

Introductory Macroeconomics  
Lecture of March 9, 2010  
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Indexes and Index Numbers

Well-known index numbers:

- CPI (Consumer Price Index)
- PPI (Producer Price Index)
- Dow-Jones Index

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Indexes

- Price Indexes
  - CPI
  - PPI
  - Implicit GDP Deflator
- Quantity Indexes
  - GDP
- Real vs. Nominal measures

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## Indexes and Index Numbers

What can be learned from index numbers?  
 (comparison of index of California housing prices to CPI)

Selected spatial concentration indexes

Location Quotients

Hachman Index (HI)

Federal Reserve Bank of San Francisco Report  
 Moody's Economy.com Reports

Herfindahl-Hirschman Index (HHI)

Ellison-Glaeser Index (EGI)

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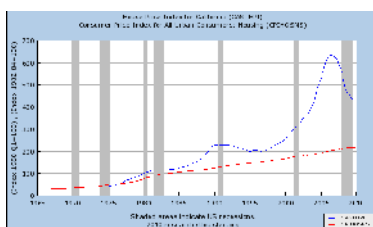
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## California Housing Prices vs. Housing Component of National CPI




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## Real vs. Nominal

Anything measured in terms of money has a **nominal** (number of dollars) aspect and a **real** (purchasing power of dollars) aspect. The purchasing power of dollars changes because of changes in the average level of prices (as typically measured by a **price index**).

Price indexes measure the average level of prices relative to a **base year** (which can be any year – it is arbitrary).

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### How are index numbers computed?

- Four steps to computing a price index:
  1. Select a base year
  2. Identify a market basket of goods and services
  3. Determine spending (expenditures) on the (given) market basket of goods and services
  4. Compute the ratio:
    - $(\text{expenditures on the given market basket in a particular year}) / (\text{expenditures on the given market basket in the base year})$

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### Median Weekly Earnings (Nominal)

Year	Qtr1	Qtr2	Qtr3	Qtr4	Annual
2000	573	569	571	585	576
2001	589	592	596	606	596
2002	611	605	608	613	608
2003	620	616	618	625	620
2004	634	639	632	647	638
2005	652	643	649	659	651
2006	668	659	675	682	671
2007	693	690	695	700	695
2008	712	712	720	728	722
2009	738	734	738	748	739

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### Median Weekly Earnings (Nominal)




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### Median Weekly Earnings (Real)

Year	Qtr1	Qtr2	Qtr3	Qtr4	Annual
2000	325	320	320	324	323
2001	321	322	323	330	325
2002	331	325	322	326	326
2003	327	323	323	327	325
2004	328	326	322	327	325
2005	328	319	318	321	322
2006	324	315	320	326	321
2007	328	320	322	322	323
2008	327	320	317	330	323
2009	336	330	330	334	333

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### Median Weekly Earnings (Real)




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**Table 2: Nominal and Real Wages  
(in December of Each Year)**

Year	Nominal Wage (dollars per hour)	CPI	Real Wage (1983 dollars per hour)
1975	4.87	55.5	8.77
1980	7.12	86.3	8.25
1985	8.86	109.3	8.11
1990	10.35	133.8	7.74
1995	11.79	153.5	7.68
2000	14.29	174.0	8.21
2005	16.37	196.8	8.32

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