

Price Indexes for State and Local Governments

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BEA Price Indexes

Why does BEA produce price indexes?

- Most analysts are interested in estimates of “real” output
- This involves disentangling prices and quantities

BEA also produces quantity indexes

- But only for “goods & services”

Price Indexes for State and Local Governments

What state and local government expenditures does BEA estimate in “real” terms?

- Consumption expenditures and gross investment
- NOT Included: social benefits payments, interest payments, and subsidies

Where are the state and local indexes located?

- NIPA tables 3.9.4 and 3.10.4
- www.bea.gov/national/nipaweb/Index.asp

Some things you should know about BEA's State and Local price indexes...

- They exclude government enterprises such as utilities, transit agencies, and housing authorities
- They are calculated net of sales revenue such as hospital charges
- They include depreciation (as a partial measure of the service of government capital)

How does the price index for S&L consumption and gross investment differ from the CPI?

- The two indexes are based on different “market baskets” of goods and services
- The CPI is based on a market basket of goods typical for a household, including such things as food, shelter, utilities, transportation, and entertainment

Differences from the CPI continued...

- The state and local index uses a market basket of goods that is designed to match what state and local governments purchase
- The largest component is “employee wages and benefits”
- Other components include fuel, utilities, services, office supplies, construction costs, equipment, etc.

A Bit of Price Theory

The Laspeyres Index

- The most common type of index
- Uses a base-year market basket
- The CPI is a Laspeyres index

The Paasche Index

- Uses a current-period market basket

Problems with these indexes

- Market baskets shift over time, so
 - Laspeyres Index tends to *overstate* inflation
 - Paasche Index tends to *understate* inflation

A Bit of Price Theory

More complicated index forms:

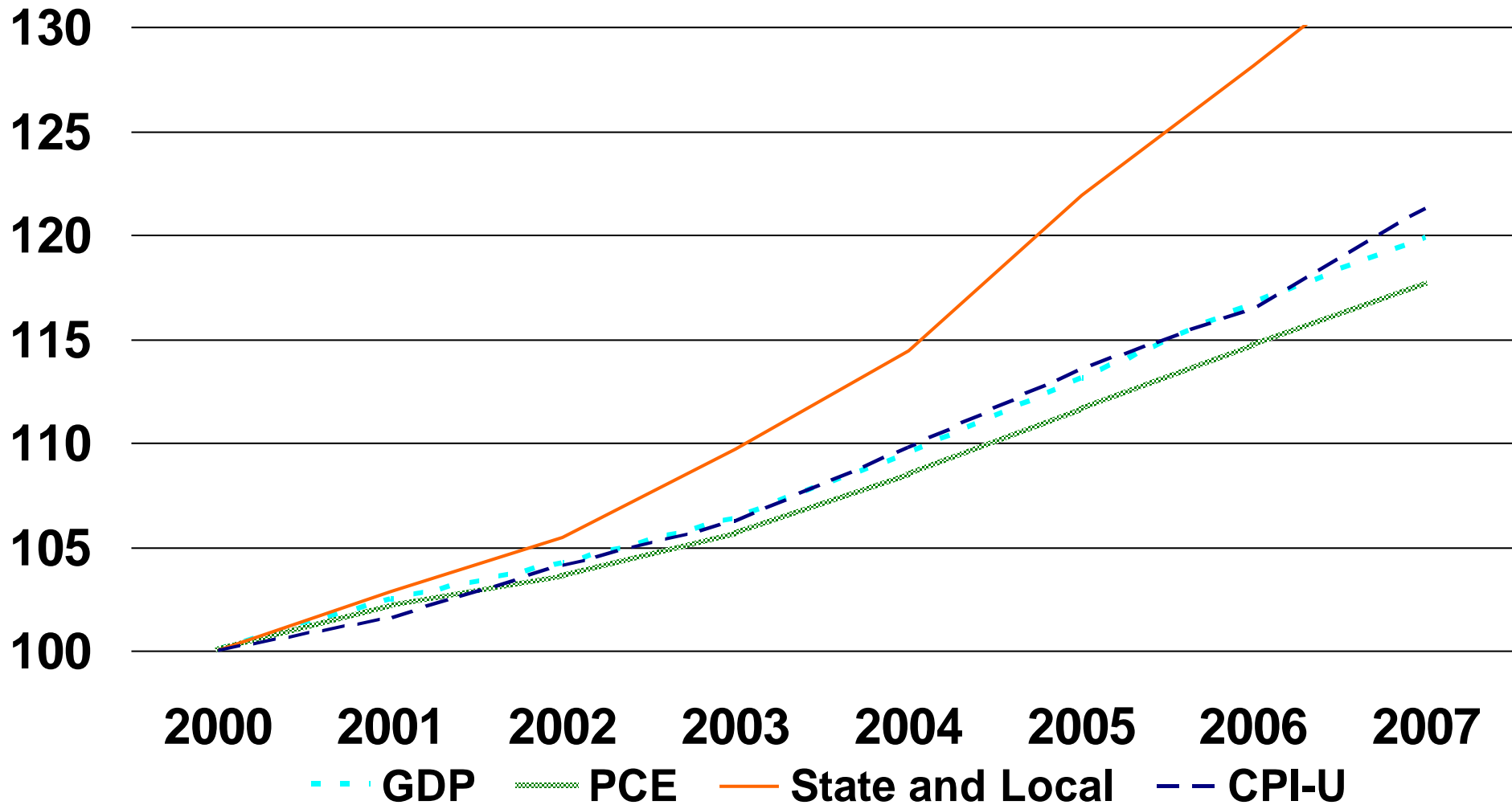
- A “Fisher-Ideal” index is the geometric mean of Laspeyres and Paasche indexes
- Chain indexes use a constantly-updated market basket to estimate price change from one period to the next
- BEA’s “chain-type” indexes are a hybrid of the Fisher Ideal and the chain index

BEA Chain-type Indexes

- BEA Chain-type indexes are “Fisher-Ideal” relatives that are linked (multiplied) together to form a time series
- Accounts for substitution as relative prices and quantities change

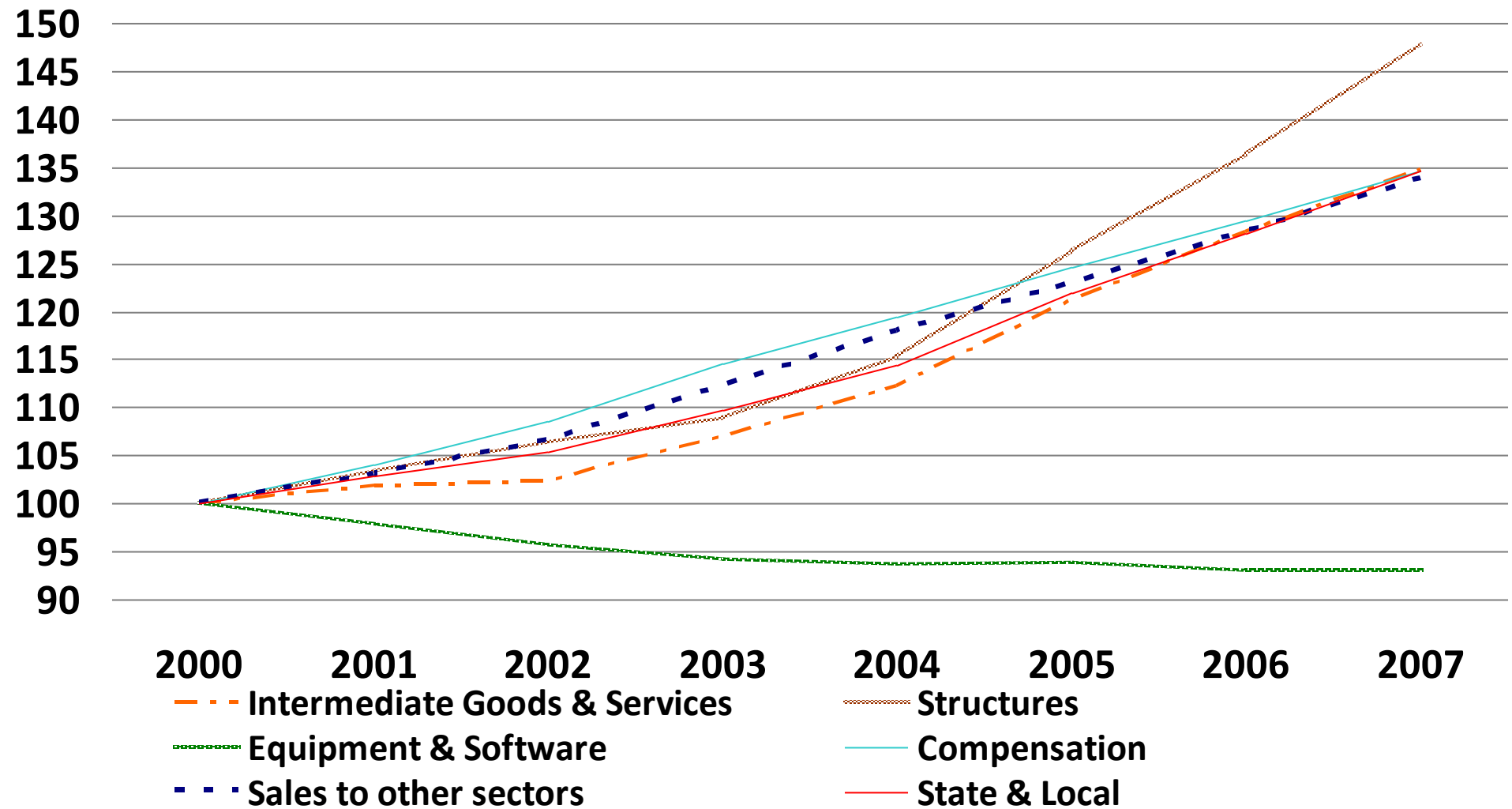
Trends in Price Deflators

[Index numbers, 2000=100]



State and Local Price Deflators

Index Numbers [2000=100]



Contributions to Percent Change in Price

	2000	2001	2002	2003	2004	2005	2006	2007
Consumption expenditures & gross investment	4.53	2.87	2.50	4.06	4.30	6.49	5.13	5.12
Consumption expenditures	3.87	2.43	2.13	3.74	3.40	5.00	3.90	3.78
Gross output of general government	4.50	3.06	2.87	4.84	4.50	5.93	4.83	4.67
Value added	2.52	2.43	2.64	3.27	2.79	3.12	2.79	2.83
Compensation of general government employees	2.32	2.31	2.56	3.22	2.57	2.59	2.34	2.31
Consumption of general government fixed capital	0.20	0.12	0.07	0.05	0.22	0.53	0.45	0.52
Intermediate goods and services purchased	1.97	0.63	0.23	1.57	1.71	2.81	2.04	1.84
Durable goods	0.00	0.01	0.01	0.01	0.03	0.04	0.04	0.03
Nondurable goods	1.23	-0.09	-0.22	0.84	0.98	1.66	0.95	0.84
Weighted petroleum deflator	1.01	-0.22	-0.22	0.58	0.62	1.30	0.65	0.47
Industrial chemicals	0.04	0.00	0.00	0.06	0.08	0.09	0.08	0.05
Drugs and pharmaceuticals	0.02	0.02	0.02	0.03	0.03	0.05	0.04	0.03
Pulp, paper, and products, ex.	0.05	-0.01	-0.01	0.01	0.02	0.03	0.03	0.03
Printing	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.02
Finished consumer foods	0.04	0.07	-0.02	0.10	0.11	0.05	0.02	0.15
All other nondurables	0.04	0.03	0.00	0.03	0.08	0.12	0.10	0.09

Contributions to Percent Change in Price

	2000	2001	2002	2003	2004	2005	2006	2007
Services	0.74	0.71	0.44	0.72	0.71	1.11	1.05	0.97
Commercial power, 40 kw demand	0.03	0.11	-0.03	0.04	0.02	0.08	0.13	0.04
Auto rent (other auto)	0.02	0.00	0.02	0.01	0.01	0.02	0.02	0.02
Maintenance & repair services	0.23	0.17	0.15	0.11	0.29	0.47	0.39	0.43
Medical care	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Natural gas	0.10	0.13	-0.12	0.16	0.07	0.16	0.02	-0.01
Post office	0.00	0.01	0.02	0.02	0.00	0.00	0.02	0.03
Professional services	0.14	0.16	0.14	0.11	0.09	0.12	0.16	0.16
Residential rent	0.06	0.08	0.07	0.06	0.05	0.05	0.06	0.07
Telephone	-0.04	-0.03	-0.01	-0.02	-0.03	-0.01	0.01	0.01
Transit	0.01	0.02	0.01	0.04	0.03	0.03	0.02	0.01
Social services	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.03
All other services	0.13	0.00	0.13	0.14	0.14	0.14	0.17	0.16
Gross investment	0.66	0.44	0.37	0.31	0.90	1.49	1.23	1.35
Structures	0.70	0.53	0.46	0.37	0.92	1.49	1.26	1.35
Equipment and software	-0.04	-0.10	-0.09	-0.06	-0.02	0.00	-0.03	0.00
Own-account investment	-0.05	-0.04	-0.03	-0.05	-0.05	-0.06	-0.05	-0.05
Sales to other sectors	-0.57	-0.59	-0.71	-1.05	-1.05	-0.87	-0.89	-0.85
Tuition and related educational charges	-0.16	-0.20	-0.27	-0.35	-0.40	-0.33	-0.30	-0.28
Health and hospital charges	-0.23	-0.29	-0.33	-0.52	-0.44	-0.34	-0.37	-0.30
Other sales	-0.18	-0.10	-0.10	-0.17	-0.21	-0.19	-0.22	-0.27

Conclusions

For 2000-2007, these components have pulled the S&L index up:

- Construction costs
- Petroleum, natural gas
- Industrial and agricultural chemicals

The following components have pulled the S&L index down:

- Computers, software, electronics
- Durables
- Telephone, airfares