

Mitchell's Musings 11-21-11: Lessons from the Grid

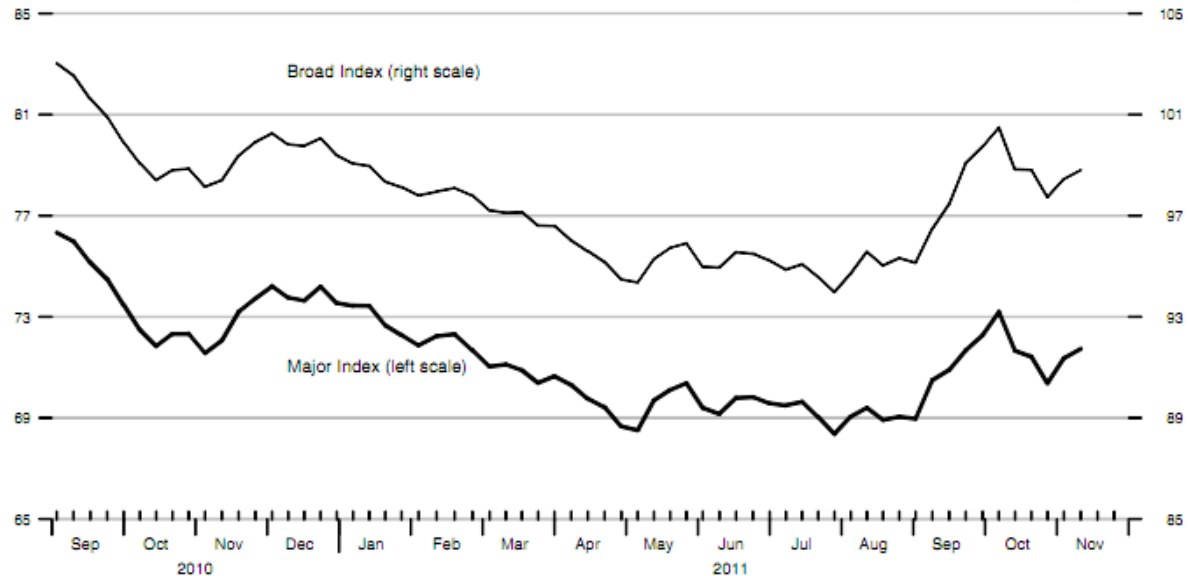
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Trade-Weighted Exchange Rate Indexes

Averages of Daily Figures

March 1973=100

January 1987=100



As the chart above reminds us, international financial markets – even in the absence of an immediate crisis – can be erratic. Within the timeframe shown on the chart, the dollar first dropped about 10% relative to other currencies, then suddenly rose about 8% starting last summer, and has moved up and down since. Concerns about how the EU was handling its euro/sovereign debt problem seemed to play a major role in the recent gyrations.

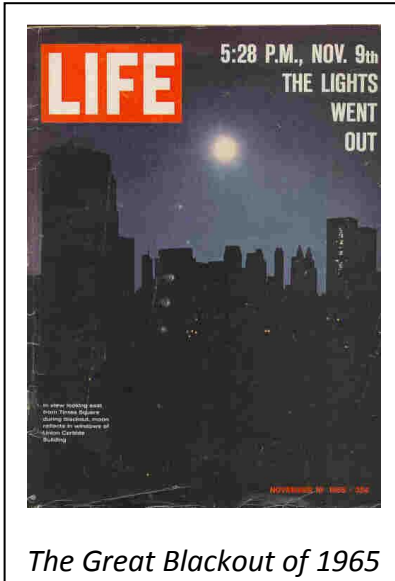
The euro problem, however, threatens an even more dramatic adjustment than just a volatile exchange rate. Failure of major European financial institutions - if the euro/sovereign debt issue is not resolved - could have important and adverse consequences for the sluggish U.S. recovery. Indeed, such a development could bring about an otherwise unlikely double-dip recession in the U.S.

One response to such a prospect is the oft-heard phrase, “we live in a global economy.” That phrase typically is invoked to indicate that the impact of external developments on the American economy are like the weather, i.e., they are unavoidable. But is that viewpoint really valid?

I was a graduate student at MIT on November 9, 1965, about to leave the campus in the late afternoon, when suddenly the lights went out. In fact, they went out all over the Northeast and parts of Canada. It took a long time to get the lights back on. You need electricity to start a generator so it is hard to restart an entire system. For those unfamiliar with the event, go to <http://www.youtube.com/watch?v=cdF-CsxqDko> for a TV news report, in part illuminated by candlelight, on the great blackout.

The 1965 power failure was the first really large-scale regional electricity blackout. At one time, individual cities and areas had self-contained electrical systems. Each was isolated from the other so that each had to have substantial back-up capacity to deal with peak loads and possible failures of individual pieces of equipment. Linking the various systems together provided potential savings and efficiencies. In the event one area had a power deficit, surplus power from elsewhere could take up the slack. In addition, a large grid allowed trade in electricity. So, for example, areas of Canada with significant hydroelectric resources could export electricity to the U.S. The grid opened up exports and imports of power.

As it turned out, however, there was an unforeseen downside to the grid, well illustrated by the major failure of 1965. A disturbance anywhere in the system could cascade, affecting a vast area and millions of people. In the case of the 1965 blackout, the initiating problem arose in Canada. The grid turned what could have been a local malfunction into a regional failure.¹



The Great Blackout of 1965

¹ Various explanations of the triggering event in Canada and how it cascaded throughout the region are available on the web. See, for example, http://www.semp.us/publications/biot_reader.php?BiotID=387.

How does this tale of a huge power failure relate to the euro/sovereign debt problem and – more generally – U.S. international economic policy in the aftermath of the Great Recession? In an international economics course I used to teach, I would point to the 1965 power grid experience while examining the pros and cons of fixed exchange rates vs. flexible. Fixed exchange rates facilitate trade and investment by making prices more certain over extended periods of time and by reducing exchange rate risk and cost. They help tie national economies together. But they also efficiently transmit disturbances – such as inflation or recession – from one country to another. Flexible exchange rates tend to isolate such disturbances precisely because countries are not so efficiently linked together.

Electricity Grids and Fixed Exchange Rates

LIFE
THE BIG CITY LIVED BY THE LIGHT OF THE MOON

**Northeast blackout:
Nov. 9,
1965**

In any system in which segments are tightly tied together, a disturbance in one segment is quickly transmitted to the other segments.

Slide from International Econ Course

The lesson of the 1965 great blackout for operators of power systems was that efficiencies of interregional power transmission had to be balanced against preserving electricity supply locally. If there is a disturbance externally, local areas needed to be able to unlink from the grid. They needed to be able to isolate themselves from the source of the disturbance.

As noted at the outset, right now the U.S. is threatened with a disturbance from abroad, i.e., from the euro area. Even apart from the issue of Greek debt and contagion to the debt of other European countries, the powers-that-be in Europe seem to have opted for austerity, worsening the demand for U.S. exports. We have a flexible exchange rate with the euro zone which might have softened the impact of that perverse European policy. But the Greek debt problem has caused the dollar to appreciate as speculators worry about European inaction. In addition, China continues its dysfunctional undervalued exchange rate against the dollar, also draining

demand from the U.S., particularly in the manufacturing sector. Effectively, China maintains a quasi-fixed exchange rate against the dollar.

When there is a disturbance on the electrical grid, we now have systems in place that unlink and isolate the disturbances to the locale causing them. In 1994, for example, the large earthquake in Los Angeles early in the morning of January 17 caused lights to blink in Seattle as local LA-area power sources failed. But the system quickly cut LA loose from the grid, isolating the problem before it could spread. In contrast, when it comes to the international economic network, policy makers in the U.S. seem to insist on an economic version of a pre-1965 grid. The mantra, “we live in a global economy,” is taken to mean that unlinking is impossible, even when the link poses a threat to – or at least a drain on – recovery from the Great Recession.

It would be nice if all countries would cooperate in promoting recovery. But, as noted, Europe seems intent on a policy of austerity whose growth-retarding effect is felt elsewhere, including in the U.S. with its high unemployment rate. China, for internal reasons, regards its exchange rate against the dollar as its own domestic affair – as if two currencies and countries were not involved. Japan has had a long history of China-type policies.

In periods of prosperity, perhaps such external behaviors could be overlooked. But not now. In the international econ course mentioned earlier, I would start on the first day by asking students to raise their hands if they believed in free trade. All hands would go up. Then I would ask how one could “believe” in something on the first day of a course in which no analysis of the topic had yet been provided. Faith-based economics – including international economics - makes for poor policy.