



ECONOMICS MADE EASY

A Journalism Workshop

Data Interpretation

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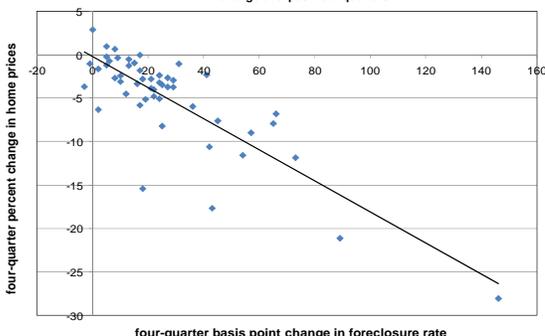


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Correlation vs. Causation

- Correlation: Two variables are positively (negatively) correlated if high (low) values of one are likely to be associated with high (low) values of the other.

Home Prices & Foreclosures
change over past four quarters



four-quarter percent change in home prices

four-quarter basis point change in foreclosure rate



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Correlation vs. Causation

- Correlation does not mean causation.

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Correlation vs. Causation

- To illustrate that correlation does not imply causation, some interesting correlations:
 - Ice cream sales & shark attacks on swimmers
 - Skirt lengths and stock prices
 - Number of cavities and children's vocabulary

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Level vs. Change

- To get a good understanding of the magnitude and significance of a change in a variable, we will look at a variable in levels, change, or both.
 - Particularly important if making comparisons

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Level vs. Change

- For example, in August:
 - Maryland employment fell 12,000
 - Virginia employment fell 3,000
 - U.S. employment fell 216,000
- Which is most significant in terms of magnitude?
 - In terms of percent change, annualized
 - Md.= -5.5% || Va.= -1.0% || U.S.= -2.0%
- Are these big changes?
 - Average change during current recession (since Dec. 2007)
 - Md.= -3,770 (-1.7%)
 - Va. = -5,760 (-1.8%)
 - U.S. = -346,500 (-3.1%)

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Level vs. Change

- Another example, in July:
 - Maryland housing starts fell 14%
 - Virginia starts grew 32%
 - U.S. starts declined 0.2%
- What do these changes mean in terms of levels?
 - In terms of levels
 - Md. = -1,420 || Va.= 5,390 || U.S.= -1,000
- Are these big changes? Average change over past 3 yrs.:
 - Md. = -275
 - Va. = -580
 - U.S. = -32,000

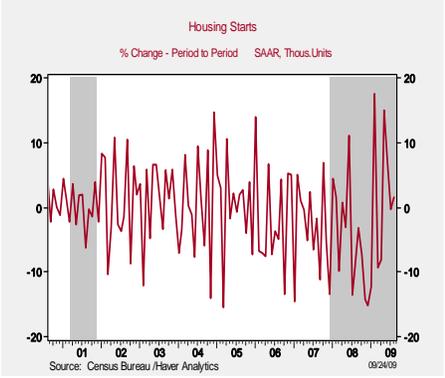


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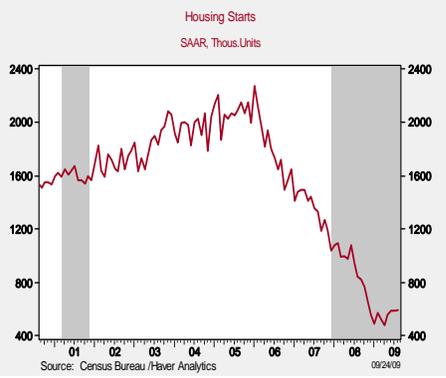
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Level vs. Change

- Sometimes to really gauge whether the most recent data is meaningful, it is just easier to look at the series.



Source: Census Bureau /Haver Analytics



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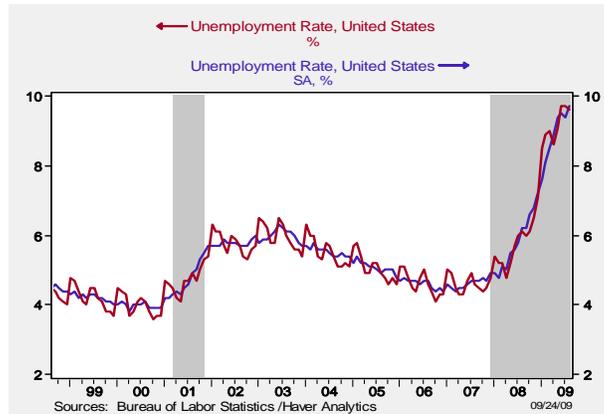


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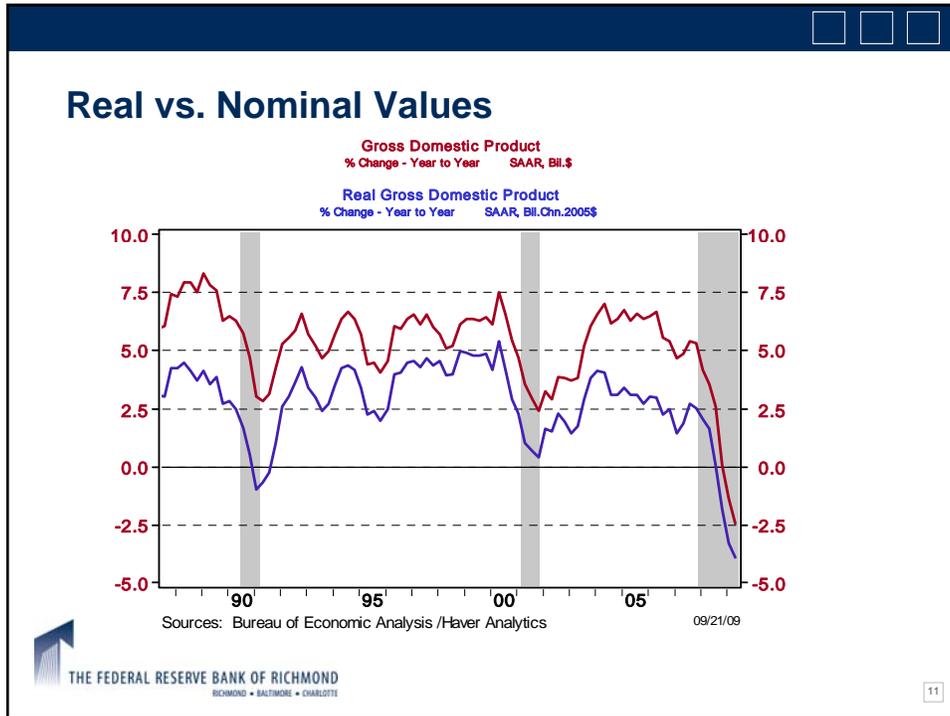
Seasonally Adjusted vs. Unadjusted

- The time of year can make a big difference for some economic indicators – underlying trend is important

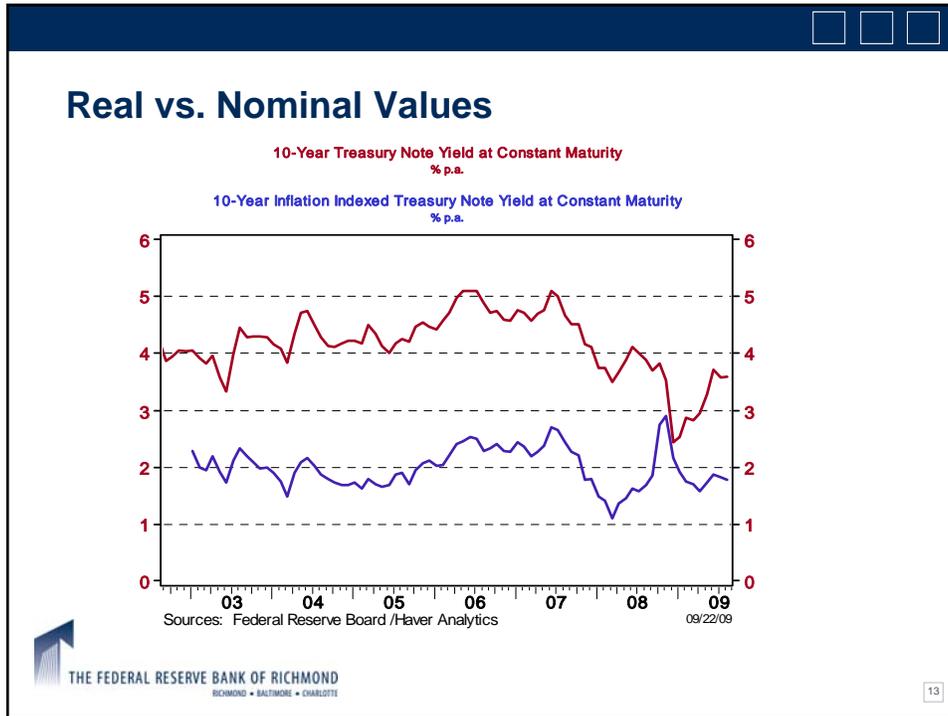


Real vs. Nominal Values

- Time value of money:
 - A dollar today is worth more than a dollar tomorrow.
- When looking at economic data, we frequently look at inflation-adjusted or “real” values.
 - We are interested in changes in quantities without fluctuations in prices.
 - Allows for comparisons across time.
 - Hence, real GDP is the measure we focus on for measuring the economy & economic growth.



- ### Real vs. Nominal Values
- Nominal interest rates are closely followed and reported in the financial press.
 - However, decisions by economic agents are driven by real returns and real interest rates.
 - Businesses/investors are concerned about the return on their investment after accounting for inflation (the “real” return).
 - Households are concerned about how their nominal wage can be negatively affected by higher inflation (i.e., they are concerned about their real wage).
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- ### Samples, Weights and Noise
- With many data series, knowing the details of the methodology is important.
 - For example: labor market surveys
 - Household survey: roughly 60,000 households
 - Unemployment rate, labor force, number employed, etc....
 - Number employed, unemployed, labor force – very volatile
 - Data is not revised
 - Establishment survey: 400,000 establishments
 - Payroll employment, hours, earnings
 - Payrolls revised several times (twice initially & then annually)
 - Revisions to previous months' data important
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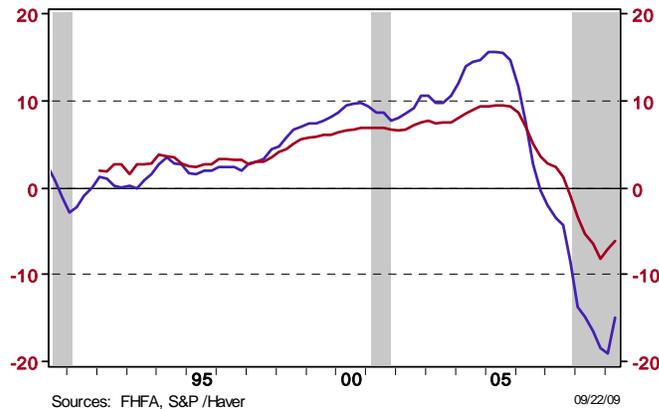
Samples, Weights and Noise

- Another example: house price indexes
- FHFA home price index
 - Weighted repeat sales index
 - Includes conforming, conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac
 - Only mortgage transactions on single-family properties are included
- Case-Shiller home price index
 - Also a repeat sales index
 - Also only includes single-family properties
 - But includes nonconforming mortgages (subprime/jumbo)

Samples, Weights and Noise

FHFA House Price Index: Purchase Only, United States
% Change - Year to Year SA, Q1-91=100

S&P/Case-Shiller Home Price Index: U.S. National
% Change - Year to Year NSA, Q1-00=100





Samples, Weights and Noise

- One data point does not make a trend.
 - Important to consider the distribution of changes of a particular series & gauge whether the most recent data is significantly different – some data are just noisy.
 - Recall housing starts.
- Seasonal factors (even with seasonally adjusted data) can be very important.
 - Especially with smaller sample sizes
 - Example: housing data



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