

JUNE 2011

Beyond growth

Valuation and financial policy in the maturing
tech sector

1. Technology stock valuations—the new reality

Investment pundits increasingly lament the low valuation multiples in the technology (henceforth “tech”) sector. In particular, these experts note that several “large-cap” tech firms trade at low multiples relative to firms with similar characteristics in other sectors. They posit that this valuation gap has developed in part because tech companies hold too much cash and have been slow to adopt financial policies that are consistent with their current (lower) growth profile. These firms, they say, would create shareholder value with more leverage, less on-balance-sheet cash and by returning more capital to shareholders through dividends and share buybacks.

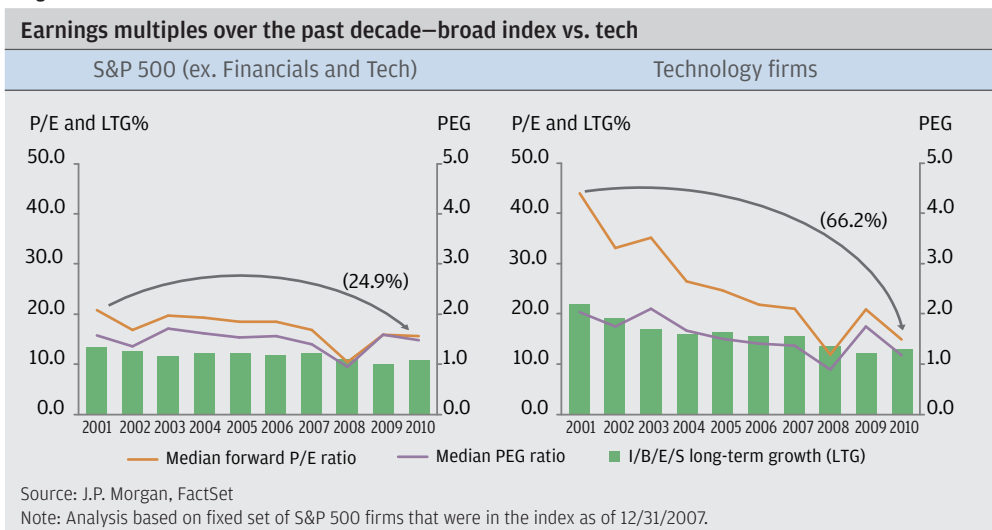
Decision-makers contemplating such a radical shift in financial policy should weigh all of the considerations. A balanced approach to financial policy is paramount in the tech sector with its vastly differentiated business models and rapidly shifting competitive environment. In this report, we compare tech firms to consumer and industrial firms to better understand the link between valuation and financial policy. Our key findings are

- 1) Growth expectations, valuation multiples and PEG (forward P/E to long-term earnings growth) ratios for tech firms have declined dramatically over the last 10 years
- 2) The PEG ratios for large-cap tech firms are now lower than PEG ratios in other sectors
- 3) Large-cap tech firms have significantly less leverage and shareholder distributions than consumer and industrial firms with similar growth characteristics
- 4) Simple assumptions suggest that more aggressive financial policies may create value
- 5) Tech firms should proceed with caution as their underlying business risk is materially higher than “comparable” consumer and industrial firms

2. Growth: the Holy Grail

Declining growth prospects: Ten years ago, shortly following the burst of the tech bubble, equity valuations in the tech sector remained elevated. The median tech sector forward P/E ratio stood at 44.1x, more than twice that of S&P 500 firms (ex. Financials and Tech, Figure 1). The PEG ratio was 2.0x for tech in 2001, also significantly higher than the 1.6x observed for the broader group.

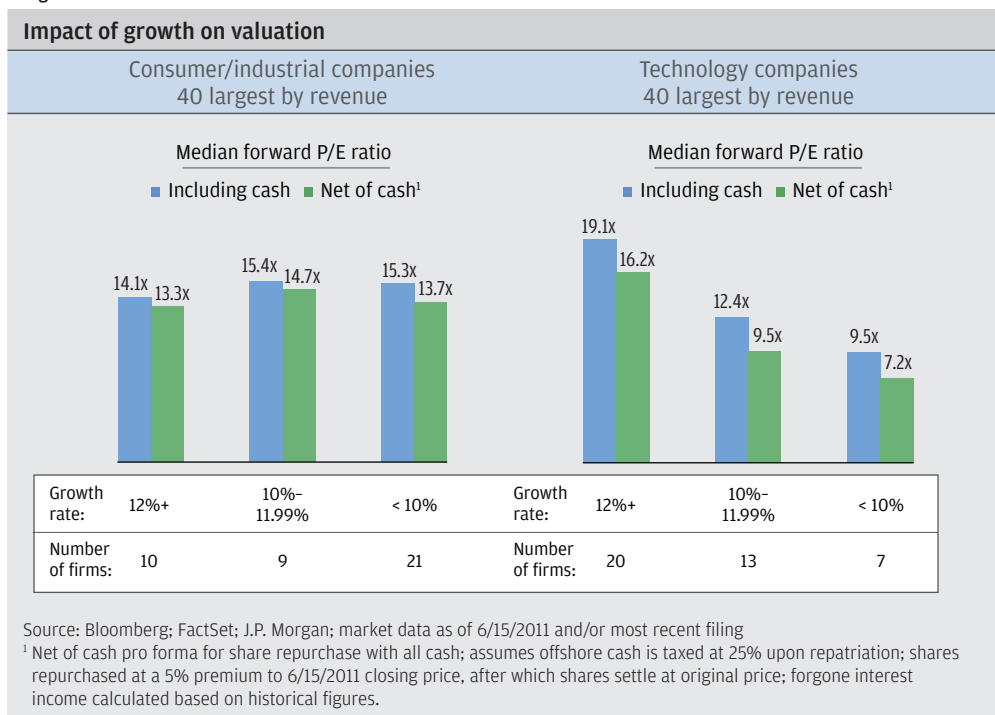
Figure 1



Since 2001, tech valuations have contracted steadily, with the median forward P/E ratio falling by over 66% to 14.9x. In other sectors the forward P/E ratios also dropped, but only by 25%, from 20.8x to 15.6x. The contraction in P/E ratios is not surprising because tech growth rates have slowed considerably as many of the highest flyers in the sector have matured. It is also noteworthy that the median PEG ratio—which normalizes the P/E ratio for growth prospects—has fallen from 2.0x to 1.0x in tech over the decade, while moving to 1.5x in other sectors. Are the results due to capital market conditions, shifting investor preferences or the companies themselves? Do these results suggest that tech sector growth prospects are not only lower than they used to be, but also that investors believe that these growth prospects are now less certain than in other sectors?

A premium valuation for growth: Valuation theory and market practice suggest that equity investors are willing to pay a premium when they are excited by a growth opportunity. To test this theory for large-cap firms, we sorted the 40 largest tech and 40 largest consumer/industrial firms by long-term EPS growth (note: the median long-term growth for the tech group is 12%). The median forward P/E of the 20 higher-growth tech firms is 19.1x, significantly higher than the 9.5-12.4x P/E for the tech firms with below 12% growth (see Figure 2).

Figure 2



Interestingly, when we compare our overall large-cap tech and consumer/industrial lists, we find that growth is a significantly larger driver of tech valuations. Among consumer/industrial companies, there is little to no relation between valuation and growth (surprisingly, the 12%+ growth category has the lowest P/E multiple, though the results are within the margin of error for a group of this size).

P/E multiples net of cash: To further interpret the results, we also considered the impact of balance sheet cash on valuation by computing P/E ratios net of cash. This estimation assumed that on-balance-sheet cash net of repatriation tax is used to repurchase

shares at a 5% premium. On an ex-cash basis, the difference between tech and consumer/industrial firms is more pronounced, with lower-growth tech firms trading at only 7.2x forward earnings vs. 13.7x for the consumer/industrial firms. Either the tech businesses are receiving significantly lower valuations because of their risk profile, and/or investors are not fully valuing the large cash balances.

Key executive takeaways:

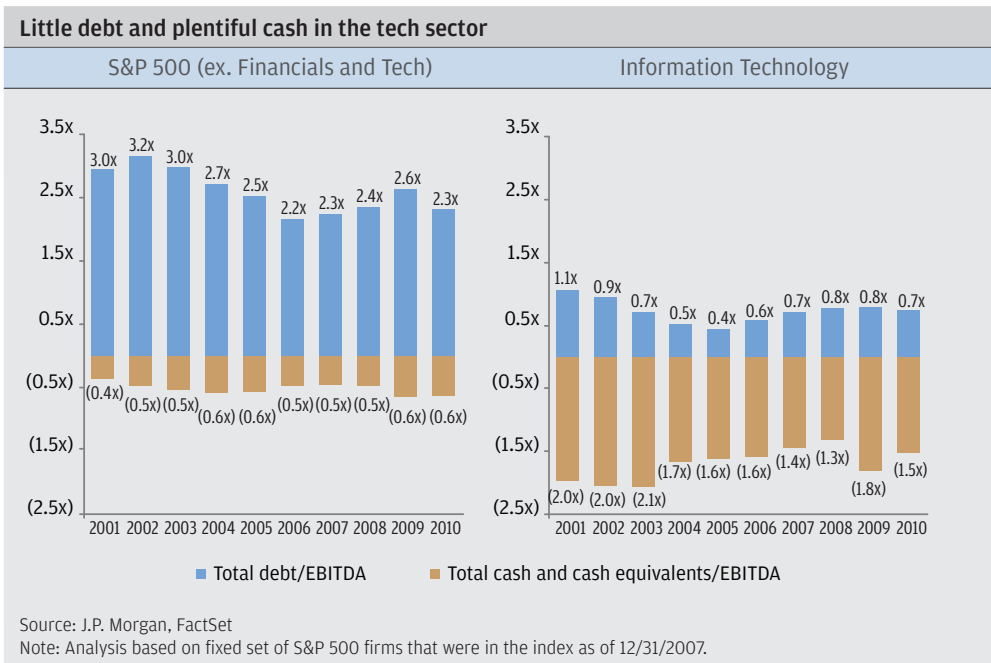
- 1) As much of the tech sector has matured, valuations have come down, though higher-growth firms can still receive a valuation premium
- 2) Tech firms are receiving lower valuations than similar-growth companies in other sectors
- 3) Several factors may contribute to these lower valuations, including greater inherent business risk, significant trapped cash not fully valued by the market and a lack of institutional investors willing to invest in lower-growth tech firms

Mature tech companies continue to manage very conservative capital structures. Do current market conditions present an opportune time for large-cap tech firms to revisit leverage and capital distribution policies?

3. Conservative financial policies

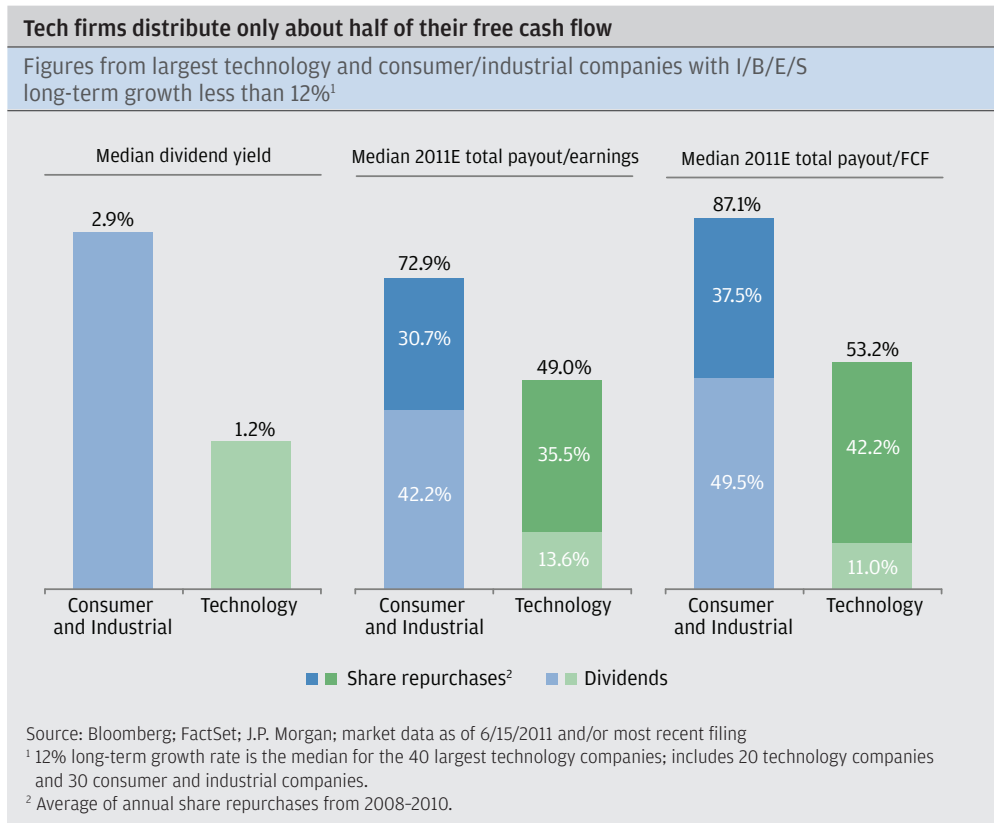
Tech firms, more cash than debt: Throughout the past decade, balance sheet leverage across corporate America (ex. Financials and Tech) has averaged between 2.2x and 3.2x EBITDA, significantly higher than the levels observed in the tech sector and declining gradually over time (see Figure 3). Although debt financing has become common among tech firms, EBITDA growth has outpaced the added leverage, resulting in a modest decline in Debt/EBITDA. Cash balances have grown at almost the same pace. As a result, most tech firms currently hold net cash positions.

Figure 3



Low shareholder distributions by tech companies: Despite the significant cash build-up among tech firms, the amount of capital returned to shareholders has been modest on a relative basis. In Figure 4, we focus within the 40 largest tech companies on the 20 firms with expected EPS growth below 12%. Compared to consumer/industrial firms in the same growth category, tech firms distribute a much lower percentage of earnings and cash flow. For example, consumer/industrial firms with less than 12% growth distribute almost 90% of their free cash flow to investors, and 57% of the distribution is in the form of dividends. Tech firms, in contrast, distribute about 53% of their free cash flow, but only 21% of the distribution is in the form of dividends.

Figure 4



Would a levered recap highlight the valuation discrepancy? Could large-cap tech companies highlight the valuation disparity and attract new investors focused on value and income by adopting financial policies similar to those of consumer/industrial firms? While low-growth technology businesses currently trade at a discount to consumer/industrial companies, this valuation disparity would be more apparent if financial policies were similar.

In Figure 5, we recapitalize the same group of large-cap tech companies (growth expectations below 12%) to be consistent with similar-growth consumer and industrial companies. This recapitalization includes

- 1) Increasing leverage to 1.7x EBITDA
- 2) Decreasing cash from 27.5% of market capitalization to 6.2%, assuming a 25% tax upon repatriation
- 3) Using the proceeds of both to repurchase shares at a 5% premium to current value

This hypothetical recapitalization makes the valuation disparity more pronounced: the median forward P/E for large-cap tech firms falls from 11.5x to 7.1x, their median PEG falls from 1.16x to 0.80x and cash yield (measured as free cash flow divided by market capitalization) increases from 9.0% to 13.4%. Pro forma for this recapitalization, share prices would have to more than double for large-cap tech firms to trade at similar valuations as consumer/industrial firms.

Figure 5

Highlighting value with a recap: illustration for a large-cap tech firm

Figures from largest technology and consumer/industrial companies with I/B/E/S long-term growth less than 12%¹

	Low growth tech companies		Low growth consumer and industrial companies	Implied share price appreciation to achieve similar valuation
	Current	Pro forma ²		
Dividend yield	1.2%	6.0%	2.9%	
Total payout/earnings ratio	49.0%	77.5%	72.9%	
Dividend/earnings payout ratio	13.6%	42.2%	42.2%	
Debt/2011E EBITDA	0.8x	1.7x	1.7x	
Cash/market cap	27.5%	6.2%	6.2%	
Cash flow yield ³	9.0%	13.4%	6.1%	120.0%
PEG ratio	1.16x	0.80x	1.77x	122.3%
Forward P/E ratio	11.5x	7.1x	15.3x	116.8%

Source: Bloomberg; FactSet; J.P. Morgan; market data as of 6/15/2011 and/or most recent filing

¹ 12% long-term growth rate is the median for the 40 largest technology companies; includes 20 technology companies and 30 consumer and industrial companies.

² Pro forma for share repurchase with a target cash to market capitalization of 6.2% and debt issuance at a target leverage ratio of 1.7x. 1) This illustration does not assume delevering for companies with leverage ratios above target; 2) assumes offshore cash is taxed at 25% upon repatriation; 3) shares repurchased at a 5% premium to 6/15/2011 closing price, after which shares settle at original price; 4) forgone interest income calculated based on historical figures; 5) incremental after-tax interest expense using 10-year industrial debt cost of capital for each company's appropriate rating; and 6) earnings payout ratio adjusted to match average of low-growth consumer and industrial companies.

³ Equal to 2011E levered free cash flow divided by market capitalization.

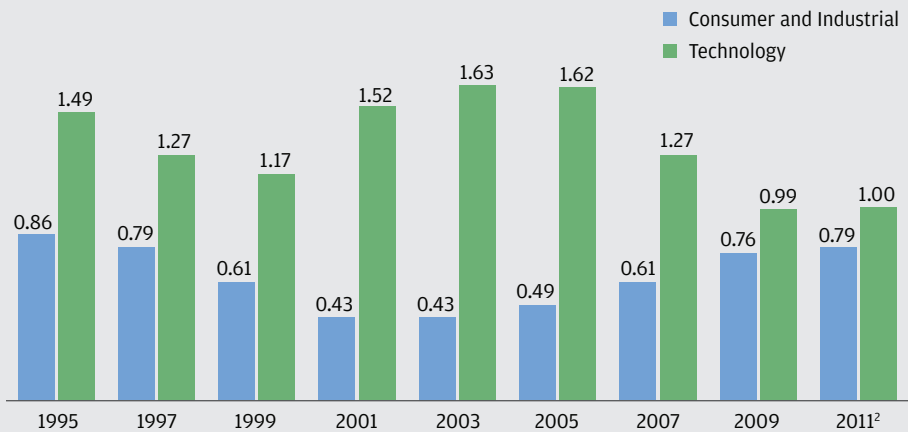
4. Tech sector cash distributions and leverage—practical realities

Tech business risk challenge: Tech firms may employ conservative financial policies because they face greater business risks than consumer/industrial firms. Tech firms are vulnerable to disruptive technological changes that may make their key products or services obsolete. The fact that 24 of the 40 largest tech firms had their initial public offerings in the past decade, compared to 8 of the 40 largest consumer/industrial firms, illustrates this sector's dynamic and evolving nature. In Figure 6 below, we compare the asset betas of consumer/industrial firms to those of the large-cap tech firms. Historically, tech asset betas were more than 50% higher than consumer/industrial betas. But as tech firms matured and their growth expectations declined, their median beta has dropped to only about 25% higher than the median consumer/industrial asset beta. This is consistent with the notion that large-cap tech companies are inherently riskier businesses, but much less so today than 10 or 15 years ago.

Figure 6

Tech firms have a higher business risk than consumer/industrial firms, but their risk has been declining over the last decade

Asset betas¹



Source: FactSet data for the 40 largest consumer/industrial firms and 40 largest technology firms by revenue; does not include betas if IPO occurred within regression period

¹ Historical asset betas based on five-year weekly regression against the S&P 500 Index.

² Asset beta observed on 6/15/2011.

The off-shore cash challenge: Recent media reports have highlighted the record cash balances held by U.S. corporations. A disproportionate amount of this cash is held by large-cap tech companies with much of it offshore. A few factors drive this concentration of cash balances in the tech sector. First, the potential for dynamic industry change creates corresponding business risk, implying that many tech companies are well-served by maintaining conservative balance sheets. This is particularly true during early development and growth stages. Second, for some tech firms, the transition from growth stage to lower-growth, cash-rich stage has happened so rapidly that it has been difficult to change financial policies fast enough to keep pace. Finally, many of the most profitable companies are structured to generate cash in low tax jurisdictions, leading to lower tax rates but also significant cash balances trapped offshore (i.e., subject to taxes upon repatriation or distribution to shareholders).

How should tech firms handle trapped overseas cash? It is possible that some firms may receive a more efficient valuation by repatriating offshore cash, paying the tax and distributing it to shareholders. With potential tax liabilities of up to 35%, however, repatriation is inefficient if there is a meaningful probability of future tax relief. Although the future legislative landscape is far from certain, tech firms have overwhelmingly chosen to retain the “option value” associated with a wait-and-see approach.

Financial leverage: If the decision has been made not to repatriate offshore cash, then firms can return more cash to shareholders by raising incremental debt. It may seem counterintuitive to borrow more because of a large cash balance, but issuing debt to repurchase shares may be more tax-efficient than outright repatriation, in particular if there is ultimately another repatriation holiday. Additionally, credit markets and equity markets generally recognize that offshore cash reduces the risk of incremental debt. In the event of a significant business downturn, repatriated cash could be used to service

the debt. For many large-cap tech firms, a forced repatriation due to a business downturn would be a fallback scenario, as their U.S. cash flow can support a moderate amount of leverage.

Dividends vs. buybacks: Once the appropriate debt/equity mix has been determined, firms need to decide on the right approach to return capital to shareholders. Recurring common dividends will be appealing to companies seeking to attract yield- and value-oriented investors. While common dividends are currently appreciated by investors seeking yield, they impose an incremental financial burden on firms operating in a dynamic environment. Share buybacks, on the other hand, are a more flexible approach and may be interpreted as signaling a bullish stock price view. Distribution policy should be set in a manner that does not put excessive pressure on U.S. liquidity and leaves room for anticipated M&A and other strategic needs, as well as for downside scenarios. In several technology sub-sectors, share buybacks remain the preferred approach because industry dynamics require maximum flexibility.

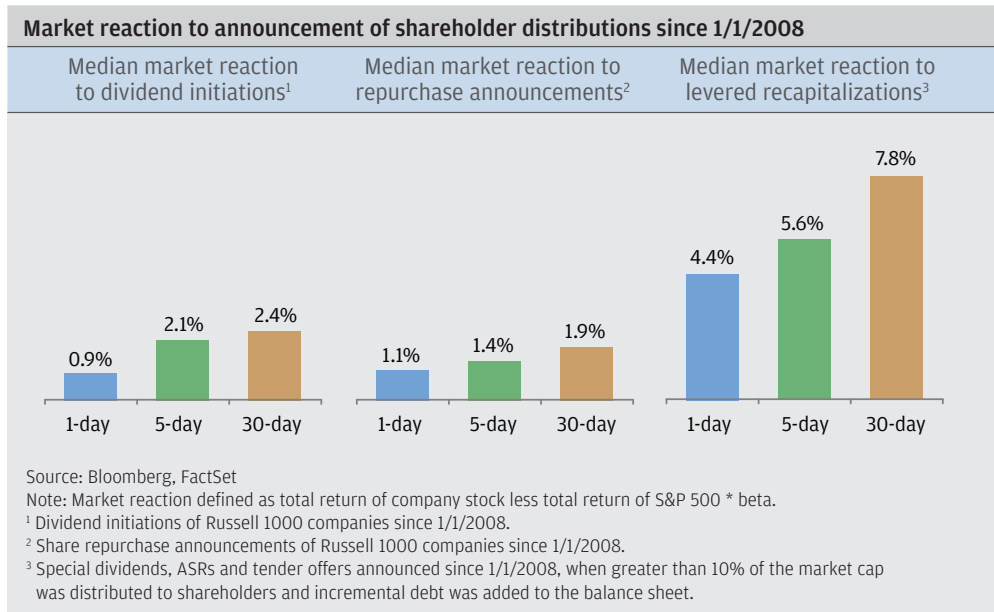
Figure 7

Leverage and shareholder distributions: considerations for tech companies	
Adding balance sheet leverage (replacing equity with debt)	
<p>Benefits</p> <ul style="list-style-type: none"> ↑ Create shareholder value by improving tax efficiency of capital structure ↑ Fund shareholder distributions without costly repatriation of trapped overseas cash ↑ Provide minimal risk for companies with significant trapped cash offshore ↑ Communicate shareholder-friendly financial policy 	<p>Considerations</p> <ul style="list-style-type: none"> ↓ Increase financial risk for some companies (may be inappropriate if there is significant business risk) ↓ Reduce financial flexibility for large M&A ↓ Lower ratings can have a negative impact on business model
Distributing capital to shareholders	
<p>Benefits</p> <ul style="list-style-type: none"> ↑ Communicate shareholder-friendly financial policy ↑ Reduce balance sheet cash, which may not receive full value by investors ↑ Share buybacks are accretive to earnings and improve EPS growth metrics ↑ Dividends attract yield- and value-oriented investors ↑ Signal stability of cash flow and capital discipline 	<p>Considerations</p> <ul style="list-style-type: none"> ↓ Tax inefficient if cash would need to be repatriated ↓ Reduce financial flexibility (especially in the case of ongoing dividend) ↓ Signal end of “higher growth period”

Positive market reaction: Historically, the market has responded well when companies have returned capital to shareholders, and this trend has continued since the financial crisis. Figure 8 shows the market reaction to dividend initiations, share buyback announcements and levered recapitalizations since January 2008. Following dividend initiations and share buyback announcements, firms outperformed the S&P 500 by about 2% during the 30 days post-announcement. The outperformance may be due in part to an interpretation that management teams at cash-distributing firms have better discipline to avoid wasteful spending. Following levered recapitalization announcements (>10% reduction of equity in

a single transaction, funded by leverage), median outperformance has been significantly higher. While this result may be partially explained by the larger magnitude of the announced event, it is also likely that the market is recognizing the value created by moving closer to an optimal capital structure.

Figure 8



5. What can we expect going forward?

Faced with declining growth rates and valuation contraction, large-cap tech firms are under growing pressure to re-evaluate capital structure and financial policy. Many growth-stage ventures may soon face similar pressures, especially if the current benign credit market environment continues. There has already been an uptick in debt financing, dividend increases and share buybacks among tech firms (see Figure 9 in Appendix).

If capital markets remain stable, we expect the pace of capital structure activity in the tech sector to accelerate over the next 12-24 months. In particular, we anticipate more of the following:

- High-grade, high-yield and convertible debt financing to repurchase shares
- Dividend initiations and increases by more mature and more stable firms
- Floating-rate financing by firms with substantial trapped cash
- Long-term, fixed-rate financing to lock in unusually low interest rates
- Cash-funded M&A transactions, especially by acquirers with significant cash offshore
- Structured stock buyback programs for price-sensitive companies

In our view, many tech firms have gained the size and scale to support more shareholder-friendly balance sheet management. The appropriate steps to achieve this objective can be determined as part of a detailed business review.

6. Appendix

Figure 9

Recent public debt transactions, share buybacks and dividend announcements in the tech sector

Recent debt transactions (>\$250mm)

Date	Company	Deal Type	Deal Size (\$mm)
2/3/2011	Microsoft Corp.	Investment grade	\$ 2,250
1/5/2011	WebMD Health Corp.	Convertible	400
2/8/2011	Avaya Inc.	Investment grade	1,009
2/28/2011	Juniper Networks Inc.	Investment grade	1,000
3/3/2011	MEMC Electronics Materials	High-yield	550
3/9/2011	Cisco Systems Inc.	Investment grade	4,000
3/9/2011	WebMD Health Corp.	Convertible	400
3/28/2011	Dell Inc.	Investment grade	1,500
3/29/2011	Mentor Graphics Corp.	Convertible	253
3/29/2011	Verisk Analytics Inc.	Investment grade	450
3/30/2011	Analog Devices Inc.	Investment grade	375
4/14/2011	iGATE Corp.	High-yield	770
5/4/2011	Novellus Systems Inc.	Convertible	700
5/4/2011	Seagate Technology PLC.	High-yield	600
5/5/2011	Lam Research Corp.	Convertible	900
5/6/2011	Sensata Technologies Holding N.V.	High-yield	700
5/9/2011	International Business Machines Corp.	Investment grade	1,000
5/11/2011	Eagle Parent, Inc.	High-yield	465
5/13/2011	CoreLogic Inc.	High-yield	400
5/13/2011	Xerox Corporation	Investment grade	1,000
5/16/2011	Google Inc.	Investment grade	3,000
5/16/2011	Texas Instruments Inc.	Investment grade	3,500
5/17/2011	Amkor Technology, Inc.	High-yield	400
5/25/2011	Hewlett-Packard Co.	Investment grade	5,000
6/1/2011	Applied Materials Inc.	Investment grade	1,750
6/6/2011	Fiserv, Inc.	Investment grade	1,000
6/7/2011	Freescale Semiconductor Holdings Ltd.	High-yield	750

Recent dividend increases¹

Declaration Date	Company	Old	New	% increase
1/18/2011	Linear Technology Corp.	\$ 0.23	\$ 0.24	4.3%
2/9/2011	FLIR Systems Inc.	0.00	0.06	NM
3/8/2011	Applied Materials Inc.	0.07	0.087	14.3%
3/8/2011	QUALCOMM Inc.	0.19	0.22	13.2%
3/14/2011	Hewlett-Packard Co.	0.08	0.12	50.0%
3/14/2011	Xilinx Inc.	0.16	0.19	18.8%
3/18/2011	Cisco Systems Inc.	0.00	0.06	NM
3/24/2011	Oracle Corp.	0.05	0.06	20.0%
4/26/2011	International Business Machines Corp.	0.65	0.75	15.4%
5/3/2011	Molex Inc.	0.18	0.20	14.3%
5/12/2011	CA Inc.	0.04	0.05	25.0%
5/17/2011	Analog Devices Inc.	0.22	0.25	13.6%

Recent share repurchase announcements (>\$100mm)

Date	Company	Size (\$mm)
1/24/2011	Intel Corp.	\$ 10,000
2/1/2011	Electronic Arts Inc.	600
2/9/2011	Activision Blizzard Inc.	1,500
2/28/2011	VMware Inc.	550
3/9/2011	LSI Corp.	750
4/26/2011	International Business Machines Corp.	8,000
5/5/2011	Allscripts Healthcare Solutions Inc.	200
5/9/2011	Quest Software Inc.	200
5/25/2011	Fiserv, Inc.	469

Source: Bloomberg, J.P. Morgan

¹ All S&P 500 Information Technology companies.

J.P. Morgan

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