Comments on:
***Changes in the Volatility of Economic Activity at the Macro and Micro Levels* by Steven Davis and James Kahn**

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Why Has the Aggregate Economy Become More Stable over Time?

- The U.S. economy has been markedly more stable since the mid-1980s—the "Great Moderation."
- Leading explanations:
    - Milder economic shocks
    - Better monetary policy
    - Improved inventory management
    - Financial innovation
        - *Market-driven changes* such as improved assessment and pricing of risk, intermediation through markets more than institutions, and "democratization" of credit.
        - *Government-policy changes* such as elimination of Regulation Q deposit-rate ceilings, and greater bank diversification.

Paper Provides a Critical Review of the Evidence for Some Hypotheses

- I want to endorse two important points:
    - There probably is not a single explanation for the Great Moderation. This line of research is an exercise in assessing relative importance, not in ruling some idea in or out.
    - The proposition that we experienced a downward *break* in volatility rather than a downward *trend* does not look so obvious in the data and is difficult to reconcile with almost every hypothesis.

Two Principal Questions

- What can we learn from evolving volatility of the pieces of GDP?
    - By type of *product* (durable goods, services, etc.)
    - By type of *expenditure* (consumption, fixed investment, inventories, etc.)
- What can we learn from evolving volatility at the microeconomic level?
    - Sharper tests of hypotheses
    - Impetus to richer hypotheses
    - Better understand implications of the Great Moderation for the economy and economic policy

What Can We Learn from Evolving Volatility of Types of Products?

- Unfortunately, I do not think that much can be learned. The patterns we observe are consistent with a variety of hypotheses.

Contributions by Product to the Declining Volatility of Real GDP, 1960-1984 to 1985-2007

Component	Quarterly growth		Four-quarter growth	
	Change	Share	Change	Share
Variance of GDP	-15.1	100%	-6.0	100%
Variance of durable goods	-7.1	47%	-1.8	30%
Variance of nondurable goods	-3.0	20%	-.5	8%
Variance of services	-.5	3%	-.2	3%
Variance of structures	-1.4	9%	-.6	10%
Covariances	-3.1	21%	-3.0	50%

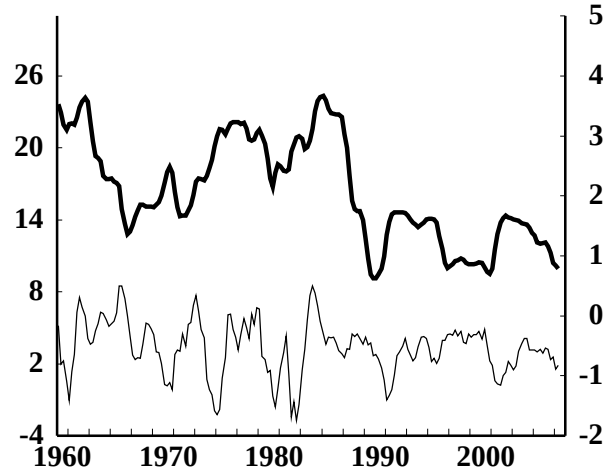
Declining Volatility of Real GDP and Product Types

Component	Standard deviation of quarterly growth			Standard deviation of four-quarter growth		
	1960:Q1 to 1984:Q4	1985:Q1 to 2007:Q2	Change	1960:Q1 to 1984:Q4	1985:Q1 to 2007:Q2	Change
GDP	4.4	2.0	-54%	2.8	1.3	-53%
Durable goods	18.2	8.0	-56%	9.2	4.6	-50%
Nondurable goods	7.8	4.8	-38%	2.8	1.7	-38%
Services	2.4	1.3	-44%	1.4	.9	-39%
Structures	11.8	6.1	-48%	7.4	3.9	-47%

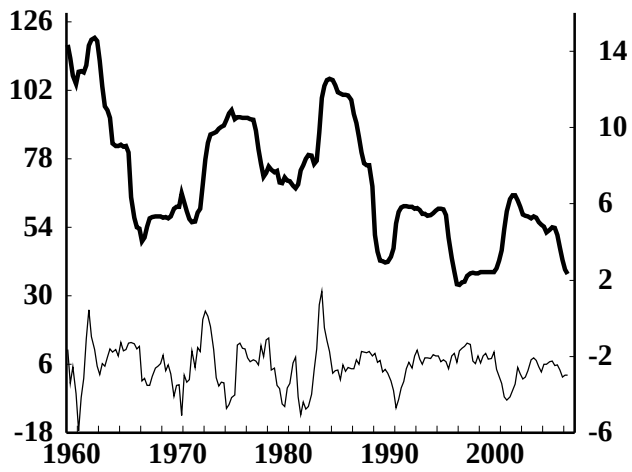
Volatility of GDP by Major Product Type

Thin line = Four-quarter growth rate (left scale)
Thick line = 5-year trailing moving average of the standard deviation (right scale)

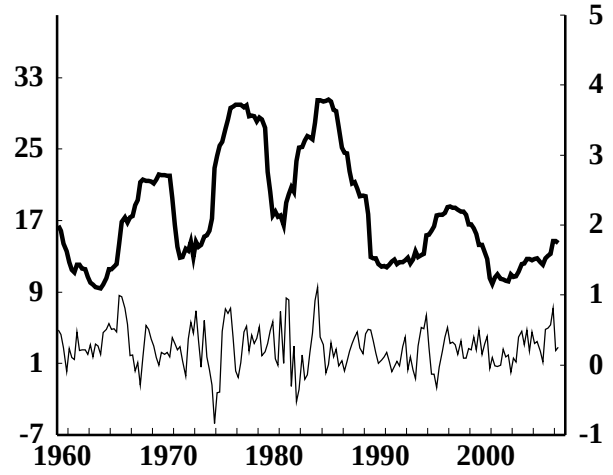
Real GDP



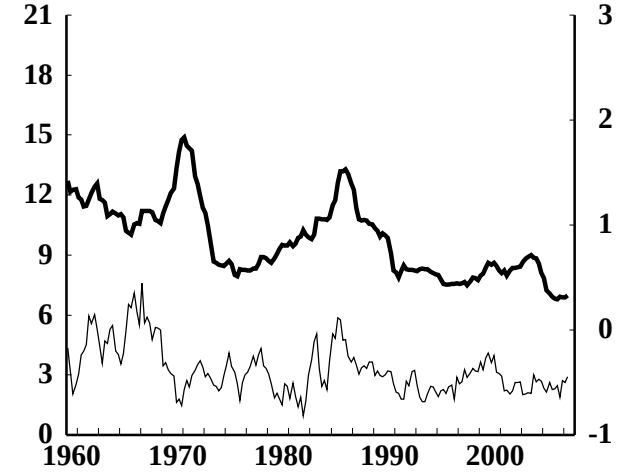
Real Durable Goods GDP



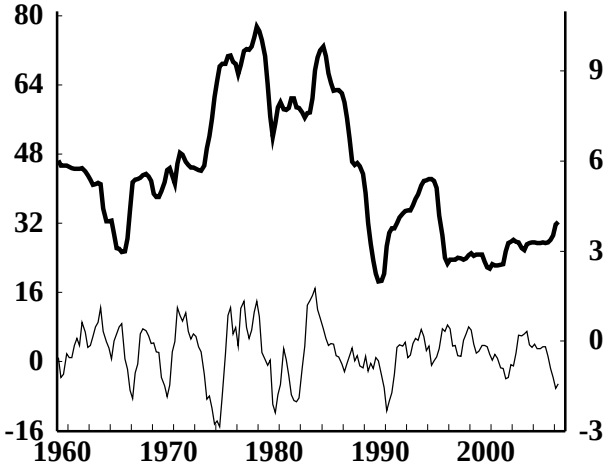
Real Non-Durable Goods GDP



Real Services GDP



Real Structures GDP



What Can We Learn from Evolving Volatility of Types of Expenditures?

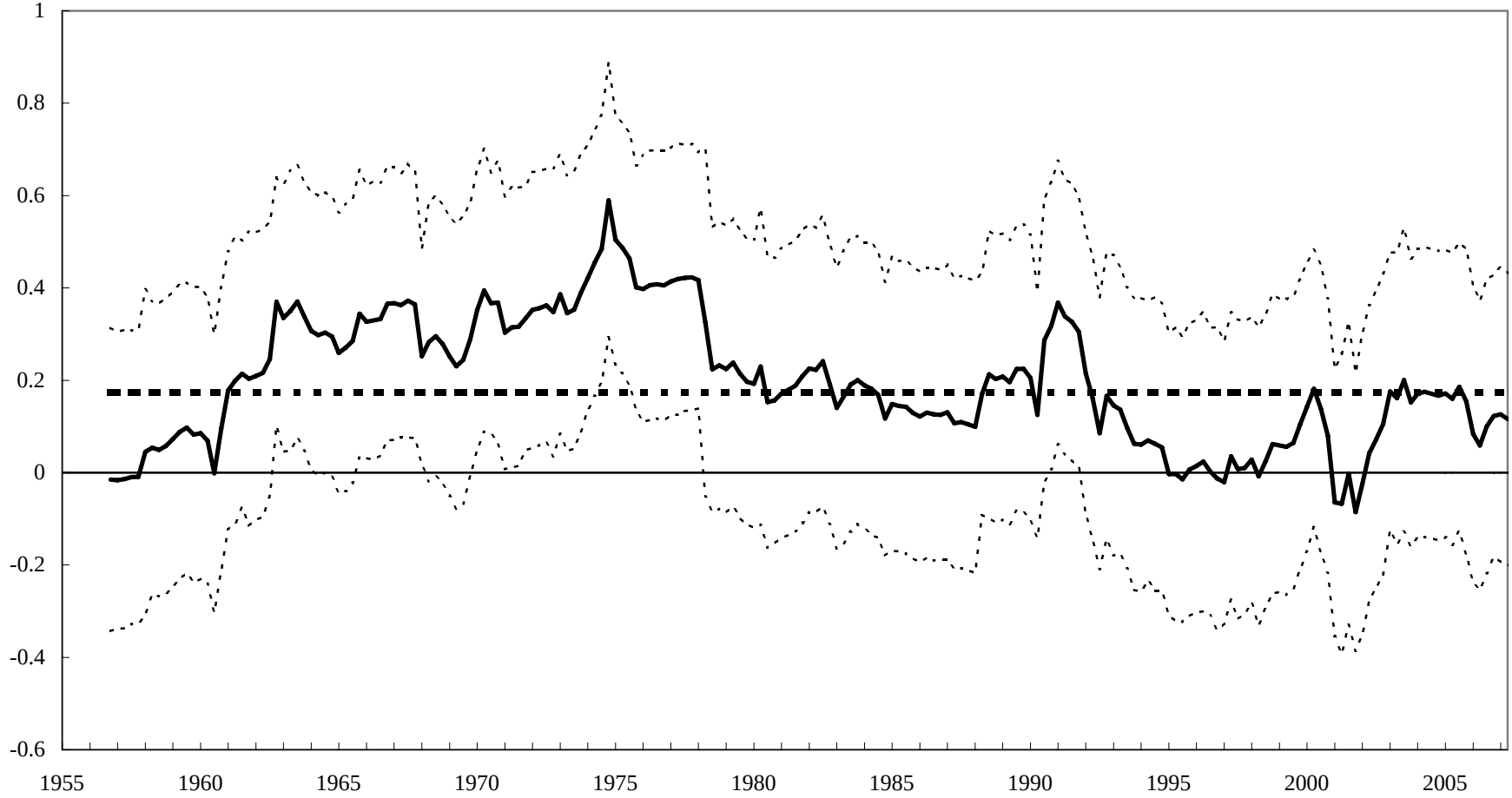
- I think we can learn a little more than we can learn from the data on types of products, but only a little.

Contributions by Expenditure to the Declining Volatility of Real GDP, 1960-1984 to 1985-2004

Component	Quarterly growth		Four-quarter growth	
	Change	Share	Change	Share
Variance of GDP	-15.1	100%	-5.9	100%
Household sector	-5.4	36%	-2.8	48%
Variance of PCE	-2.5	16%	-1.2	20%
Variance of housing	-.9	6%	-.5	8%
Covar. of PCE, housing	-2.0	13%	-1.2	20%
Variance of BFI	-.5	3%	-.2	3%
Inventory investment	-7.8	51%	-2.7	45%
Variance	-5.4	35%	-.7	11%
Covar. of invent., fin. sales	-2.4	16%	-2.0	34%
Other variances and covariances	-1.5	10%	-.3	5%

Rolling (40-Quarter) Correlation between Contribution to Real GDP Growth of Inventories Growth and Final Sales

Coefficient on Lagged Final Sales Growth from 40-Quarter Rolling Regressions of Final Sales Growth on Lagged Final Sales Growth



a. The solid line is the estimated coefficient, and the thin dashed lines represent 95% confidence intervals. Dates are final date in each 40-quarter window. The thick dashed line represents the coefficient from the same regression using the entire sample (1947Q1-2007Q2).

Declining Volatility of Real GDP and its Components

Component	Standard deviation of quarterly growth			Standard deviation of four-quarter growth		
	1960:Q1-1984:Q4	1985:Q1-2004:Q4	Change	1960:Q1-1984:Q4	1985:Q1-2004:Q4	Change
GDP	4.4	2.1	-53%	2.8	1.4	-51%
PCE	3.3	2.0	-39%	2.2	1.2	-44%
Housing	24.1	9.5	-60%	17.3	7.1	-59%
BFI	10.3	8.4	-19%	7.7	6.5	-15%
Government	5.0	3.6	-29%	2.9	2.1	-29%
Exports	23.1	8.1	-65%	7.4	5.6	-24%
Imports	20.0	7.6	-62%	9.1	4.9	-47%

What Can We Learn from Evolving Microeconomic Volatility?

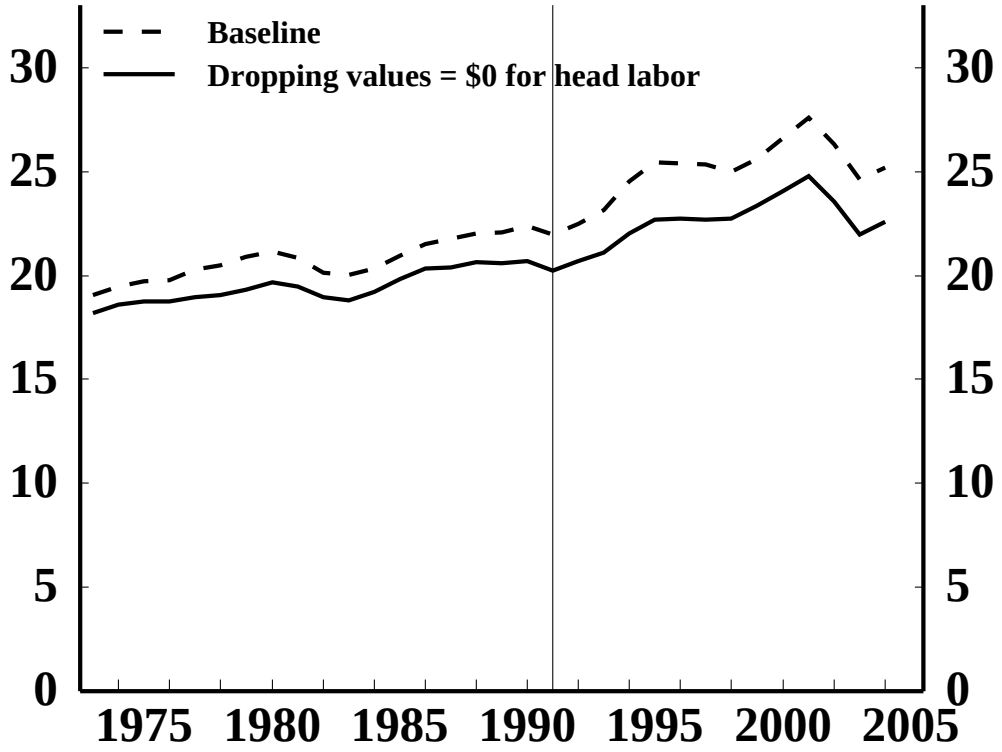
- Sharper tests of hypotheses
    - Aggregate data are a blunt tool, especially because all economic variables depend on all other economic variables.
- Impetus to richer hypotheses
    - But note that many different things can be happening in the economy at once.
- Better understand implications of the Great Moderation for the economy and economic policy
    - Should asset prices reflect a riskier or less risky world?
    - Is economic insecurity a growing or shrinking problem?

Is the Volatility of Household Income Rising or Falling?

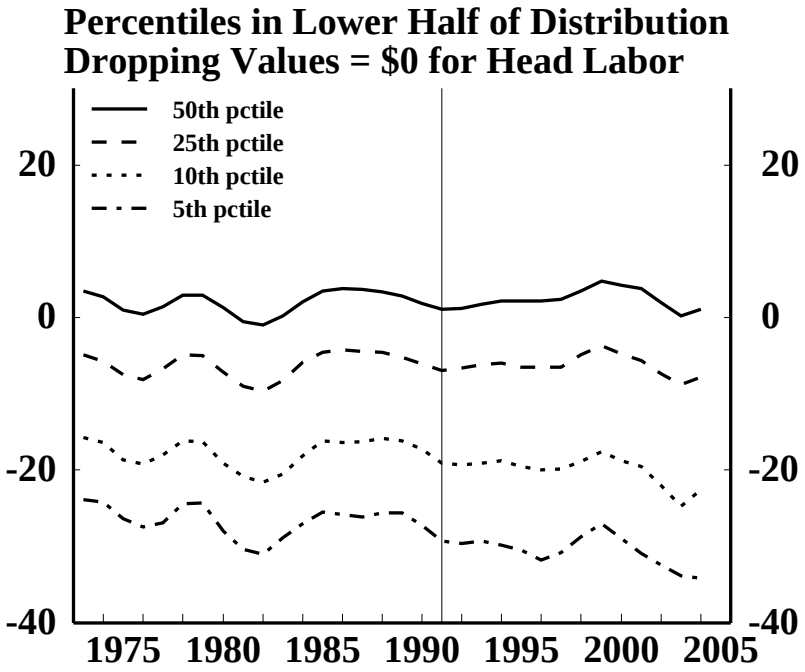
- Many commentators have argued that the economy is more "dynamic"—that globalization, deregulation, and rapid technological change have increased "creative destruction" and competitive pressures bearing on workers and firms.
- Empirical evidence is unclear and almost entirely focused on individuals' earnings.

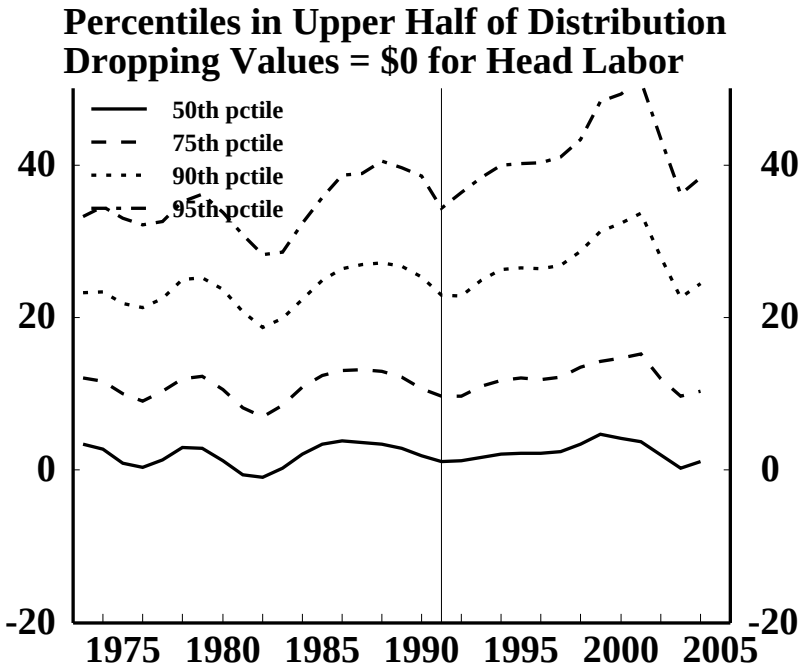
Volatility of Household Income

Standard Deviation of Percent Changes



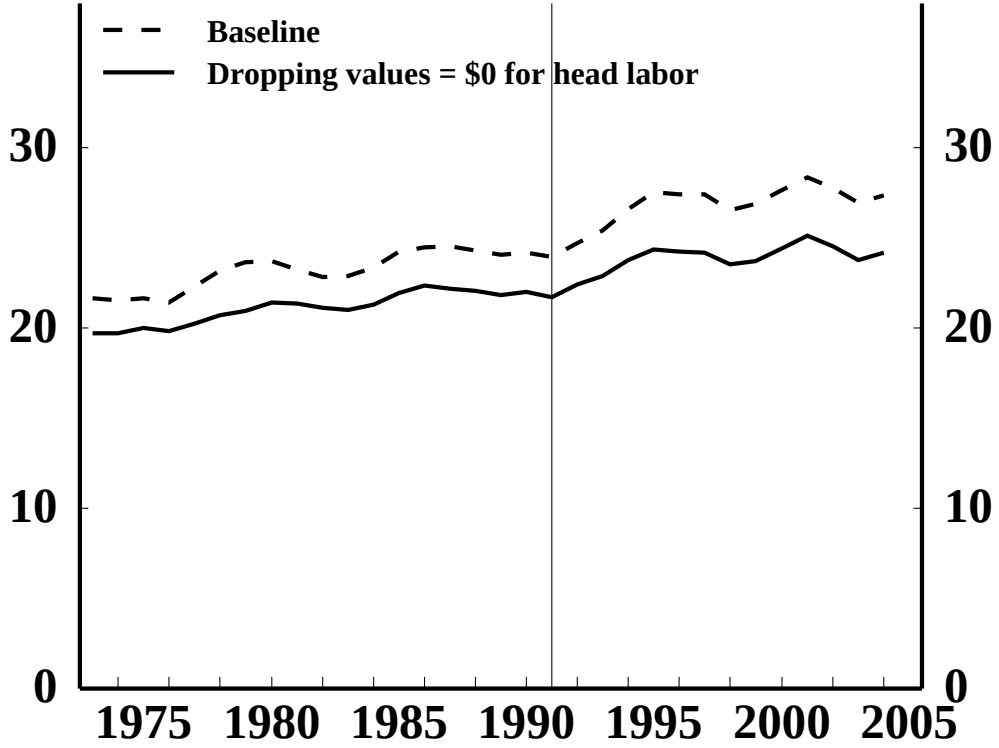
Volatility of Household Income





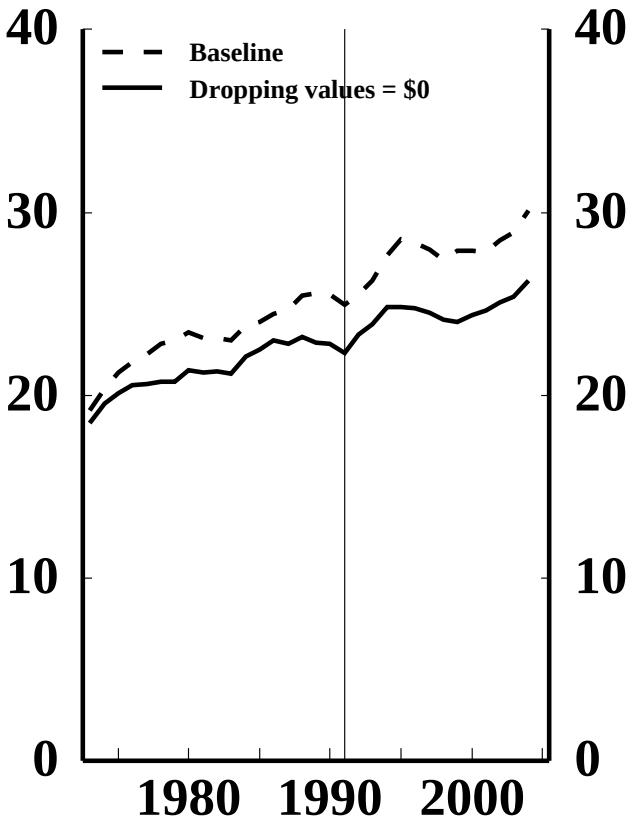
Head and Spouse Combined Labor Earnings

Standard Deviation of Percent Changes

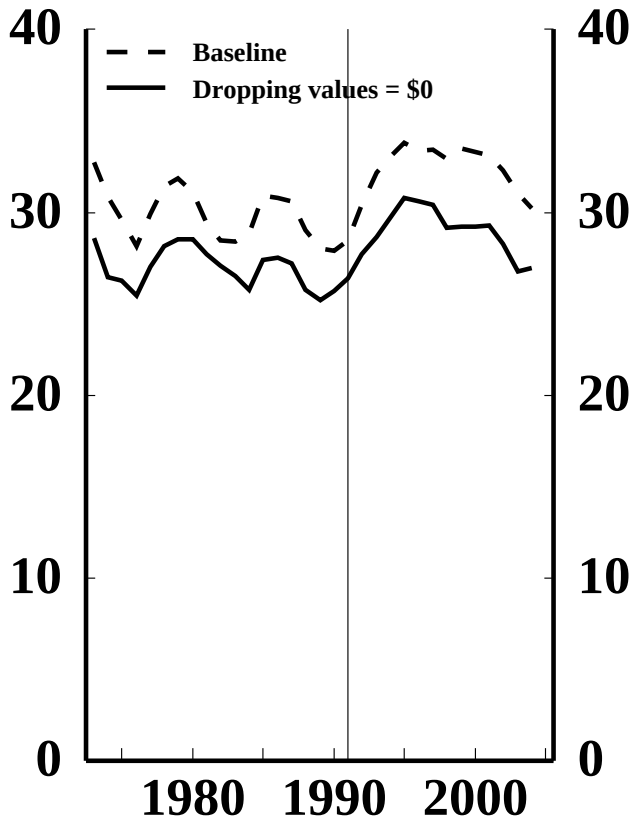


Household Head Labor Earnings

Male Heads
Standard Deviation of Percent Changes



Female Heads
Standard Deviation of Percent Changes



What Has Happened to the Relationship Between Household Consumption and Income?

- Dynan, Elmendorf, and Sichel hypothesize that financial innovation has enhanced the ability of households to borrow funds.

- More borrowing moderates spending if households and firms can better sustain spending in the face of cyclical weakness in income and cash flow. But it could also create more volatility by making it easier to adjust to changes in target capital stocks.

- Using aggregate data, we showed that consumer spending has become less responsive over time to contemporaneous shifts in income.
    - The MPC out of income declined notably between 1965-1984 and 1985-2004: For spending on nondurables and services, from 0.23 to -0.02. For total spending, from 0.36 to 0.05.
    - This change is especially noticeable in periods of unusual weakness in income.

- What do household data say?

- We are using PSID and CEX data to conduct similar tests. The basic empirical specification:

$$\Delta \ln C_{it} = \beta_0 + \beta_1 \Delta \ln Y_{it} + H_{it}\gamma_1 + T_t\gamma_2 + \varepsilon_{it}$$

- Preliminary results:
  - Coefficient on income: 0.073 (standard error = .004)
  - With dummy variable for period after 1984:
    - Coefficient on income = .086 (.008)
    - Coefficient on income interacted with dummy = -.019 (.009)