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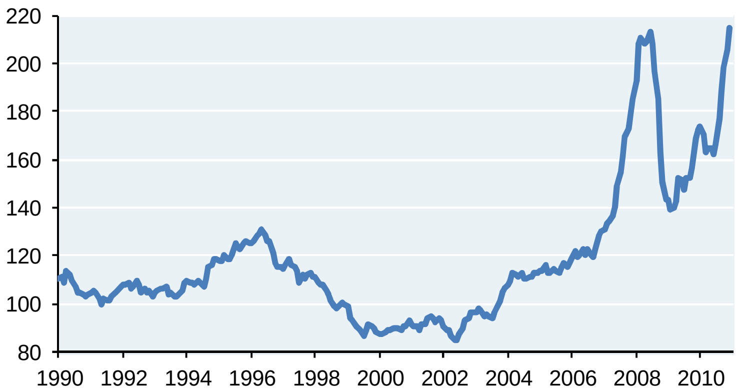
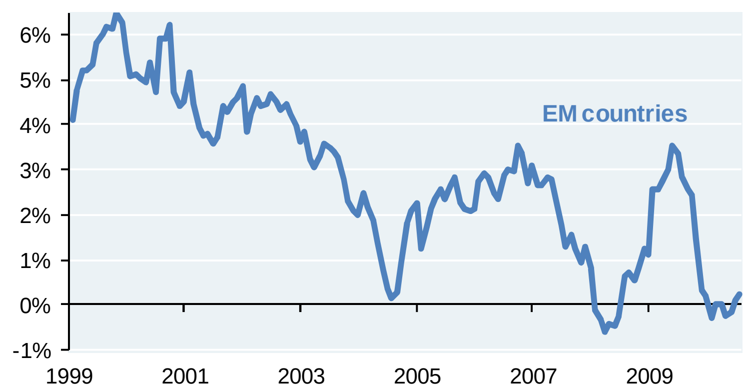
"Earth, Wind and Fire". There are strange things going on regarding the weather (Australian and Russian wheat crops destroyed; tornadoes, blizzards and floods in the US; coldest winter in Europe in 100 years; worst drought in Shandong Province in 50 years; worst rains in Brazil in 44 years; severe drought in Kansas). These events are compounding the increase in agriculture prices. Commodities like corn, cotton, coffee and sugar are seeing their **lowest stocks-to-use ratios** in decades.

World food prices
United Nations Food and Agriculture world food price index



Source: Food and Agriculture Organization of the United Nations.

Cost of money = zero
Policy rates adjusted for inflation, percent



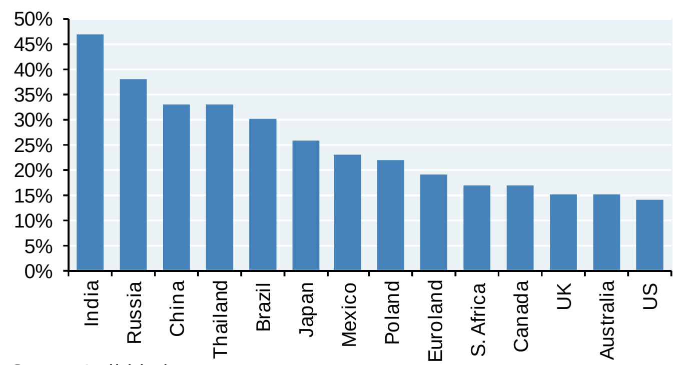
Source: J.P. Morgan Securities LLC.

To be sure, it's not just the weather. High agricultural commodity prices also reflect easy monetary policy in the emerging world (see chart, above right), and long-run demographic and environmental issues, including:

- Increased caloric intake along with rising incomes, including grain-intensive meat demand. The consumption history of Taiwan, Korea and Japan show clear linear relationships between per capita income growth and consumption of corn, poultry, pork and beef
- Deforestation, soil salinization, desertification of the Gobi[1] and urbanization in China, an importer of wheat and corn
- Biofuel demand
- Financial flows into agricultural commodities[2]

Rising food prices are disruptive, given the large weight of food in many emerging economy CPI baskets (see chart, right).

Food weight in CPI baskets
Percent



Source: Individual country sources.

Improved agricultural productivity can mitigate the impact of environmental problems and increased demand. China, India and other emerging economies are spending heavily on ports/rails/roads, which should reduce losses from "wastage" (the USDA estimates that 30%-40% of global food production ends up as waste rather than being consumed). There's also room for yield improvements through seed research and irrigation: while soybean yields in Brazil are similar to US levels, both Brazilian and Chinese corn yields are less than half. Other supply side improvements involve increasing arable land. Brazil has had success converting scrubland into arable land by adding lime to offset the acidity of the soil in the Cerrado, where they now grow soybeans and sugarcane. In the US, the corn belt is expanding, due to the use of new short-season varieties in regions primarily used for wheat. These are the kind of innovations and supply responses that followed an increase in food prices in the 1970's, after which food prices declined for 3 decades at ~1% per year in real terms.

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[1] At the current rate of expansion (15 km per year according to satellite data), Beijing may be on the edge of the Gobi Desert within 6-8 years, despite massive spending by the government on land reclamation and replanting (the Green Wall of China). Around 30% of China is classified as desert, and 90% of its grasslands are considered to be degraded due to over-planting and over-grazing.

[2] In the last decade, agricultural trading volumes tripled on the CME Group and Euronext Liffe. As reported by the FT on January 13th, the Commodity Futures Trading Commission proposed rules to **limit positions in spot commodity contracts to 25% of deliverable supply**. A second phase would limit holdings in all delivery months to 10% of total market size for the first 25,000 contracts, then 2.5% for holdings above this level. However, one Democratic commissioner on the CFTC was quoted as follows: "*With such a lack of concrete evidence, my fear is that, at best, position limits are a cure for a disease that does not exist or at worst, a placebo for one that does*". Opinions vary on this subject. In an interview with The Sunday Telegraph, Unilever CEO Paul Polman said that short-term financial buyers were driving up prices.

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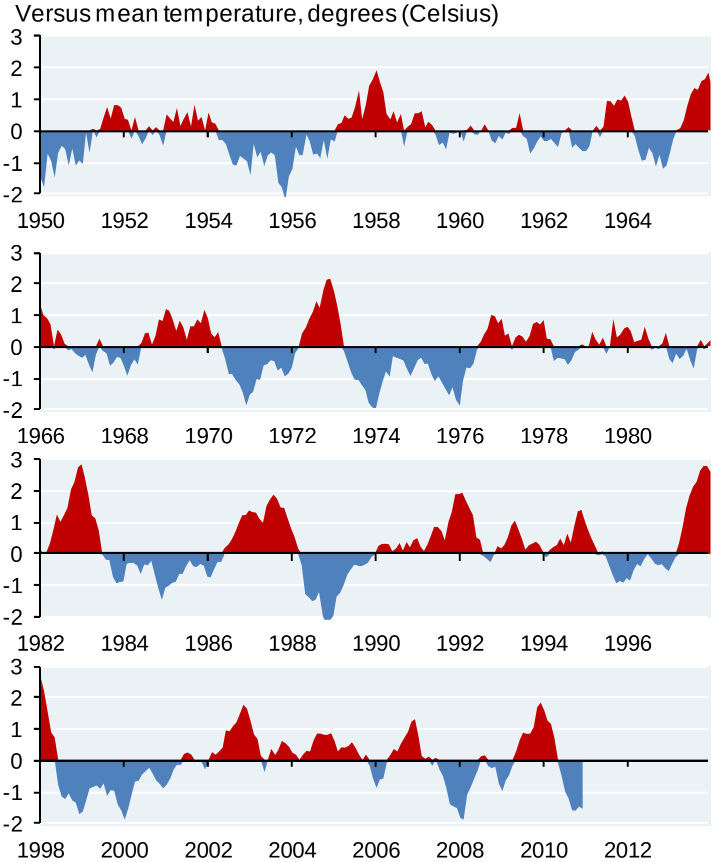
However, in the industrialized world, Science magazine reports that the growth rate in crop yields for major cereal grains and soybeans fell in half between 1961-1990 and 1990-2007. Their findings are consistent with USDA research showing agricultural productivity growth of 0.9% per year from 2000-2007 in the industrialized world, the slowest in any decade since 1961. As a result, agricultural supplies may remain vulnerable to rising demand and weather conditions.

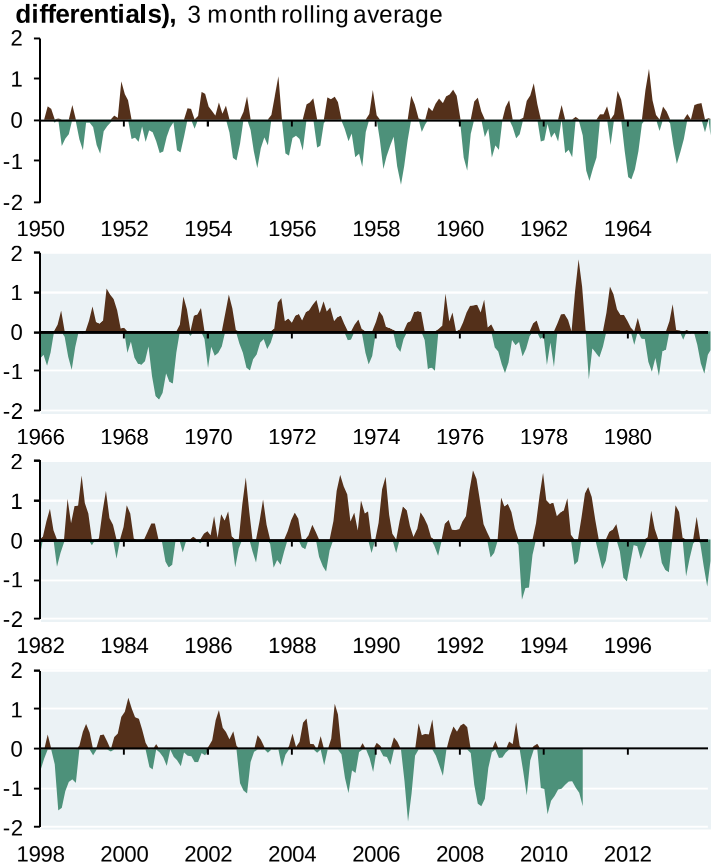
On the weather, the question at hand is whether the recent spate of blizzards, deep-freezes, hurricanes and floods is part of a trend we should expect to continue, or just random acts of nature. I spoke last week with Richard Seager at the Lamont Doherty Earth Observatory[3], who has been working on climate science at Lamont since 1983

- THE FLOODS. Australian floods (and Kansas droughts, according to the National Oceanic/Atmospheric Administration) are being exacerbated by this year's powerful La Niña. The La Niña phenomenon involves cold tropical sea surface temperatures forcing heavy rains westward towards Australia. This year's La Niña event was predicted early in 2010 using techniques developed at Lamont in the 1980s (although the magnitude of this year's floods were not foreseen in advance). The endless succession of El Niños and La Niñas arise from natural tropical Pacific atmosphere-to-ocean interactions. The charts on the left show the Central to Eastern tropical Pacific sea surface temperature differentials since 1950.
- THE FREEZING. Crazy weather in the Northern Hemisphere over the last 2 winters appears to be a by-product of **lower than normal atmospheric pressure differences between the North Atlantic and Arctic regions**. This phenomenon is often measured as the pressure differential between the Lisbon/Azores high pressure system and the Icelandic low pressure system. This difference is plotted as the "North Atlantic Oscillation" Index, shown in the charts on the right since 1950. In typical years, the pressure differential between the 2 regions is high enough to result in a strong wind flow from West to East, which keeps the polar jet stream confined to the Arctic region. But when this pressure differential declines sharply, the polar jet stream migrates southward, bringing Arctic mayhem to North America and Northwestern Europe. That's what has happened during the last two winters, which is consistent with the highly negative NAO Index reading.

Sea surface temperature differentials, Nino 3.4 region
Versus mean temperature, degrees (Celsius)



North Atlantic Oscillation index (atmospheric pressure differentials), 3 month rolling average



Source: National Oceanic and Atmospheric Administration.

[3] Among other achievements, Lamont was the first research institute to create quantitative predictions of El Nino, enable nuclear test bans through seismic detection, produce a map of the global ocean floor, build a lunar seismometer and measure the speed of the earth's core.

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Are either of these weather patterns affected by the earth's rising temperatures or greenhouse gases? After all, 2010 is tied with 2005 as the warmest year on record. I asked Seager what he makes of the last two years; are they part of a new trend? Many press articles ascribe higher commodity prices and disruptive weather to global warming. **His answer was not what you might think**: **Seager sees both sea surface temperature differentials and atmospheric pressure differentials as chaotic in nature, and does not see evidence that they are part of a longer-term trend related to rising greenhouse gases.** Seager does believe that humans are causing the planet to warm, causing rising sea levels, melting glaciers and sea ice, etc. Nonetheless, the **natural variability** of climate on year-to-year time scales is immense, and recent weather events look to him like naturally occurring anomalies. This can be inferred from a casual look at the charts; the peaks and valleys do not seem to be intensifying with any regularity.

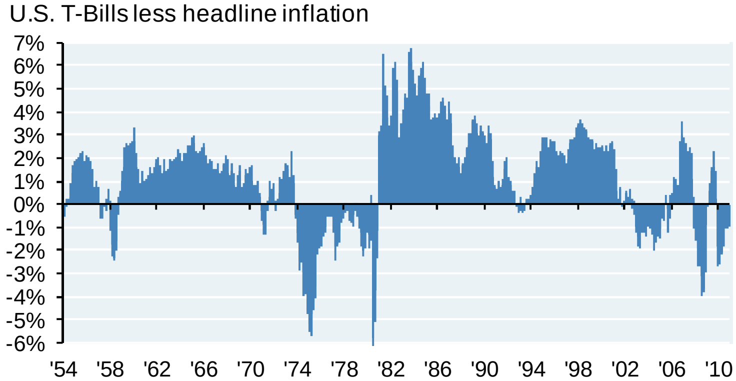
Investment implications. Biofuel demand, Chinese and Indian consumption, pig viruses, deforestation….the list of forces driving up food prices is a long one. But if seasonal weather patterns are in fact random, buying agricultural commodities at today's levels looks like a **risky bet** to us, particularly given the possibility of exchange trading or price controls at some point, and the likelihood of productivity improvements[4] in the developing world. We have greater interest in companies that work to keep food prices from inexorably rising (as they did throughout the 20th century): seed manufacturers, infrastructure and harvesting equipment makers, grain processors and fertilizer companies. While their prices have risen in the last year, their valuations relative to earnings estimates have not.

The Grasshopper strategy: managing Conservative portfolios at a time of savings confiscation

In a prior *Eye on the Market*, we estimated that the annual wealth transfer in the United States from the nation's savers to its borrowers (due to the Fed's zero interest policy) is something in the neighborhood of $70 billion per year. To us, this is an inversion of the Ant-Grasshopper fable (wherein savers are rewarded), and presents challenges for conservative investors. Why? **For most of the post-war era (see chart below), interest rates were above the rate of inflation**[5]. That meant that while savers *could* invest in riskier assets, they could also opt to leave their money in cash and retain (if not grow) their purchasing power. The prior extended exception was a period in the late 1970s; some might not have noticed that their purchasing power was evaporating, since T-bill rates were 12%, but inflation was even higher.

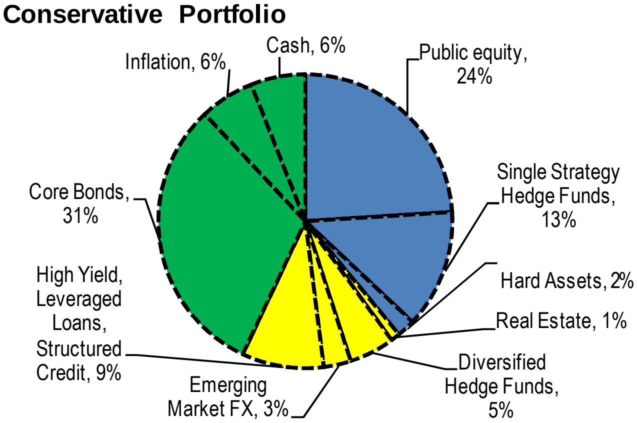
Today, the Fed's strategy is designed to deliver negative real returns to savers, a policy Fed governor Dick Fisher has expressed misgivings about. We have them as well, but we have to deal with the realities of the present rather than the conditions of the past. The pie chart shows current allocations in our Conservative Portfolio. In the high net worth industry, Conservative Portfolio allocations often have 45%-60% allocations to cash and bonds. In light of Fed policy, our cash + traditional bond holdings are 37%, with the remainder invested in inflation-protected bonds, long-short hedge funds with low net exposure to equity markets, macro hedge funds, credit, and income-oriented real estate. We have not increased equities, which remain around one quarter of our Conservative portfolio, primarily in US equities. As we wrote in the 2011 Outlook, **reducing the real cost of money to zero is a mixed blessing, with a mixed history of creating durable economic/market expansions.**

Real yields on cash
U.S. T-Bills less headline inflation



Source: "A History of Interest Rates", Sidney Homer and Richard Sylla, 2005; "Irrational Exuberance", Robert Shiller, 2005.

Our Conservative Portfolio



Source: J.P. Morgan Private Wealth Management.

[4] Sources include research papers from *Amber Waves*, a publication of the US Department of Agriculture Economic Research Service, including "*Accelerated Productivity Growth Offsets Decline in Resource Expansion in Global Agriculture*", September 2010

[5] To capture the broadest sense of the challenge, the chart looks at T-bill rates less **headline** inflation. In other words, the most conservative investor (T-bills) attempting to maintain purchasing power in the face of rising prices across the entire economy.

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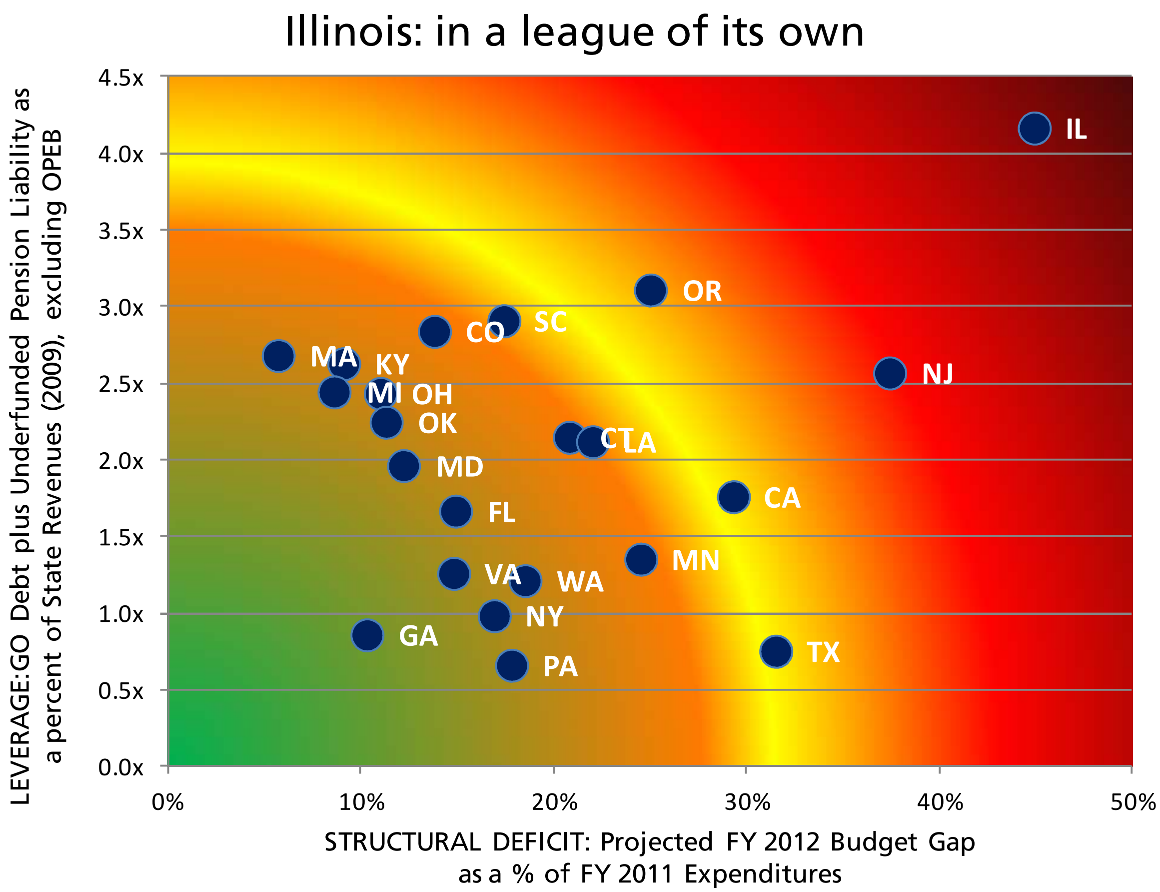
Illinois: in a league of its own

We will have more to say about municipal bond markets in the next couple of weeks. For now, a visual to reinforce an important point. Unlike broker-dealer balance sheets in 2007 (which all looked pretty similar), and unlike peripheral European sovereigns (whose post-EMU consumption booms, competitiveness gaps and debt burdens are quite similar), the U.S. municipal market is a very diverse one. **Illinois in particular is in a league of its own, and is not representative of how most U.S. states have managed their affairs.** For years, we have argued for nationally diversified portfolios rather than concentrated state-specific ones; in this regard, nothing has changed.



Notes: All states with general obligation debt and unfunded pension obligations in excess of $15 bn. Sources include Moody's, Bloomberg and the Center on Budget and Policy Priorities. Data is shown before the impact of recent increases in Illinois personal and corporate income tax rates. Leverage measure excludes OPEB, which stands for "Other Post-Employment Benefits", and where Illinois has one of the largest estimated unfunded obligations.

Michael Cembalest
Chief Investment Officer

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