

# MARKET Recap

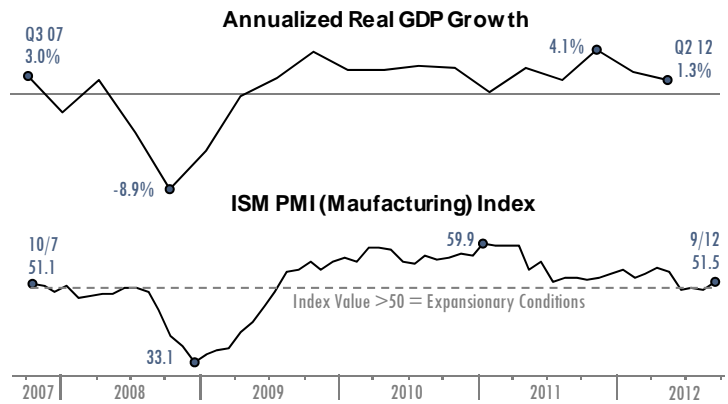
## The Economy: “Fed Adopts a Through Strategy”

The pace of US economic growth decelerated to 1.3% in the second quarter. Consumer spending and fixed investment grew at a slower pace, partially offset by slower decreases in government spending. Through August incremental data tended to be modestly negative, particularly for the manufacturing sector on news that new orders for durable goods decreased 13.2% in August following 3 consecutive monthly increases. Notwithstanding positive stock market performance due to relative calm in Europe, sentiment on Wall Street was generally negative, with speculation abounding on a mild 2013 recession.

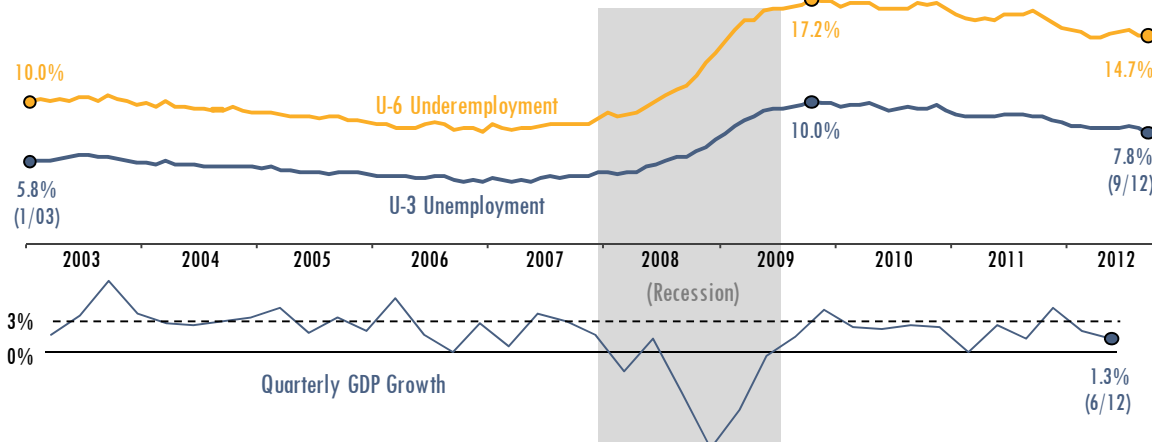
On October 1<sup>st</sup> the Institute for Supply Management’s report on manufacturing told a much different story. The widely followed Purchasing Managers’ Index reversed a 3-month declining trend, rising above the key 50% level to indicate expansionary conditions. Other statistics in the report were also decidedly bullish, as were those in the service-sector report issued 2 days later. In fact the only negatives of note were a decelerating employment index (on the service side), and increasing prices (for both). Alas for Europe, China, and much of the rest of the world, where similar statistics were not as rosy – particularly for manufacturing. That matters very much of course, but for the near-term, expectations of a continued decline in domestic economic activity may prove overly pessimistic.

In light of such robust activity measures, it is easier to understand this comment in the Federal Open Market Committee statement following their September 13 meeting: “To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time *after* the economic recovery strengthens.” [Emphasis added.] At this meeting the Committee officially launched a third round of quantitative easing. More importantly, they sought to remove lingering doubt about their commitment to low interest rates and other stimulus mechanisms for the near term, lest the first bit of good news (like the ISM Reports) send a shock-wave of selling through inflated asset markets. To borrow a cliché from the makers of target-date funds, the Fed is following a “through” strategy, not a “to” strategy.

That monetary stimulus has inflated the price of houses and financial assets is not in doubt; it is a central part of the Fed’s strategy to boost consumer spending and, ultimately, drive up employment. Unless broader price inflation emerges,



**Unemployment and Underemployment vs. GDP Growth**



stimulus will continue until 3% growth can be sustained. There is little uncertainty left in the Fed’s playbook. What remains is uncertainty over the long-term effects of ultra-low rates, and whether fiscal sanity can be restored without cliff-diving. We’ll have more thoughts on that in January...

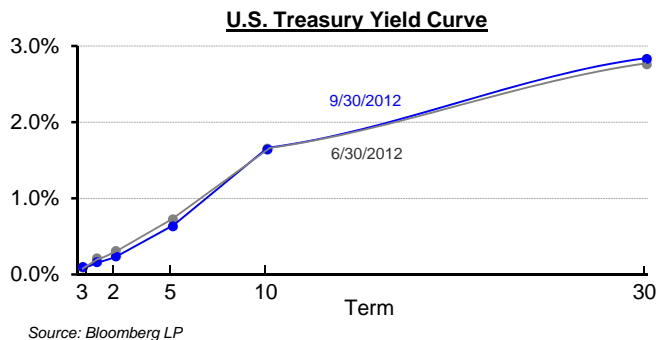
## The US Bond Market

Continuing the trend restarted in June, the third quarter was dominated by an investor preference for the riskier segments of the US bond market. The yield on the 10-year treasury climbed for most of the quarter, starting its ascent after ECB President Mario Draghi pledged to preserve the euro in late July. Central banks in Japan, Europe and the US further demonstrated their commitment to accommodative monetary policy with announcements of additional asset purchase programs in early September. As investor fears eased, spreads narrowed. However in the final weeks of the quarter, concerns over geopolitical tensions in the Middle East, a growing dispute between China and Japan over a handful of uninhabited islands in the Pacific, and the approaching fiscal cliff in the US caused some investors to turn back to Treasury bonds.

Debate over QE3 raged throughout the quarter. Interestingly, defensive sectors performed relatively well in the wake of the official announcement of the program launch in what seemed to be a sign of investor skepticism of QE3's impact on real economic activity (or the ability of any policymaker to bolster economic growth with waves of cheap money). Fed Chairman Bernanke defended the program, characterizing it as a continuation of the same basic monetary-policy strategy that has been in place for some time. "The difference is that, with short-term interest rates nearly at zero, we have shifted to tools aimed at reducing longer-term interest rates more directly," he said. Bernanke emphasized the Fed's commitment to maintaining price stability, noting his expectation that inflation would "remain low for the foreseeable future," and that the Fed's intention to keep interest rates low, now until mid-2015, was not just a response to current weakness. Rather, it is designed to ensure growth will continue at a sufficient pace and for sufficient time to increase employment. (For a discussion of the implication of sustained low interest rates on unemployment, see this quarter's Focus piece.) Not surprisingly, the announcement of QE3 drove spread tightening in mortgage-backed securities. Further, the open-ended nature of the program to purchase \$40 billion dollars per month of agency MBS should keep mortgage spreads tight going forward.

Bond Indices - Total Returns	
BarCap Aggregate	1.58%
BarCap Interm. Gov't	0.62%
BarCap Long Gov't	0.34%
BarCap Interm. Credit	2.90%
BarCap Long Credit	5.22%
BarCap High Yield	4.53%

The recent trend of publicly-aided dissension among Fed members continued with Charles Plosser, president of the Philadelphia Fed Bank, expressing his doubts about the program. "We are unlikely to see much benefit to growth or employment from further asset purchases," he commented in a



speech to financial market trade groups the week after QE3 was announced, noting that monetary policy cannot relieve the "frictions and structural adjustments" that are currently holding back improvements in US labor markets.

Regardless of the public debate (or perhaps because of it), by the end of the quarter, the US treasury yield curve had barely budged from its 2Q close. The shorter end of the curve dropped by roughly 7 basis points, while the yield on the 30-year treasury increased by 7 basis points. The benchmark 10-year treasury closed the quarter virtually unchanged at 1.63%

(down from the 2Q close of 1.65%). Modest as they were, the moves began a reversal of the flattening trend from prior quarters. The spread between the 2-year and 10-year notes widened to 140 basis points from 134 basis points at the end of Q2 (but still narrower than the 1Q close of 188 basis points or the 4Q 2011 close of 165 basis points).

Driven by consistently low interest rates and investors looking beyond treasuries for yield, high-grade corporate bond issuance had a record quarter of \$260 billion, largely driven by September issuance of \$120 billion (Dealogic). While the best third quarter in 17 years, Q3 2012 issuance fell short of the \$310 billion issued in the first quarter of the year. September was a solid month for high-yield issuance as well, with \$47 billion issued according to Dealogic. But with current high-yield spread levels close to historic lows (except in CCC's, the riskiest end of the segment), many are beginning to view the category as expensive with the best opportunity for returns behind us.

## The US Stock Market

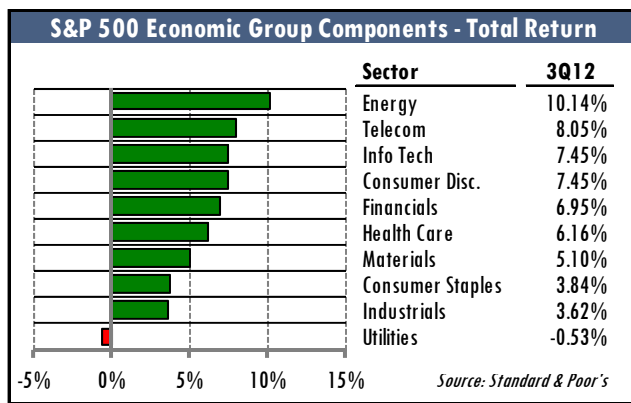
It was a strong quarter for US equity markets as monetary intervention and corporate earnings fueled gains. The anticipation of the ECB and FOMC monetary announcements drove stocks higher through the middle of September, until returns fell at quarter end in a typical "buy the rumor, sell the news" situation. For the companies of the S&P 500, 64.5% beat their expected operating earnings estimates. This is above the long-term (since 1992) average of 62%, but below the average for the last 4 quarters of 68% (Thompson Reuters). Overall, economic data was more of an indirect factor through QE3 in this quarter's uptick. The anticipation of the Fed's decision to launch a third round of bond buybacks was

one of the leading contributors in equity market performance, largely due to poor economic data. The data was mixed with weak job numbers and growing strength in the housing sector, but the disappointing employment numbers over the quarter forced Bernanke's hand in initiating more quantitative easing.

The third quarter showed a small increase in risk appetite as investors were cautiously optimistic. Cyclical stocks were in favor, but most defensive sectors also performed well on an absolute basis. Preference for dividend paying stocks fell slightly, but still remains strong overall. Investors are now forced to weigh valuations of such securities against the desire for higher yield in a low interest rate environment. In July, the price to earnings valuation for dividend paying stocks was 216 basis points lower than that of stocks with no dividend, while the historical median is 1,343 basis points (Factset).

Stock Indices - Total Returns			
<b>Largecap Stocks</b>		<b>Midcap Stocks</b>	
S&P 500	6.35%	S&P Midcap 400	5.44%
Russell 1000	6.31%	Russell Midcap	5.59%
Growth	6.11%	Growth	5.35%
Value	6.51%	Value	5.80%
<b>Broad Markets</b>		<b>Smallcap Stocks</b>	
Russell 3000	6.23%	S&P Smallcap 600	5.40%
MSCI ACWI	6.84%	Russell 2000	5.25%
		Growth	4.84%
		Value	5.67%

Energy stocks gained on increased oil prices due to instability in the Middle East (US and European embargo on Iran has been in effect since July) and new monetary stimulus. The 8.40% jump in price followed a Q2 loss of 17.46%. The telecom sector advanced on continued demand for dividend yield, increased revenue expectations from the sale of

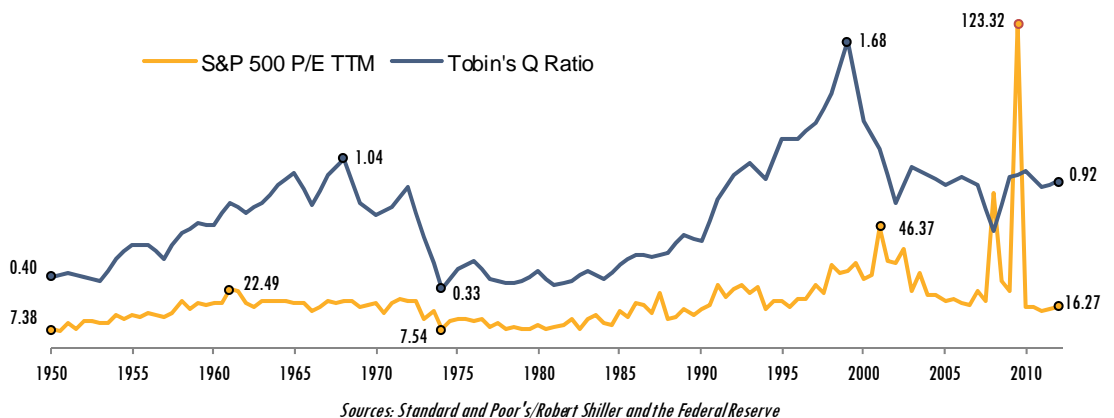


Apple's iPhone 5, and exceptionally strong performance from Sprint and Frontier Communications (+69.33% and +30.94% respectively). The technology sector also benefitted from the announcement and sale of the iPhone 5 which drove Apple's stock price up over \$700 intra-quarter, returning +14.68% QTD and +65.37% YTD. Utilities was the only negatively performing sector in the S&P 500 for the third quarter with poor performance attributable mainly to electric utilities. The industry suffered specifically from declining power prices and worries of increased regulations weighing on future earnings.

After a quarter of strong gains pushing US equity markets to levels not seen in 5 years, investors are left asking "Have stocks become too expensive?" Two metrics often used to value stocks

are the "price to earnings" and "Tobin's Q" ratios. The P/E ratio compares the market price to, in this case, the average earnings of the last 12 months. Currently, the P/E ratio of the S&P 500 is 16.77 compared to the 62 year average of 17.77 and median of 16.52. Tobin's Q, a ratio of market value to total asset value, is also a strong valuation metric. A ratio of less than 1.0 would mean the stock, or in this case, the entire stock market is undervalued, and vice versa. Although equilibrium would be 1.0, the 62 year average for the US broad market is around 0.74 and the median is 0.75.

The current Tobin's Q ratio is 0.92. It is important to note that in recessions there will often be surges in price to earnings ratios as the market price (based on future earnings) declines before trailing earnings do. Based on these simple metrics, equity investors should be aware that the "easy money" from the post-selloff recovery has been realized.



## Overseas Markets

An already weak global recovery seemed to nearly stall during the third quarter as Europe and its sovereign debt issues continued to plague markets. Even after making forward strides toward integration during the previous quarter Spain and Italy still require a significant amount of capital to remain afloat, prompting the IMF to call for a quicker move toward a banking union and fiscal sharing lest one of the countries loses access to capital markets and start a global financial panic. The IMF lowered its global growth forecasts for a number of sectors for the rest of 2012, and to 3.9% for world mar-

kets in 2013. Despite the negative news on growth, markets went “risk-on” during the quarter as monetary stimulus was in vogue globally.

European and global markets were bolstered mid-quarter when Mario Draghi said the ECB is “ready to do whatever it takes to preserve the euro.” He hinted that the ECB was prepared to resume purchases of distressed government bonds, noting that the Bank’s mandate extended to cases where high-yield premiums obstructed the use of monetary policy. In Spain there were rising fears of a default. The Valencia region warned that it could default and the Catalan region talked of secession, forcing 10-year Spanish bond yields over the critical 7% threshold – the level that forced the other peripherals to seek bailout funds. Simultaneously, the German Constitutional Court began a hearing into whether the European Stability Mechanism (ESM) and planned changes to the region’s budget rules are compatible with German law. Approval of the ESM would allow funds to be used more flexibly to ease the European debt crisis. While European finance ministers did agree to release €30 billion of bailout funds for Spain’s troubled lenders and grant Spain an extra year to reach its deficit reduction target, they made no progress on how the ESM will be used to help lower Madrid’s elevated borrowing costs. Ultimately, to the market’s relief, the German court approved the ratification of the ESM with the caveat that the German parliament would have veto rights over any increase in Berlin’s contribution to the ESM.

Foreign Stock & Bond Indices - Total Returns			
MSCI Broad Indices		Barcap Global Indices*	
World Index	6.71%	Global Aggregate	3.27%
EAFE (Developed)	6.92%	Pan-Euro	5.14%
Emerging Markets	7.74%	Asian-Pacific	3.27%
		Eurodollar	2.46%
		Euro-Yen	4.65%
		Other Currencies	4.88%
MSCI Regions		<i>*Unhedged</i>	
Europe	8.70%		
Japan	-0.84%		
Pacific ex-Japan	10.99%		
Latin America	4.69%		

In Italy, Moody’s cut the country’s credit rating to Baa2 from A3 with a negative outlook. According to a statement from Moody’s: “Italy is more likely to experience a further sharp increase in its funding costs or the loss of market access than at the time of our rating action five months ago due to increasingly fragile market confidence, contagion risk emanating from Greece and Spain and signs of an eroding non-domestic investor base.” Moody’s also noted that Italy’s near-term economic outlook had deteriorated as reflected by weaker growth and higher unemployment, making it that much harder for Italy to meet its deficit targets. Italian sovereign yields rose, which ironically led to Italy completely selling out a new batch of 3-year bonds as the prices fell. Italian borrowing costs remained high with the yield on the 10-year Italian government bond approaching 6%. The cost of insuring Italian government debt against default initially rose, but fell back in the wake of positive auction results. However, many analysts found the downgrade by Moody’s to Baa2 “misleading” as the CDS market for Italian debt implied a rating of single-B, several notches below Moody’s new rating, according to data from global financial services information company Markit.

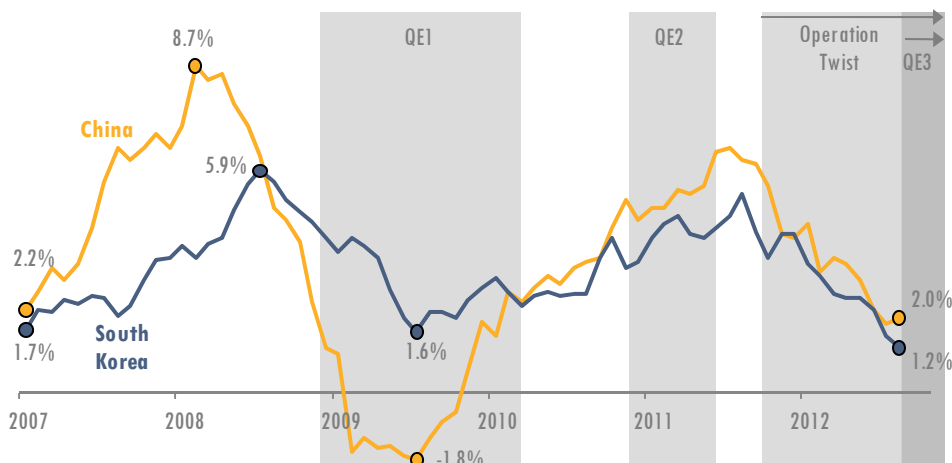
Eurozone inflation unexpectedly accelerated in September after the Spanish government increased sales tax to help plug its budget gap, driving prices up the most in 17 months. Consumer prices in the 17-nation euro region increased 2.7% from a year earlier after a 2.6% gain in August, according to the EU’s statistics bureau. The median analyst forecast was for the rate to fall to 2.4%. Services and manufacturing output fell to a 39-month low in September as European leaders struggled to reverse a slide into recession. A composite index based on a survey of purchasing managers in both industries in the zone dropped to 45.9 from 46.3 in August, according to Markit. A reading below 50 indicates contraction. Economists had forecast a reading of 46.6. The zone’s economy appears to be heading for a second straight quarterly contraction after a 0.2% decline in the second quarter.

In Japan economic indices showed weakening momentum. According to the third quarter Tankan survey, manufacturers turned more pessimistic as export weakness due to a strong yen continued to hamper growth. In a retaliatory move to devalue the yen and make exports more competitive, the Bank of Japan announced a new round of stimulus, expanding asset purchases by another ¥10 trillion in government bonds and treasury discount bills. The total size of the stimulus program was lifted to ¥80 trillion. At this point it is difficult to say whether the program will have a material effect on the economy. If similar moves in the US (where the Fed’s balance sheet has been greatly expanded but the overall impact on the economy has been nominal) are any indication, the Japanese economy is in for another rough patch. On the political front, recent conflict with China over the Senkaku Islands is not helping the situation as Japanese firms with operations in China have been impacted with China threatening trade sanctions which would crimp growth even more. Chinese demand for Japanese goods has fallen with the automobile market feeling most of the impact.

China continues to experience an economic slowdown as demand from its global trading partners contracts. GDP growth slowed to 7.6% in the second quarter from a year earlier, its slowest pace since 2008. Expectations are for a further cooling in 3Q, unanticipated by both government and private-sector forecasts. To combat the pending growth slowdown, local Chinese governments have put large public spending plans in place. For example, the major port city of Tianjin announced plans to invest 1.5 trillion yuan to offset its slowing growth rates. The four-year plan is targeted towards a number of different industries from petrochemicals to ports. This comes after similar announcements in both Chongqing and Guangdong, which unveiled plans to spend 1.5 trillion yuan and 1 trillion yuan, respectively. It is widely expected that

these initiatives will put pressure on the central government to get behind local spending plans and provide a level of funding which it has shied away from the last few years in an effort to prevent asset bubbles and runaway inflation. China, and Korea, also weighed in on the recent QE3 announcement in the US, indicating a rising backlash in Asia against the dollar as a settlement currency. Both governments are concerned that the increase in global liquidity (from the US, Japan, and the Eurozone through announced asset purchase plans) could cause rapid inflows of capital into emerging markets, pushing up prices. While calls for an Asian “regional currency” are premature, China continues to press the case for the yuan’s ascension to a global settlement currency.

**Effects of US Quantitative Easing on Select Inflation Rates**



business labor reform allows companies to offer part-time work, hourly wages and gives them the ability to engage in outsourcing. Mexico is also benefiting from manufacturing companies’ preference to move operations out of China. Chinese manufacturing wages have increased by over 2.5x during the past decade, causing corporations to move to more competitive countries, with Mexico near the top of that list. The country’s proximity to its largest trading partner, the US (accounts for 91% of exports) has been a further benefit as higher fuel and transportation costs factor more into the manufacturer outsourcing decision.

As signs of moderating growth in the BRIC nations emerge, investors are looking for other countries that will provide growth leadership. Colombia and Peru are being coined Latin America’s “New Tigers,” with both nations boasting a young population demographic, abundance of natural resources, and meaningful improvements in their political and economic climates. Columbia and Peru have youthful labor forces aged 28 and 26 years respectively, compared with the US at 37 years. The younger labor pools provide more work force options for businesses and a larger taxing population for governments. In addition, both countries are benefiting from high commodity prices, with Colombia’s robust crude oil sector and Peru’s active mining industry. The political climates have also created a tailwind for economic expansion. Juan Manuel Santos, inaugurated as President of Colombia in 2010, has reorganized the country’s governmental branches, mandated the redistribution of royalties from the country’s natural resources to citizens, and passed the historic Victims and Land Restitution Law, which provides monetary and land-based compensation to 4 million victims affected by the country’s ongoing civil conflict. In Peru, President Ollanta Humala has also demonstrated his commitment to economic growth, embracing foreign investment and relaxing regulations within its mining industry. Q2 annual GDP growth remains attractive, at 4.9% and 6.1% for Columbia and Peru respectively, as do the countries’ relatively low government debt to GDP levels of 34.7% and 21.6%.

## Focus On: *Capital-Labor Substitution and Fed Policy*

“The Committee is concerned that, without further policy accommodation, economic growth might not be strong enough to generate sustained improvement in labor market conditions.” After the poor jobs report on September 7<sup>th</sup>, the stage was set for the Federal Open Market Committee to announce a third round of quantitative easing, this time with no limitation on the program’s timeframe. \$40 billion per month in agency mortgage-backed security purchases would become the latest treatment for an ailing labor market. Investors applauded the effort, pushing major equity indices higher. The near-zero federal funds target rate was also extended, at least through mid-2015.

Half of the Fed’s mandate is to maintain “maximum employment,” and the tool at its disposal is monetary policy. In the short run, the strategy is simple – lower the cost of capital through interest rates, and all market participants (people, businesses, and governments) will borrow and spend more. This in turn leads to increased economic activity, which must in turn lead to increased employment to supply the demanded goods and services.

Often economic conditions will produce different results if they are maintained (or expected to be maintained) for long periods of time. That’s because some market adaptations to new conditions naturally require more time to be enacted. At

issue today is the *capital-labor substitution effect*. While low interest rates may create a tailwind for job-hungry workers in the short run, that may not be the case in the long run. At the very least, the effect carries with it complex and important social ramifications that tend to be lost in the race for short-term results.

### Substitute and Complementary Goods

What is the substitution effect? It's a relationship between prices and quantities demanded of related goods and services. When two different goods can be used to meet the same need, they are called "substitute goods." Economics predicts that a change in price for one good will have a parallel effect on the price and quantity demanded of the second good. More technically, we say the goods exhibit positive "cross elasticity" of demand.

For example, coffee and tea are substitute goods. To the extent people are indifferent to their taste and just want a caffeine buzz, either drink will meet the need. When the price of coffee increases, consumers will drink less coffee and demand more tea instead. This leads to an increase in the price of tea.

Similarly, oil and natural gas are substitute goods, since they can both be used to generate power. If the price of gas decreases, the market will use more natural gas and less oil. The predicted outcome is that less oil will be demanded, and the price of oil will fall.

In contrast, some goods exhibit the opposite effect. Complementary goods tend to be used together to meet a particular need more effectively. For example, tea and sugar are complimentary goods. An increase in the price of tea causes a drop in its consumption, which in turn will cause a drop in demand for sugar. Complimentary goods and services have a negative cross elasticity of demand. When goods A and B are complimentary, an increase in the price of good A will negatively affect the demand of good B, causing its price to decline. Oil and automobiles provide another example.

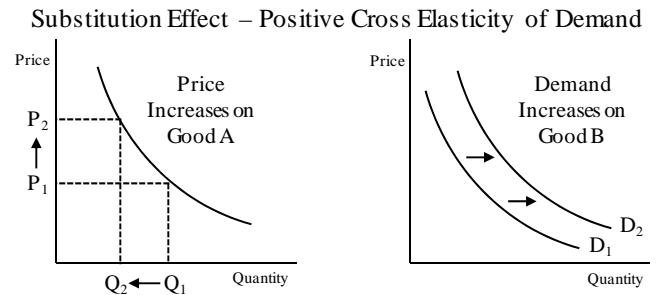
These are, of course, simple examples – but already one can see embedded complexities. For example, are oil and natural gas really substitutes? In the short run, it would not seem so; after all, you can't power most cars with natural gas, or power a gas furnace with oil, no matter what the price. Perhaps in the short run they are actually complementary; cheap gas leads to lower heating bills, freeing up household cash, allowing people to travel more, which causes an increase in oil consumption. However, in the long run markets will adapt. People will replace oil furnaces with gas furnaces and buy natural gas cars or electric cars that draw power from gas-fired powered plants. In the long run cross-elasticity changes, and commonly it increases. Market actors tend to value flexibility and treasure new technologies that use different inputs to drive down cost.

### Capital and Labor – Compliments or Substitutes?

As consumers engage in markets to buy goods and services, businesses engage in the "factor markets" for things needed to produce their goods and services. These inputs of land, labor, and capital also exhibit cross-elasticity. Long-term strategic decisions are analyzed and executed in order to maximize the financial standing of a company, and one of the most important choices a business will make is around staffing and operations. Both a strong, loyal workforce and modern production systems are critical to success. Companies engage in capital investments to enhance equipment, relocate operations, and increase worker efficiency. When interest rates are low, businesses can borrow more and increase capital investment.

Capital investment in a company's plant, equipment or technological systems is designed to allow workers to be more productive. But do capital investments lead to more employment? Yes, if labor and capital are complementary. For example, using capital to buy new and better welding torches may empower workers to produce more complex and better products, which the consumer market will demand. The entire "pie" may grow, requiring more workers even though each worker is more productive. On the other hand, if the pie doesn't grow, increased productivity results in companies doing more with less. More dramatically, buying computer-driven welding machines could displace a large number of workers quickly, resulting in a smaller workforce even if consumption of the end-product is growing. In these examples, labor and capital are substitutes.

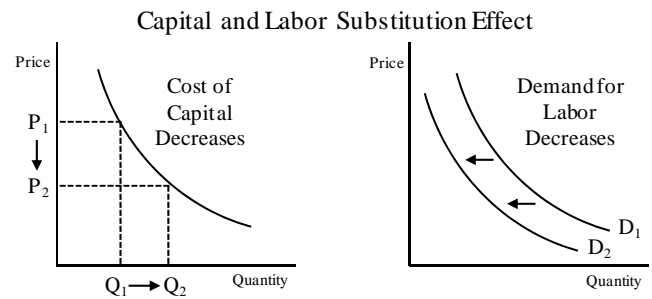
In a complex economy, we think capital and labor are simultaneously substitutes and complements. It largely varies by the level of maturity for a given industry or geographic region. By and large, we think capital and labor tend to be more complementary in less developed regions and industries; but gradually they become substitute factors. In developed sectors, most innovation that would lead to increased scale has already occurred, and the focus instead is on automation to improve efficiency. Conversely, the two are mainly complimentary in emerging markets. Technological advance through capital investment leads to a thriving manufacturing economy that offers more jobs to a dormant labor base.



As economies mature and cross-elasticity increases, one expects that increased capital investment would lead to (1) a decrease in the quantity demanded of labor, (2) a decrease in the price paid for labor, and (3) an increase in skill requirements for labor. Sound familiar?

Substitution of automation for manual labor is a common theme in the industrial sectors, but increasingly the "service economy" is affected as well. Consider the financial markets, where trading automation has reduced the need for market specialists and floor traders.

The floor of the NYSE, at one time bustling with activity, has now quieted to a trickle of daily orders still filled by human beings. You can observe the same phenomenon on the "trading deck" of any asset manager. There are fewer traders, but skill requirements have increased, as the largest institutions have scrambled to hire armies of PhD's in mathematics to develop more complex trading strategies.

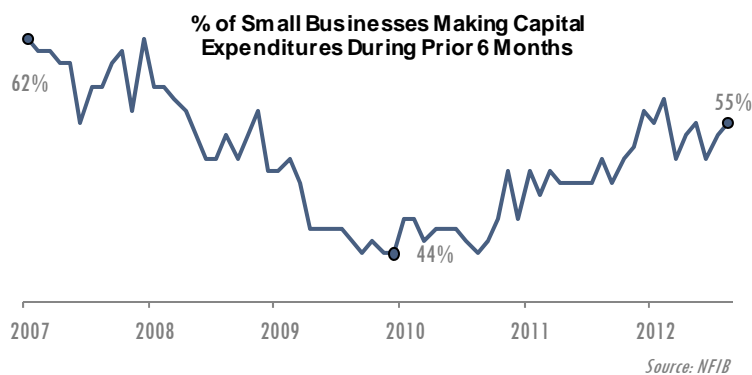


### The Capital/Labor Decision with Certainty of Prolonged Low Rates

Underlying Fed policy decisions is the assumption that low rates create a wealth effect. As the consumer spends more, businesses begin to hire to meet the increased demand in goods and services, thereby reducing the unemployment rate. The federal funds rate has been at the near-zero mark for an unprecedented period of time, since late 2008. Also never in its history has the Fed provided such openness and clarity in its policy response to boost economic activity. "If we do not see substantial improvement in the outlook for the labor market, we will continue the MBS purchase program (QE3), undertake additional asset purchases, and employ our policy tools as appropriate until we do," asserted Bernanke during his recent QE3 press conference.

We agree that low rates can have the desired stimulative effect – in the short run. Yet, prolonged low rates can be counterproductive to the Fed's goal of maximum employment. While the trend of capital expenditures leading to a lessening need for labor through technological advance is not new, a Fed guarantee of cheap money for the next 3 years makes business systems and machinery upgrade projects more enticing.

Generally, capital expenditures are funded with borrowed money and have hefty upfront costs that will be recouped over the new useable life of the equipment or project. Theoretically, an upgrade should have a margin of profitability beyond a project's cost of capital. In contrast, labor gets paid a continuous cash stream over time which must be financed from the company's ongoing revenue to be sustainable. Businesses agonize over capital investment decisions, because these decisions are very risky. Workforces can be expanded or reduced as market conditions change but expensive projects and facilities, once committed to, cannot easily be scaled back.



The certainty of prolonged low rates pushes the needle in the direction of businesses engaging in system advancements. In an environment of interest rate uncertainty, low-cost financing can quickly rise, changing the economics of a capital expenditure decision. With confidence that financing costs will remain attractive through an entire project cycle, more companies can initiate capital outlays.

As long-term rates are suppressed through programs like Operation Twist, businesses can finance longer-term projects with greater certainty. In its monthly survey which includes nearly 2,000 small businesses, the

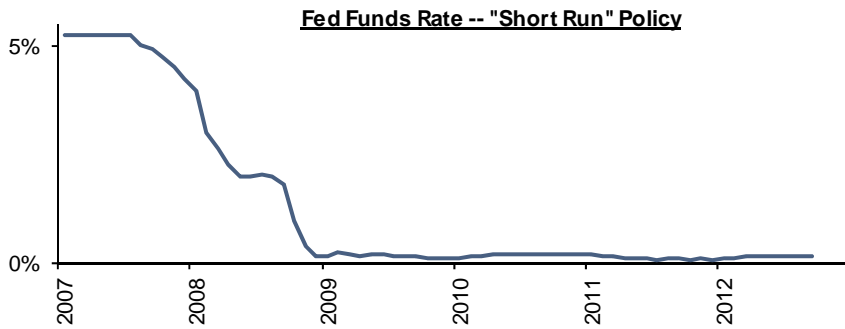
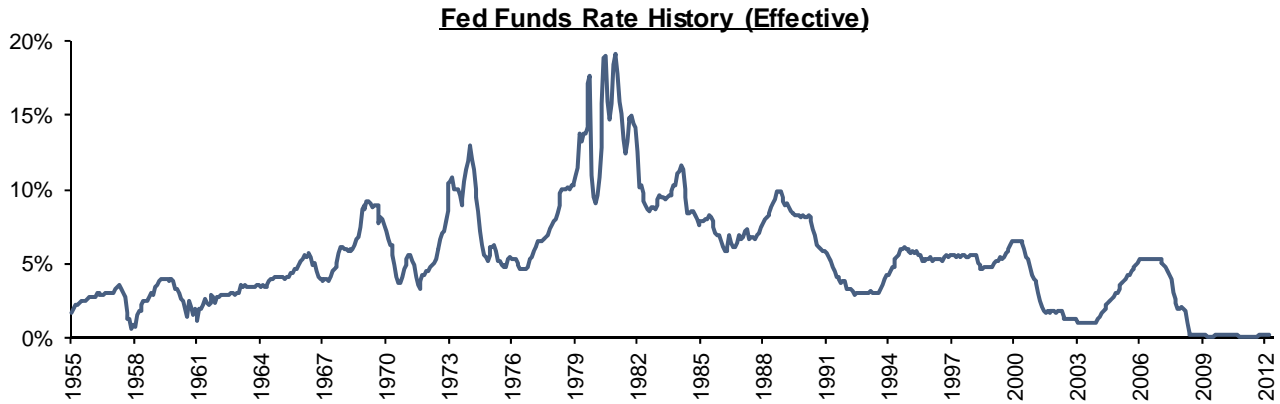
National Federation of Independent Business found more companies continue to make capital outlays since the lows of the financial crisis illustrated in the graph provided. Furthermore, the percent of small businesses making an equipment capital expenditure in August 2012 was 41%, up from previous levels of 36% one year prior and 29% two years back. Not all of these investments displace labor, but some do.

### Unintended Consequences

It is one thing when capital-labor substitution occurs naturally due to technological innovation and the action of free markets. We generally call this "progress," particularly if it occurs gradually enough that the labor base and related support systems have time to adapt. Even then there are winners and losers, and complex public policies arise to manage the outcome.

But what if the price of capital is artificially suppressed by a very powerful actor, like the Fed, with the laudable goal of stimulating employment? If you believe that capital and labor tend to be substitutes, at least in the United States, you had better hope the strategy works quickly; because eventually, the unintended consequence of capital-labor substitution may impede the strategy.

The problem with the short run is that it eventually becomes the long run. The current episode of rate suppression will soon mark its 4<sup>th</sup> birthday, with virtual certainty of 2 more to follow. It is reasonable to assume that major capital allocation decisions will be taken by businesses within a 6-year window. Further, the displacement of labor through capital substitution is a long-term effect, one that arrives when our support systems are already strained. Education is one of two major sectors which has experienced significant price inflation in recent decades (healthcare being the other), and entitlement programs are under fiscal pressure. Interest rates can be cut with the click of a mouse, but the problems of supporting and retraining displaced workers cannot be solved as quickly.



FOMC Participants' Interest Rate Projections

Fed Funds (basis points)	Year-End				Longer Run
	2012	2013	2014	2015	
401 - 500				1	9
301 - 400				3	9
201 - 300			2	2	1
101 - 200		1	4	3	
26 - 100	1	3	0	9	
0 - 25	18	15	13	1	