

# Accounting for Nonmarket Production: A Prototype Satellite Account Using the American Time Use Survey

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# Household Production Satellite Accounts

- The debate over nonmarket accounts:
  - Appropriate scope of the accounts:
    - Consistency and relevance
    - Welfare vs. production
    - Feasibility
  - Pigou (1920): National accounts should include elements that reflect economic welfare that can “be brought directly or indirectly into relation with the measuring-rod of money”



# Household Production Satellite Accounts

- Kuznets (1934) and national accountants:  
General agreement on inclusion, but excluded on practical grounds
  - Absence of observable/measurable market transactions
  - Normative judgments
  - Large degree of uncertainty
  - Diminution of the usefulness of the accounts for existing users



# Household Production Satellite Accounts

- System of National Accounts (1993): Cut Gordian knot impeding progress
  - Supplemental accounts that would allow experimentation with changes in scope and measurement
  - Satellite accounts consistent with and that could be used with the core accounts without diminishing their usefulness
- New data, including ATUS



# Household Production Satellite Accounts

- The NAS recommendations address many issues critical to the successful implementation of nonmarket accounts:
  - Use of satellite accounts
  - Focus on production
    - Third-party criteria
    - Consumption-value in both paid and unpaid work should be ignored
  - Maintenance of double-entry accounting
  - Estimation of prices and quantities
  - Use of market prices or proxies thereof
    - Quality-adjusted specialist wage
  - Overall consistency with current accounts



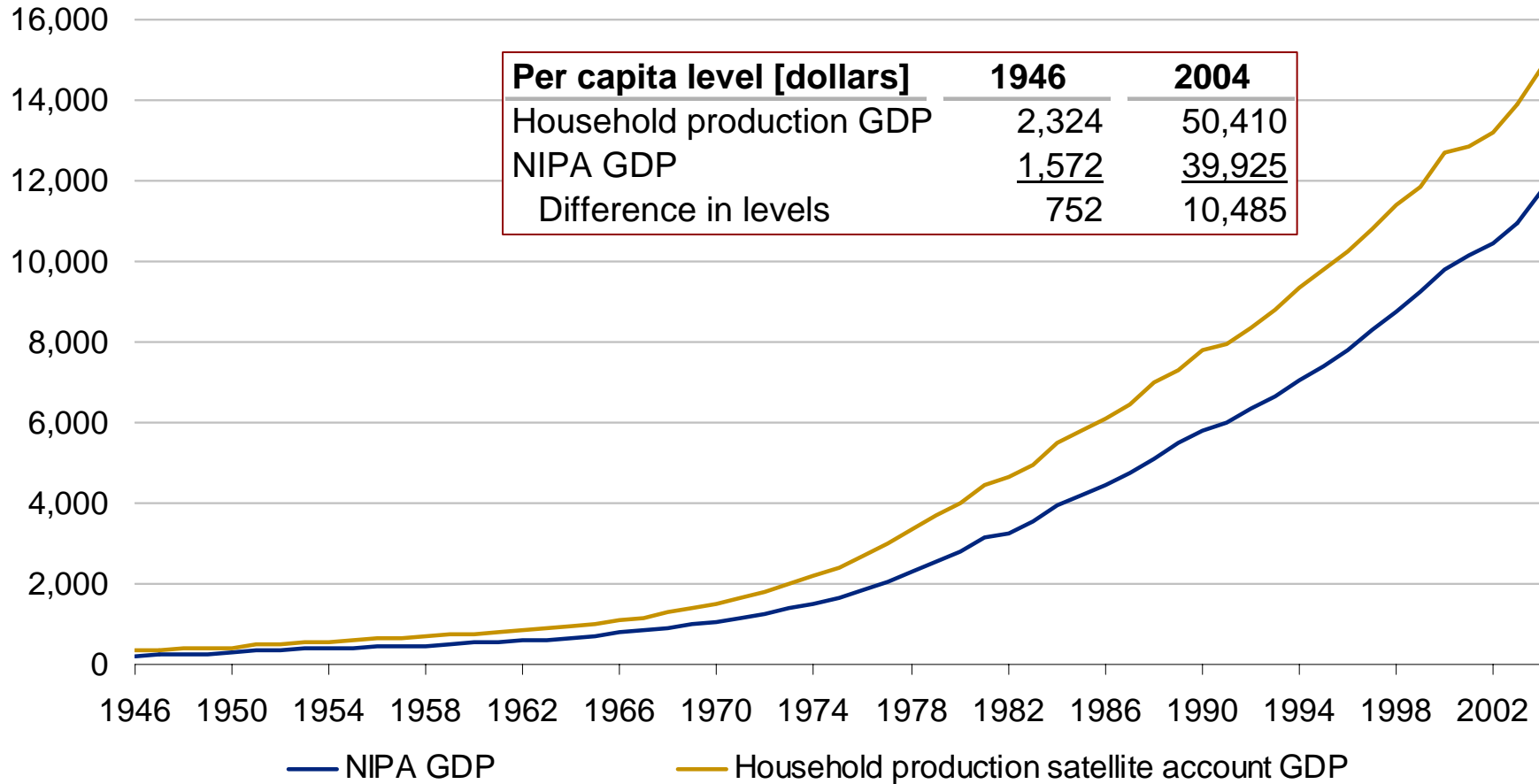
# Household Production Satellite Accounts

- The overall level of measured economic activity in 2004 is estimated to have been over \$3 trillion, or 26 percent, higher if household production were added to GDP
  - GDP per capita is raised by \$10,000 from \$40,000 to \$50,000
- The increments in earlier periods were higher - plus 48 percent in 1946



# GDP Trend Growth

[Billions of dollars]



Source: BEA NIPA tables 1.1.5 and authors' calculations.



# Household Production Satellite Accounts

- Accounting for household production lowers the long-term growth rate from 7.1 to 6.8 percent
  - Market production grew faster as women entered the labor force, but household production grew at a slower rate

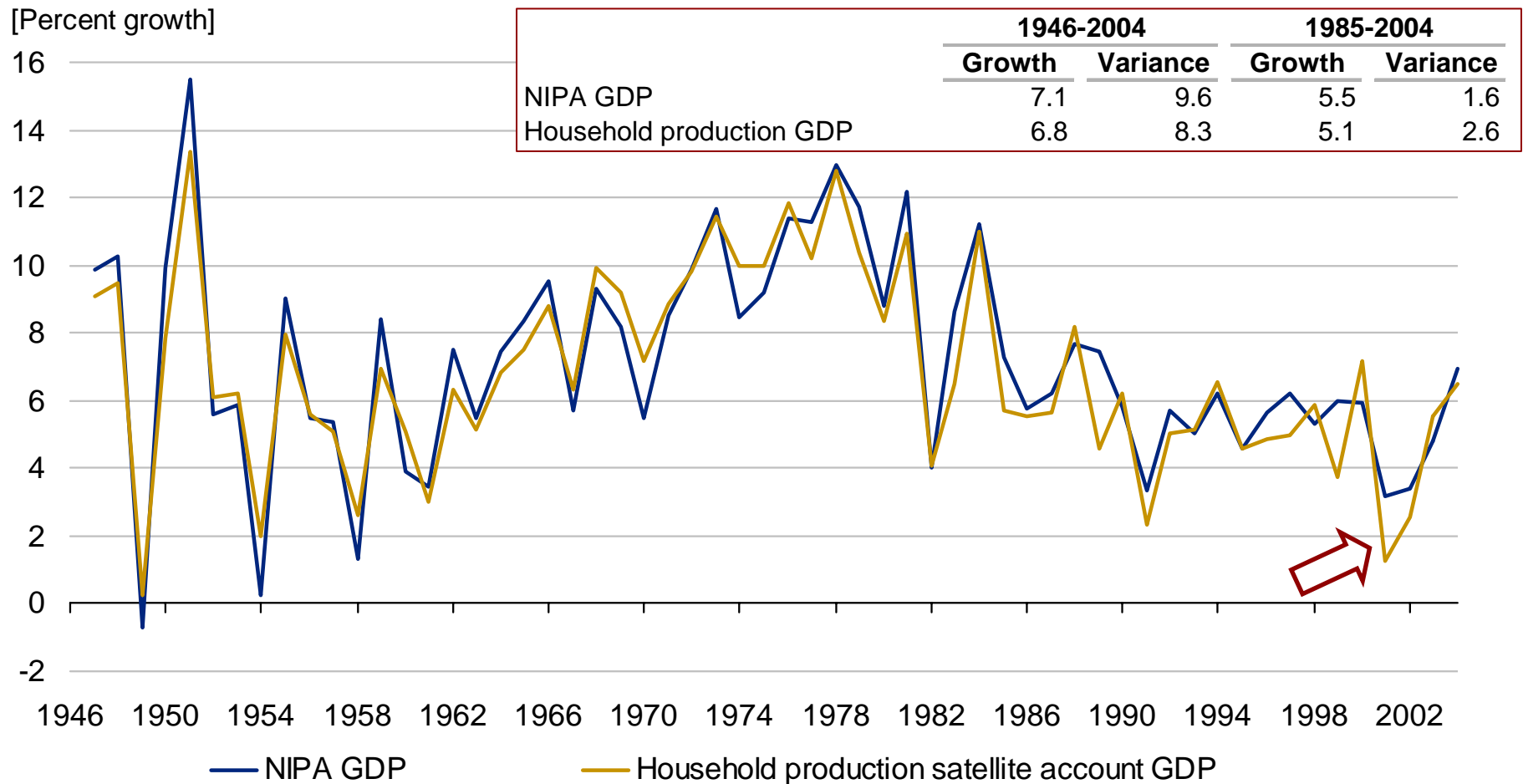


# Household Production Satellite Accounts

- Household production acts as a buffer to market cyclical volatility
  - Between 1946 and 2004 the volatility of production was lower in the satellite account than in GDP
  - However, between 1985 increased cyclical volatility in low-income wages resulted in the satellite account showing higher volatility



# GDP Annual Growth



Source: BEA NIPA table 1.1.5 and authors' calculations.



# Household Production Satellite Accounts

- Impact of treating the household as a producer:
  - Investments in consumer durables
  - Capital services
  - Household saving
  - Intermediate products
- The substitution of K for L in household production contributed to even faster growth in K/L ratio in household production (4.1 percent) than growth in market K/L ratio (1.8 percent)



# Selected GDP Components

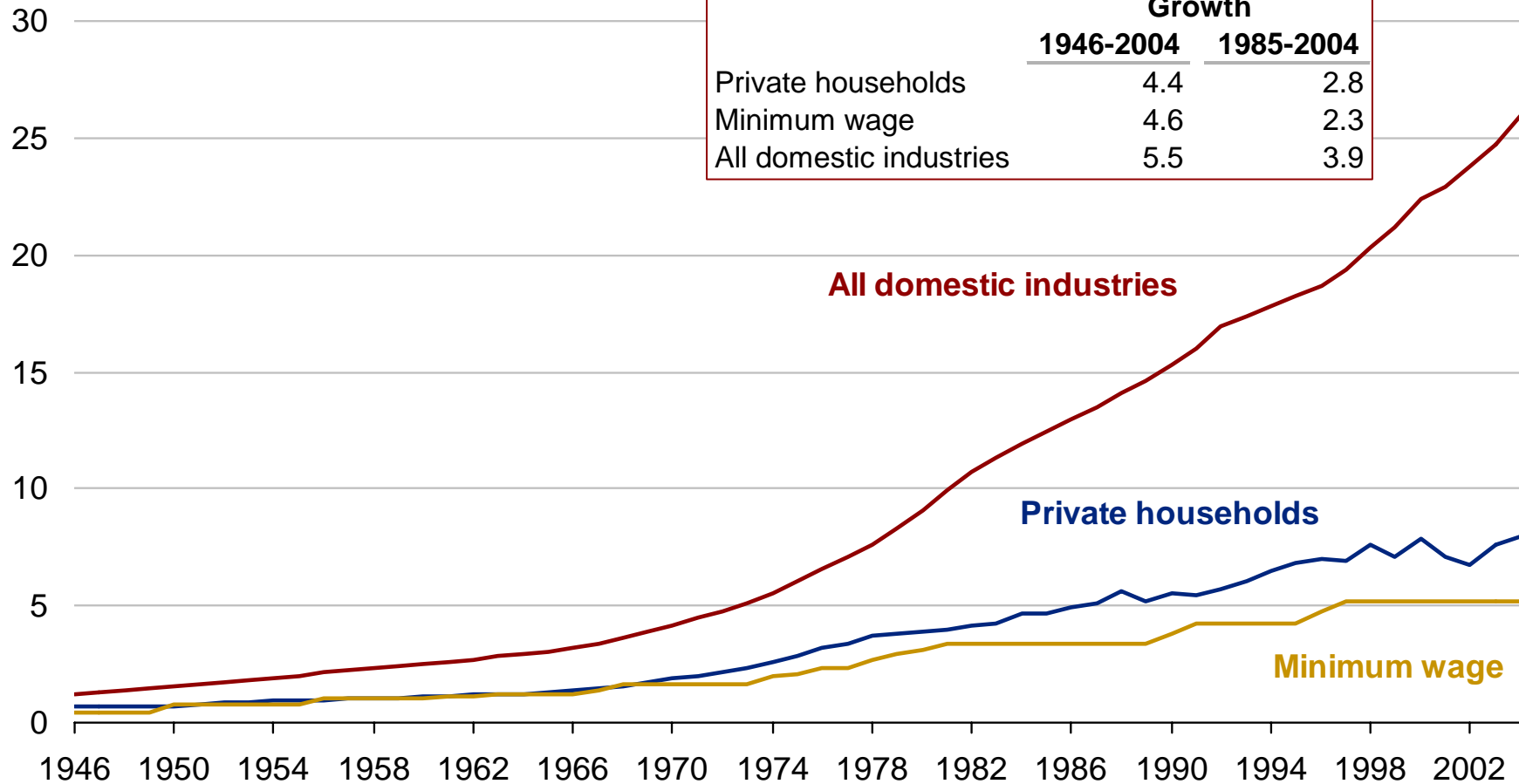
[Percent]	Impact of adjustment on NIPA GDP		Share of NIPA GDP		Adjusted share of satellite GDP	
	1946	2004	1946	2004	1946	2004
Gross domestic product	48	26	100	100	100	100
Personal consumption expenditures and investment	51	31	n.a.	n.a.	78	80
Personal consumption expenditures	40	17	65	70	71	69
Services of consumer durables	5	7	n.a.	n.a.	3	6
Nonmarket services	42	18	n.a.	n.a.	28	14
Investment	0	0	n.a.	n.a.	7	11
Net exports	0	0	3	6	2	-4
Gross business investment *	-4	-6	14	16	7	8
Gov't consumption & investment with capital services	1	1	18	19	12	16

[Percent]	NIPA		Satellite account	
	1946	2004	1946	2004
Other measures				
Personal savings as a % of disposable personal income	9.6	1.8	11.7	9.8
Gross national savings as a % of gross national income	17.3	13.4	16.5	17.3

\* The apparent negative impacts of the adjustments on business investment are solely a result of the reclassification of residential investment from business to household investment.

# Opportunity Costs

[Hourly compensation]

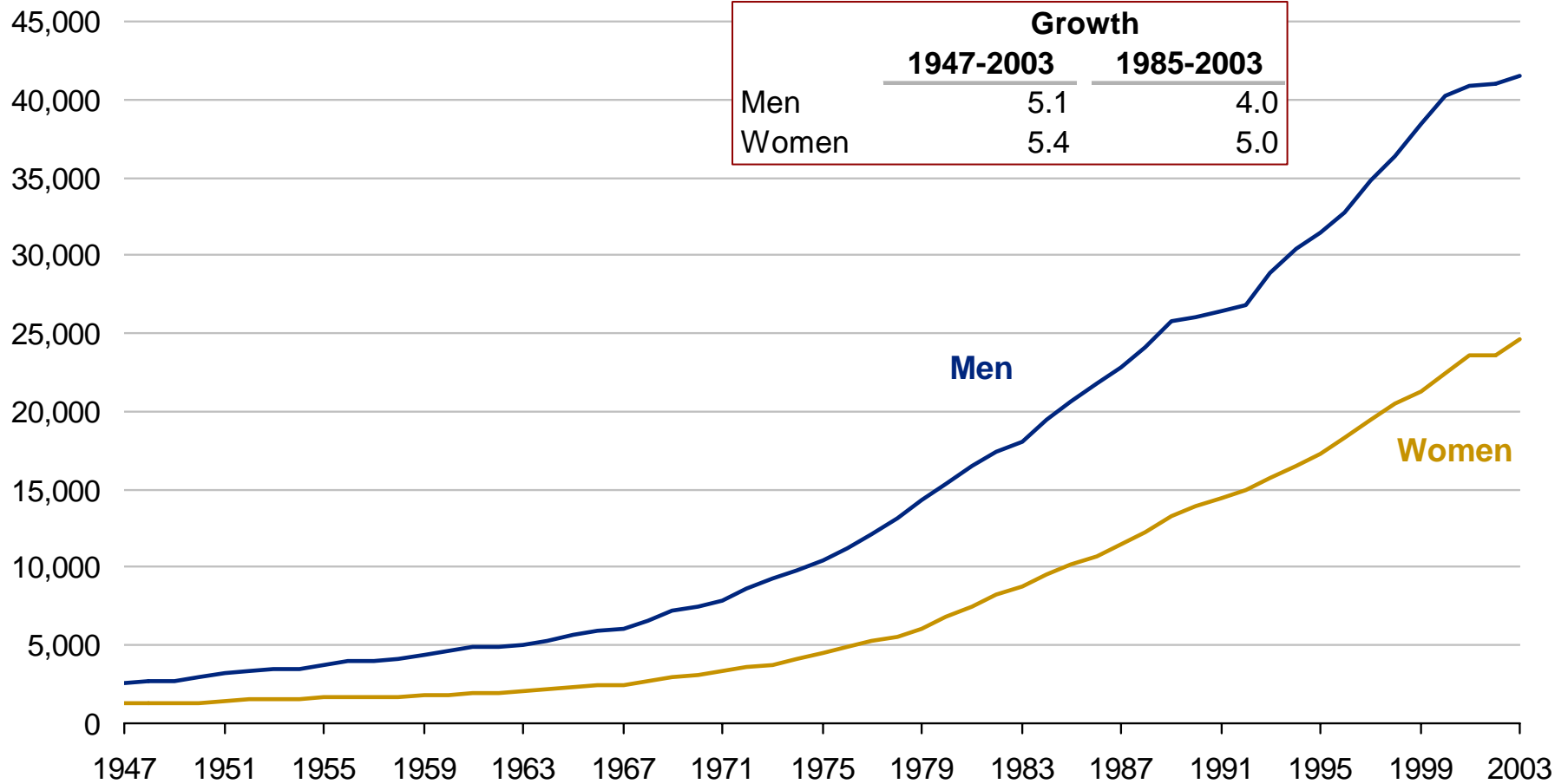


Source: BEA NIPA tables 6.2A-D and 6.5A-D. Minimum wage data from the Department of Labor.



# Opportunity Costs

[Annual income per person]



Source: Census income data from the Current Population Survey (CPS).



# GDP Component Price Growth

## Price change between 1985-2004 [Percent]

Gross domestic product	2.4		
Personal consumption expenditures	2.6		
Durable goods	-0.3	Gross private domestic investment	1.1
Motor vehicles and parts	1.4	Fixed investment	1.2
Furniture and household equipment	-3.1	Nonresidential	0.3
Furniture, including mattresses and bedsprings	0.5	Residential	3.4
Kitchen and other household appliances	-0.8	Net exports of goods and services	
China, glassware, tableware, and utensils	-0.1	Exports	0.7
Video, audio, & computer goods	-8.7	Imports	0.9
Video & audio goods (incl. musical instruments)	-3.6	Government consumption exp. & gross investment	2.8
Computers, peripherals, & software	-20.1		
Nondurable goods	2.2		
Food	2.6		
Food purchased for off-premise consumption	2.5		
Purchased meals and beverages	3.0		
Services	3.4		

Source: BEA NIPA tables 1.5.4 and 2.4.4.

# Why Eat Out?

According to the national accounts...

Percent growth 1985-2004	Prices	Quantities
Food purchased for off-premise consumption	2.5	1.8
Purchased meals and beverages	3.0	2.7

According to the household production accounts...

[Billions of dollars]	1985	2004	Growth	Share of 1985 exp.	Share of 2004 exp.	Price used
<b>Nominal expenses</b>						
Food:						
Food purchased for off-premise consumption	311	688	4.3	21	6	Off-premise consumption growth
Labor:						
Cooking hr * private households compensation	1,115	11,260	12.9	74	93	All worker compensation growth
Capital:						
Cooking % of HH hr * consumer durables srvcs.	64	105	2.6	4	1	Return on consumer durables growth
Cooking % of all hr * housing srvcs.	11	20	3.0	1	0	Return on housing growth
				100	100	
<b>Total</b>	<b>1,501</b>	<b>12,073</b>	<b>11.6</b>	<b>3.4</b>	<b>3.8</b>	<b>Weighted average growth<sup>1</sup></b>

1. Share of total expenses multiplied by the price index indicated under "Price used."

# Household Production Satellite Accounts

- Relatively small impact of alternative wages
  - Larger potential impact for continuous time series
- Future work:
  - Input-output satellite accounts
  - Independent estimates of output quantities and prices

