QE2, Markets and Your Strategic Plan

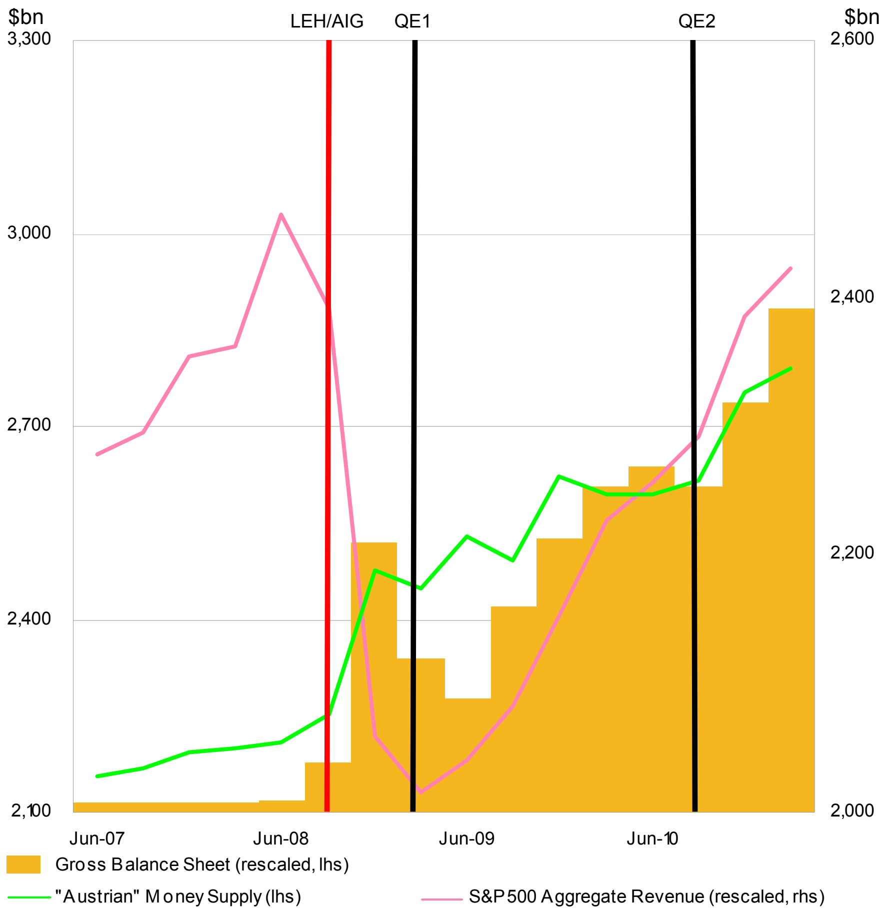
June 2011

Morgan Stanley

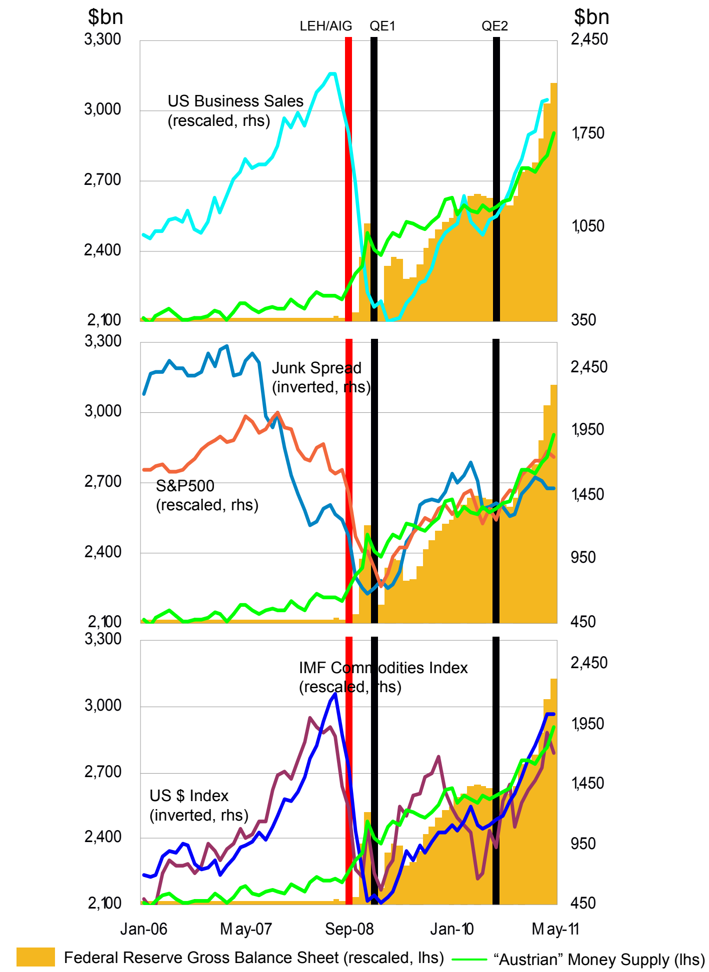
The Power of Money

The growth of money/credit during QE1 and QE2 had discernable effects on stock prices, credit spreads, commodity prices and the US dollar. Less obvious but still true, these programs also boosted business revenues

QE1/QE2: Regime Change for S&P 500 Revenues



Money Matters: QE1 & QE2 Inflection Points



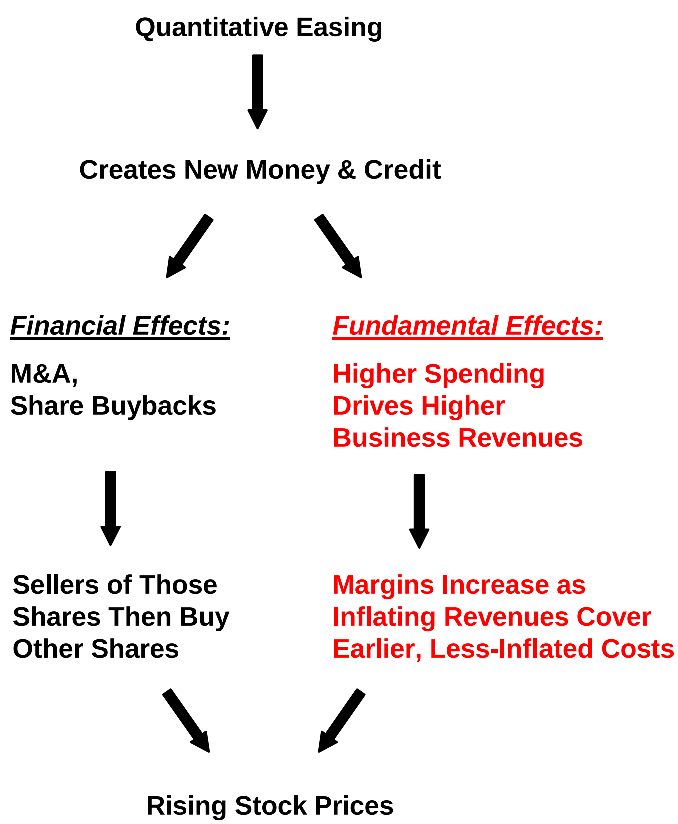
Notes:

1. QE1 date shown is November, 25, 2008, when the Federal Reserve began to purchase mortgage-backed securities. QE2 date shown is August 27, 2010, which marks the initial discussion of QE2 by Federal Reserve Chairman Ben Bernanke at Jackson Hole. QE2 formally announced November 3, 2010.
2. "Austrian" Money Supply is an alternative money supply measure that includes currency and all demand or checkable deposits, but excludes savings, time deposits and other types of accounts that are not immediately exchangeable as money. Data reported in Federal Reserve Board H.6 statistical release.

Sources: Bloomberg, International Monetary Fund, Federal Reserve Board statistical releases (H.4.1, H.6 and monthly sweeps), FactSet, and Morgan Stanley. Based on methodology of Sean Corrigan, Diapason Commodities Management, "Tangible Ideas," May-June, 2011.

Money/Credit Expansion Boosts Revenue & Margins

Creating new money & credit results in higher stock and other financial asset prices. But the new liquidity impacts fundamentals at the business level, in addition to providing a new source of purchasing power for financial assets



1. Boosts Revenue

- a higher volume of spending drives higher business revenue
- both production and consumption expenditures grow

2. Boosts Margins

- margins expand during a money/credit boom, as revenues generated at today's (inflated) prices more than cover costs incurred at yesterday's (lower) prices
- depreciation and inventory cost accounting exacerbate the impact of time differences during money/credit booms
- as interest rates drop amid a money/credit boom, businesses tend to take on longer-term projects and tilt production expenditures further into the future

HOWEVER,

- not all companies benefit equally
- money/credit booms can turn into busts, thus reversing these effects
- a money/credit boom distorts relative prices across the economy and thus can result in business mistakes that destroy wealth
- nominal growth stemming from a money/credit boom masks real erosion in the purchasing power of money

Sources: Morgan Stanley and Reisman, George, "The Stock Market, Profits and Credit Expansion," www.mises.org, July 31, 2002, and Kelly, Kel, "How the Stock Market and Economy *Really* Work," www.mises.org, September 1, 2010.

Post-QE2, Are Margin Estimates Achievable?

The cyclical margin boost that arises as new money/credit boosts revenues is temporary and subject to a reversal of the processes that helped create the initial margin expansion

Quantitative Easing

Creates New Money & Credit

Financial Effects:

M&A,
Share Buybacks

Sellers of Those Shares Then Buy Other Shares

Fundamental Effects:

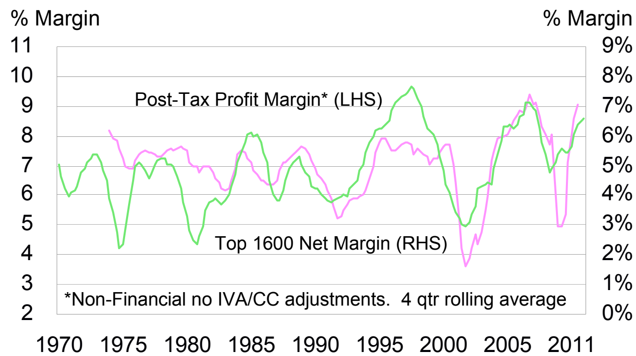
Higher Spending Drives Higher Business Revenues

Margins Increase as Inflating Revenues Cover Earlier, Less-Inflated Costs

Rising Stock Prices

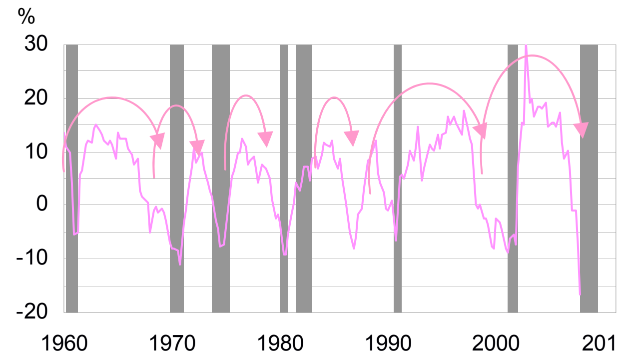
30% Higher From Here?

US Corporate Margins



Sources: Bureau of Economic Analysis (BEA), FactSet, Morgan Stanley Research

The Cycle in Incremental Margins*



Sources: BEA, NBER, Morgan Stanley Research
Note: 8 quarter change in US-sourced after-tax profits as a percent of 8 quarter change in nominal GDP
*Incremental Margins are margin on the last year of sales

Revenue Growth Expectations Decelerate in 2012…

	EPS Growth			Revenue Growth		
	2010	2011E	2012E	2010	2011E	2012E
S&P 500 ex-Fin	26.9%	15.9%	11.7%	8.3%	10.6%	4.3%
S&P 500 ex-Fin & Enegy	23.3%	12.0%	11.1%	6.5%	7.3%	4.2%
Discretionary	44.6%	15.2%	16.2%	4.8%	7.5%	3.9%
Staples	3.2%	7.8%	9.3%	1.6%	6.2%	3.4%
Energy	53.5%	38.7%	14.7%	18.8%	27.5%	4.5%
Health Care	13.0%	4.8%	5.0%	7.1%	4.6%	2.5%
Industrials	24.9%	21.1%	17.3%	3.7%	9.4%	4.2%
Technology	40.2%	12.1%	11.5%	15.7%	11.6%	8.3%
Materials	85.8%	40.1%	15.1%	16.7%	11.9%	5.3%
Telecom	(11.1%)	9.4%	13.5%	12.4%	1.4%	3.1%
Utilities	6.9%	(1.2%)	(2.2%)	5.0%	3.8%	3.1%

Sources: FactSet, Morgan Stanley Research

… But Incremental Margin Expectations Accelerate - Potentially Impacting Estimate Achievability

	Net Margin			Incremental Margin		
	2010E	2011E	2012E	2010E	2011E	2012E
S&P 500 ex-Fin	8.3%	8.7%	9.3%	22.9%	12.4%	23.7%
S&P 500 ex-Fin & Enegy	8.4%	8.8%	9.3%	25.9%	13.7%	23.0%
Discretionary	6.0%	6.4%	7.2%	40.2%	12.1%	26.9%
Staples	5.5%	5.5%	5.9%	10.6%	6.8%	15.4%
Energy	7.5%	8.2%	9.0%	16.7%	10.6%	26.6%
Health Care	9.9%	9.9%	10.2%	17.2%	10.4%	19.5%
Industrials	7.3%	8.1%	9.1%	40.9%	16.5%	33.6%
Technology	16.4%	16.5%	17.0%	34.8%	17.2%	23.0%
Materials	7.2%	9.1%	9.9%	23.4%	24.3%	26.1%
Telecom	6.6%	7.1%	7.8%	na	44.7%	31.1%
Utilities	9.1%	8.7%	8.2%	12.5%	(2.8%)	(6.0%)

Source: Morgan Stanley Research

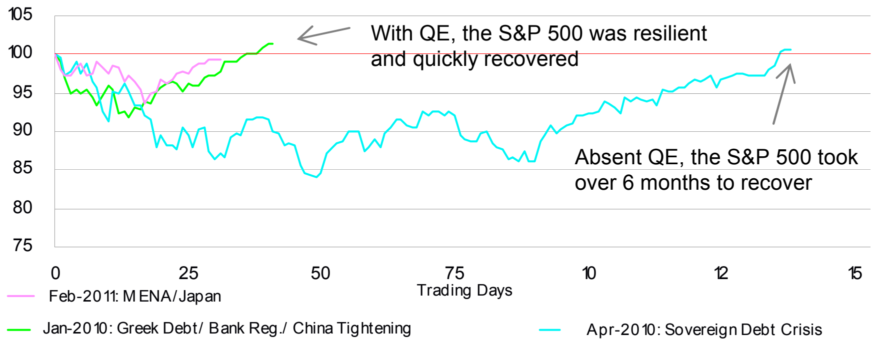
Quantitative Easing’s Impact on the Stock Market

“Our policies [regarding QE2] have contributed to a stronger stock market just as they did in March 2009 when we did the first iteration of this program.” ***–Ben Bernanke, January 2011***

The S&P Has Been Resilient During Periods of Quantitative Easing

S&P 500 During Recent Crises

Pre-Crisis Peak = 100



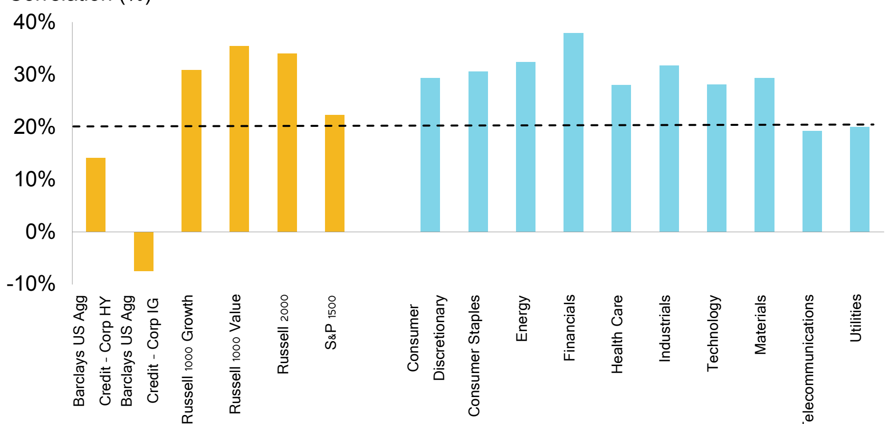
Sources: Federal Reserve, FactSet, Morgan Stanley Research

“Since the fall of 2009, this correlation has generally been significantly positive, meaning that Fed asset purchases have tended to coincide with increases in the S&P 500. **The correlation has been statistically significant over the last several months.** During the height of the financial crisis in fall 2008, the *negative* correlations of Fed balance sheet changes with equity market returns are not altogether surprising. Money was rapidly flowing out of equity markets, as some investors were forced to de-lever and others became more risk averse. Despite its increased asset purchases, the Fed was unable to keep pace with credit destruction during this time period. By contrast, QE2 has been highly proactive. It was proposed in August 2010, began in November 2010, conducted at a steady pace, and is scheduled to end in June 2011.”

Source: Morgan Stanley Research

8 of 10 Sectors are Significantly Correlated with Changes in the Fed’s Balance Sheet

Correlation (%)

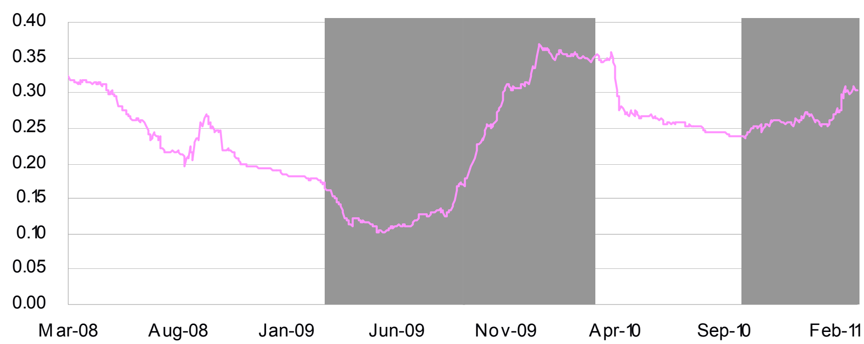


Sources: Federal Reserve, FactSet, Morgan Stanley Research

Note: 52 week period ending March 31, 2011. All industry groups from S&P 1500

Hedge Funds’ Correlation of Performance to the S&P 500 Increases During QE1 and QE2 – Evidence of the “Risk-On” Trade

Beta to S&P 500



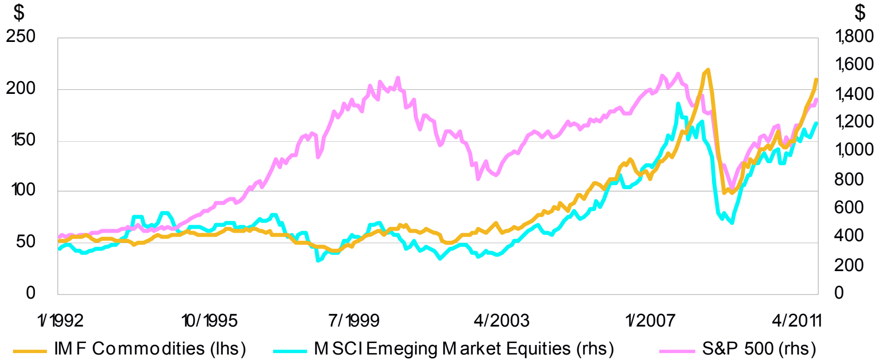
Sources: Hedge Fund Research (HFR), FactSet, Morgan Stanley Research

Note: Rolling 126-day beta to S&P 500 index

"Risk-On" Also Pushed Commodities Higher

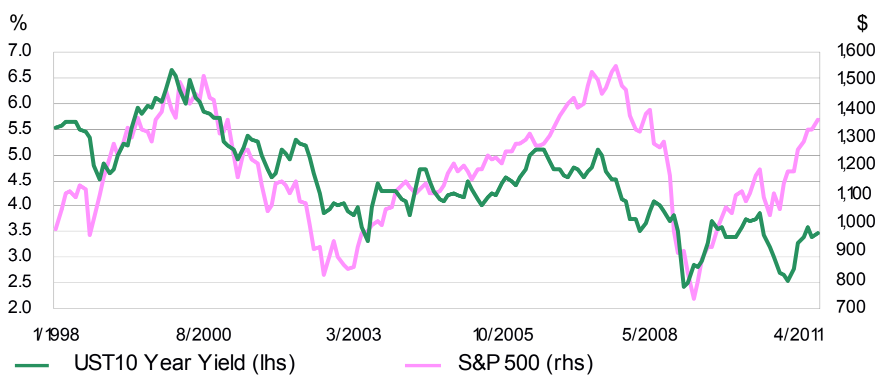
Historically, commodities moved in opposition to financial assets (stocks and bonds). Now, commodities tend to move with equities and together against bonds. QE enhanced this trend

Commodities Now Moving With Equities



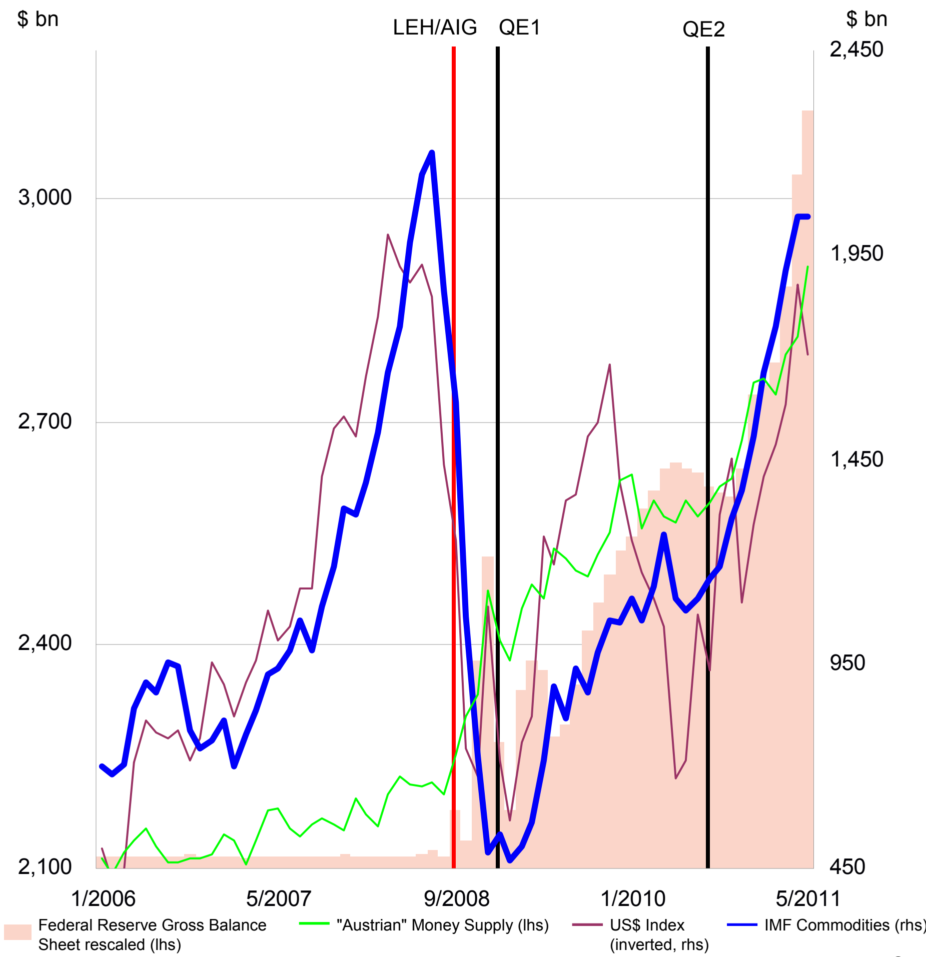
Sources: IMF, Bloomberg, MSCI

S&P 500 Now Correlates with US Treasury Yields



Source: Bloomberg

Commodities Strongly Responded to QE1 & QE2



Sources: Federal Reserve, Bloomberg, IMF, Based on methodology of Sean Corrigan, Diapason Commodities Management, "Tangible Ideas," May-June, 2011.

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Credit Expansion and Money Supply

The 2008 credit bust slowed leverage growth in the US economy, but did not reverse it. By contrast, Japan and the Eurozone have deleveraged to different degrees. All three areas are printing money faster than credit is growing

Quantitative Easing

↓

Creates New Money & Credit

↙ ↘

Financial Effects:

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↓

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Fundamental Effects:

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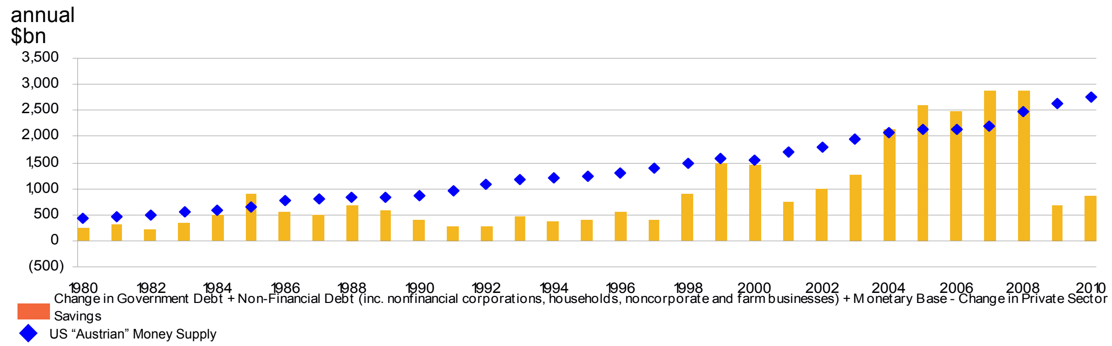
Margins Increase as Inflating Revenues Cover Earlier, Less-Inflated Costs

↘ ↙

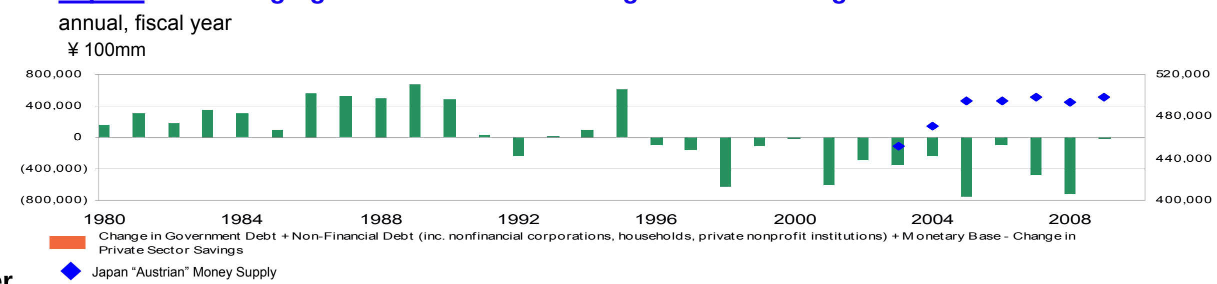
Rising Stock Prices

US: Leverage Is Still Growing, Mostly Owing to Government Debt



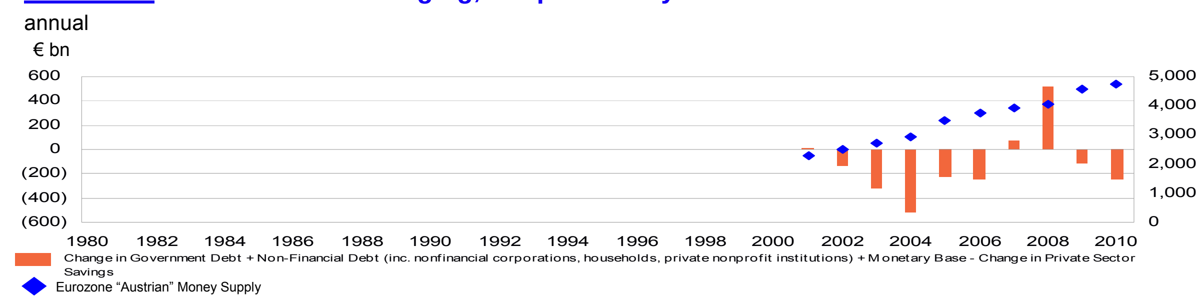
Sources: Bureau of Economic Analysis, Federal Reserve

Japan: Deleveraging Has Now Offset Leverage Growth During its Late 1980s Credit Bubble



Sources: Bank of Japan, Japan Cabinet Office

Eurozone: Periods of Deleveraging, Despite Money Growth from the ECB



Sources: European Central Bank, Eurostat

Credit Expansion and Banks

Bank reserves have grown exponentially during QE1 & QE2. While US banks have not grown their cash reserves substantially, the US subsidiaries of foreign banks have exponentially grown their cash reserves

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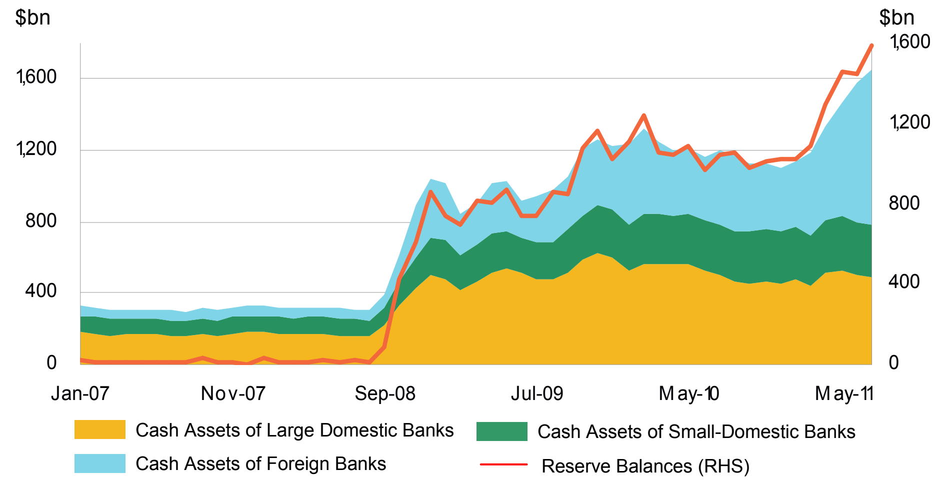
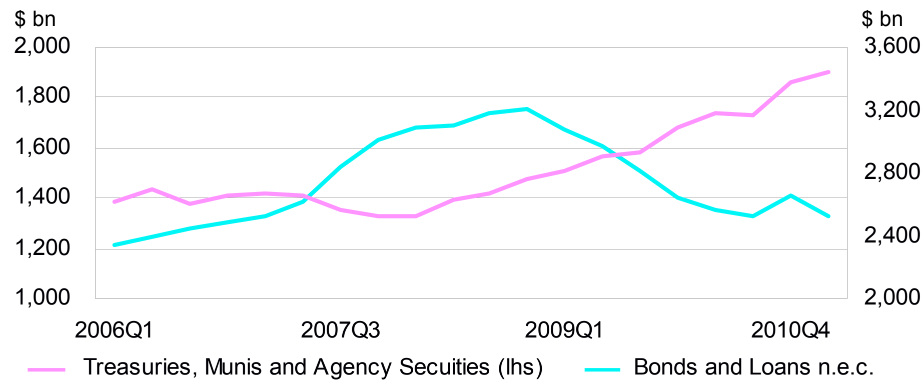
Cash of Domestic and Foreign Banks vs. Fed Bank Reserves



Source: Federal Reserve

US Commercial Banks Increasingly Own US Government Paper in Lieu of Corporate Paper

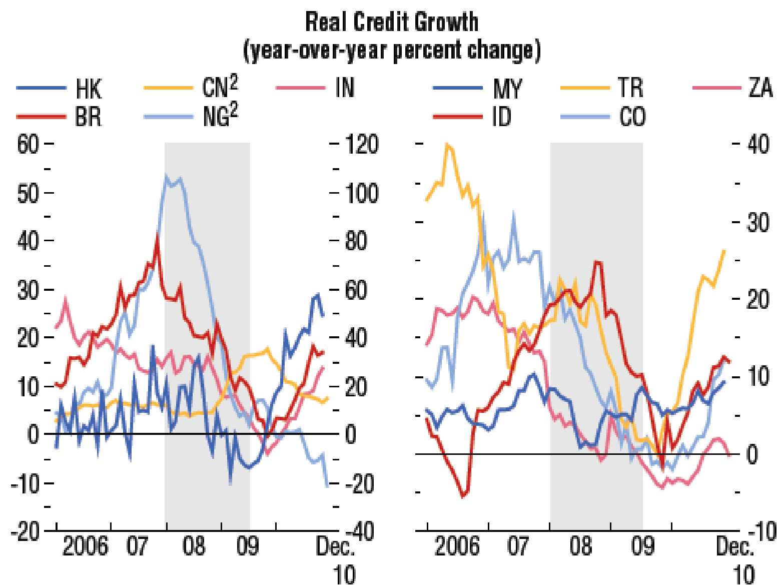


Source: Federal Reserve. N.E.C. = not elsewhere classified

Credit Expansion and Emerging Markets

Credit has expanded rapidly in many emerging markets. For US multinationals, are you tapping this ample liquidity? For US companies with foreign sales, have you modeled a bubble popping in your downside case?

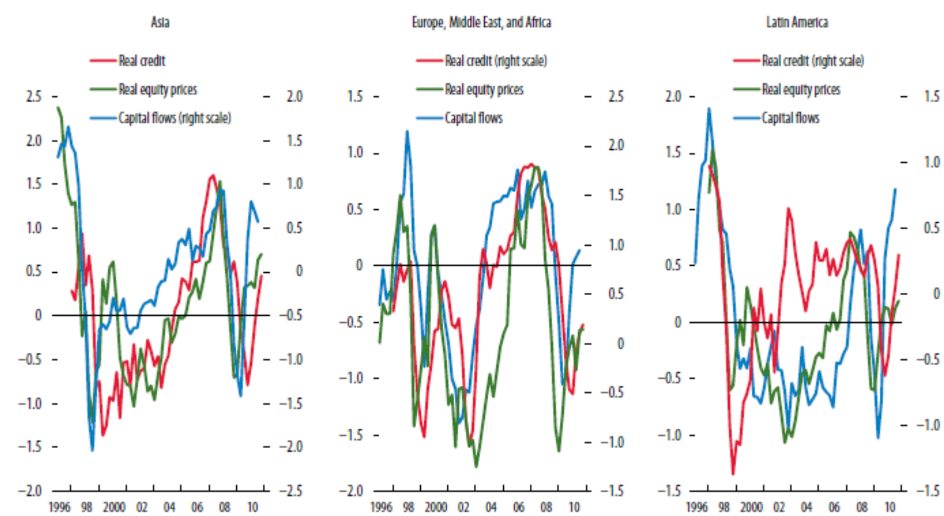
Emerging Market Economies with Strong Credit Expansion



Source: International Monetary Fund, World Economic Outlook, April 2011

Capital Inflow, Real Credit, and Real Equity Prices

Z Score



Sources: IMF International Financial Statistics database; Haver Analytics; and IMF staff estimates.

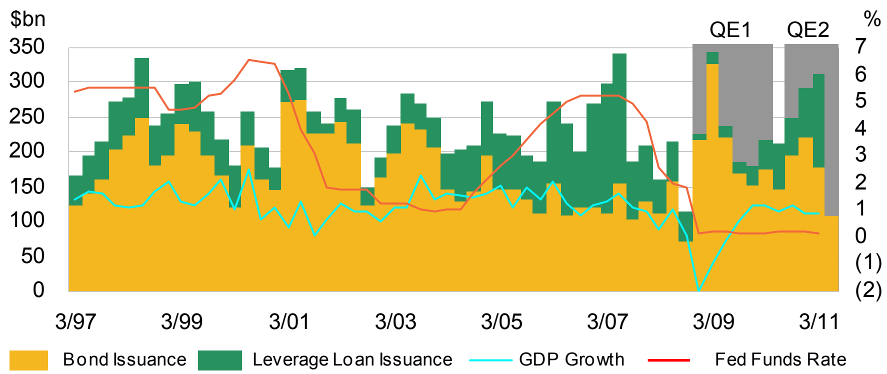
Note: Portfolio and other investment as a percentage of the size of financial markets. Year-on-year real credit growth. Real equity prices deviations from trend. All variables are transformed into a *z score* (difference from average in terms of standard deviation). Asia includes India, Indonesia, Korea, Malaysia, and Thailand; EMEA includes Hungary, Poland, Russia, South Africa, and Turkey; Latin America includes Brazil, Chile, Colombia, Mexico, and Peru.

Source: International Monetary Fund, Global Financial Stability Report, April 2011

Money Growth and Bonds, Equity and M&A in the US

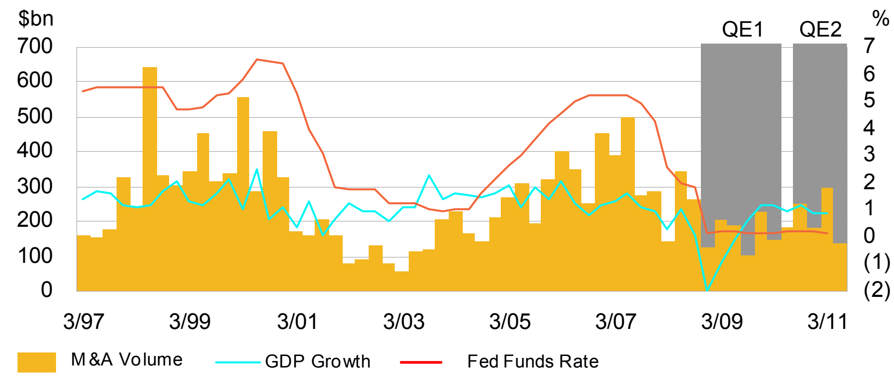
QE2 was an inflection point that spurred share buybacks, M&A, debt issuance and equity IPOs and follow-on offerings in the US, as companies took advantage of low interest rates and ample liquidity

Fixed Income Volume



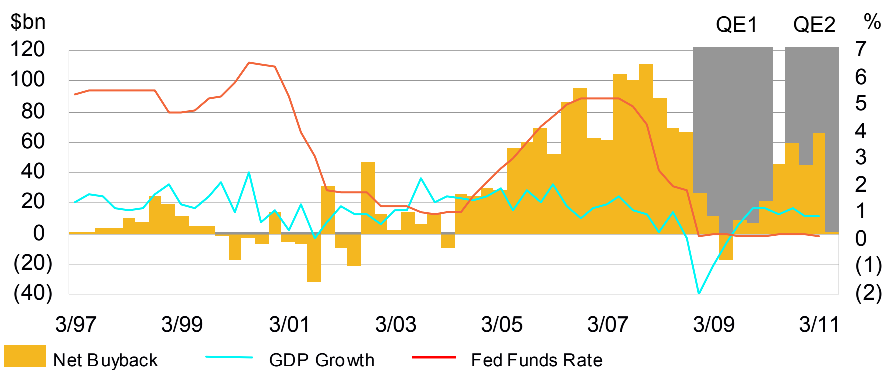
Sources: Thomson Reuters, Federal Reserve
Note: Excludes financials

M&A Volume



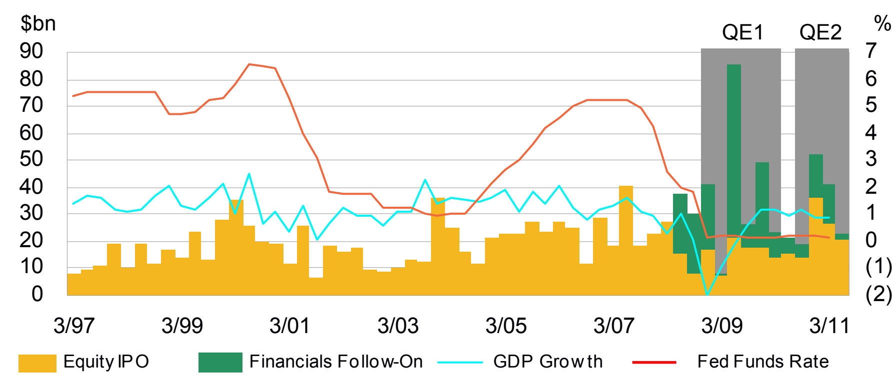
Sources: Thomson Reuters, Federal Reserve

Share Buybacks Net of Issuance



Sources: Capital IQ, Federal Reserve

Equity (IPO + Follow-On) Volume



Sources: Capital IQ, Federal Reserve

Following Investors' Money

Fund flow data show that investors have been chasing the "risk-on" trade in the US and emerging markets, often using margin debt

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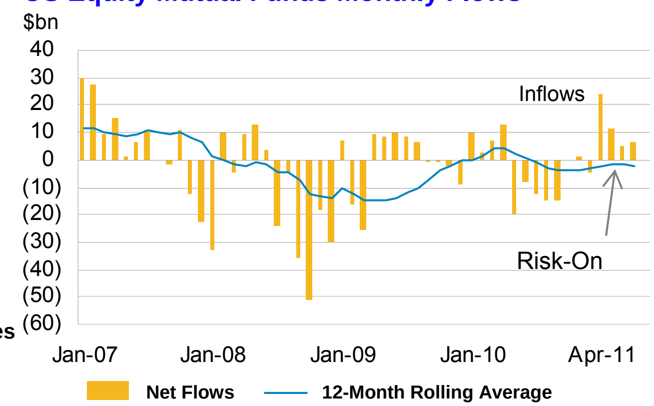
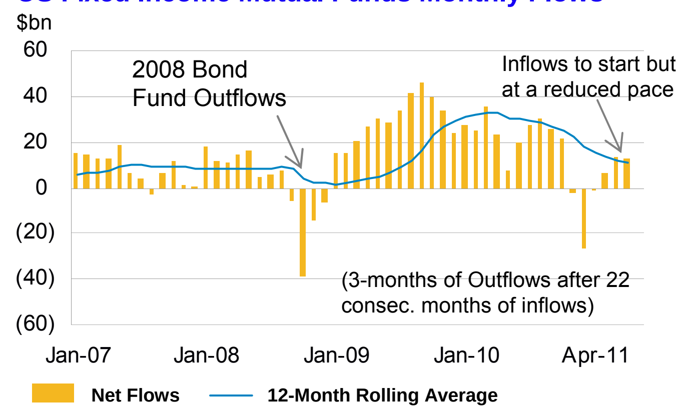
US Equity Mutual Funds Monthly Flows



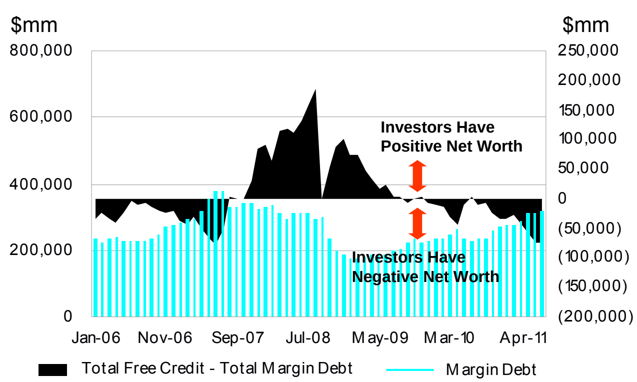
Sources: Morningstar, Diversified Financials Group, Morgan Stanley Research

US Fixed Income Mutual Funds Monthly Flows



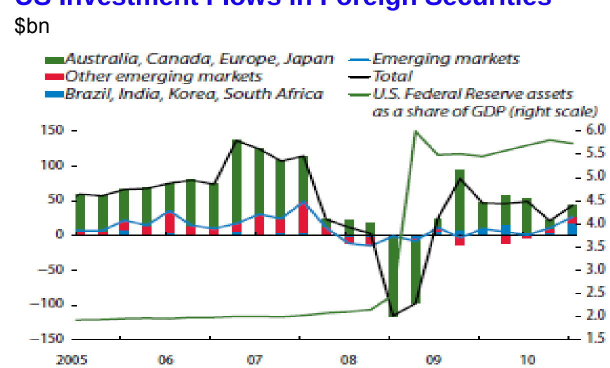
Sources: Morningstar, Diversified Financials Group, Morgan Stanley Research

US Margin Debt Building



Source NYSE Technologies, Based on the methodology from www.zerohedge.com

US Investment Flows in Foreign Securities



Sources: Bureau of Economic Analysis; Federal Reserve; Organization for Economic Cooperation and Development (OECD); and IMF staff estimates.
Note: Europe includes emerging Europe. Monthly OECD leading indicators for the United States are used as a proxy for GDP. Federal Reserve assets adjusted for OECD leading indicators.

Not All Companies Benefit Equally from Money/Credit

New money/credit does not change prices for all goods and services equally, thus often leading to disparities between input costs and realized selling prices. This underscores the need for management to focus on margins

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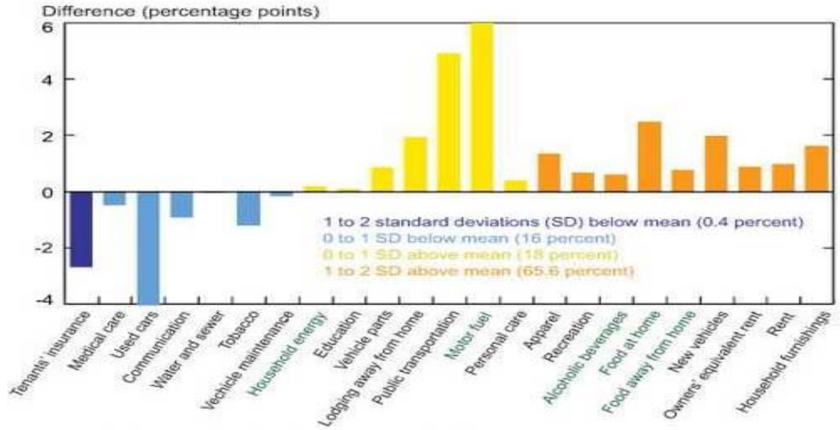
Inflation Rates Differ Substantially Across Industries

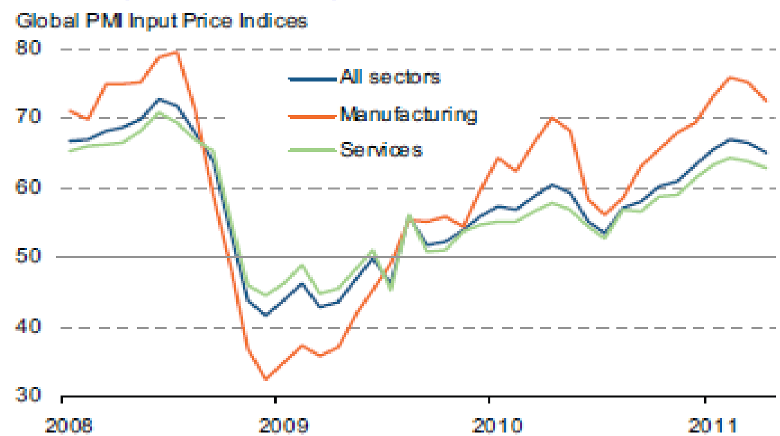


Sources: U.S. Bureau of Labor Statistics; authors' calculations.

Notes: Bars represent difference in year-over-year inflation between October 2010 and April 2011 for each item. Figures in parentheses are expenditure shares. Means and standard deviations are calculated using data going back to January 2000.

Source: New York Fed "Liberty Street Economics" Blog, "Closer Look at the Recent Pickup in Inflation", June 6, 2011

Global Input Prices Are Up Across the Board



Source: "Global inflation," Markit Economic Research, May 11, 2011

Companies with Pricing Power Benefit Most

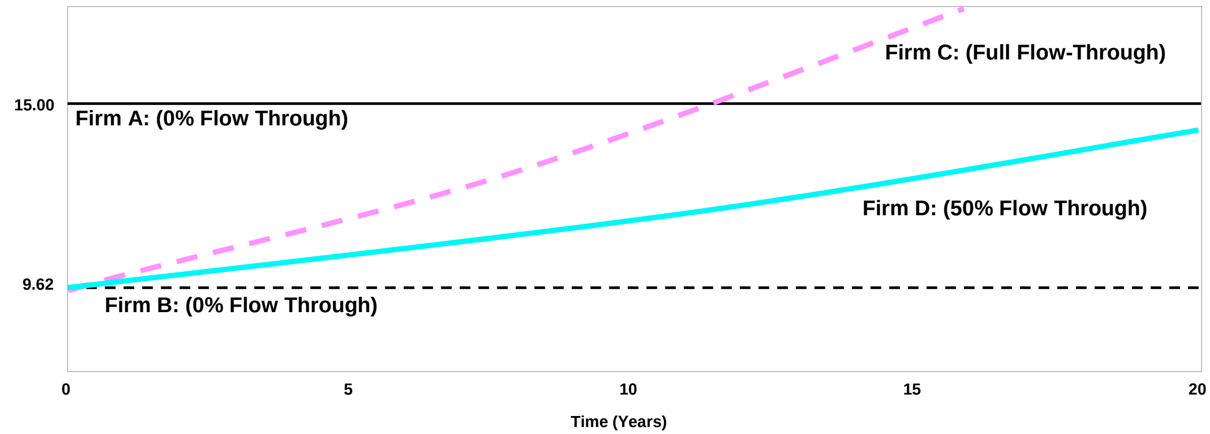
“Companies that can increase earnings to keep pace with inflation tend to be more valuable than comparable firms without “flow-through” capacity.” –*Martin Leibowitz and Stanley Kogelman*

A “full flow-through firm” is one whose earnings fully reflect year-to-year inflation increases

A “partial flow-through firm” is one whose earnings only partially reflect year-to-year inflation increases

Full Flow-Through v. Partial Flow-Through v. No Flow-Through

Earnings $MM



- Firm A: $15MM earnings/year in perpetuity
- Firm B: $9.62MM earnings/year in perpetuity
- Firm C (Full Flow-Through): Earnings grow with inflation at 4%, starting from a base $9.62MM
- Firm D (Partial Flow-Through) : Earnings grow @ 2% annual rate (50% of inflation rate) starting from a base $9.62MM

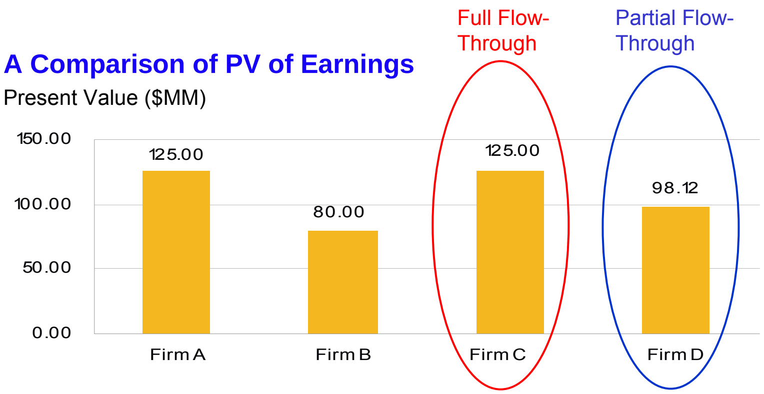
Source: Leibowitz, Martin L. and Stanley Kogelman, “Inflation-Adjusted ROEs.” *The Journal of Investing* (Winter 1993)
Assumptions: inflation rate = 4%, discount rate = 12%

The Ability to Flow-Through Boosts P/E Multiples

Firms that can flow-through inflation to their earnings—either via higher revenue growth or lower costs—can overtake those of their competitors with higher initial earnings and achieve higher P/E multiples

A Comparison of PV of Earnings

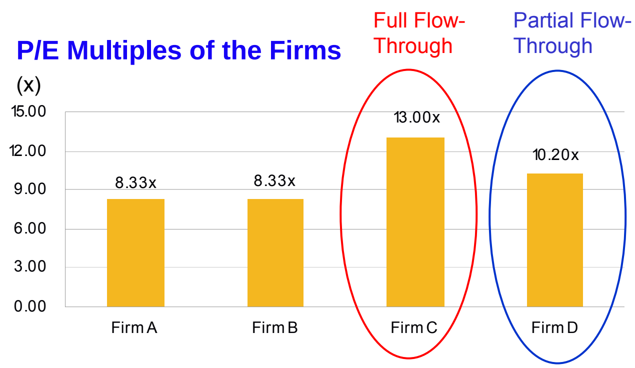
Present Value ($MM)



- PV (A) = $15MM/0.12 = $125MM
- PV (B) = $9.62MM/0.12 = $80.1MM
- PV (C) = $9.62MM * $\left(\frac{1 + 0.04}{(0.12) - (0.04)}\right)$ = $125MM
- PV (D) = $9.62MM * $\left(\frac{1 + 0.02}{(0.12 - 0.02)}\right)$ = $98.1MM

P/E Multiples of the Firms

(x)



- Base P/E (A) = $125MM/$15MM = 8.33x
- Base P/E (B) = $80.13MM/$9.62MM = 8.33x
- Base P/E (C) = $125MM/$9.62MM = 13.00x
- Base P/E (D) = $98.1MM/$9.62MM = 10.2x

- "Because Firms A and B have level earnings, their only source of growth is new investment, the basic fuel of high P/Es.
- By contrast, Firm C's earnings do not reflect the full value of the current business. Firm C has the valuable ability to grow its earnings with inflation and this specific growth capacity brings the base P/E up from 8.35 to 13.0."

Note: Base P/E reflects existing business and does not reflect new investment
Source: Leibowitz, Martin L. and Stanley Kogelman, "Inflation-Adjusted ROEs," *The Journal of Investing* (Winter 1993)

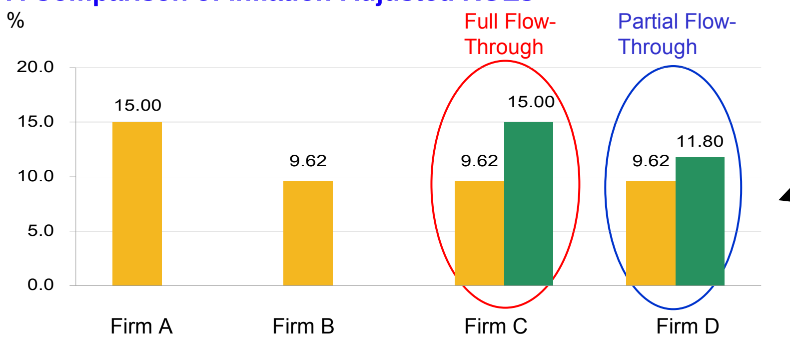
Flow-Through Also Boosts Inflation-Adjusted ROE

Firms that can flow-through inflation to earnings can also achieve higher inflation-adjusted ROEs, which translate into an multiple expansion as the companies report higher profits over time

- To determine a company's inflation-adjusted ROE, determine the earnings on an inflation equivalent firm with constant earnings
- Alternatively, apply the inflation adjustment factor to initial ROE

  $y = k(1+ I^*\lambda)/ (k - I^*\lambda)$

A Comparison of Inflation-Adjusted ROEs



Green bars show future potential ROE, which reflects the upside of inflation flow-through

- Firm A = 15% ROE
- Firm B = 9.62% ROE
- Firm C = while Firm C has an initial ROE of 9.62%, its earnings growth pattern leads to an inflation adjusted ROE = 15%
- Firm D
  - Solve for inflation adjustment factor for 50% flow-through
  - $y = k(1+ I^*\lambda)/ (k - I^*\lambda)$
  - $y = 0.12 \left(\frac{1 + (0.5*0.04)}{0.12 - (0.5*0.04)} \right)$
  - $y = 1.224$
- Firm D has an initial ROE of 9.62%, but its earnings growth pattern leads to an inflation-adjusted ROE of 9.62% * 1.224 = 11.77% inflation-adjusted ROE

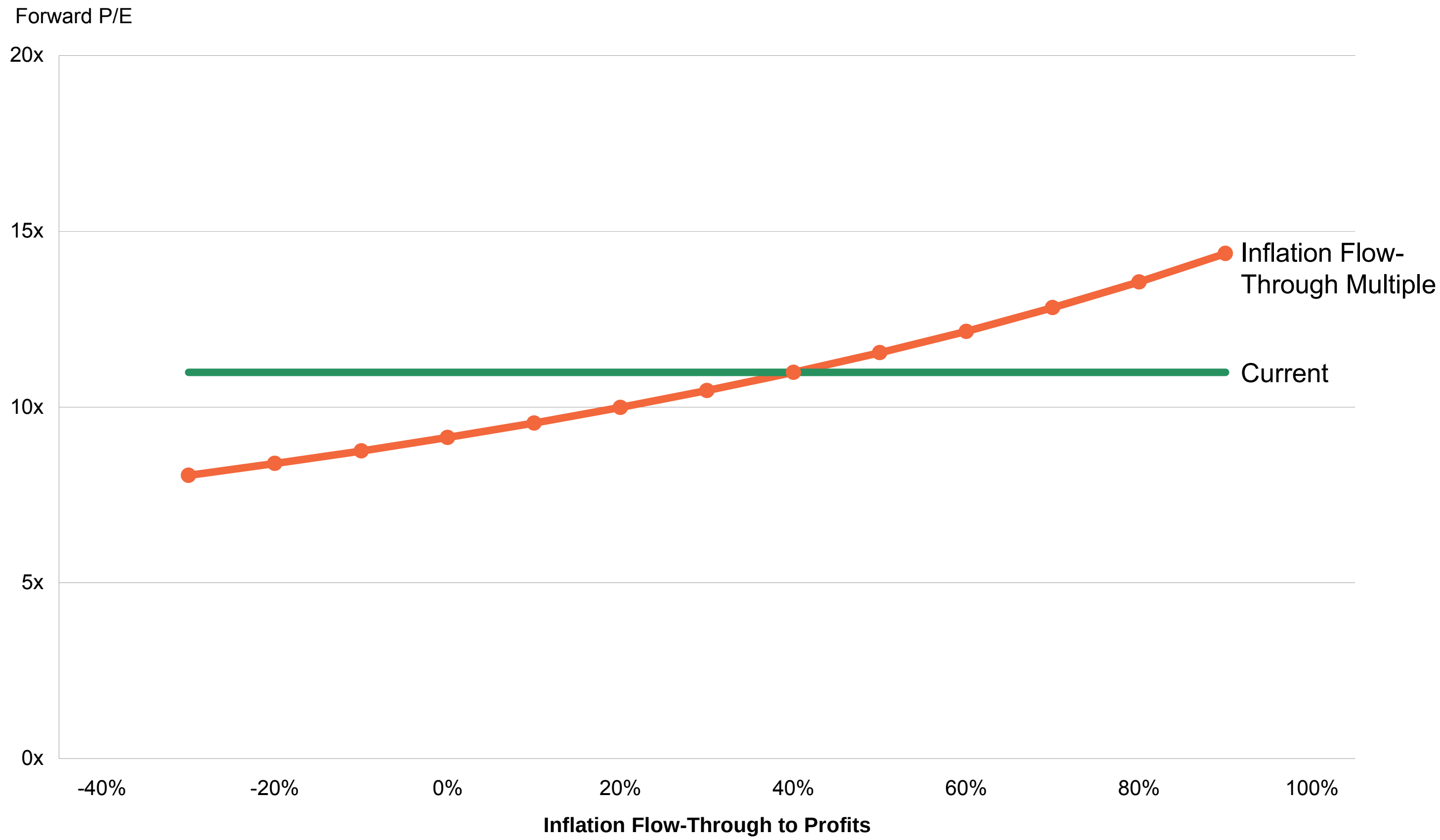
Morgan Stanley

Source: Leibowitz, Martin L. and Stanley Kogelman, "Inflation-Adjusted ROEs." *The Journal of Investing* (Winter 1993)
Assumption: All four firms have $100MM book value

Protecting Margins Helps [Company] Protect Its Multiple

[Company]'s multiple depends, in part, on its ability to translate the impact of inflation into additional profits. Our analysis shows [Company]'s multiple could be quite sensitive to its ability to pass through inflation

[Company] Flow-Through Impact, Assuming Base Case of 40% Pass-Through of Inflation



Sources: Morgan Stanley, Bloomberg. Based on methodology of Martin Leibowitz and Stanley Kogelman, "Inflation-Adjusted ROEs: Strong Effects Even with Low Inflation," The Journal of Investing, Winter 1993.

And in the Long Term . . .

As inflation accelerates, margins become more uncertain, real cash flow shrinks, investor time horizons shorten (thus raising required returns), multiples attached to uncertain earnings begin to contract *–Sean Corrigan*

Quantitative Easing

Creates New Money & Credit

Financial Effects:

M&A,
Share Buybacks

Sellers of Those Shares Then Buy Other Shares

Fundamental Effects:

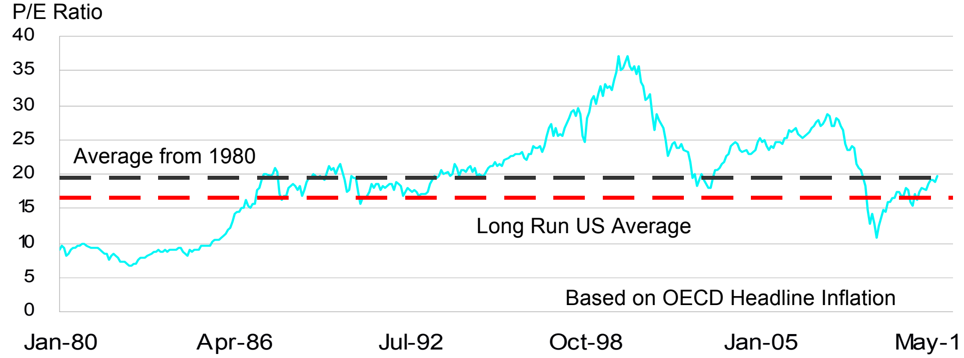
Higher Spending Drives Higher Business Revenues

Margins Increase as Inflating Revenues Cover Earlier, Less-Inflated Costs

Rising Stock Prices

Higher Earnings in the Price

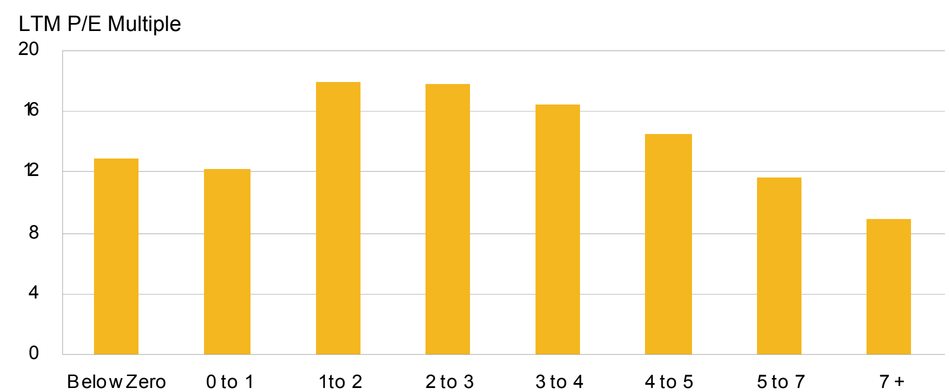
Graham-Dodd P/E Ratio for DM MSCI Index



Sources: MSCI, BLS, OECD, Morgan Stanley Research

Average S&P 500 P/E Multiple: Higher in Stable Inflation Environments

1927-2010, excluding Great Depression years



Source: Morgan Stanley Investment Management, Ann Thivierge and Andrew Maggio, "A Closer Look at Equity Valuation," Investment Management Journal, Volume 1, Issue 1, 2011, citing Robert Shiller Online Data, Standard & Poor's and Bloomberg

Source: Corrigan, Sean, Diapason Commodities Management, "Tangible Ideas," May-June, 2011.

Business Planning & the End of QE2—QE3 or Bust?

How should businesses plan for the wide range of potential outcomes after the end of QE2? How much could a reversal of the money/credit boom impact your company's revenue, margins and profits?

	Potential Macro Outcome	Impact to US Businesses
Credit Growth Continues	**Private Sector Credit Growth Resumes** / **Fed Institutes "QE3"**	**Revenues & Margins:** Up (nominal) **US Dollar:** Trend Weaker
Credit Contraction Starts	**Deleveraging Begins in the US**	**Revenues & Margins:** Down (nominal) **US Dollar:** Trend Stronger

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Revisiting Your Strategic Plan

Creation of new money/credit led to an increase in business revenues overall. How dependent on continued growth of new money/credit are your short and long term business strategies?

- Understanding QE2's impact on your business plan and stock price
- Future of credit expansion uncertain
  - Should you raise capital now?
    - US v. abroad
    - Range of potential interest rate implications
  - M&A while our currency is strong?
  - Share buybacks? Does your stock price reflect real value? Return of capital to shareholders?
- Does our 5-year plan have stress case scenarios for 4% or greater inflation, or shock to liquidity?
  - Impact on revenues, costs and profits

Appendix A

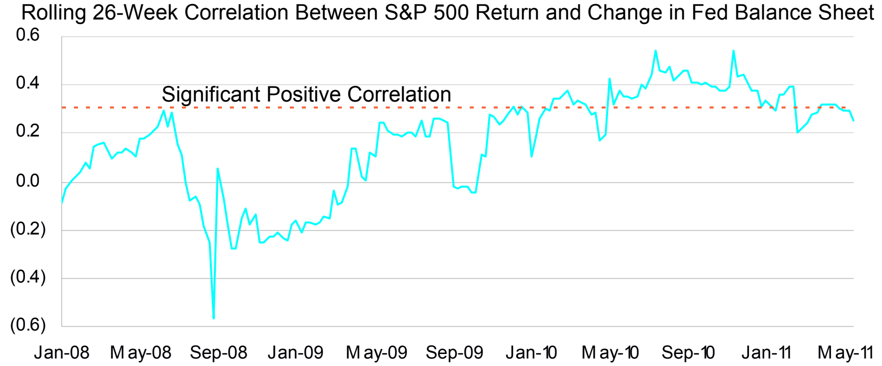
Appendix

Quantitative Easing Appendix Page

Positive correlation between the S&P and changes in the Fed balance sheet whereas initial claims, earnings revisions and lagged earnings have been negatively correlated with S&P returns

Correlation Btwn the S&P and Changes in the Fed's Balance Sheet Has Been Positive Since Fall '09 and Statistically Significant Since Last Fall

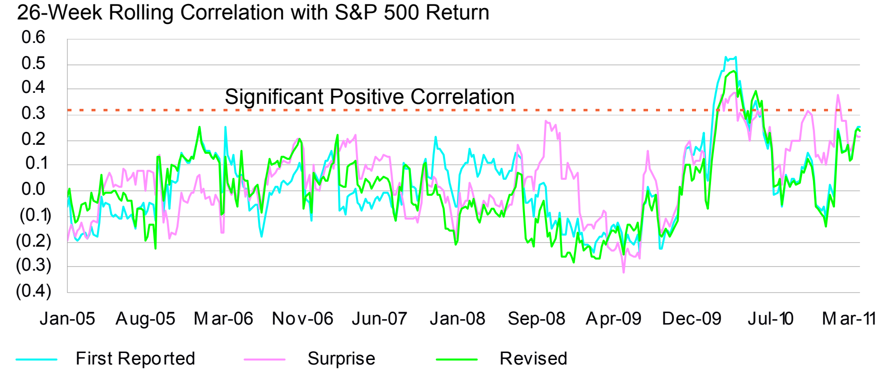
Rolling 26-Week Correlation Between S&P 500 Return and Change in Fed Balance Sheet



Sources: Federal Reserve, FactSet, Morgan Stanley

Initial Claims Are Rarely Significantly Correlated with S&P Returns

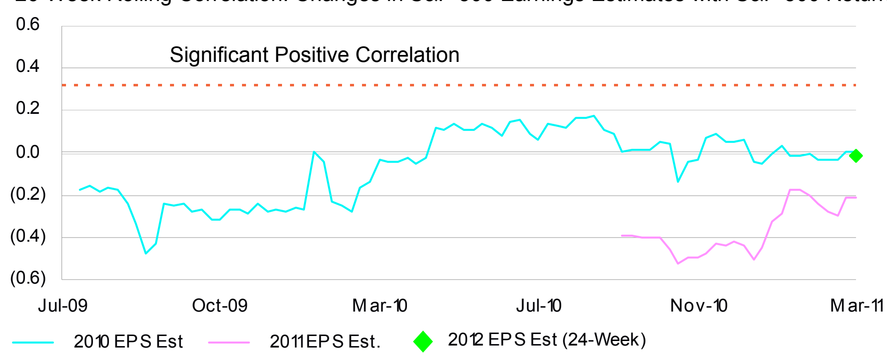
26-Week Rolling Correlation with S&P 500 Return



Sources: FactSet, Haver Action Economics, Morgan Stanley

Coincident Earnings Revisions Were Recently Negatively Correlated with S&P 500 Returns

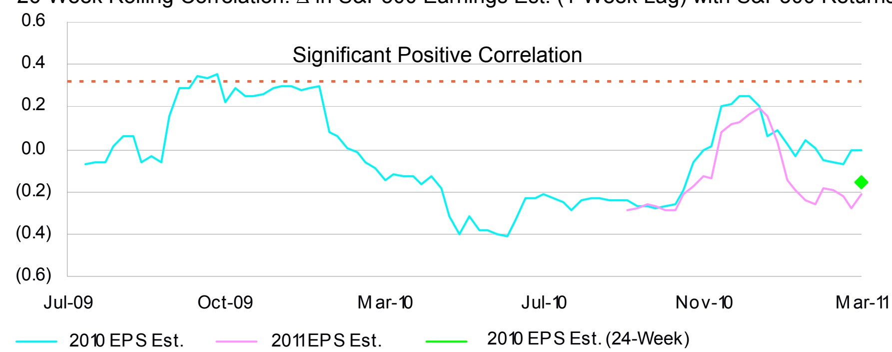
26-Week Rolling Correlation: Changes in S&P 500 Earnings Estimates with S&P 500 Returns



Sources: FactSet, Morgan Stanley

Lagged Earnings Revisions Have Also Been Negatively Correlated with S&P 500 Returns

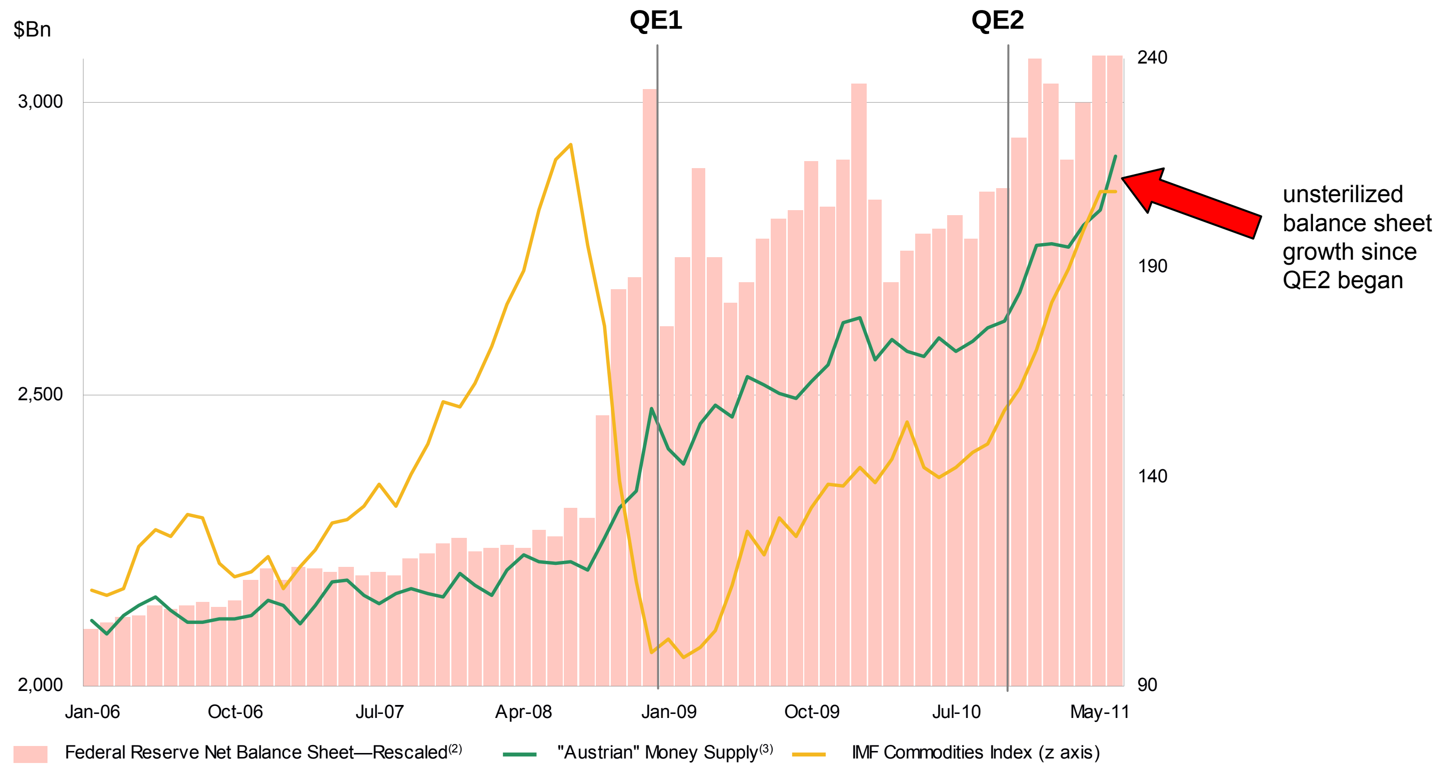
26-Week Rolling Correlation: Δ in S&P500 Earnings Est. (1-Week Lag) with S&P500 Returns



Sources: FactSet, Morgan Stanley

Commodity Prices and Monetary Policy

Does monetary policy influence commodity prices? The Fed's "unsterilized" balance sheet (pink bars) has grown substantially since QE2 was announced, which also corresponds to an acceleration of the commodities rally



Notes:

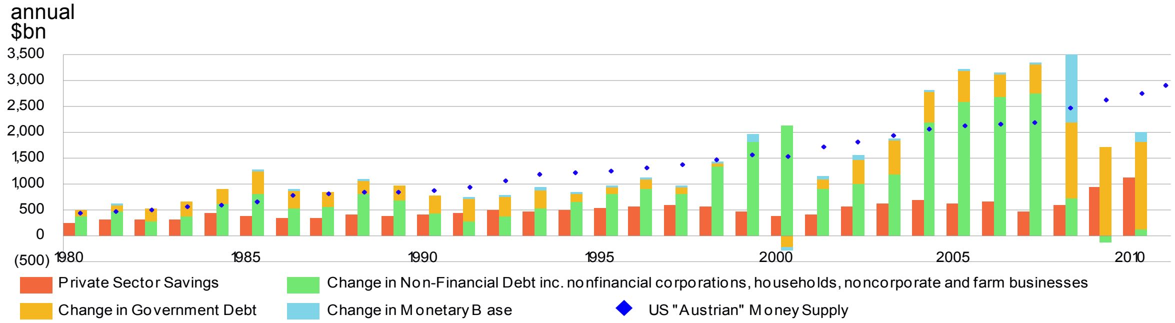
1. QE1 date shown is November, 25, 2008, when the Federal Reserve began to purchase mortgage-backed securities. QE2 date shown is August 27, 2010, which marks the initial discussion of QE2 by Federal Reserve Chairman Ben Bernanke at Jackson Hole. QE2 formally announced November 3, 2010.
2. Federal Reserve net balance sheet equals total balance sheet less supplementary financing program (SFP) and excess reserves. SFP and excess reserves represent money that has not entered into the real economy because it is held by the US Treasury and the banking system, respectively. In essence, SFP and excess reserves "sterilize" portions of the Fed's total balance sheet. Subtracting these amounts allows calculation of the "unsterilized" or "net" portion of the Fed's balance sheet. Rescaled for presentation purposes at 2.44x actual dollar amount.
3. "Austrian" Money Supply is an alternative money supply measure that includes currency and all demand or checkable deposits, but excludes savings, time deposits and other types of accounts that are not immediately exchangeable as money. Data reported in Federal Reserve Board H.6 statistical release.

Sources: Bloomberg, Federal Reserve Board statistical releases (H.4.1, H.6 and monthly sweeps), and Morgan Stanley. Based on methodology of Sean Corrigan, Diapason Commodities Management, "Material Evidence," February 18, 2011.

Credit Expansion and Money Supply: Detail

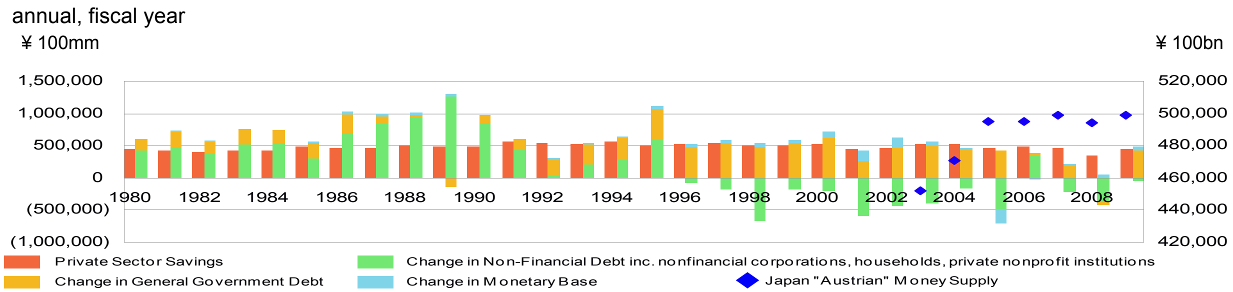
The 2008 credit bust slowed leverage growth in the US economy, but did not reverse it. By contrast, Japan and the Eurozone have experienced true deleveraging to different degrees

US: Savings vs. Debt Growth



Sources: Bureau of Economic Analysis, Federal Reserve,

Japan: Savings vs. Debt Growth



Sources: Bank of Japan, Japan Cabinet Office, Pollaro, Michael, "True "Austrian" Money Supply Global Metrics." The Contrarian Take blog, 2011

Euro Zone: Savings vs. Debt Growth

Sources: European Central Bank, Eurostat, Pollaro, Michael, "True "Austrian" Money Supply Global Metrics." The Contrarian Take blog, 2011

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