



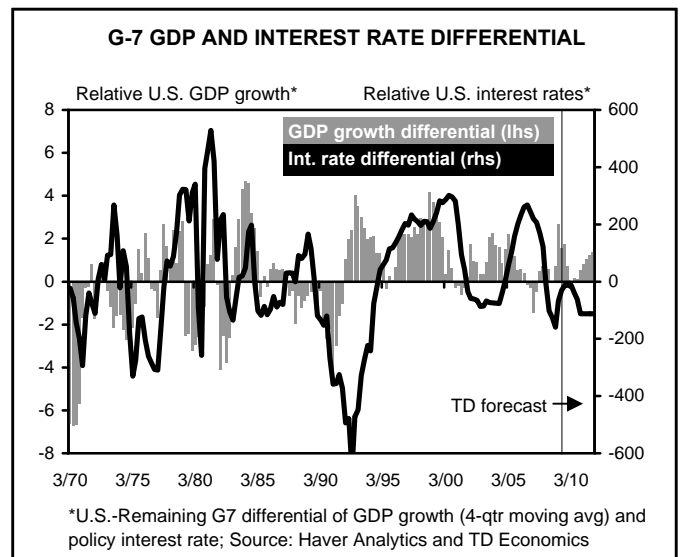
**HIGHLIGHTS**

- We used to see a regular trade-off in terms of which of the G-7 economies was leading the global economy.
- Since the early 1990s, though, all we have typically seen is the relative outperformance of the U.S. economy widen or narrow, but rarely has U.S. GDP growth lagged in absolute terms.
- The Federal Reserve has also tended to raise interest rates a year or more after the relative outperformance of U.S. GDP growth compared to the rest of the G-7 turns.
- This raises concerns that global imbalances and the need for a lingering Federal Reserve are hard-wired into the global economy.
- Expectations for business investment and consumer spending are also weak enough to suggest the Fed does not need to raise interest rates until 2011.
- Combining these analyses, it suggests the average G-7 central bank excluding the Fed will raise interest rates by a full percentage point in 2010, and only in 2011 will the Fed join in and raise interest rates at the same pace as these central banks through 2011.

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**IS THE GLOBAL ECONOMY HARD-WIRED FOR A LINGERING FED?**

Central banks do not act in a vacuum. With global trade and capital flows dependent on relative interest rates and economic performance, there is more than a little feedback around the global economy. Higher interest rates can drive capital inflows while at the same time shifting an economy's focus from imports to exports by slowing the pace of domestic economic growth relative to the rest of the world. In fact, looking at the relative performance of GDP and interest rates across the G-7 economies, what used to be a rather contemporaneous relationship – as U.S. economic growth increased relative to the rest of the G-7, so too did U.S. interest rates – has developed a noticeable lag. Since the late 1980s, we have consistently seen changes in U.S. short-term rates lag changes in the U.S. economy by one to two years. At the same time, other G-7 central banks' cycles have actually seemed more in tune



with contemporaneous changes in the U.S. economy. But given our weak profile for the recovery of hours worked in the U.S. economy, as well as the likelihood capital goods orders are going to remain quite weak, the Fed looks set to linger low for longer than just about every other major central bank.

**The Relative Shift**

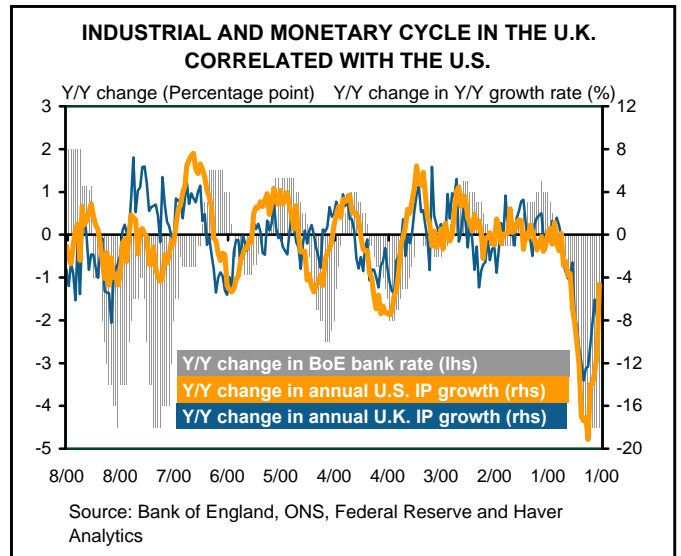
While there has always been plenty of discussion of various drivers of a central bank's decision to adjust interest rates to manage inflation, there has generally been much less attention on whether there are any larger global patterns in relative GDP growth rates and interest rate differentials. Looking at the chart here showing relative G-7 GDP growth rates (Q/Q annualized growth in the U.S. minus Q/Q annualized growth in the other G-7 economies – Canada, Japan, U.K., Germany, France, and Italy) and relative cash or effective policy rates (U.S. minus others), a few quick observations pop out.

Relative interest rates and GDP growth were generally much more volatile and oscillated between positive and negative much more in the pre-1990 period than they have since then. There was a regular tradeoff between the U.S. and the other G-7 economies in terms of who was leading the global economy. We also saw regular and more volatile changes in interest rates. But somewhere in

the late-1980s and early-1990s, we find a smoother pattern to the relative interest rate profile as inflation management becomes more perfected. We also find a protracted period in which U.S. GDP growth rarely lags the other G-7 economies.

The more actionable findings come when we look at the next chart which shows the 12-month change in the relative outperformance of U.S. GDP and U.S. interest rates against the remaining G-7 economies. Through about 1987, as the U.S. economy strengthened relative to its peers, its interest rate spread simultaneously moved higher (the black line below). The stronger economy made for more inflationary prospects down the road and interest rates rose almost immediately in response. Since about 1987, however, the relationship changed. There developed, and still appears to be, a noticeable lag of 12 to 18 months between when the U.S. relative GDP growth starts to improve compared to when relative U.S. interest rates improve (the orange line below).<sup>1</sup>

So the Federal Reserve has tended to raise interest rates a year or more after relative growth of the U.S. economy turns. It isn't that the Federal Reserve is targetting foreign or relative economic performance, but this has been the way it has shaken out. Combining this with our existing trackings and forecasts for these economies, we can establish a relative gauge for monetary tightness between the Fed and other G-7 central banks. It suggests the relative tightness of monetary policy will remain unchanged across the G-7 through the first quarter of 2010. At that point, we should see a net increase of 25bps in each of the second and third quarters of 2010 for non-Fed central banks, followed by a further 50bps increase in the final quarter of 2010. At that point, any relative tightening of the Fed should be matched by tightening across the rest of the G-7. Since this relation-

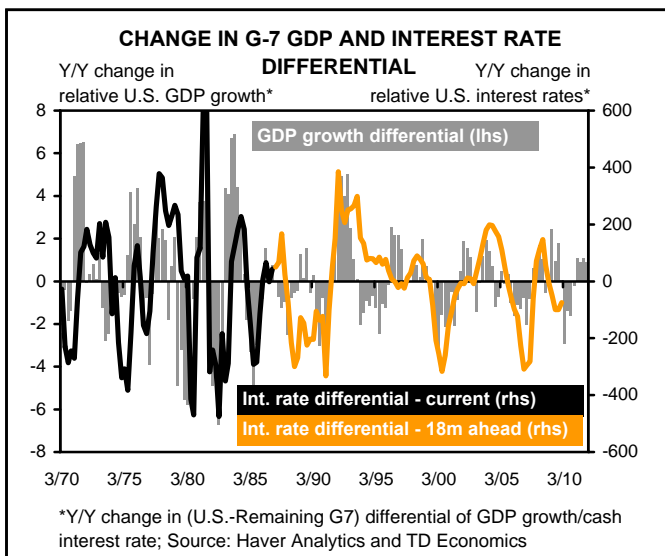


ship can only explain relative interest rates, it does not imply the Fed could not begin hiking rates in 2010 – although we still see little reason for the Fed to begin hiking interest rates before the first quarter of 2011 – but if the Fed were to hike sooner, this relationship implies U.S. interest rates will rise slower than in other G-7 economies. This relationship does match closely with our existing forecasts where we expect to see the Bank of England and European Central Bank begin hiking in mid-2010, with the Bank of Canada following suit at the end of 2010, with the Fed following up in early 2011. The odd man out is likely to be the Bank of Japan, which is not likely to raise rates until late 2011 or even 2012.

**Global Imbalances Make the World Go Round**

There are a number of candidates to explain this break in the relationship in the late-80s/early-90s. Central banks one by one began to get inflation under control. The Plaza Accords signed in 1985 led to the depreciation of the U.S. dollar and was followed by the collapse of the Japanese economy. The U.S. began a protracted period of a large and growing current account deficit. But the last few can be lumped together as related to the issue of global imbalances and are generally consistent with the data. The world is more dependent on U.S. demand to drive their own growth, and thereby their interest rates, while the U.S. has become more dependent on foreign growth, so rates only rise later in the cycle. We can look to the U.K., where the change in interest rates has historically followed the US industrial production cycle quite well.

While we're concerned here with the phenomenon itself and its implications for when the Fed, European Central Bank, Bank of England, Bank of Japan, and Bank of Canada might start to raise interest rates, it raises some interest-



ing food for thought. It's difficult to say the Fed has been consistently late to raise interest rates since the 1990s, as inflation has averaged just 2.4% since 1992. But, are global imbalances being reinforced through relative interest rates and GDP growth? Do strong U.S. GDP growth rates coincident with lower U.S. interest rates lead to excess liquidity in the global system? If foreign economies are forced to consistently raise interest rates and slow their economies before the U.S., doesn't that inhibit U.S. attempts to grow their exports and reduce their dependence on domestic consumption? And doesn't that, in turn, force the U.S. dollar to depreciate more than it would otherwise to try to bring balance through relative prices instead?

Definitive answers to these questions are hard to come by, and beyond the narrow scope here, but it is important to think briefly whether there is any chance we might be living through a structural change in this regime. This seems doubtful. While the US consumer is weaker than before, and the US current account deficit is smaller than before, global economic dependence does not change that quickly. There is also no sense that the finance relationships have changed much – rates are rising outside the US and will likely rise in Europe and Canada before they do in the US. So this “business as usual” relationship does imply the Fed is likely to be slower to raise interest rates than most other major central banks.

**An Alternative Model for Fed Rate Changes**

But we can say more than just that the global economy appears to be hard-wired for a lingering Fed. We can provide some benchmarks for where some indicators need to be before the Fed would typically feel comfortable raising

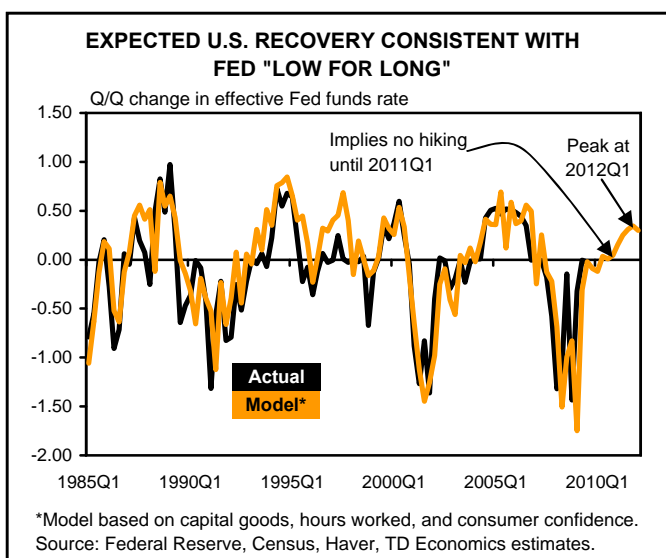
MARKET DATA CONSISTENT WITH TD ECONOMICS FORECASTS*						
	Capital Goods New Orders <sup>^</sup>		Univ. of Mich. Con. Expect. Index (NSA)		Agg. Wkly Hrs: Total Private Index (SA)	
	Bill 1982\$		Index (NSA)		Index (SA)	
	Value	Q/Q %	Value	Q/Q %	Value	Q/Q %
<b>3/09</b>	95.5	-15.9	53.9	-1.9	101.7	-2.3
<b>6/09</b>	98.5	3.1	67.2	24.7	99.7	-2.0
<b>9/09</b>	103.4	4.9	67.2	0.0	98.9	-0.8
<b>12/09</b>	102.2	-1.1	70.3	4.5	98.9	0.0
<b>3/10</b>	101.4	-0.7	74.5	6.0	98.9	0.0
<b>6/10</b>	101.1	-0.4	79.5	6.7	99.0	0.1
<b>9/10</b>	100.8	-0.2	81.4	2.4	99.2	0.2
<b>12/10</b>	101.3	0.4	81.8	0.5	99.5	0.2
<b>3/11</b>	<b>103.0</b>	<b>1.7</b>	<b>82.4</b>	<b>0.7</b>	<b>99.8</b>	<b>0.3</b>
<b>6/11</b>	106.2	3.1	82.9	0.6	100.2	0.4
<b>9/11</b>	110.4	3.9	83.3	0.5	100.7	0.5
<b>12/11</b>	115.0	4.1	83.9	0.7	101.3	0.6
<b>3/12</b>	118.6	3.2	84.2	0.4	101.9	0.6

\*Market indicators forecast based on TD Economics economic forecasts as of September 2009. Highlighted row is when the data would be consistent with a Fed hike in interest rates.  
<sup>^</sup>Nondefense orders  
 Source: TD Economics

interest rates. Whether geared towards domestic or foreign production, U.S. business activity in the form of employment or investment offers signals as to the relative strength of the economy and the appropriate level of interest rates.

The model shown here exploits the close relationship between changes in the Fed funds rate and changes in three economic indicators – capital goods orders, Michigan survey of consumer expectations, and the aggregate index of weekly private sector hours. The table shows a quarterly forecast for each of these indicators that would be consistent with our existing quarterly economic forecasts updated in September 2009. Given the compound uncertainty around some of these point estimates, we would use this model as a relative indicator of the direction of monetary policy, rather than a precise forecast for the level of interest rates 18 months in the future.

With this in mind, the model suggests the Fed will switch to a tightening bias in the first quarter of 2011 – precisely our current expectation for the Fed. The fact that the model and our existing expectation for the Fed are aligned is a sign our forecasts are internally consistent, rather than objective evidence supporting our current expectation for the Fed. It does, however, further demonstrate just how weak we expect the U.S. recovery to be over the next year. It also





provides a useful benchmark as these monthly indicators are released for us to check against our economic forecasts and the likelihood for the Fed hike coming sooner or later than we currently expect.

The most important indicator in the model is capital goods, followed by the index of hours worked by the private sector and finally consumer expectations. Our diminished expectations for overall business investment – with ongoing contractions in commercial real estate and weak investment in machinery and equipment – drive the weak capital goods orders. After the initial rebound in the second and third quarters of 2009, we expect businesses will still be paring back investment for more than a year given the existing capacity they have sitting idle already due to weaker demand, as well as lingering issues with securing financing. Given the dramatic cuts in jobs seen during this recession, we do think employers will start to increase employment and hours worked early in 2010. But only when businesses are investing in both workers and machines, which will depend on further improvements in consumer confidence and spending, will the Fed be in a position to raise interest rates.

### **The Road to Recovery**

So you can look at global linkages that imply collectively that the ECB, BoE, BoJ and BoC are all likely to hike interest rates before the Federal Reserve, as early as the second quarter of 2010.<sup>2</sup> Or, we can look at our existing economic forecasts and see that given the outturns they imply for several crucial market indicators, it is likely the Fed will be on hold for quite some time. The concern of markets and several Fed Governors over the size of the Fed's balance sheet and the inflation risks it may pose certainly increase the uncertainty in this cycle, but we think these worries will dissipate over time. The initial spurt of growth we are seeing in the global economy is likely to dissipate over the next several months, so with the global economy looking like it is hard-wired for a lingering Fed, the evidence suggests it will not be disappointed.

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### **END NOTES**

<sup>1</sup> This break in the perceived causality is also noticeable statistically through granger causality tests.

<sup>2</sup> Individually, we do see the ECB and BoE raising interest rates in the middle of 2010, while we think the BoC will begin in the fourth quarter of 2010 and the BoJ will actually be the one bank here to hike well after the Federal Reserve.