
1996	87,322	113,864	4,554	23,652	1,257	38,261	19,158
1997	104,324	92,431	3,541	-22,459	1,931	53,379	16,745
1998	96,662	88,404	5,031	-3,614	2,774	56,354	15,504
1999	135,444	83,448	6,200	19,062	5,068	62,996	20,407
2000	236,737	112,970	9,162	28,045	8,278	100,163	23,380
2001	149,680	108,462	9,333	12,496	7,933	87,946	26,055
2002	132,228	124,191	12,334	8,739	9,624	67,132	35,338
2003	133,511	155,979	15,916	62,038	8,128	62,491	46,837
2004	158,116	219,449	21,293	77,388	15,712	85,658	69,352
2005	255,465	267,215	24,980	71,418	15,235	124,157	77,143
2006	340,894	327,275	28,769	87,156	22,131	158,328	90,975
2007	452,408	422,207	31,761	188,979	25,434	229,956	121,212
2008	406,045	462,848	32,736	-8,270	17,812	161,789	104,020
2009	313,116	481,970	38,437	158,979	3,656	151,049	117,638
2010	471,729	557,217	45,565	241,408	6,318	293,416	153,044
2011	428,568	629,619	50,294	192,069	25,701	208,285	164,055
2012	404,832	677,426	59,065	123,084	13,109	213,707	166,560
2013	469,490	686,665	68,607	70,527	8,545	279,522	179,308
CAGR	**15.1%**	**16.0%**	**20.3%**	**4.8%**	**13.3%**	**15.8%**	**16.4%**
St. Dev.	**35.5%**	**24.3%**	**17.0%**	**496.4%**	**213.8%**	**38.9%**	**17.4%**

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Dollar amounts not inflated. Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

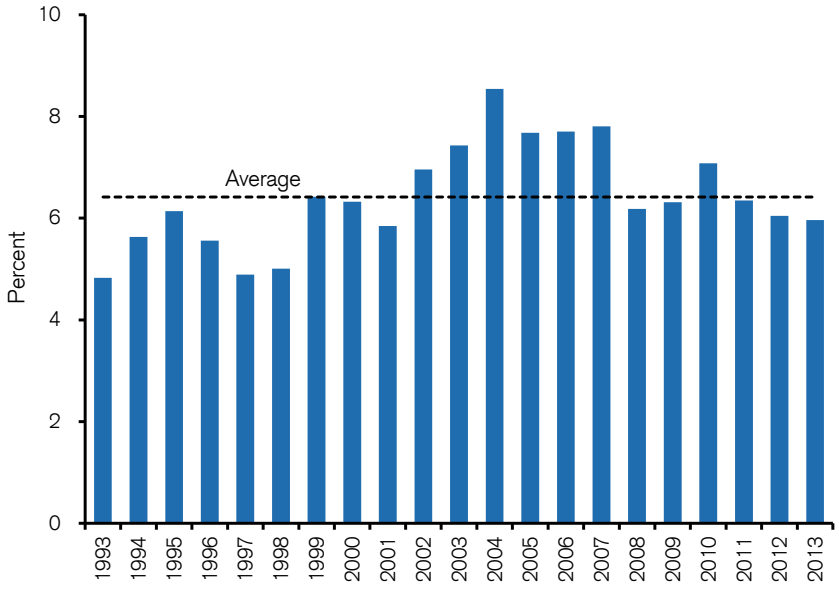
Exhibit 42: APEJ Capital Deployment, 1992-2013

	As a Percentage of Sales						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1992	8.4%	10.6%	0.5%		0.2%	4.4%	2.5%
1993	8.8%	8.3%	0.5%	7.2%	0.1%	4.4%	2.6%
1994	5.9%	9.1%	0.5%	6.5%	0.0%	3.0%	2.6%
1995	8.5%	12.3%	0.5%	8.1%	0.2%	4.7%	2.4%
1996	10.5%	13.7%	0.5%	2.8%	0.2%	4.6%	2.3%
1997	15.8%	14.0%	0.5%	-3.4%	0.3%	8.1%	2.5%
1998	12.4%	11.3%	0.6%	-0.5%	0.4%	7.2%	2.0%
1999	14.6%	9.0%	0.7%	2.1%	0.5%	6.8%	2.2%
2000	22.7%	10.9%	0.9%	2.7%	0.8%	9.6%	2.2%
2001	14.0%	10.1%	0.9%	1.2%	0.7%	8.2%	2.4%
2002	10.1%	9.5%	0.9%	0.7%	0.7%	5.1%	2.7%
2003	8.4%	9.8%	1.0%	3.9%	0.5%	3.9%	2.9%
2004	7.5%	10.4%	1.0%	3.7%	0.7%	4.1%	3.3%
2005	10.3%	10.7%	1.0%	2.9%	0.6%	5.0%	3.1%
2006	11.2%	10.7%	0.9%	2.9%	0.7%	5.2%	3.0%
2007	11.7%	10.9%	0.8%	4.9%	0.7%	5.9%	3.1%
2008	9.6%	10.9%	0.8%	-0.2%	0.4%	3.8%	2.5%
2009	7.0%	10.8%	0.9%	3.6%	0.1%	3.4%	2.6%
2010	8.2%	9.7%	0.8%	4.2%	0.1%	5.1%	2.7%
2011	6.4%	9.4%	0.8%	2.9%	0.4%	3.1%	2.5%
2012	5.5%	9.2%	0.8%	1.7%	0.2%	2.9%	2.3%
2013	6.2%	9.0%	0.9%	0.9%	0.1%	3.7%	2.4%

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Recent Trends in Cash Flow Return on Investment and Asset Growth. CFROI today in the APEJ region is slightly below the long-term average, and well below the peak years of the mid-2000s. (See Exhibit 43.) The current level of 6.0 percent is below the historical average of 6.4 percent over the past twenty years.

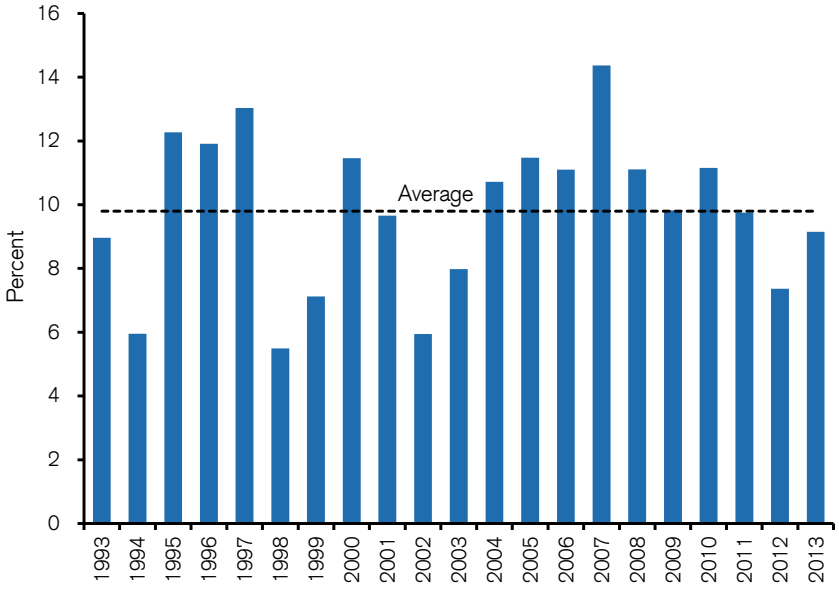
Exhibit 43: APEJ CFROI, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of APEJ firms excluding financials and regulated utilities.

Exhibit 44 shows the annual rate of asset growth, adjusted for inflation, over the past twenty years. In 2012 and 2013, growth was low relative to the long-term average. Asset growth of 7.4 percent in 2012 and 9.2 percent in 2013 was below the average of 9.8 over the past twenty years. Asset growth in this region is the highest in the world.

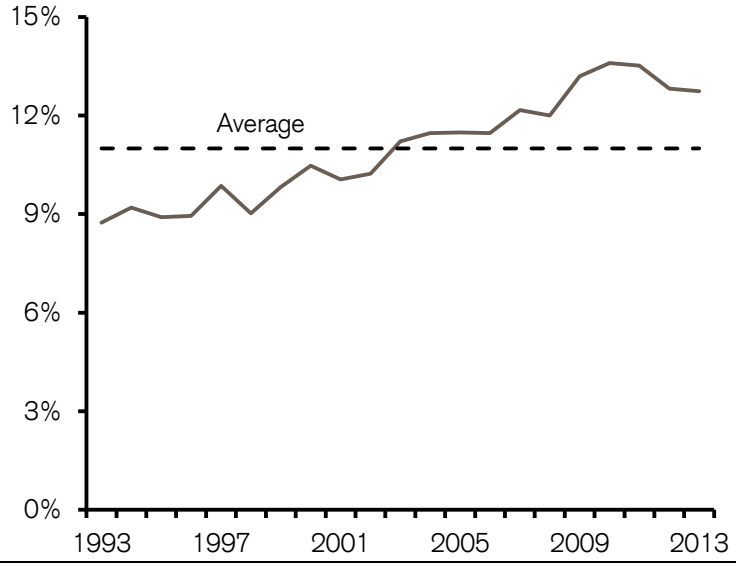
Exhibit 44: APEJ Real Asset Growth Rate, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of APEJ firms excluding financials and regulated utilities.

Exhibit 45 shows that today's cash as a percentage of assets of 13 percent is above the long-term average of 11 percent. The level of cash relative to assets shows a clear upward trend.

Exhibit 45: APEJ Cash as a Percentage of Total Assets, 1993-2013



Source: Credit Suisse HOLT.
Note: Top 1,000 industrial firms.

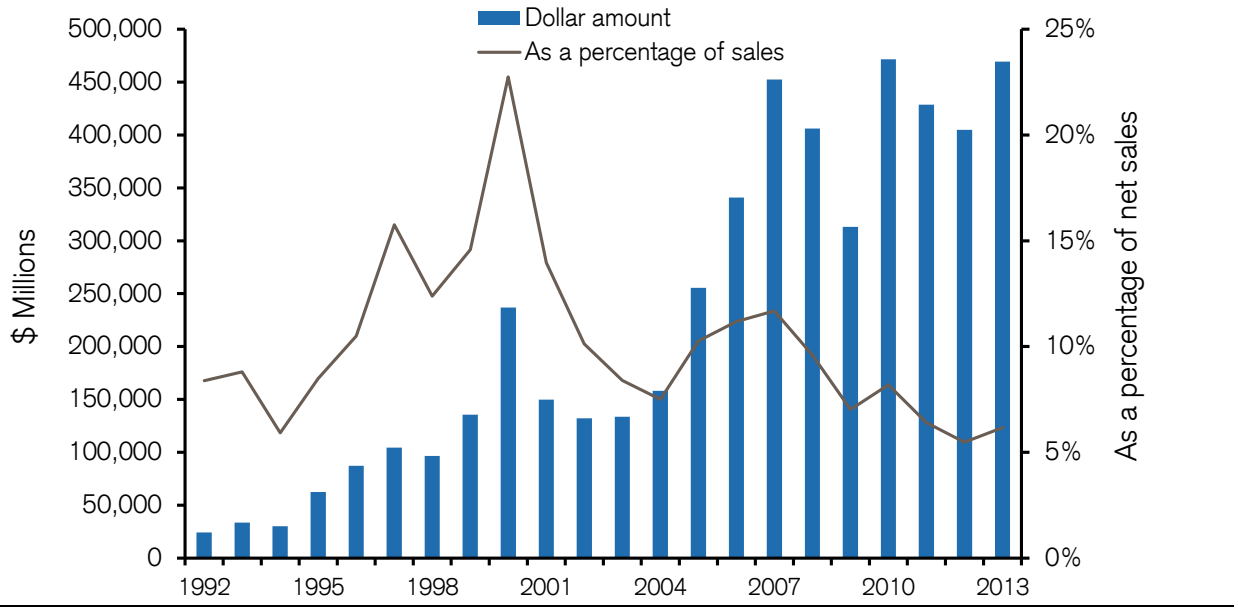
Mergers and Acquisitions. Exhibit 46 shows the dollar amount of M&A, as well as M&A as a percentage of sales, from 1992 to 2013. M&A is very cyclical, ranging from a low of 5.5 percent of sales in 2012 to a high of 22.7 percent of sales in 2000. In 2013, M&A volume was 6 percent of sales, well below its long-term average of roughly 10 percent. This historical average is equal to that of the U.S. and Europe. But while M&A levels are comparable as a fraction of sales, the absolute level of M&A in APEJ lags that of the U.S. and Europe. In 2013, M&A volume in APEJ was one-half the level of the U.S. and nine-tenths that of Europe.

One notable difference across the regions is that absolute M&A volumes recovered more rapidly following the financial crisis in APEJ than it did in the U.S. and Europe. Only in 2014 did worldwide deal volume return to the level of 2007.

On a country basis, China leads the deal making in APEJ. Its share of the region's total M&A went from less than 5 percent in the early 1990s to just over one-half in recent years. Australia and South Korea were the next biggest contributors in 2013, representing 14 percent and 9 percent of the region's total M&A, respectively. India's M&A activity has not kept pace with China, with volume equal to just 4 percent of the region's total in 2013.

The trend in M&A activity in the region has been largely positive owing to economic growth and business reforms. In particular, China's rapid growth and its shift toward a more free market economy have driven deal activity.[55] But while M&A has been strong between Chinese companies, government restrictions aimed at ensuring Chinese companies maintain control of certain industries have limited cross-border deals.

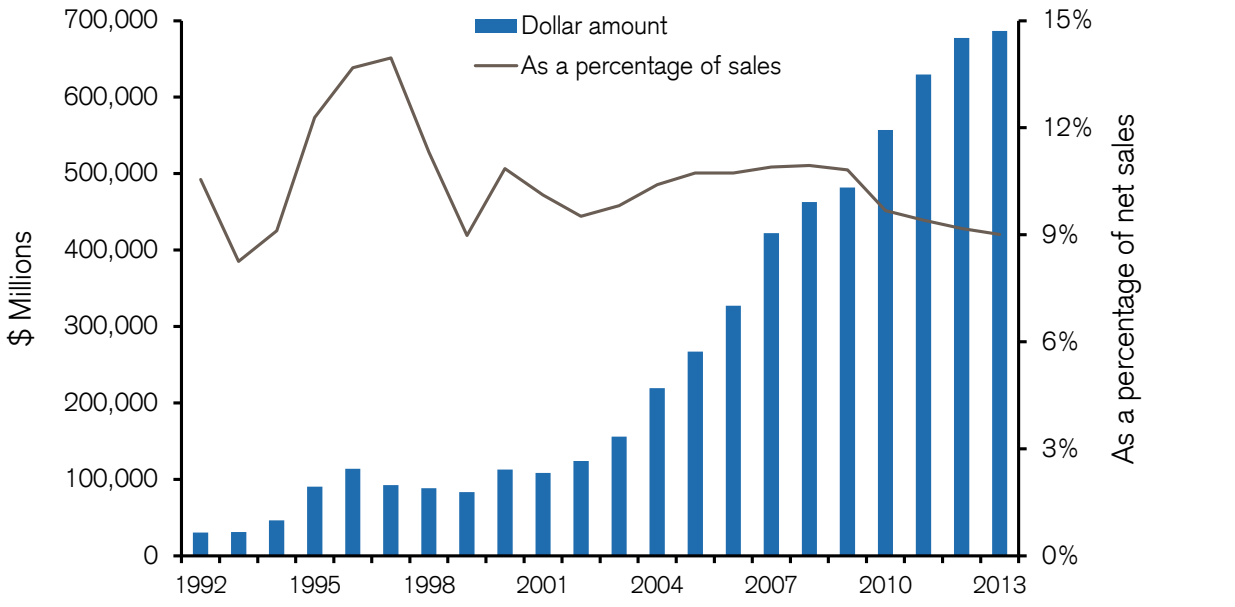
Exhibit 46: APEJ Mergers and Acquisitions, 1992-2013



Note: Dollar amounts not inflated. APEJ announced domestic mergers; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Capital Expenditures. Exhibit 47 shows the dollar amount of capital expenditures as well as capital expenditures as a percentage of sales from 1992 to 2013. Capital expenditures were 9.0 percent of total sales in 2013, below the long-term average of 10.5 percent. In 2013, they were APEJ's largest use of capital, which is typically the case with the exception of large years for M&A. Measured as a fraction of sales, APEJ's capital expenditure ratio is much higher than that of the U.S., Japan, and Europe, and is slightly below that of GEM.

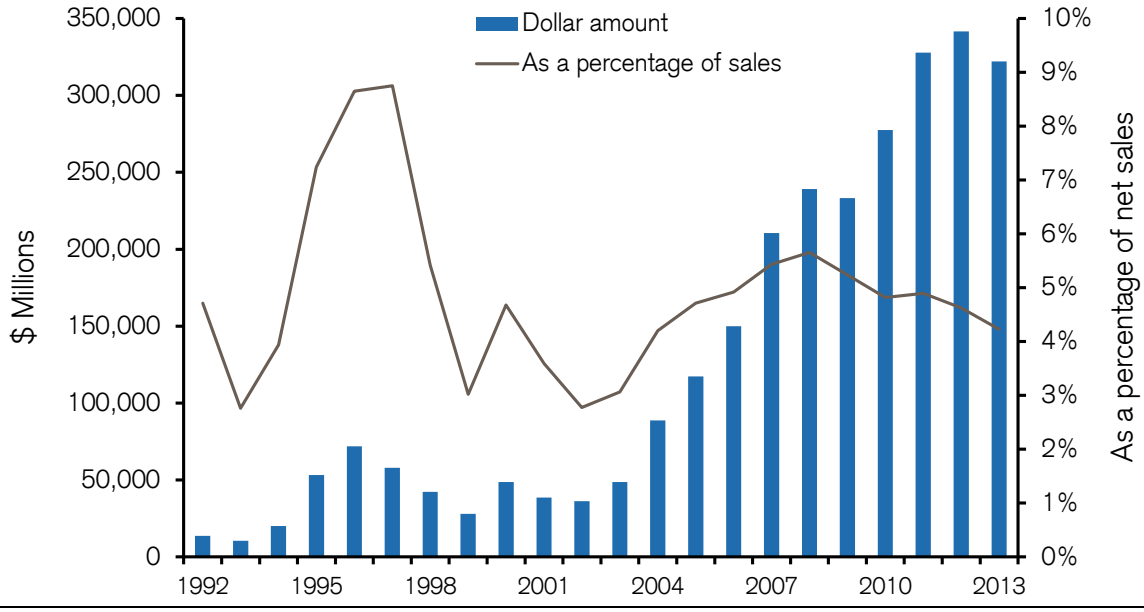
Exhibit 47: APEJ Capital Expenditures, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Exhibit 48 shows capital expenditures net of depreciation. Measured as a percentage of sales, growth capital expenditures have averaged roughly one-half of overall capital expenditures.

Exhibit 48: APEJ Capital Expenditures Net of Depreciation, 1992-2013



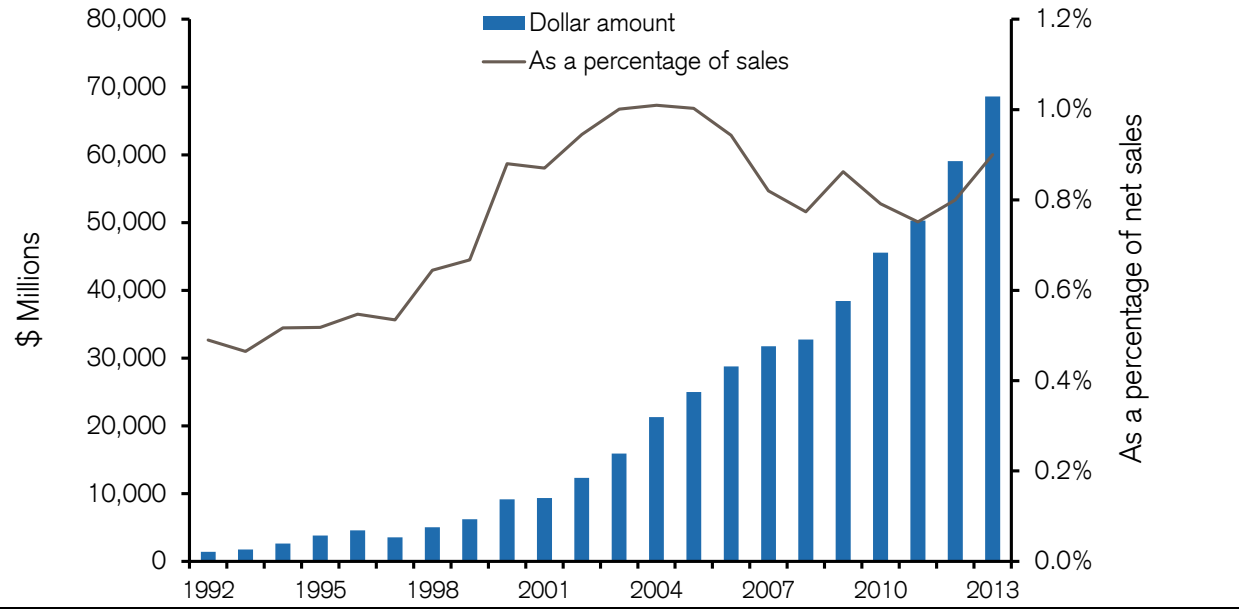
Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Research and Development. Exhibit 49 shows the dollar amount of R&D, as well as R&D as a percentage of sales, since 1992. R&D rose steadily from 0.5 percent of sales at the beginning of the period to a peak of 1.0 percent of sales in the mid-2000s, and currently stands at 0.9 percent of sales. R&D spending has risen substantially off of a low base, but remains well below the levels of the U.S., Japan, and Europe relative to sales. The rise in R&D during the full period reflects the change in the composition of the market. During this time, information technology, the most R&D-intensive sector, grew from 1 percent to 10 percent of the market.

Based on 2013 figures, the APEJ countries that spent the most on R&D as a percentage of sales were Korea at 2.0 percent and Taiwan at 1.8 percent. Notable laggards included Australia at 0.3 percent and India at 0.4 percent. China was in the middle at 0.7 percent.

Businesses in APEJ countries account for roughly one-half of total R&D spending, with the government, academia, and private nonprofit companies contributing the rest.[56] Corporations in APEJ account for a smaller share of the total R&D spending than they do in the U.S. and Japan, which are around 70-75 percent, and in Europe, which is just above 60 percent. The business share of total R&D spending ranges from a high of 77 percent in Korea to a low of 15 percent in Vietnam. Among larger APEJ economies, the business share of R&D spending is 76 percent in China, 43 percent in Hong Kong, 58 percent in Australia, and 36 percent in India.

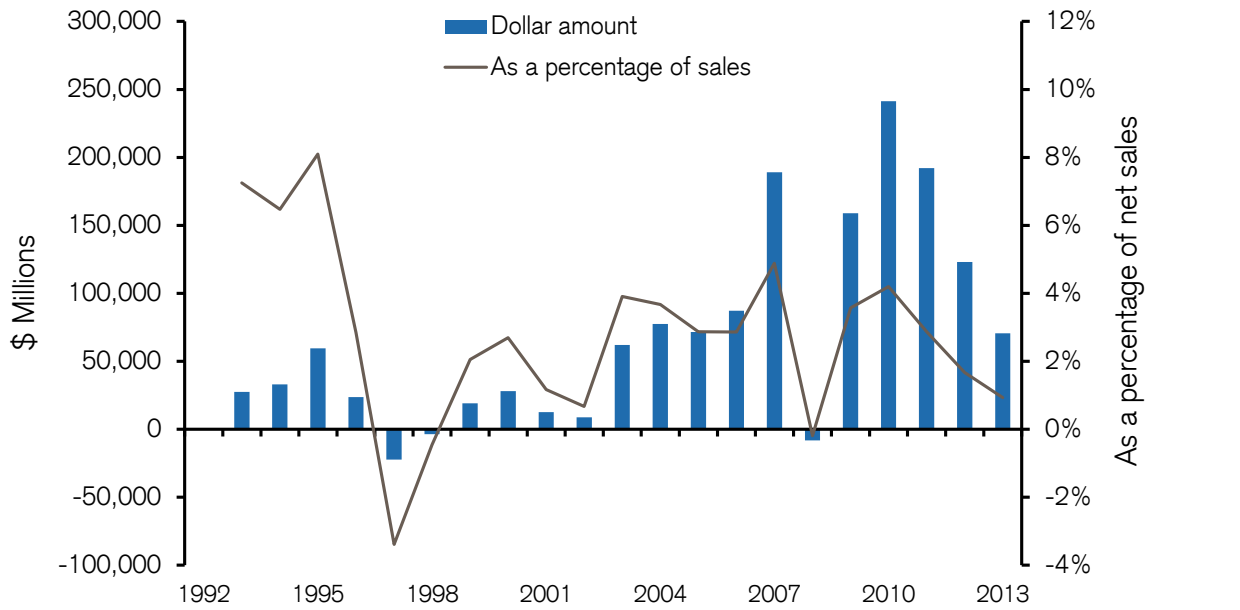
Exhibit 49: APEJ Research and Development, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Net Working Capital. Net working capital is roughly 15 percent of assets on average for companies in APEJ. Exhibit 50 shows the annual change in net working capital from 1992 through 2013. At year-end 2013, net working capital was $1.5 trillion for the top 1,000 public firms in APEJ. We consider changes in net working capital as opposed to the absolute amount, because changes are what you should consider to be an incremental investment. Net working capital investments are an important use of cash in APEJ and are larger than R&D on average but smaller than M&A and capital expenditures.

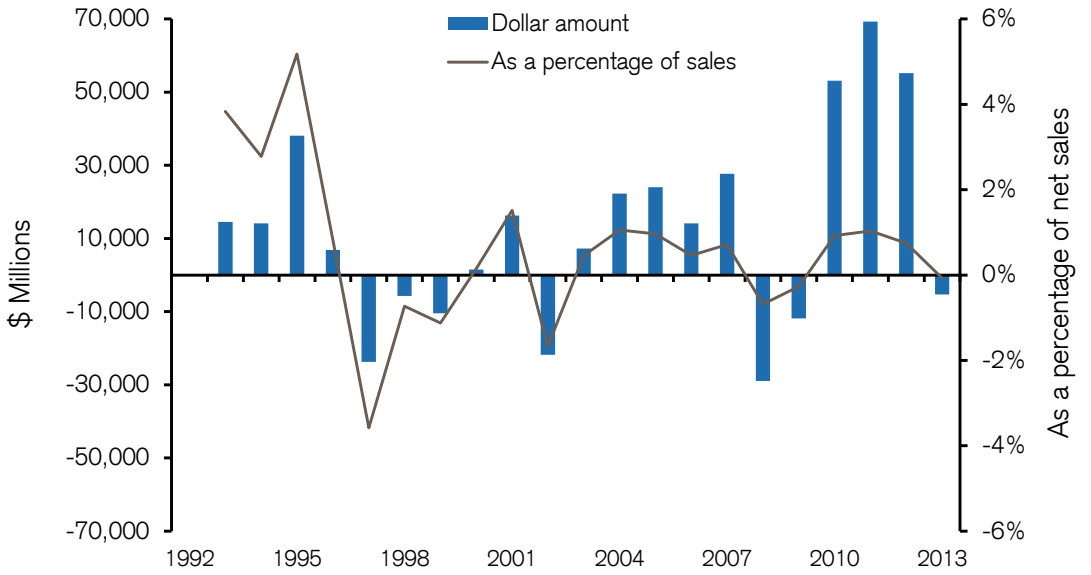
Exhibit 50: APEJ Change in Net Working Capital, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

The picture changes dramatically when we exclude cash. At the end of 2013, net working capital excluding cash was about $280 billion for the top 1,000 APEJ industrial companies, roughly one-fifth the total net working capital sum. Exhibit 51 shows the change in net working capital excluding cash.

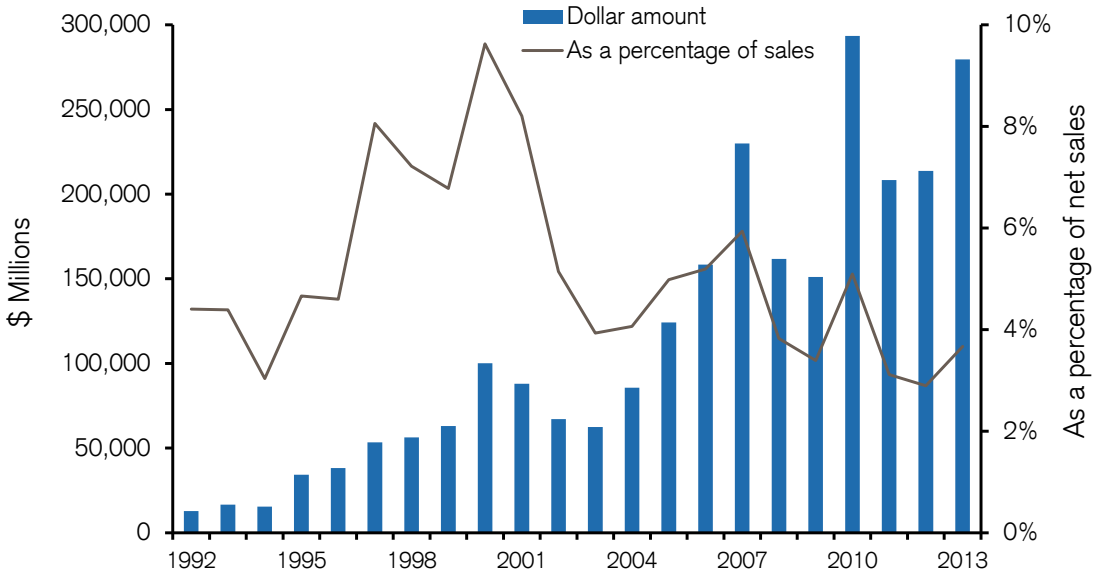
Exhibit 51: APEJ Change in Net Working Capital Excluding Cash, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Divestitures. Exhibit 52 shows the magnitude of divestitures from 1992-2013. Similar to M&A, divestitures vary a great deal from one year to the next, and were in a range of 3.0 percent of sales in 1994 to 9.6 percent in 2000. Divestitures have averaged 5.1 percent of sales over time, one-half the level of M&A and much higher than buybacks, dividends, or R&D spending.

Exhibit 52: APEJ Divestitures, 1992-2013

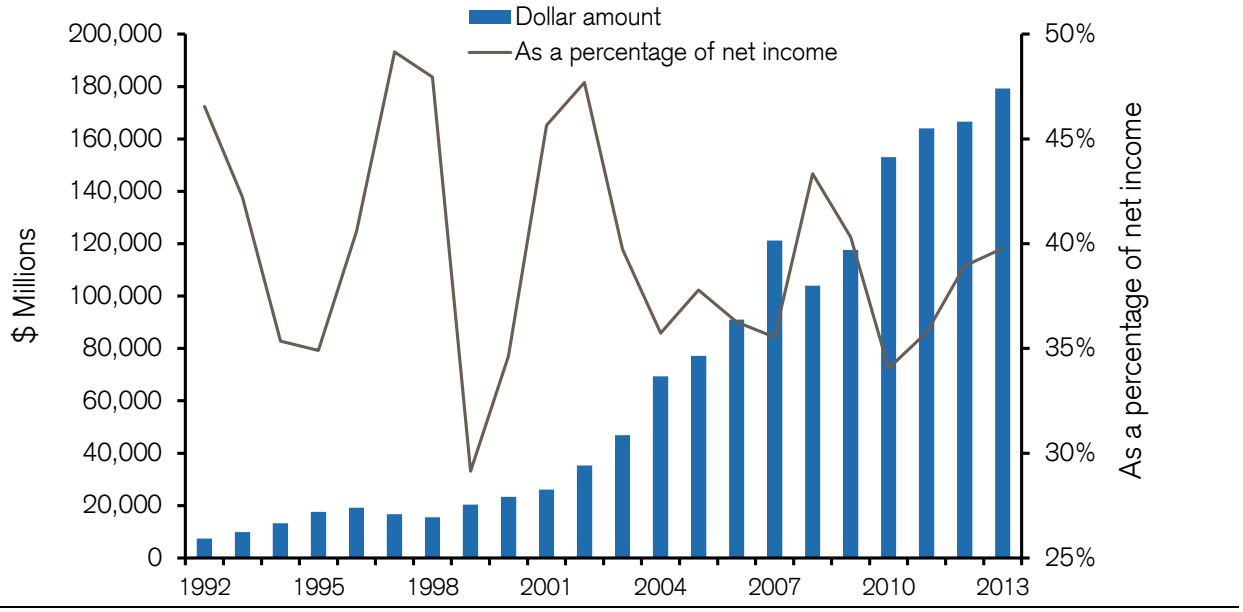


Note: Announced divestitures; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases; Dollar amounts not inflated.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Dividends. Exhibit 53 shows the annual dividends on common and preferred stock for the top 1,000 companies in APEJ, excluding the financial services and regulated utility industries, from 1992 to 2013. Dividends are very stable in APEJ.

The average dividend payout ratio, or dividends as a percentage of net income, was roughly 40 percent from 1992-2013. The average dividend yield was 2.2 percent over the same period. In 2013, the dividend yield was 2.5 percent. Countries with above-average payouts included Thailand at 3.8 percent, Singapore at 3.3 percent, and Australia at 3.2 percent. Countries with below-average payouts included Korea at 1.0 percent and India at 2.0 percent.

Exhibit 53: APEJ Common and Preferred Dividends, 1992-2013



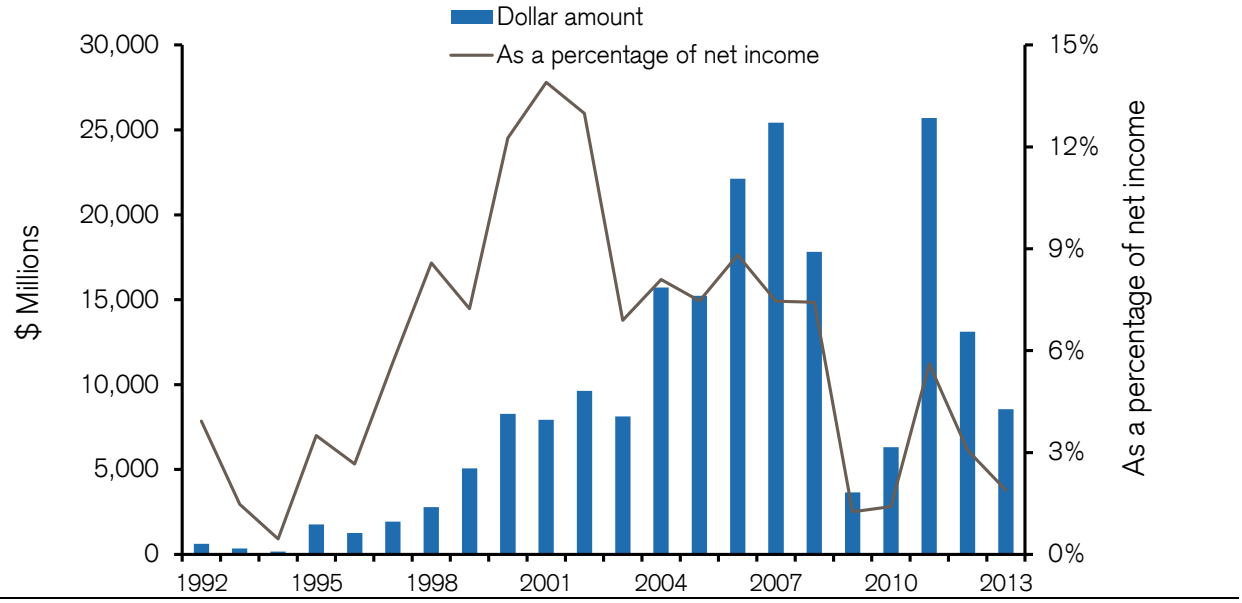
Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Share Buybacks. Exhibit 54 shows the annual gross buybacks for the top 1,000 companies in APEJ from 1992 to 2013. Similar to other regions, we see cyclicality. Buybacks rose throughout most of the 2000s but fell sharply in 2008-2010. Overall, buybacks remain a very small component of the corporate payout in APEJ.

Buybacks have been roughly five percent of net income, on average, from 1992-2013. The average buyback yield, or buybacks as a percentage of total market capitalization, was 0.3 percent over the same period, significantly below the 2.2 percent dividend yield. In 2013, the buyback yield was 0.1 percent. Australia was the only country in the region with a relevant buyback yield, at 0.6 percent, and China, India, and Taiwan all had a zero yield.

Regulatory constraints contributed to the lower level of buybacks in the earlier years. For example, the government of Australia did not legalize buybacks until 1989 and Hong Kong did not legalize them until 1991. These are two of the largest economies in the region.[57]

Exhibit 54: APEJ Gross Share Buybacks, 1992-2013



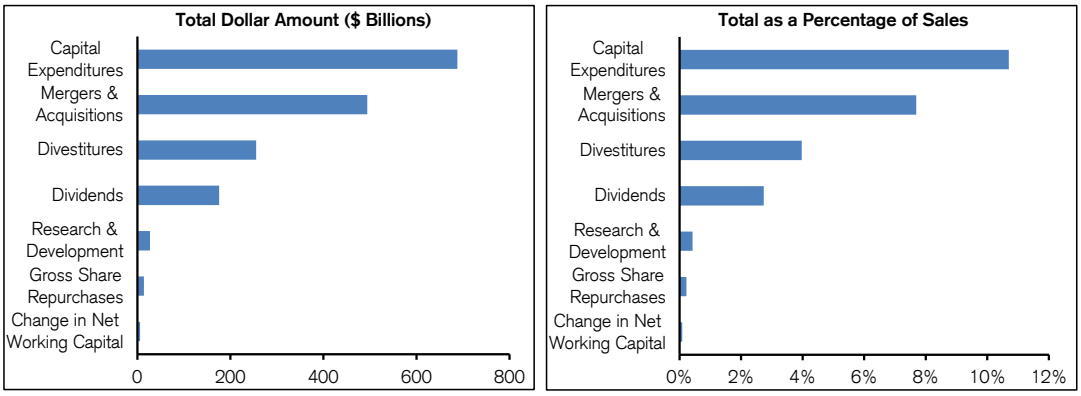
Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Global Emerging Markets

The countries in the GEM region overlap substantially with those in the APEJ region. This overlap helps explain why some of the trends in capital deployment are similar. In 2013, the shared countries constituted roughly one half the market capitalization of each region. China and India alone, which are mutual constituents, made up roughly one-third the market capitalization of each region in 2013. The appendix provides a full list of the countries in each region.

Uses of Capital. Exhibit 55 shows how the top 1,000 companies in GEM, excluding companies in the financial services and regulated utility industries, deployed capital in 2013. While just a snapshot for a particular year, the ranking reasonably reflects how companies in GEM have allocated capital over time.

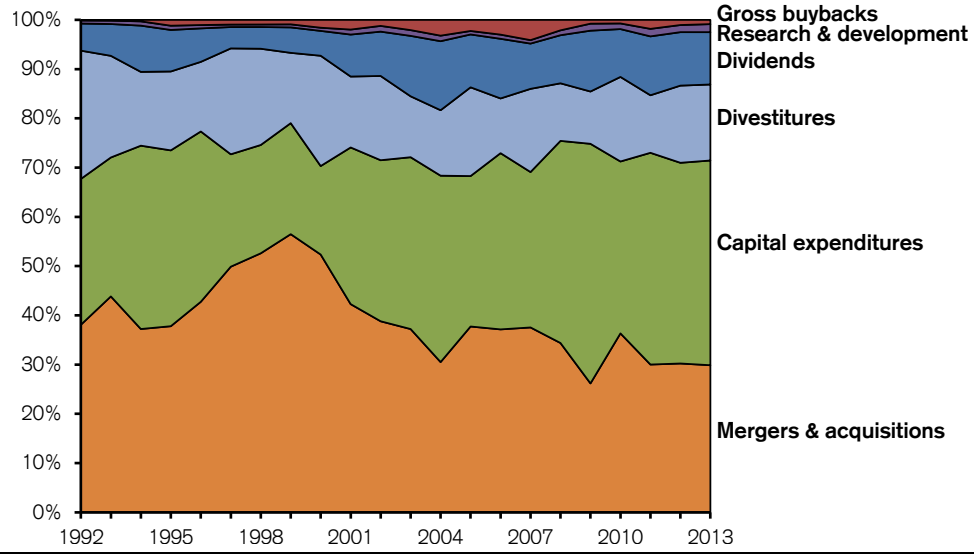
Exhibit 55: GEM Capital Deployment, 2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Exhibit 56 shows the spending by source from 1992-2013. Again, we exclude changes in net working capital.

Exhibit 56: GEM Capital Deployment, 1992-2013



Source: Credit Suisse HOLT, Thomson Reuters Datastream.
Note: Data for R&D, capital expenditures, buybacks, and dividends exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

M&A and capital expenditures are by far the largest uses of capital over time. An examination of the changes from 1992 through 2013 reveals some noteworthy patterns:

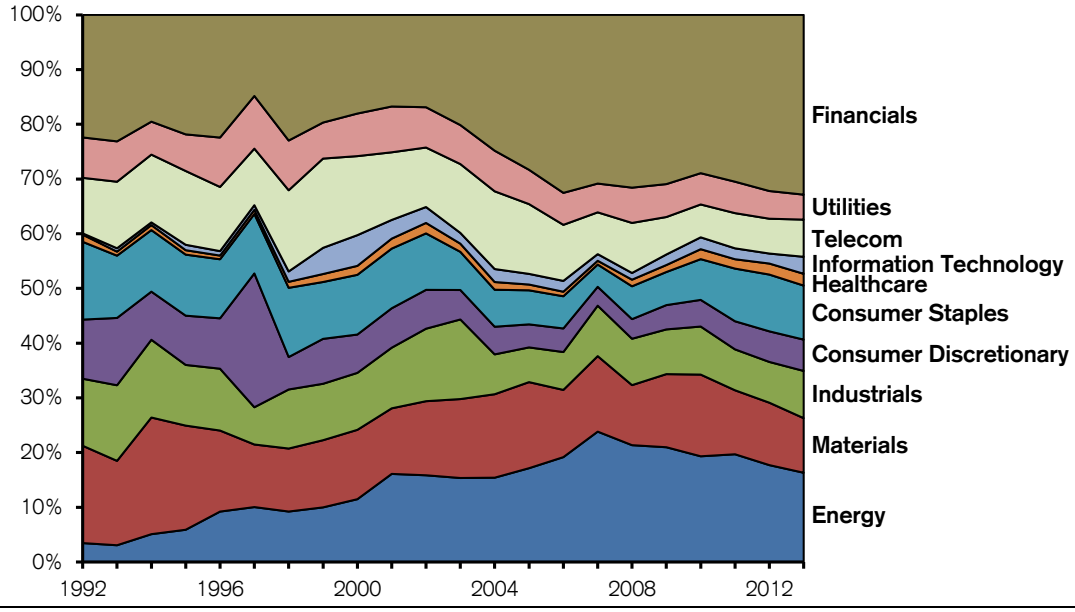
- M&A is very cyclical, ranging from a low of 7 percent of sales in 2009 to a high of 33 percent of sales in 1998. The long-term average of 16 percent of sales greatly exceeds the 10 percent level shared by the U.S., Europe, and APEJ. The absolute level of M&A in GEM has risen sharply since the early 1990s as the result of strong economic growth and business reforms. The BRIC countries (Brazil, Russia, India, and China) now dominate M&A activity in the region. Together they accounted for 70 percent of the total in 2013, up from a share of less than 10 percent in 1992.

- Capital expenditures are the next largest use of capital. Capital expenditures were 11 percent of total sales in 2013, just below the long-term average of 12 percent. This long-term average exceeds levels in the U.S., Europe, and APEJ. A logical explanation for this gap is the composition of GEM economies. (See Exhibit 57.) Capital-intensive industries such as energy, materials, and industrials represent a greater share of the economy in GEM than in any other region.

- R&D spending is very modest and has remained in a narrow band of 0.3 to 0.4 percent of sales. This level is well below that of the U.S., Japan, and Europe. Again, sector composition plays a key role, as GEM has a very low concentration in information technology and healthcare, the most R&D-intensive sectors, and a high concentration in industries that rely on capital investments for growth. Relative to the other regions, GEM companies also spend less on R&D.

- Share buybacks have been a very minor use of capital. Buybacks have averaged just 0.4 percent of total market capitalization over time, which compares to dividends at 2.3 percent. BRIC countries in particular spend very little on buybacks. Buyback activity was extremely low until the mid-2000s, rose sharply in 2007, then plummeted in the ensuing years. Dividends have been far more stable.

Exhibit 57: GEM Sector Composition, 1992-2013



Source: Credit Suisse HOLT.

Exhibit 58 shows a detailed history of capital deployment from 1992-2013. Again we see that the standard deviations of the growth rates are small for R&D, capital spending, and dividends relative to those of buybacks, divestitures, and M&A. Exhibit 59 represents the same deployment numbers as a percentage of sales.

Exhibit 58: GEM Capital Deployment, 1992-2013

	Total Amount (in Millions of U.S. Dollars, Nominal)						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1992	22,365	17,386	361		74	15,293	3,232
1993	28,407	18,281	445	9,217	99	13,376	4,183
1994	27,547	27,548	640	21,018	221	11,087	6,952
1995	46,628	44,050	1,062	32,627	1,453	19,771	10,404
1996	74,615	60,368	1,187	18,191	1,820	24,668	11,873
1997	131,331	60,095	1,314	5,895	2,507	56,603	11,434
1998	150,766	63,050	1,459	1,711	2,686	56,027	12,646
1999	146,875	58,616	1,608	30,119	2,349	37,122	13,446
2000	209,496	71,921	2,577	43,276	6,361	89,633	20,208
2001	121,911	91,720	2,921	-4,951	5,660	41,538	24,587
2002	107,961	91,006	3,237	11,353	3,392	47,618	25,055
2003	128,521	120,502	4,044	48,552	7,165	42,709	42,374
2004	130,069	161,352	4,776	85,066	13,655	56,665	59,771
2005	274,620	222,321	5,136	56,840	16,381	131,161	78,141
2006	305,167	293,961	6,964	127,410	24,573	91,271	99,498
2007	528,681	444,361	9,836	163,469	57,856	237,920	129,494
2008	414,031	494,297	11,943	26,980	25,503	140,796	117,624
2009	285,226	530,148	15,492	115,976	8,350	115,681	134,642
2010	611,816	587,701	19,262	199,021	12,151	289,123	163,599
2011	457,721	655,693	23,234	165,589	27,793	178,156	182,420
2012	518,203	698,862	24,795	81,975	17,885	268,714	186,146
2013	494,327	687,982	27,064	5,730	14,220	255,351	175,792
CAGR	**15.9%**	**19.1%**	**22.8%**	**-2.3%**	**28.4%**	**14.3%**	**21.0%**
St. Dev.	**45.2%**	**19.7%**	**17.0%**	**396.3%**	**132.4%**	**71.3%**	**22.5%**

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Dollar amounts not inflated. Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

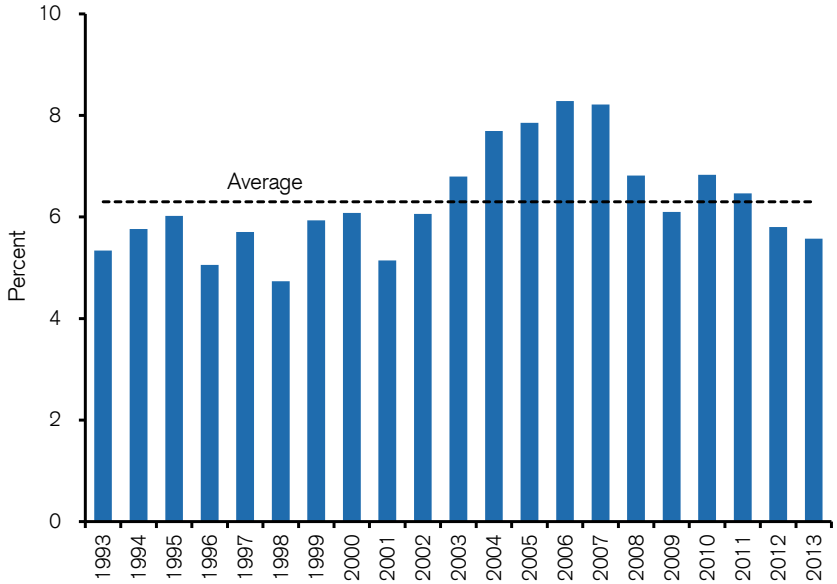
Exhibit 59: GEM Capital Deployment, 1992-2013

	As a Percentage of Sales						
	M&A	Capex	R&D Expense	Net Working Capital	Gross Buybacks	Divestitures	Dividends
1992	18.5%	14.4%	0.3%		0.1%	12.7%	2.7%
1993	18.5%	11.9%	0.3%	6.0%	0.1%	8.7%	2.7%
1994	12.7%	12.7%	0.3%	9.7%	0.1%	5.1%	3.2%
1995	13.9%	13.1%	0.3%	9.7%	0.4%	5.9%	3.1%
1996	18.2%	14.7%	0.3%	4.4%	0.4%	6.0%	2.9%
1997	31.4%	14.4%	0.3%	1.4%	0.6%	13.5%	2.7%
1998	33.5%	14.0%	0.3%	0.4%	0.6%	12.4%	2.8%
1999	27.2%	10.9%	0.3%	5.6%	0.4%	6.9%	2.5%
2000	29.0%	9.9%	0.4%	6.0%	0.9%	12.4%	2.8%
2001	15.6%	11.7%	0.4%	-0.6%	0.7%	5.3%	3.1%
2002	12.3%	10.3%	0.4%	1.3%	0.4%	5.4%	2.8%
2003	11.0%	10.3%	0.3%	4.2%	0.6%	3.7%	3.6%
2004	8.3%	10.3%	0.3%	5.5%	0.9%	3.6%	3.8%
2005	14.2%	11.5%	0.3%	2.9%	0.8%	6.8%	4.1%
2006	12.2%	11.7%	0.3%	5.1%	1.0%	3.6%	4.0%
2007	15.8%	13.3%	0.3%	4.9%	1.7%	7.1%	3.9%
2008	11.1%	13.3%	0.3%	0.7%	0.7%	3.8%	3.2%
2009	7.4%	13.8%	0.4%	3.0%	0.2%	3.0%	3.5%
2010	12.3%	11.8%	0.4%	4.0%	0.2%	5.8%	3.3%
2011	7.7%	11.1%	0.4%	2.8%	0.5%	3.0%	3.1%
2012	8.0%	10.8%	0.4%	1.3%	0.3%	4.2%	2.9%
2013	7.7%	10.7%	0.4%	0.1%	0.2%	4.0%	2.7%

Source: Credit Suisse HOLT, Thomson Reuters Datastream, and Credit Suisse.
Note: Data for R&D, capital expenditures, buybacks, dividends, and net working capital exclude financial companies and regulated utilities; data for mergers & acquisitions and divestitures include all industries.

Recent Trends in Cash Flow Return on Investment and Asset Growth. The current level of CFROI, at 5.6 percent, is slightly below the average of 6.3 percent over the past twenty years. (See Exhibit 60.)

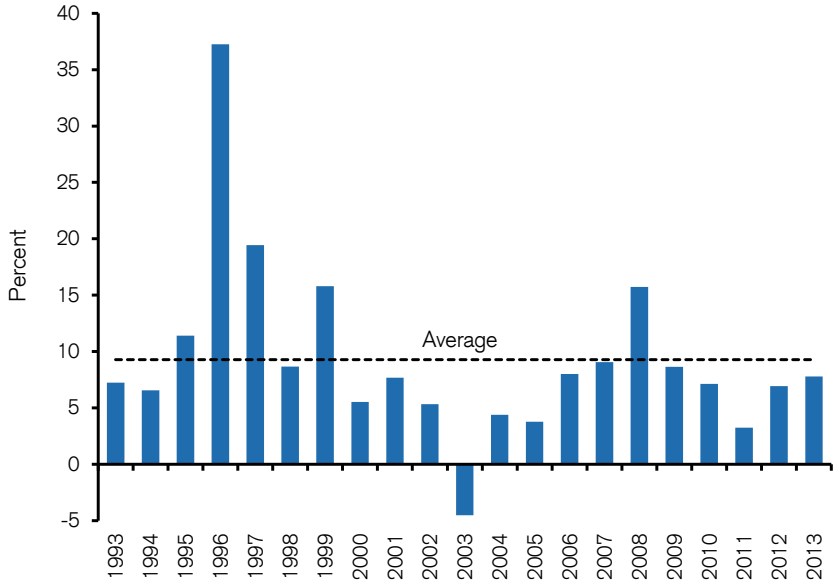
Exhibit 60: GEM CFROI, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of GEM firms excluding financials and regulated utilities.

Exhibit 61 shows the annual rate of asset growth, adjusted for inflation, over the past twenty years. In the past five years growth has been weak relative to the long-term average. That said, the average is much higher than it is in developed economies.

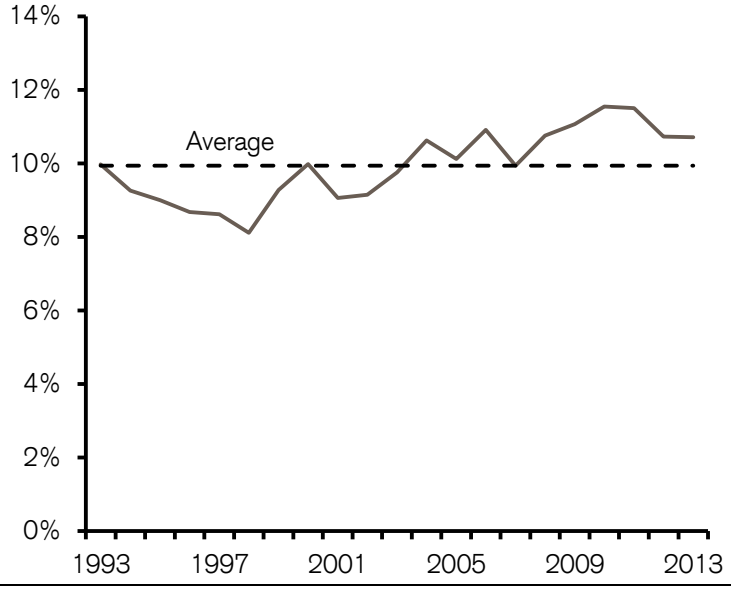
Exhibit 61: GEM Real Asset Growth Rate, 1993-2013



Source: Credit Suisse HOLT.
Note: Weighted aggregate of GEM firms excluding financials and regulated utilities.

Exhibit 62 shows that at 11 percent, today's cash as a percentage of assets is slightly above the long-term average of 10 percent. Cash holdings have been stable.

Exhibit 62: GEM Cash as a Percentage of Total Assets, 1993-2013



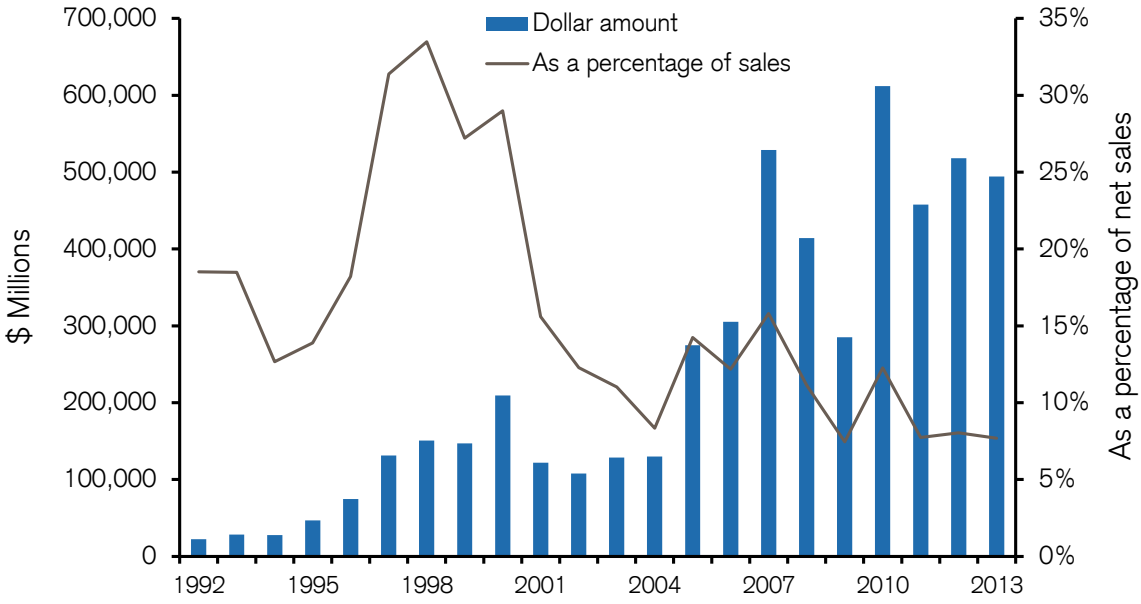
Source: Credit Suisse HOLT.
Note: Top 1,000 industrial firms.

Mergers and Acquisitions. Exhibit 63 shows the dollar amount of M&A, as well as M&A as a percentage of sales, from 1992 to 2013. M&A volume was 8 percent of sales in 2013, well below the long-term average of about 16 percent. This long-term average exceeds the 10 percent shared by the U.S., Europe, and APEJ. In absolute dollars, M&A in GEM in 2013 was still only one-half that of the U.S., reflecting the difference in the sizes of the economies. The total market capitalization of GEM is just two-fifths that of the U.S.

The BRIC countries dominate M&A activity in the region. Together they accounted for 70 percent of the total in 2013, up considerably from less than 10 percent in 1992. In 2013, China was 45 percent of the deal volume, followed by Russia at 11 percent, Brazil at 10 percent, and India at 4 percent. The biggest declines came from Argentina and Mexico. The combined share for those countries dropped from 60 percent in 1992 to only 4 percent in 2013.

M&A in GEM has risen sharply since the early 1990s as the result of strong economic growth and business-friendly reforms. In recent years, a number of governments in the emerging markets have sold off state-owned businesses. These companies often go on to merge with other companies, prompting M&A activity. And notably, some large emerging market companies have pursued major deals outside their borders.[58]

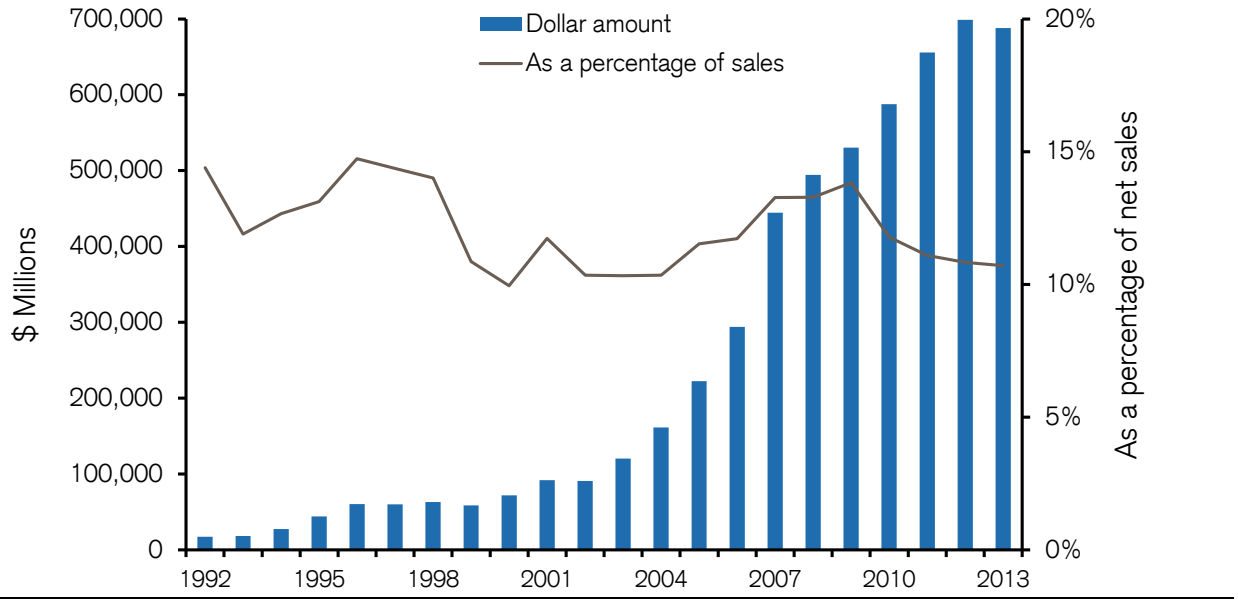
Exhibit 63: GEM Mergers and Acquisitions, 1992-2013



Note: Dollar amounts not inflated. GEM announced domestic mergers; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Capital Expenditures. Exhibit 64 shows the dollar amount of capital expenditures, as well as capital expenditures as a percentage of sales, from 1992 to 2013. In 2013, capital expenditures were GEM's largest use of capital, as M&A had a down year. Capital expenditures were 10.7 percent of total sales in 2013, below the long-term average of 12.1 percent. This long-term average exceeds the levels in the U.S., Europe, and APEJ. A logical explanation for this gap is the composition of GEM economies. The energy, materials, and industrial sectors represent 35 percent of the region's market capitalization, well above that of the other regions.

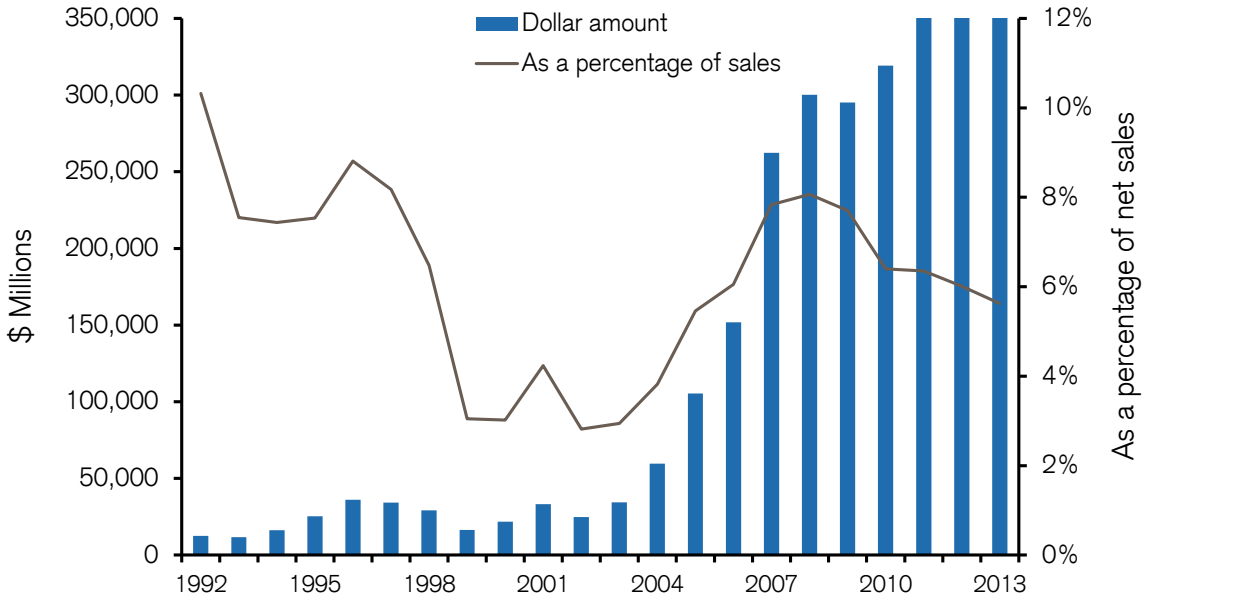
Exhibit 64: GEM Capital Expenditures, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Exhibit 65 shows capital expenditures net of depreciation. Measured as a percentage of sales, growth capital expenditures have averaged roughly one-half of overall capital expenditures.

Exhibit 65: GEM Capital Expenditures Net of Depreciation, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

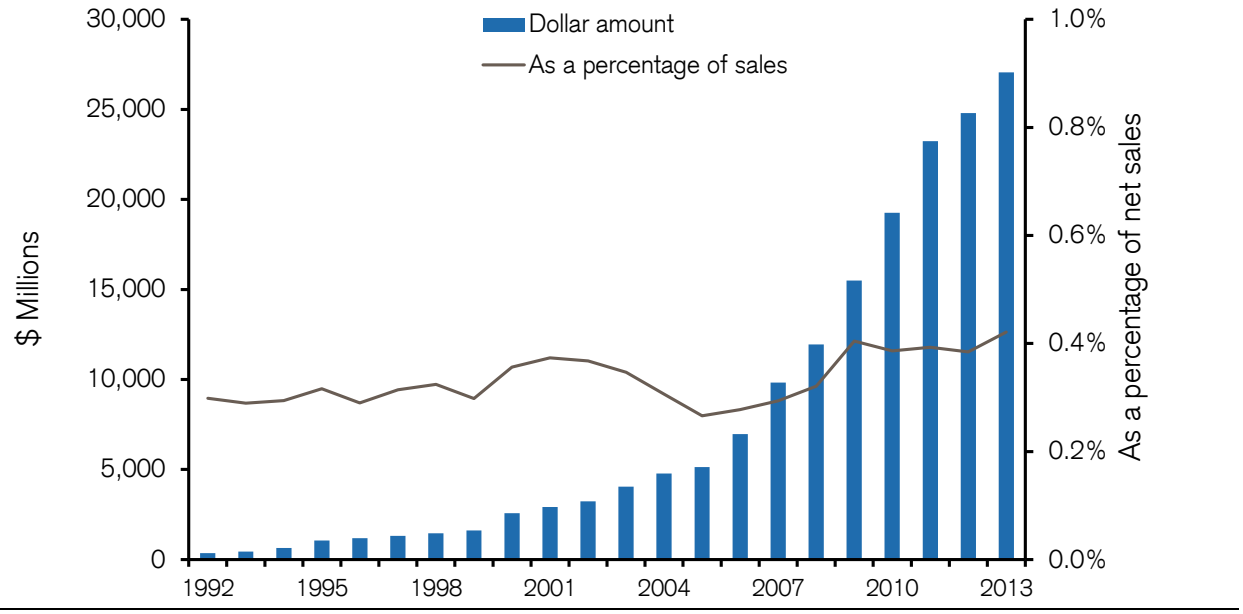
Research and Development. Exhibit 66 shows the dollar amount of R&D since 1992, as well as R&D as a percentage of sales. R&D has been in a narrow band of 0.3 to 0.4 percent of sales. This level is well below that of the U.S. and Japan, which are at 2.3 percent, and Europe, which is at 1.7 percent. Sector composition largely explains this difference. GEM has a very low concentration in information technology and healthcare,

the most R&D-intensive sectors, and a high concentration in industries that rely more heavily on capital investments. Specifically, IT and healthcare together have accounted for only three percent of total market capitalization on average over time.

In GEM countries, businesses account for 43 percent of total R&D spending on average, with the government, academia, and private nonprofit companies spending the other 57 percent.[59] Corporations in GEM account for a smaller share of the total R&D spending than they do in the U.S. and Japan (70-75 percent), Europe (about 60 percent), and APEJ (roughly 50 percent).

Among larger GEM economies, the business share of R&D spending is 76 percent in China, 58 percent in Russia, 39 percent in Mexico, and 36 percent in India. The business share of R&D spending is particularly low in Latin American countries at 32 percent on average. One notable change is in China, where the corporate share of R&D spending has risen from just 43 percent in 1996 to 76 percent today as the country continues to move toward a more market-based economy.

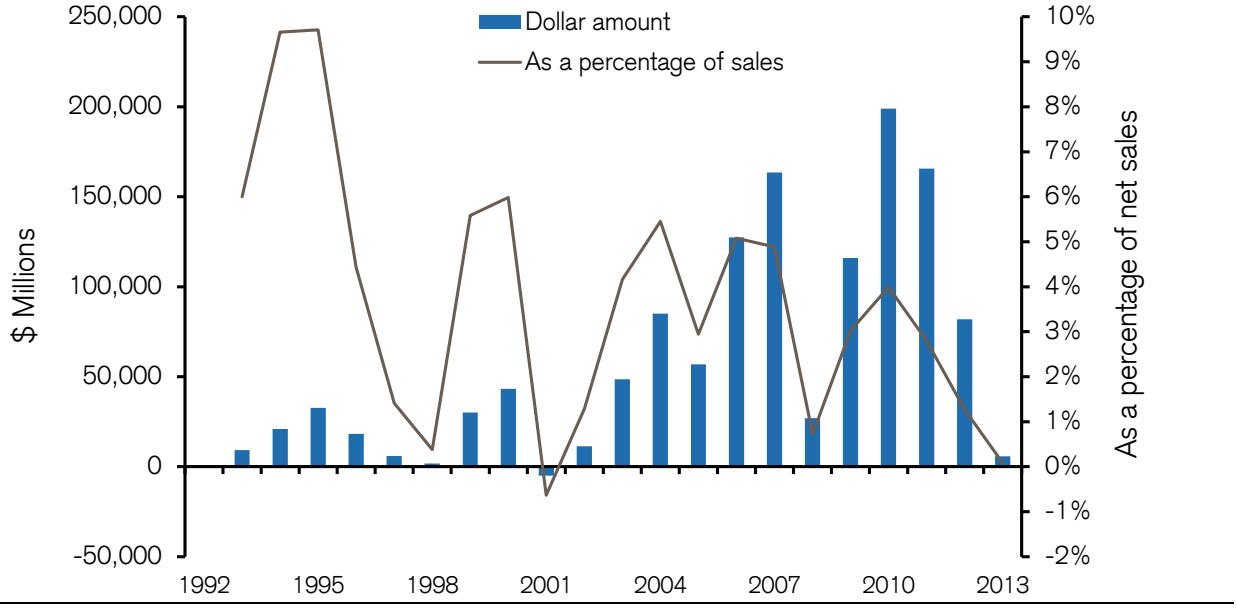
Exhibit 66: GEM Research and Development, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Net Working Capital. Net working capital equals roughly 15 percent of assets on average for companies in GEM. Exhibit 67 shows the annual change in net working capital from 1992 through 2013. At year-end 2013, net working capital stood at $1.3 trillion for the top 1,000 public firms in GEM. We consider changes in net working capital as opposed to the absolute amount, because changes are what you should consider to be an incremental investment. Net working capital investments are a large use of cash in GEM, greater on average than R&D but smaller than M&A or capital expenditures.

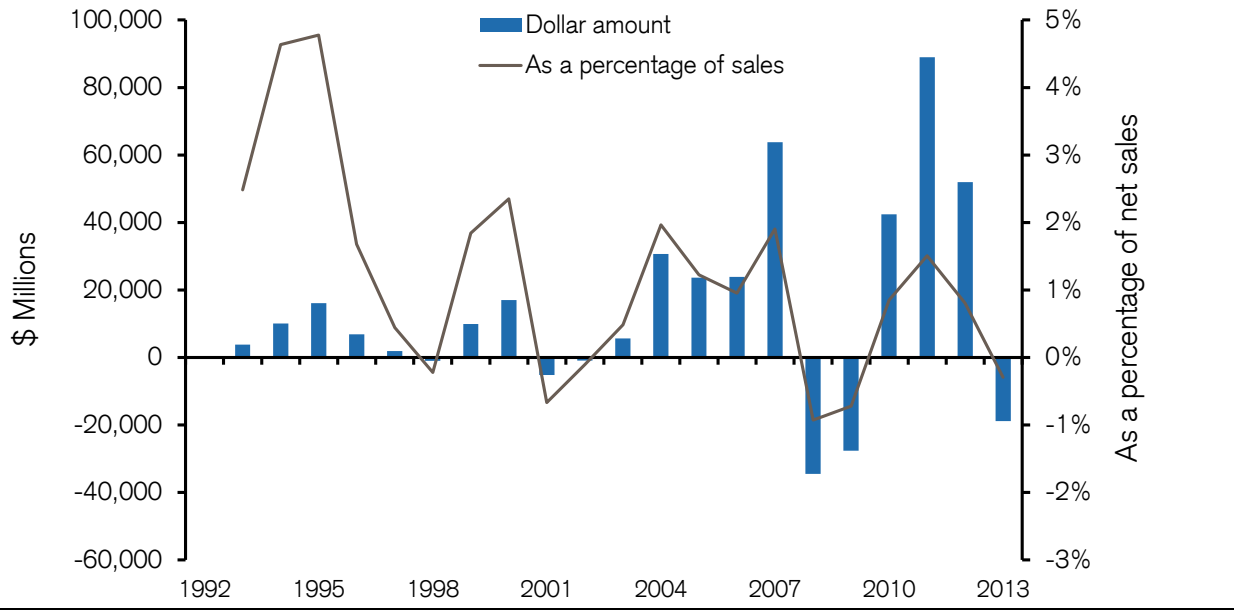
Exhibit 67: GEM Change in Net Working Capital, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

We have defined net working capital to include cash. The picture changes dramatically if we exclude cash. At the end of 2013, net working capital excluding cash was about $320 billion for the top 1,000 GEM industrial companies, roughly one quarter the total net working capital sum. Exhibit 68 shows the change in net working capital excluding cash.

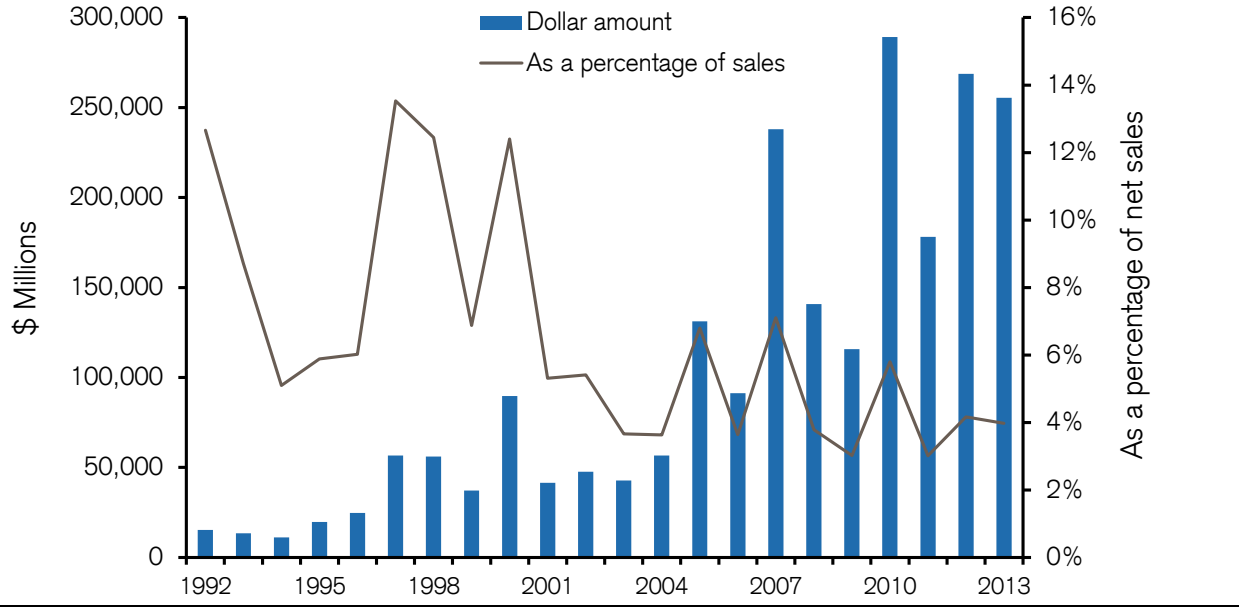
Exhibit 68: GEM Change in Net Working Capital Excluding Cash, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Divestitures. Exhibit 69 shows divestitures from 1992-2013. Similar to M&A, divestiture activity varies a lot from year to year, ranging from a low 3 percent of sales in 2009 to a high of 14 percent in 1997. Overall, divestitures have averaged 6.5 percent of sales over time, which is roughly two-fifths the level of M&A and much higher than dividends, buybacks, and R&D spending.

Exhibit 69: GEM Divestitures, 1992-2013

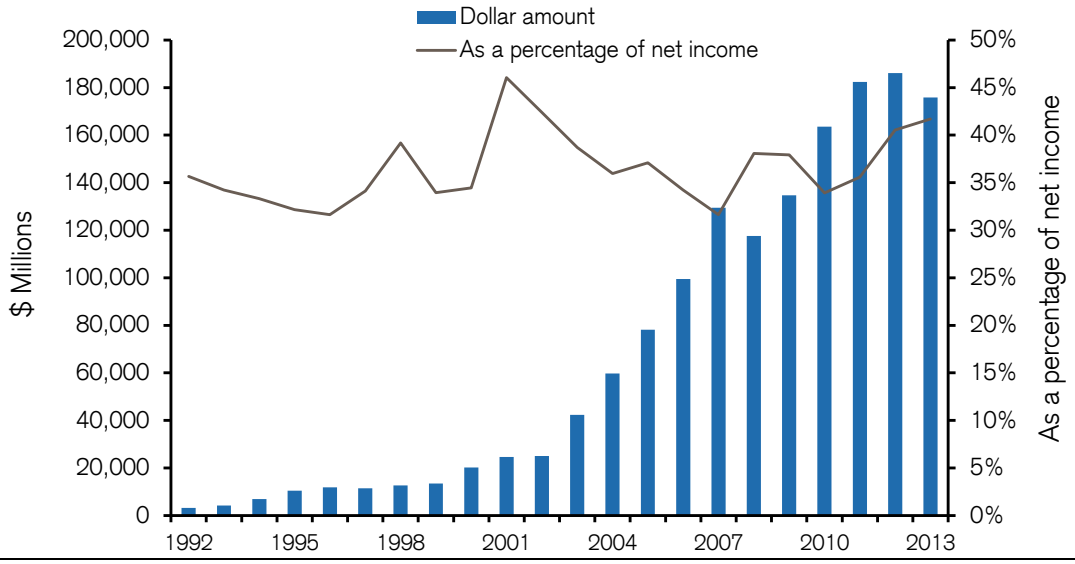


Note: Announced divestitures; excludes debt tender offers, equity carve-outs, exchange offers, loan modifications, and open market repurchases; Dollar amounts not inflated.
Source: Thomson Reuters Datastream, Credit Suisse HOLT, Credit Suisse.

Dividends. Exhibit 70 shows the annual amount of dividends on common and preferred stock for the top 1,000 companies in GEM, excluding the financial services and regulated utility industries, from 1992 to 2013. Dividends are very stable in GEM.

The average dividend payout ratio was roughly 35 percent from 1992-2013. The average dividend yield was 2.3 percent over the same period. In 2013, the dividend yield was 2.7 percent. Countries with above-average yields in 2013 included Colombia at 5.8 percent, Saudi Arabia at 3.9 percent, Thailand at 3.7 percent, and Brazil and Russia at 3.2 percent. Countries with below-average yields included Mexico at 1.8 percent and India at 2.0 percent. While their economies are a relatively small share of GEM overall, the oil producing countries of the Middle East in particular have very high dividend yields.

Exhibit 70: GEM Common and Preferred Dividends, 1992-2013

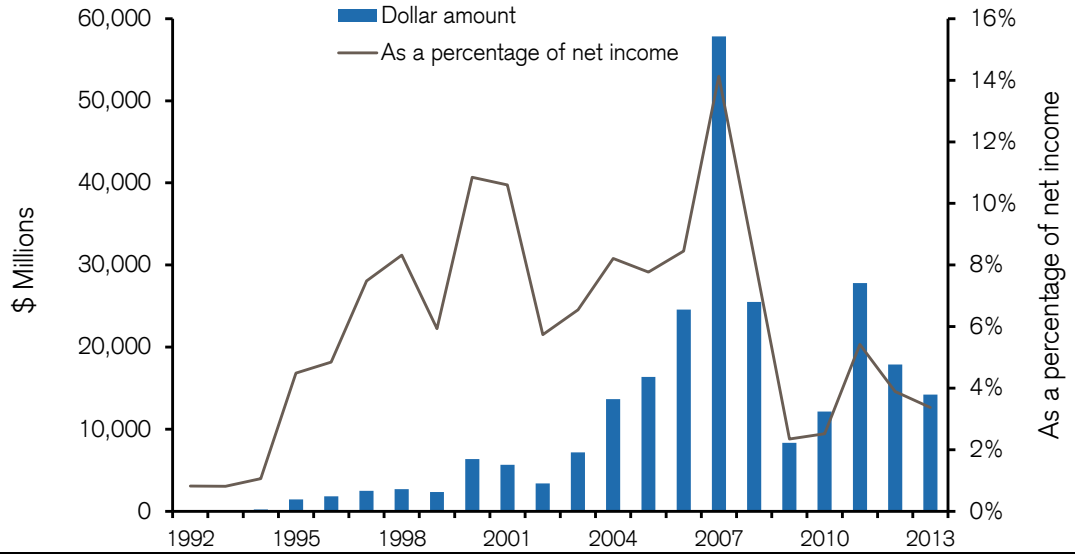


Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Share Buybacks. Exhibit 71 shows the annual amount of gross buybacks for the top 1,000 companies in GEM from 1992 to 2013. Buyback activity was extremely low until the mid-2000s, rose sharply in 2007, and then plummeted in the ensuing years. But even at their peak in 2007, buybacks were still less than 15 percent of net income.

Overall, buybacks have totaled roughly five percent of net income from 1992-2013. The average buyback yield was 0.4 percent, far below the 2.3 percent dividend yield. In 2013, the buyback yield was 0.2 percent. Countries with above-average buyback yields in 2013 included Mexico at 1.4 percent and Russia at 0.8 percent. The three other BRIC countries spend very little on buybacks. In 2013, the buyback yield was 0.1 percent in Brazil and zero in both India and China.

Exhibit 71: GEM Gross Share Buybacks, 1992-2013



Note: Top 1,000 industrial firms. Dollar amounts not inflated.
Source: Credit Suisse HOLT.

Part III: Assessing Management's Capital Allocation Skills

"All roads in managerial evaluation lead to capital allocation."[60]

The final part of this report provides a framework for assessing a management team's capital allocation skills. This framework has four components. First, you want to study how a company has allocated capital in the past. Next, you need to examine the company's return on invested capital and, more importantly, return on incremental invested capital. Third is a careful consideration of incentives and corporate governance. And finally, you can compare management's actions to the five principles of capital allocation. You can find a more detailed version of this discussion in Michael J. Mauboussin and Dan Callahan, "Capital Allocation: Evidence, Analytical Methods, and Assessment Guidance," *Credit Suisse Global Financial Strategies*, August 5, 2014.

Past Spending Patterns. The first step in assessing a company's capital allocation skills is to see how management has allocated capital in the past. You should break the analysis into two parts, one dealing with investments in the operations (M&A, capital expenditures, R&D, and working capital) and the other with returning cash to claimholders (dividends, buybacks, and debt repayment).

The value of a business is the present value of future free cash flow (FCF).[61] Free cash flow is defined as net operating profit after tax (NOPAT), a measure of the cash earnings of the business that assumes no financial leverage, minus investment (I) in future growth:

FCF = NOPAT – I

NOPAT is determined by sales and sales growth, operating profit margins, and the cash tax rate. Investment (I) is determined by changes in working capital, capital expenditures net of depreciation, and acquisitions net of divestitures. The product of this analysis is a clear understanding of profitability (sales, sales growth, and operating profit margins) and the investment choices the company has made (changes in working capital, capital expenditures, and M&A).

Such an examination is also useful to assess the change in practices from one CEO to the next. One CEO may seek to grow primarily organically, which will raise one set of analytical issues. Another may focus on profitability and emphasize cost cutting. Yet another may be more acquisitive, raising a separate set of issues. Assuming past behaviors provide some basis for anticipating future behavior, this analysis is very useful.

The second component of this analysis is to understand how and why management has returned cash to claimholders. This also requires considering a company's capital structure and whether it can or should change. The key is to understand the rationale and motivation for the decisions management makes to understand whether they are consistent with the principles of building long-term value per share.

Calculating Return on Invested Capital and Return on Incremental Invested Capital. The second component to assessing capital allocation is determining the output of management's decisions through an analysis of return on invested capital (ROIC) and return on incremental invested capital (ROIIC). ROIC provides a picture of the company's overall performance while ROIIC dwells on the efficiency of incremental spending. Our report, "Calculating Return on Invested Capital: How to Determine ROIC and Address Common Issues," provides details on how to calculate ROIC and ROIIC and includes case studies.[62] Here's a quick summary.

NOPAT is the numerator of ROIC. Because NOPAT assumes no financial leverage, the sum is the same whether a company is highly levered or free of debt. This is essential for comparability within and across industries.

Invested capital is the denominator of ROIC. You can think of invested capital in two ways that are equivalent. First, it's the amount of net assets a company needs to run its business. Alternatively, it's the amount of financing a company's creditors and shareholders need to supply to fund those net assets. These approaches are the same since dual-entry accounting requires that both sides of the balance sheet equal one another.

You can evaluate ROIC a number of ways. First and most fundamentally, companies that create value generate an ROIC above the cost of capital over time. This simply says that the company is earning in excess of the opportunity cost of capital. Second is the magnitude of the spread between ROIC and the cost of capital as well as how much a company can invest at a given spread. Companies with wide spreads that have limited investment opportunity may be less valuable than companies with narrower spreads but ample growth prospects.

Having defined and discussed ROIC, we must now emphasize that it's not the absolute ROIC that matters but rather the change in ROIC. Or, even more accurately, what's crucial is the expectation for changes in ROIC. Needless to say, the market is not always perfect at anticipating change in ROIC, so having a sense of where ROIC is going can be of great value.[63]

One potentially useful measure is return on incremental invested capital, or ROIIC. ROIIC properly recognizes that sunk costs are irrelevant and that what matters is the relationship between incremental earnings and incremental investments.

The definition of ROIIC is as follows:

$$\text{ROIIC} = \frac{\text{Year}_2 \text{ NOPAT} - \text{Year}_1 \text{ NOPAT}}{\text{Year}_1 \text{ invested capital} - \text{Year}_0 \text{ invested capital}}$$

In words, ROIIC compares the change in NOPAT in a given year to the investments made in the prior year. Let's say a company's Year_0 invested capital is $2,000 and it invests $200 during the year (making Year_1 invested capital $2,200). Further, NOPAT from Year_1 to Year_2 climbs from $300 to $350. Given these assumptions, ROIIC is 25 percent [($350-300)/($2,200-2,000)].

It is preferable to calculate ROIIC on a rolling three- or five-year basis for businesses with investments or NOPAT that are lumpy. At the other extreme, you can take quarterly changes and annualize them if you want to see if there are any recent trends or improvements. Obviously these results will be the most volatile, but they can give you some insights into how the business is doing.

Incentives and Corporate Governance. One of the essential lessons of economics is that incentives matter. But it is also the case that incentives designed to achieve one objective can lead to unintended consequences.[64] The goal of this section is to consider whether the incentives a company has in place encourage judicious capital allocation. Most of these incentives address compensation.

Agency theory is the classic way to explain why the managers of a company may not act in the interests of the shareholders.[65] The idea is that conflicts can arise when there is a separation between ownership and control of a firm. There are three areas where these conflicts tend to arise.[66]

The first is that while it is clear that shareholders want management to maximize the value of their holdings, management may derive benefits from controlling resources that don't enrich shareholders. For example, if remuneration is roughly correlated with the size of the firm, management may seek to do value-destroying M&A deals to grow.

The second area of conflict is with tolerance for risk. Since shareholders tend to hold stocks as part of a diversified portfolio and managers are disproportionately exposed to their own company, managers may seek less risk than shareholders would deem appropriate.

The final conflict is with time horizon. To the degree that compensation plans have a shorter time horizon than the period shareholders use to assess the merit of an investment, there can be a mismatch. So managers may dwell on short-term boosts in earnings. Indeed, research shows that a large majority of managers are willing to forego value-creating investments to deliver near-term earnings.[67]

So what elements should you look for in an effective incentive program? The key is to look for a company that seeks to build long-term value per share with the belief that the stock market will ultimately follow that value. If the market fails to reflect that value, management can take action by sharpening communication or buying back stock.

There are three elements to an incentive compensation program that supports judicious capital allocation.[68] The first is to compensate senior executives with stock options or restricted stock units that are indexed to either the market overall or an appropriate peer group. Presuming that exogenous factors affect peers in a similar fashion as the target firm, indexing takes a large step toward isolating management skill and reducing the role of luck. Only individuals who can influence the stock price should be paid in equity, which limits the number of eligible executives.

Second, executives who run operating units, as well as front line employees, should be paid for exceeding long-term goals for the operating value drivers. These include sales growth, operating profit margins, and some measure of return on invested capital. Broader value drivers can be further broken down into leading indicators of value, performance measures that roll up to the value drivers.

Finally, recognize that the debate about the short term versus the long term is an empty one.[69] Instead, acknowledge that the goal is to maximize long-term value per share. This applies to activities that management expects to pay off quickly or in the distant future.[70]

Five Principles of Capital Allocation. In their book, *The Value Imperative*, James McTaggart, Peter Kontes, and Michael Mankins describe four principles of resource allocation that apply readily to our discussion about capital allocation.[71] We added one to expand the list to five and believe that these principles are a sound benchmark that you can use to measure management's mindset regarding their capital allocation practices.[72]

1. **Zero-based capital allocation**. Companies generally think about capital allocation on an incremental basis. For example, a study of more than 1,600 U.S. companies by McKinsey & Company, a global consulting firm, found that there was a 0.92 correlation between how much capital a business unit received in one year and the next. For one-third of the companies, that correlation was 0.99.[73] In other words, inertia appears to play a large role in capital allocation.

   The proper approach is zero-based, which simply asks, "What is the right amount of capital (and the right number of people) to have in this business to support the strategy that will create the most wealth?"[74] There is no reference to how much the company has already invested in the business, only how much should be invested.

   Research by McKinsey suggests that those companies that showed a zero-based allocation mindset, and hence were the most proactive in reallocating resources, delivered higher TSRs than the companies that

took more of an incremental approach.[75] Further, academic research shows that those companies that are good at internal capital allocation tend to be good at external allocation as well.[76]

2. **Fund strategies, not projects.** The idea here is that capital allocation is not about assessing and approving projects, but rather assessing and approving strategies and determining the projects that support the strategies. Practitioners and academics sometimes fail to make this vital distinction.[77] There can be value-creating projects within a failed strategy, and value-destroying projects within a solid strategy.

   Another reason to be cautious about a project approach is that it is easy to game the system. It is common for companies to have thresholds for project approval. For instance, a plant manager can approve small projects, business unit heads larger ones, the CEO bigger ones still, and the board of directors the largest investments. But at each level, analysts can manipulate the numbers to look good. One of the aspects of the institutional imperative, as Buffett describes it, is, "Any business craving of the leader, however foolish, will be quickly supported by detailed rate-of-return and strategic studies prepared by his troops."[78]

   The key to this principle is recognizing that a business strategy is a bundle of projects and that the value of the bundle is what matters. The CEO and board must evaluate alternative strategies and consider the financial prospects of each.

3. **No capital rationing.** The attitude at many companies, which the results of surveys support, is that capital is "scarce but free." The sense is that the business generates a limited amount of capital which makes it "scarce," but since it comes from within it is "free."

   The primary source of capital for companies in the U.S. is the cash they generate. The patterns of spending on the various uses of capital indicate the attitude of managements. Capital expenditures, R&D, and dividends receive priority, and M&A and share buybacks are considered when economic results are good. Internal capital allocation tends to be very stable from year to year, and inertia plays a large role. Business units may jockey for more capital but, as we have seen, the changes in year-to-year allocation tend to be modest. These observations are consistent with the "scarce but free" mindset.

   A better mindset is that capital is plentiful but expensive. There are two sources of capital that companies can tap beyond the cash generated internally. The first is redeploying capital from businesses that do not earn sufficient returns. Management can execute this inside the company or sell the underperforming businesses and redeploy the proceeds. The second is the capital markets. When executives have value-creating strategies that need capital, the markets are there to fund them in all but the most challenging environments.

   The notion that internally generated capital is free is also problematic. Thoughtful capital allocators recognize that all capital has an opportunity cost, whether the source is internal or external. As a consequence, managers should explicitly account for the cost of capital in all capital allocation decisions. Too frequently, companies select actions that add to earnings or earnings per share without properly reckoning for value.

   The limiting resource for many companies is not access to capital but rather access to talent. Finding executives with the proper skills for success, including an aptitude for allocating capital, is not easy. This is a valid challenge but relates to recruiting and development, not access to capital.

4. **Zero tolerance for bad growth**. Companies that wish to grow will inevitably make investments that do not pay off. The failure rate of new businesses and new products is high. Seeing an investment flop is no sin; indeed it is essential to the process of creating value. What is a sin, in our view, is remaining committed to a strategy that has no prospects to create value, hence draining human and financial resources.

   Executives who follow this principle invest in innovation but are ruthless in cutting losses when they see that a strategy is unlikely to pay off. Many companies have the opportunity to create substantial value by exiting businesses where they have no advantage. This reduces cross-subsidization within the organization and allows for the best managers to work for the businesses that create the most value.

5. **Know the value of assets, and be ready to take action to create value.** Intelligent capital allocation is similar to managing a portfolio of stocks in that it is very useful to have a sense of the difference, if any, between the value and price of each asset. This includes the value of the company and its stock price. Naturally, such analysis must include considerations such as taxes.

   With a ready sense of value and price, management should be prepared to take action to create value. Sometimes that means acquiring, other times that means divesting, and frequently there are no clear gaps between value and price. As we have seen, managers tend to prefer to buy than to sell, even though the empirical record shows quite clearly that sellers fare better than buyers, on average.

   As we mentioned in the introduction, the answer to most capital allocation questions is, "It depends." Managers who adhere to this final principle understand when it makes sense to act on behalf of long-term shareholders.

Conclusion

Capital allocation is one of management's prime responsibilities. Yet few senior executives are versed or trained in methods to allocate capital most effectively. Further, incentive programs frequently encourage behaviors that are not in the best interests of long-term shareholders. We believe that the goal of capital allocation is to build long-term value per share.

This report had three parts. First we discussed the sources and uses of capital at a high level. In general, countries or regions with high returns on invested capital are in a position to fund a substantial percentage of investment. We also noted the differences for the major regions of the world. The differences reflect the nature of the underlying economy, stage of development, cultural norms, and regulations.

The second part examined the sources and uses of capital for Japan, Europe, Asia/Pacific excluding Japan, and Global Emerging Markets. The patterns in the U.S. and Europe are similar, with relatively strong spending on R&D, solid capital expenditure levels, active M&A, and a relatively generous shareholder yield.[79] The CFROI in the U.S. is substantially higher. Japan has a low CFROI and relatively modest growth. M&A is also muted, and shareholder yield is low—although there has been improvement in recent years. Developing markets spend an above-average amount on capital expenditures and working capital. But they have low shareholder yields and allocate little to R&D.

Finally, we set out a framework to assess the capital allocation practices of a management team. This framework includes examining past behavior, calculating return on invested capital, weighing incentives, and considering the five principles of thoughtful capital allocation.

Acknowledgment

We thank the Credit Suisse HOLT team for their essential contributions to this research. In particular, we appreciate the assistance of Ron Graziano, Tom Hillman, David Matsumura, Bryant Matthews, and Chris Morck. We could not have done this analysis without their aid.

Appendix: The List of Countries Included in the Data for Each Region

Europe

For capital expenditures, R&D, net working capital, share buybacks, and dividends: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

For M&A and divestitures: Austria, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Isle of Man, Kazakhstan, Latvia, Lithuania, Luxembourg, Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Russian, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

Asia/Pacific excluding Japan

For capital expenditures, R&D, net working capital, share buybacks, and dividends: Australia, China, Hong Kong, India, Indonesia, Korea, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, and Vietnam.

For M&A and divestitures: Australia, Brunei, Cambodia, China, Fiji, Hong Kong, India, Indonesia, Macau, Malaysia, New Zealand, North Korea, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.

Global Emerging Markets

For capital expenditures, R&D, net working capital, share buybacks, and dividends: Argentina, Brazil, Chile, China, Colombia, Croatia, Czech Republic, Egypt, Hungary, India, Indonesia, Jordan, Kuwait, Malaysia, Mexico, Oman, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, Slovenia, South Africa, Sri Lanka, Thailand, Turkey, United Arab Emirates, and Vietnam.

For M&A and divestitures: Argentina, Brazil, Chile, China, Colombia, Croatia, Czech Republic, Egypt, Hungary, India, Indonesia, Jordan, Kuwait, Malaysia, Mexico, Oman, Pakistan, Peru, Philippines, Poland, Qatar, Russian Federation, Saudi Arabia, Slovenia, South Africa, Sri Lanka, Thailand, Turkey, United Arab Emirates, and Vietnam.

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Here is Zweig's question and Bernstein's answer:
Q: Hugh Liedtke, the former CEO of Pennzoil, used to joke that he believed in the "bladder theory": Companies pay dividends so that management can't p--s all the money away.
A: It's hard to improve on that. In the 1960s, in "A Modest Proposal," I suggested that companies should be required to pay out 100% of their net income as cash dividends. If companies needed money to reinvest in their operations, then they would have to get investors to buy new offerings of stock. Investors would do that only if they were happy both with the dividends they'd received and the future prospects of the company. Markets as a whole know more than any individual or group of individuals. So the best way to allocate capital is to let the market do it, rather than the management of each company. The reinvestment of profits has to be submitted to the test of the marketplace if you want it to be done right.
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so buybacks are reflected in the calculations. Specifically, the index reweights for major share changes on an event-driven basis, and each quarter, regardless of the change amount, it reweights the entire index membership. The actual index EPS calculation determines the index earnings for each issue in USD, based on the specific issues' index shares, index float, and EPS. The calculation negates most of the share count change, and reduces the impact on EPS." See Howard Silverblatt, "Buybacks and the S&P 500® EPS," *Indexology Blog*, March 7, 2014.

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