The BOECKH INVESTMENT LETTER
SPECIAL REPORT
FEBRUARY 23, 2012

Tight Oil & Gas and the Death of Peak Energy

Fracking and horizontal drilling have unlocked access to vast reserves of gas, oil and associated liquids, most notably in North America. This could represent a sudden and profound transformation of energy markets, the implications of which are only beginning to be understood. There are three primary issues:

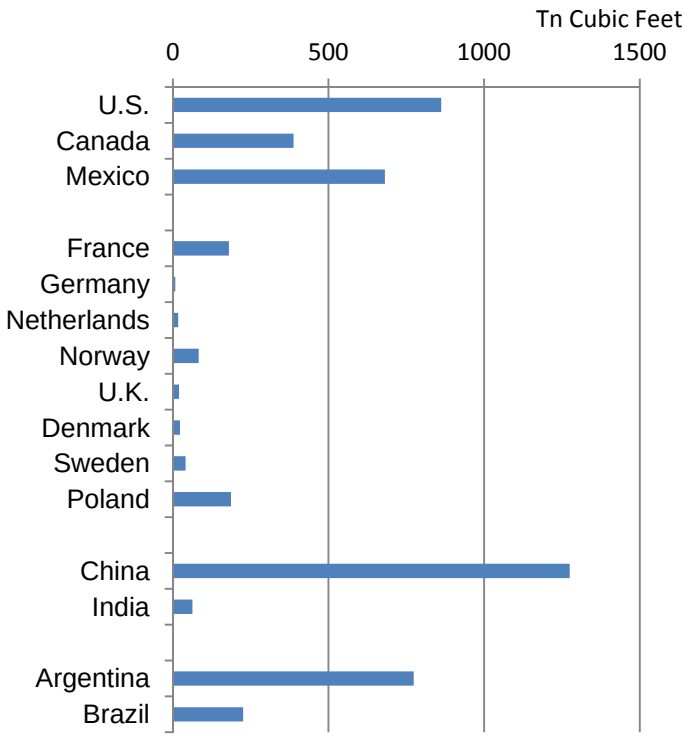
1. The potential recoverable reserves in shale and other tight reservoirs (below, collectively called shale) are massive.
2. The global distribution of energy for have and have-not countries is changing rapidly.
3. The cost base and drilling cycle for shale energy is significantly different than for traditional projects, creating new winners and losers within the industry.

Chart 1 shows the global distribution of unconventional gas resources. There is some controversy over the accuracy of estimates, as variable geology and depletion rates make the calculation of resources more imprecise than for traditional assets. Furthermore, various countries are at differing stages of exploration and development. The U.S. and Canada are particularly well endowed with proven, economic reserves, while most other countries' shale resources are unproven and must be considered speculative.

China has substantial shale deposits; however, they are deeper and the geology is particularly tricky. At the very least, it will take 10 to 20 years before this resource can be tapped, and some analysts question whether it will ever be.

Chart 1

Shale Gas Potential Resources



Source: IEA 2012

Europe has potential shale gas resources of about 580 trillion cf (about ¼ of North American reserves). Initial evaluation of these reservoirs, primarily in Poland, is underway, but the European rig count is 110 compared to 2,700 in North America. France, which holds the second most significant shale resources in Europe, has banned the use of fracking even in exploratory wells. It will take many years to ramp up production and ultimately Europe's shale resources will not be sufficient to overcome the depletion of conventional gas supplies. Europe is forecast to become increasingly dependent on imports.

So far, shale energy is really a North American story. Even using conservative estimates, the U.S. is likely to become a natural gas net exporter by 2021 and will reduce crude imports by 40% to 50% by 2020.[1] North American shale energy producers have developed a huge lead over all other nations:

[1] IEA. (2012) *Annual Energy Outlook 2012 Early Release*. Retrieved from http://205.254.135.7/forecasts/aeo/er/pdf/0383er(2012).pdf

- Infrastructure: Canada and the U.S. have more than double the rest of the world's rig count,[2] as well as the supply chain to support complex fracturing operations, and a well-established pipeline network capable of bringing new supplies into the grid with relative ease.
- Technology: Leading drilling companies are based in North America and have gained critical knowledge of local geology. This took many years to achieve and replicating drilling success in new areas is not a simple matter.
- The regulatory environment is highly supportive of exploration and development, in contrast to Europe where population is much denser and people are much more environmentally conscious. Other potentially significant producers of unconventional resources, including Russia, Venezuela and Argentina, have created an unfavourable investment climate.
- Environmental concerns regarding fracking wastewater and chemicals are an issue, particularly in Europe, but these concerns seem manageable and are unlikely to derail the trend in production in North America.

These factors indicate that the North American energy advantage will be durable, as few other areas have the geological potential, technology and regulatory/investment climate to catch up in the next several years.

Durable Spreads

The spread between North American natural gas and crude prices, compared to the rest of the world, have widened dramatically over the past year. Chart 2 shows the spreads between natural gas prices at Henry Hub and the port of Zeebrugge in Belgium; Asian prices are currently similar to those in Europe. Chart 3 shows the spread between WTI and Brent crude prices.

[2] *WTRG Economics*. www.wrtg.com

A warm winter so far in North America is partly to blame for weak gas prices. North American producers are shifting drilling activities to liquids rich opportunities, resulting in crude and liquids production effectively subsidizing gas. The effect is that gas supply may remain in surplus despite weak prices. A lack of export opportunities will ensure that gas prices will remain substantially cheaper in North America than Europe and Asia, and that the spread will persist for many years.

Chart 2

Natural Gas Prices: Europe and U.S.

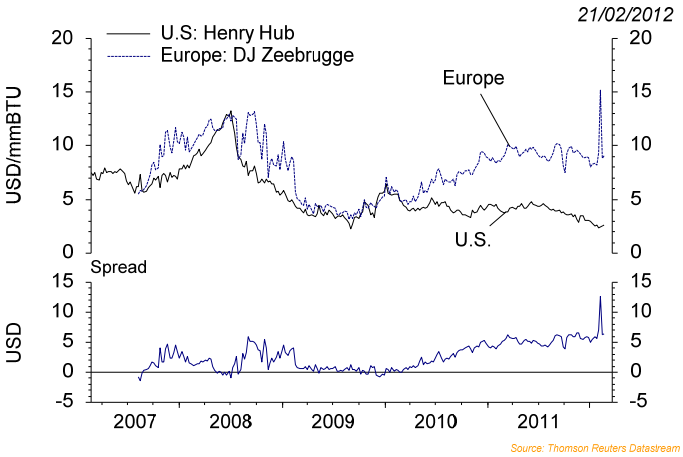
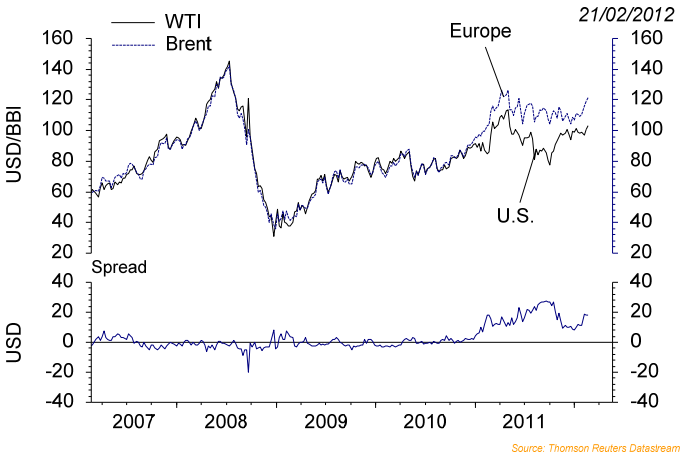


Chart 3

Crude Oil Prices: Europe and U.S.



Oil spreads have reached a record too, although they have come down somewhat since the announcement of plans to reverse the Seaway pipeline which runs from Cushing, Oklahoma to the gulf coast. Despite, rapidly increasing domestic production, the U.S. will remain a net crude importer in the foreseeable future. New unconventional crude supplies in the U.S. will offset declining domestic production from conventional sources, reducing but not eliminating imports. Global transport of crude supplies is much easier than for LNG, with the implication that U.S. crude prices will continue to be heavily influenced by global supply and demand. Spreads are likely to persist, but should converge to within $5 to $10 per barrel, a reflection of transport costs. This will certainly have important impacts on the U.S. balance of payments and energy security, but will not lead to the kind of transformative impact that we will see in natural gas markets.

Investment Themes for Shale Energy

Theme #1: M& A Activity

Don't bet on price increases to drive stock performance. Rather, look for smaller companies capable of growing reserves. A wave of consolidations and asset sales are likely to pick up steam this year. As one example, URS Corp. acquired TSX listed Flint Energy this past week at close to a 70% premium. E&P majors looking to invest in capital-intensive LNG terminals (the proposed Kitimat terminal is projected to cost over US$5bn), will be keen to lock up ample supply. For example, natural gas assets in BC and Aberta will be attractive targets, and bidding could be fairly generous given the $7 to $10 recent spread between N.A. and Asian gas prices.

Theme #2: Oilfield Services

Oilfield services are likely to be winners. However, the rig count has grown fast over past few years, and future growth will likely be more modest. Faster depletion rates for shale wells (around 32% vs. 21% per annum for conventional wells) requires higher levels of ongoing investment to maintain production. This translates into a bigger piece of the pie for oilfield services.

Theme #3: Infrastructure

Infrastructure plays are going to be big winners. Pipelines & terminal builders and operators offer attractive yields, a stable business model and good growth opportunities in the coming years.

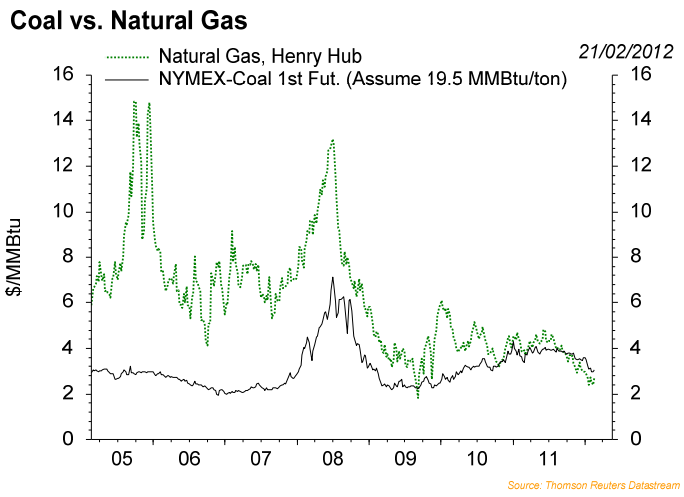
Theme #4: Refiners

North American refiners should benefit over the next few years, as a result of reduced input costs and opportunities for export of finished products to Europe and Africa.

Theme #5: Weaker Coal Demand in N.A.

Coal will suffer, but excess capacity may be soaked up by Asian demand. The convergence of coal and gas prices in North America (Chart 4) has created a powerful incentive for utilities to shift over to cleaner burning gas, and we are seeing a fairly rapid substitution taking place.

Chart 4



Theme#6: Tough Competition for Renewable

Unfortunately, renewables and nuclear are in a tough spot: cheap gas in N.A. and the prospect for unconventional gas in other areas will undermine their competitiveness. Increasingly, renewables will be dependent on regulatory assistance to spur demand, as price alone won't do it. Gas has long been heralded as the cleaner burning, less carbon intensive option to coal. It will be interesting to see the policy response as gas supply increases and the absolute level of consumption may turn out to be so large that it becomes a major source of carbon emissions. Rather than a bridge to the future, shale may end up being an end in itself.

Theme #7: Strong U.S. Economy, Strong Dollar

The U.S current account balance is in deficit largely due to crude oil imports (Chart 5). If imports were halved as forecast in 10 years, the current account would be balanced. Persistent spreads in both gas and oil will boost U.S. competitiveness (particularly in manufacturing), adding support to our long-standing recommendation to overweight U.S. equities. The U.S. dollar is likely to begin recovering from its long slide, which began in 2002 (Chart 6).

Chart 5

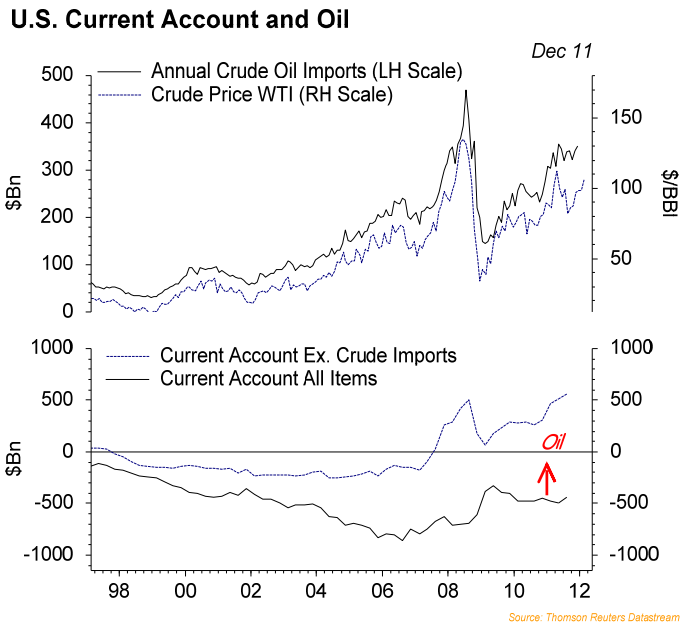
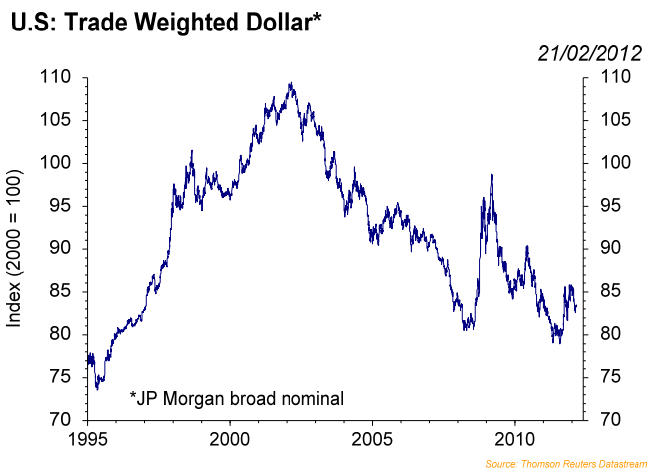


Chart 6



Investment Conclusions

The impact of unconventional energy will be massive. Uneven distribution of reserves, technology and regulatory support will rapidly shift the landscape of energy-rich and -poor countries. The U.S. will be the major beneficiary. Endowed with plentiful cheap energy, a manufacturing resurgence is likely and a balanced current account will help strengthen the dollar and facilitate the coming fiscal consolidation.

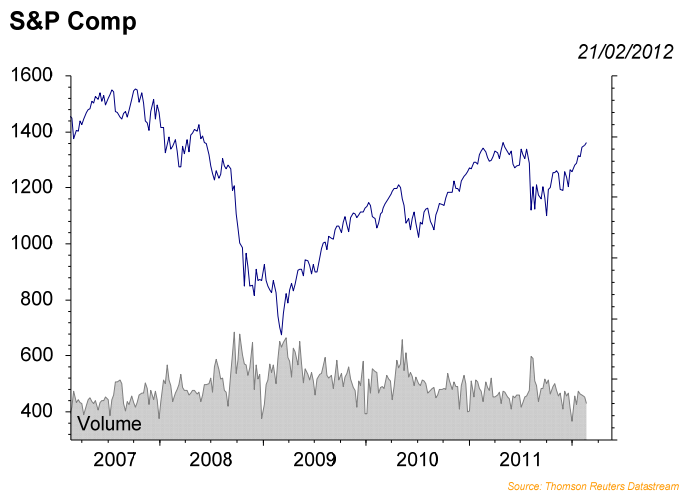
A "word of caution" on the euro credit problems…

From a general perspective, we remain unconvinced by the Greek bailout. It is just a palliative, buying some time before the next phase of the crisis. As the *Economist* recently put it, the eurozone crisis has moved from an acute to a chronic phase. The odds of a broad financial crisis are waning for now, but weak growth and persistent unemployment are likely to have political consequences. The

dynamics of the sovereign debt markets can be kept in check for a long time through a steady German diet of austerity and back-door liquidity provisions. A multi-year recession is in the cards, and few non-Germans have the stomach for it. Political consequences are likely and unpredictable.

The global stockmarket rally that began in March 2009 is into its third major up-leg, and volume is getting progressively weaker (Chart 7). Our sense is that investors should remain cautious and take money off the table over the coming months. We are due to publish our quarterly asset allocation report in March, and we expect to reduce our recommended equity allocation at that point.

Chart 7



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Tony Boeckh / Rob Boeckh

www.BoeckhInvestmentLetter.com

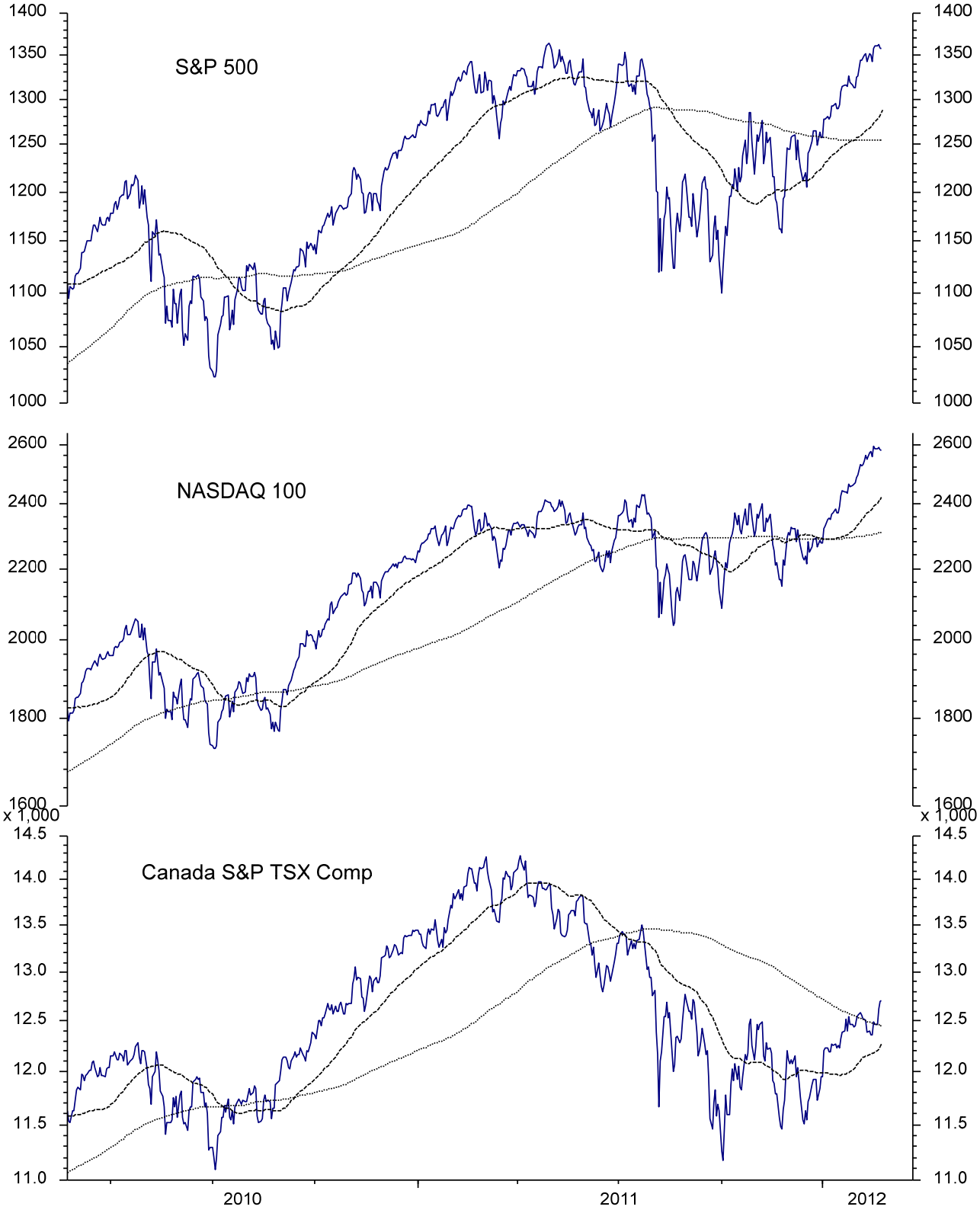
info@bccl.ca

Appendix Charts

Equities

Latest: 22/02/2012

50 & 200D M.A.

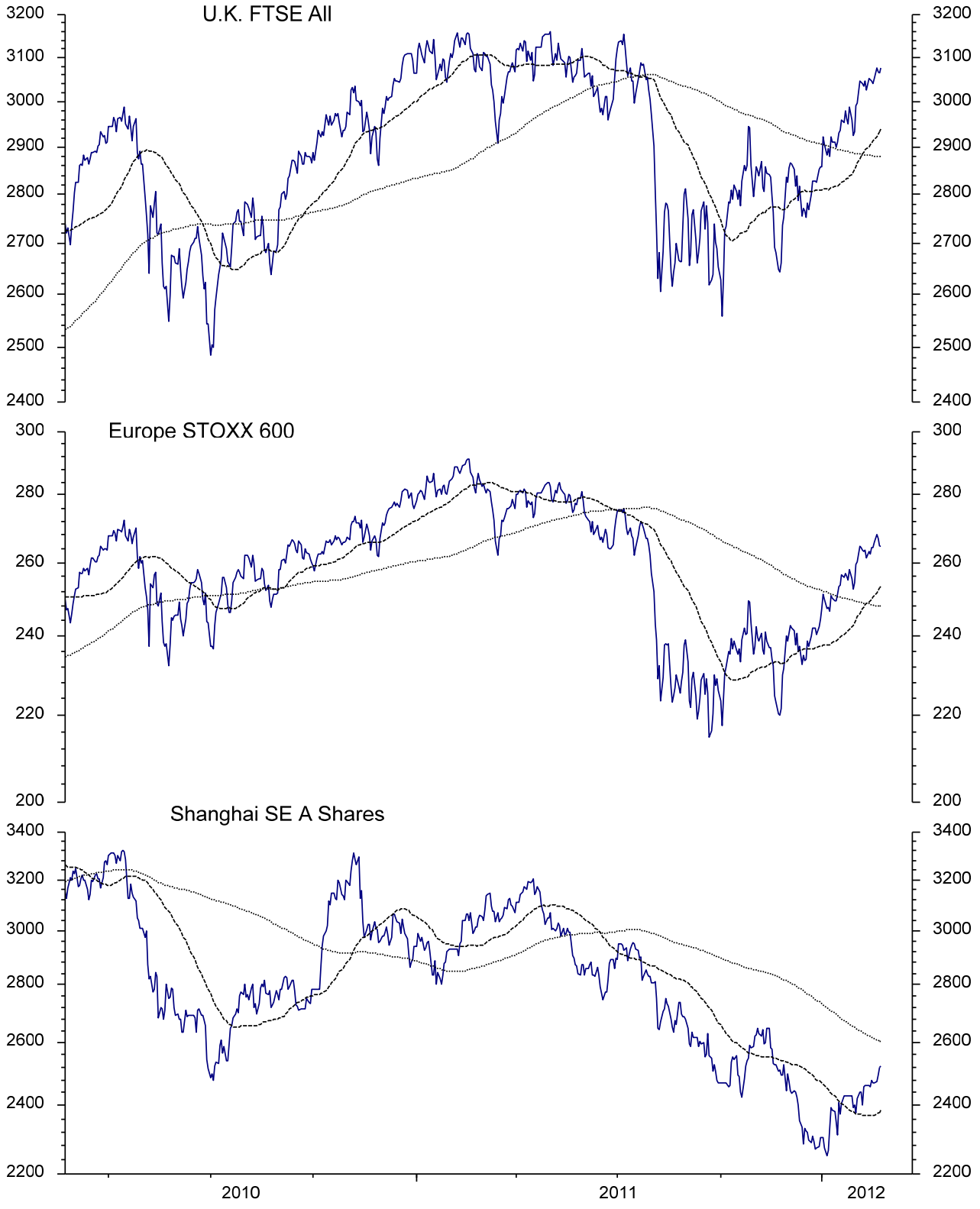


Source: Thomson Reuters Datastream

Equities

50 & 200D M.A.

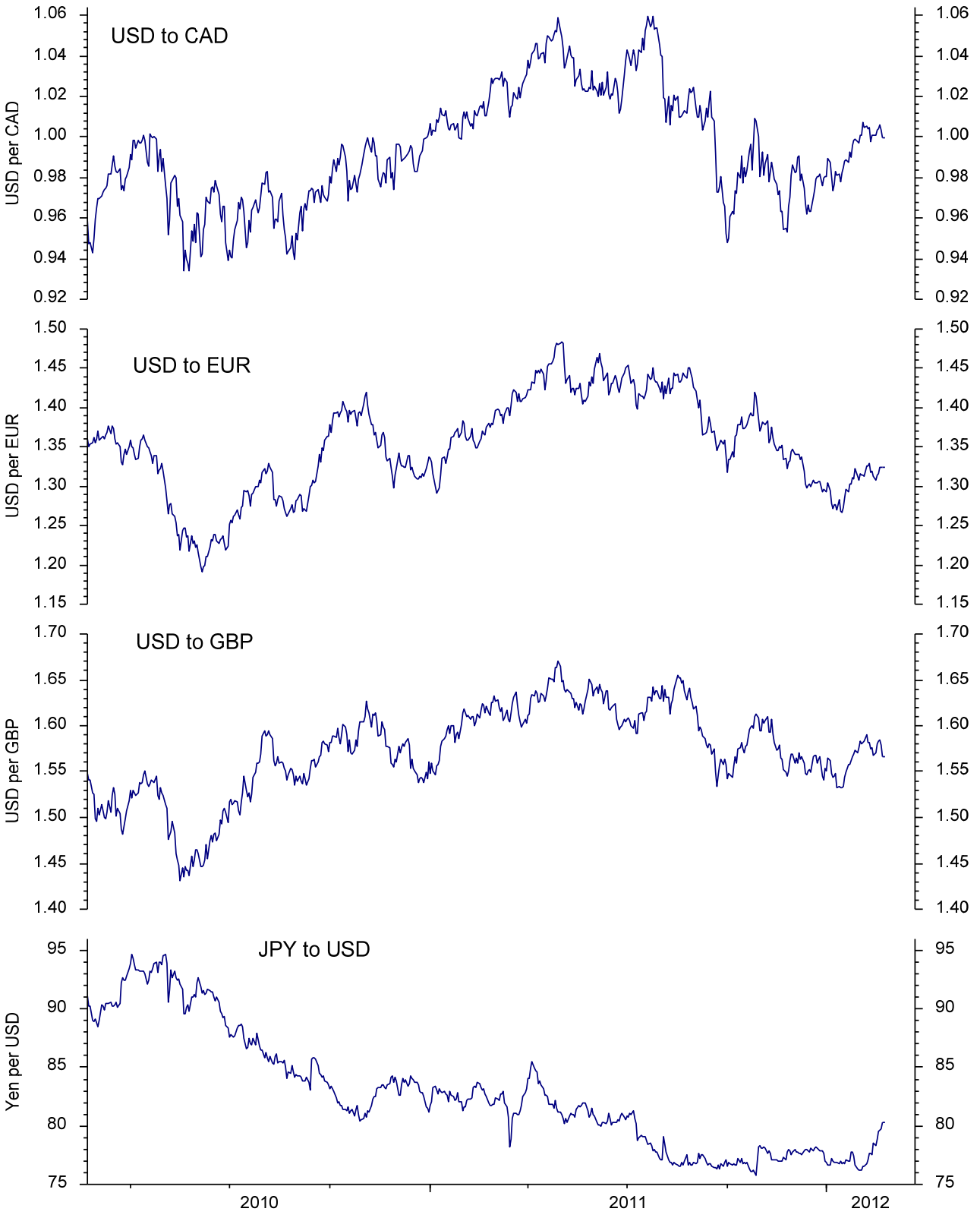
Latest: 22/02/2012



Source: Thomson Reuters Datastream

Exchange Rates

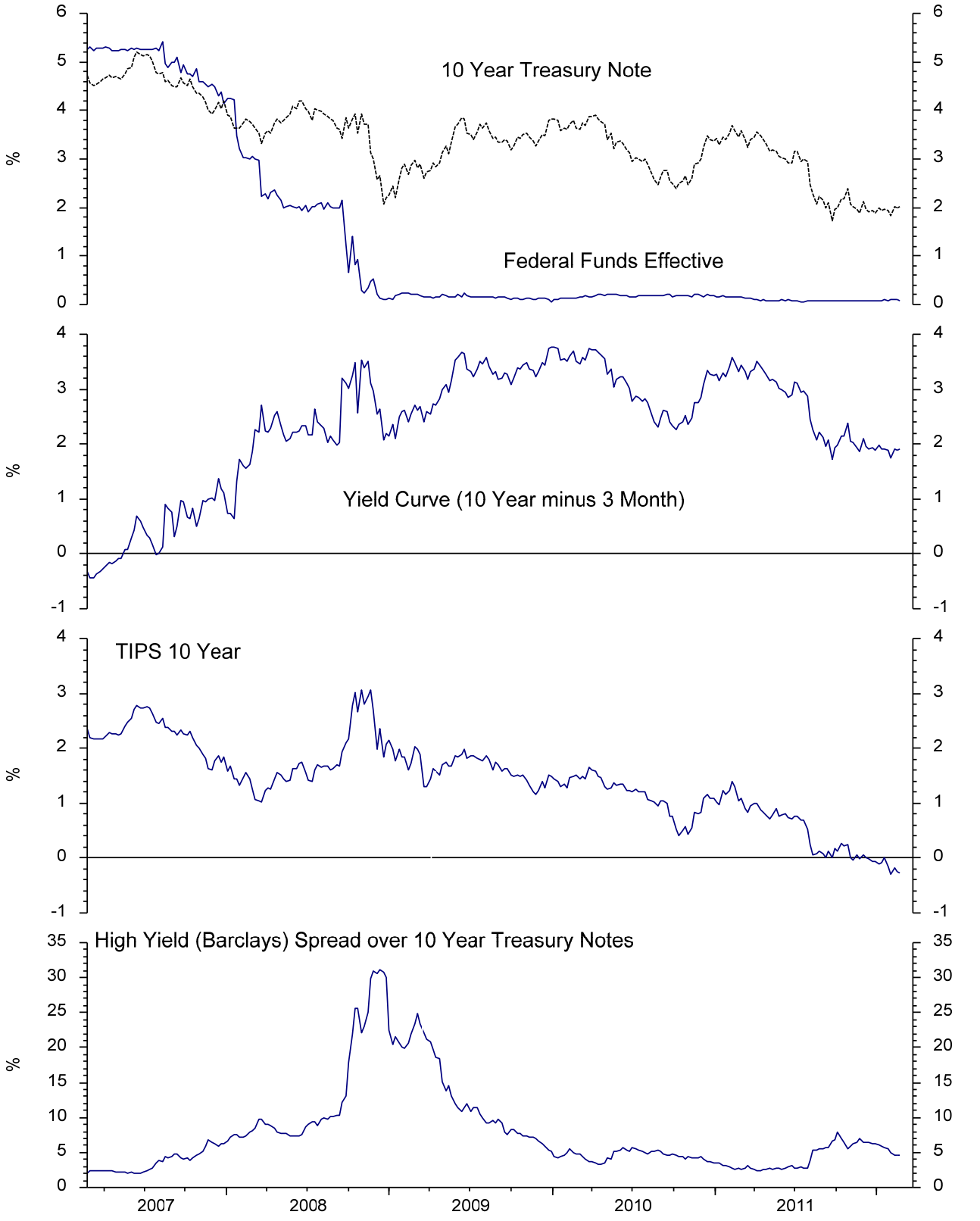
Latest: 22/02/2012



Source: Thomson Reuters Datastream

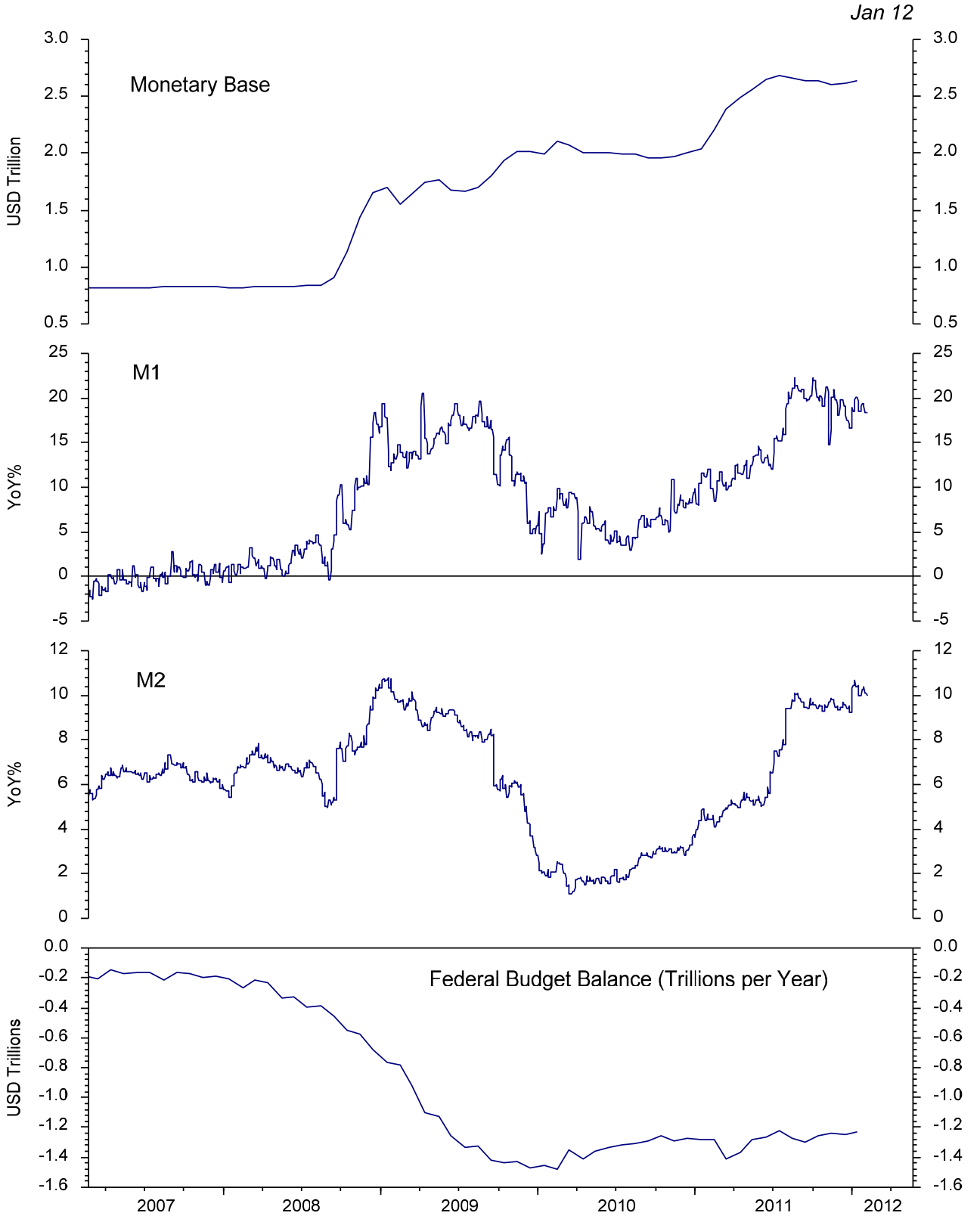
U.S. Interest Rates

Latest: 22/02/2012



Source: Thomson Reuters Datastream

U.S. Money Supply



Source: Thomson Reuters Datastream