

**TRANSFER PAYMENTS AND THE MACROECONOMY:  
THE EFFECTS OF SOCIAL SECURITY BENEFIT INCREASES, 1952–1991**

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David H. Romer

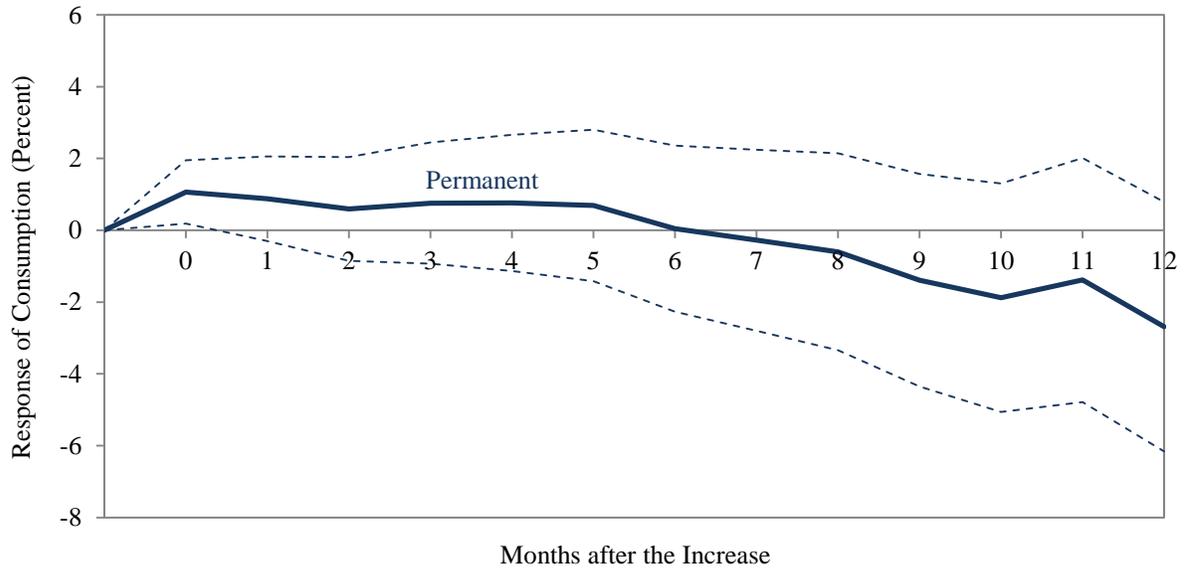
**ONLINE APPENDIX B**

**SUPPLEMENTAL FIGURES**

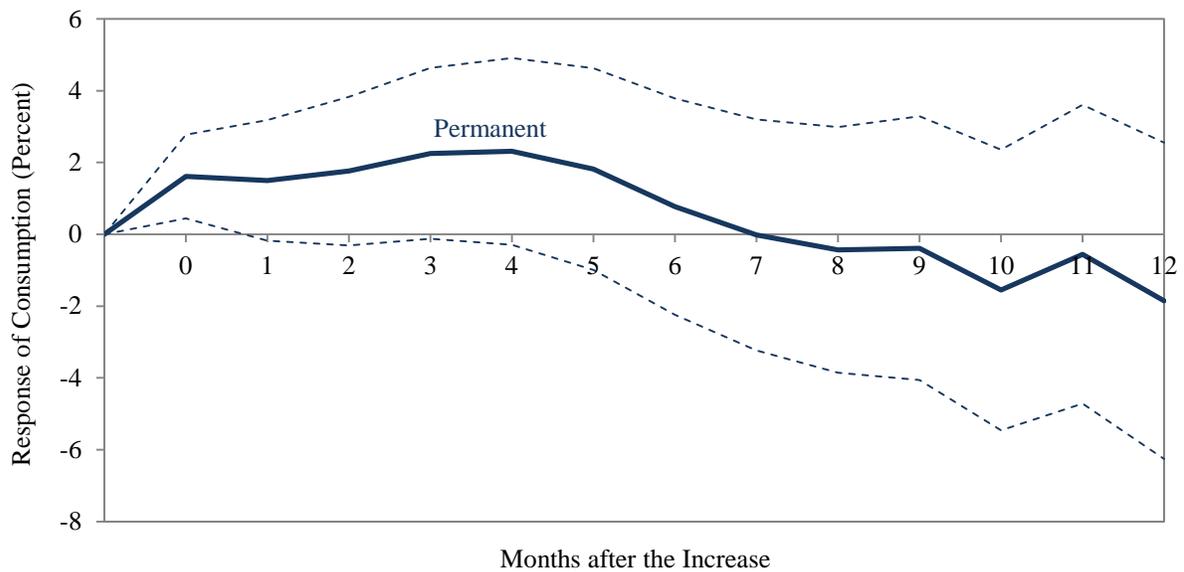
This appendix presents the figures corresponding to the robustness checks described in the text. In particular, Figures B1 through B4 show the auxiliary figures for Section I of the paper; Figures B5 through B9 show those for Section II; and Figures B10 through B18 show those for Section III.

**FIGURE B1**  
**Baseline Consumption Results for Alternative Sample Periods**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**a. 1959:2–1991:12**

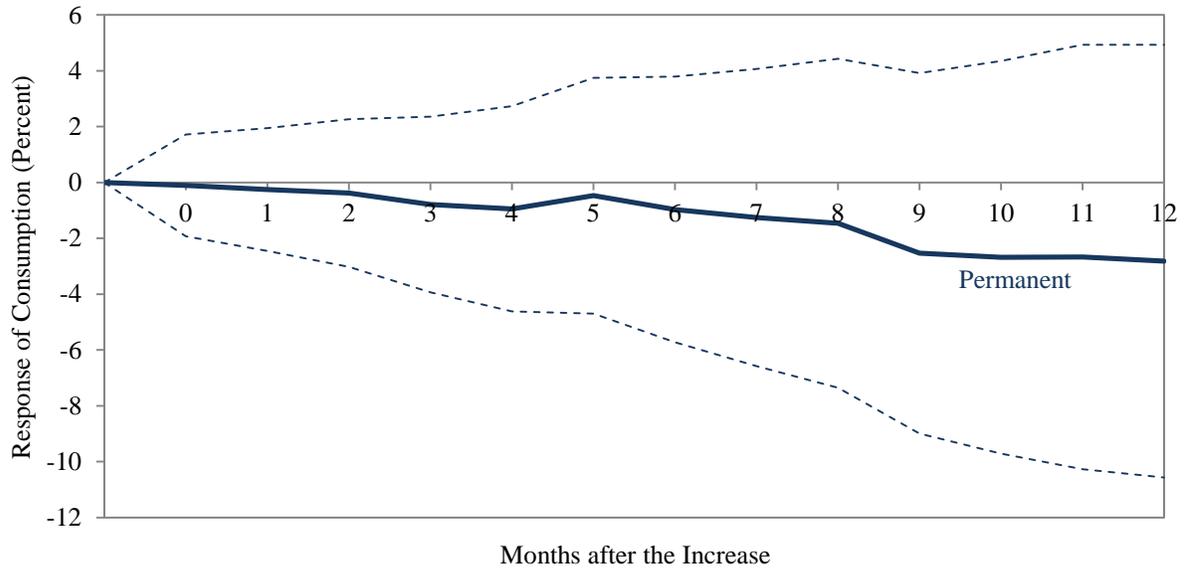


**b. 1952:1–1974:12**



**FIGURE B1 (Continued)**  
**Baseline Consumption Results for Alternative Sample Periods**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**c. 1975:1–1991:12**



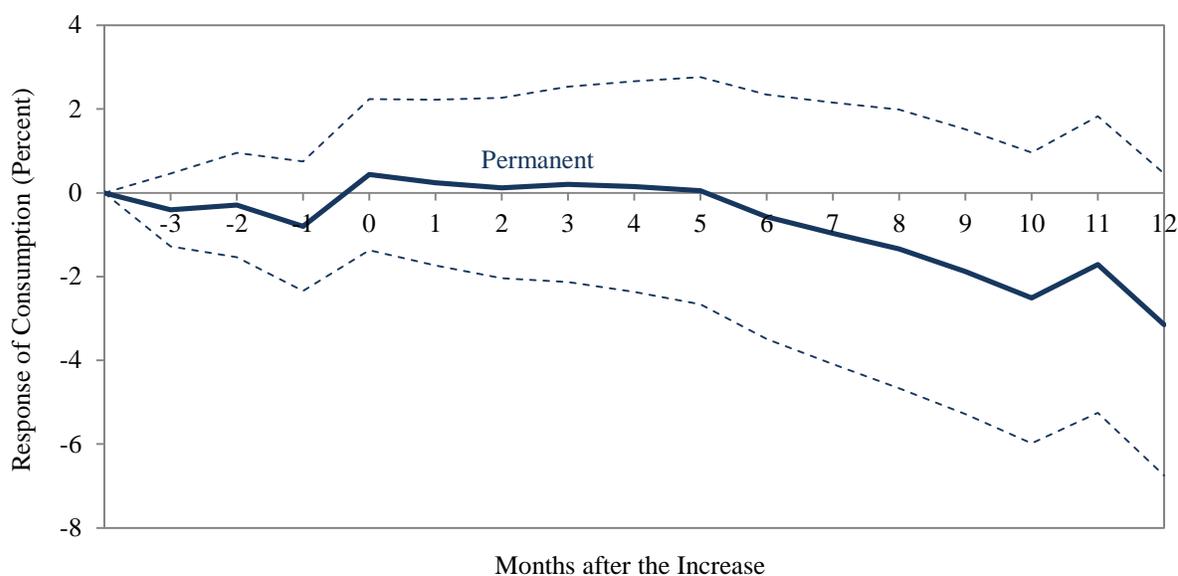
Notes: The figures show the results from estimating equation (2) over various alternative sample periods, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

**FIGURE B2**  
**Baseline Consumption Results Including Three Leads**  
 (Regression Coefficients and Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income)

**a. Regression Coefficients for Permanent Benefit Increases**

Lag of the Permanent Benefits Variable	Coefficient Estimate	Standard Error	<i>t</i> -Statistic
-3	-0.41	0.43	-0.94
-2	0.12	0.43	0.27
-1	-0.51	0.43	-1.17
0	1.24	0.43	2.84
1	-0.19	0.37	-0.52
2	-0.13	0.37	-0.34
3	0.09	0.37	0.23
4	-0.05	0.37	-0.14
5	-0.10	0.37	-0.26
6	-0.62	0.37	-1.68
7	-0.39	0.37	-1.05
8	-0.37	0.37	-1.00
9	-0.54	0.44	-1.24
10	-0.63	0.44	-1.43
11	0.80	0.44	1.81
12	-1.43	0.44	-3.26

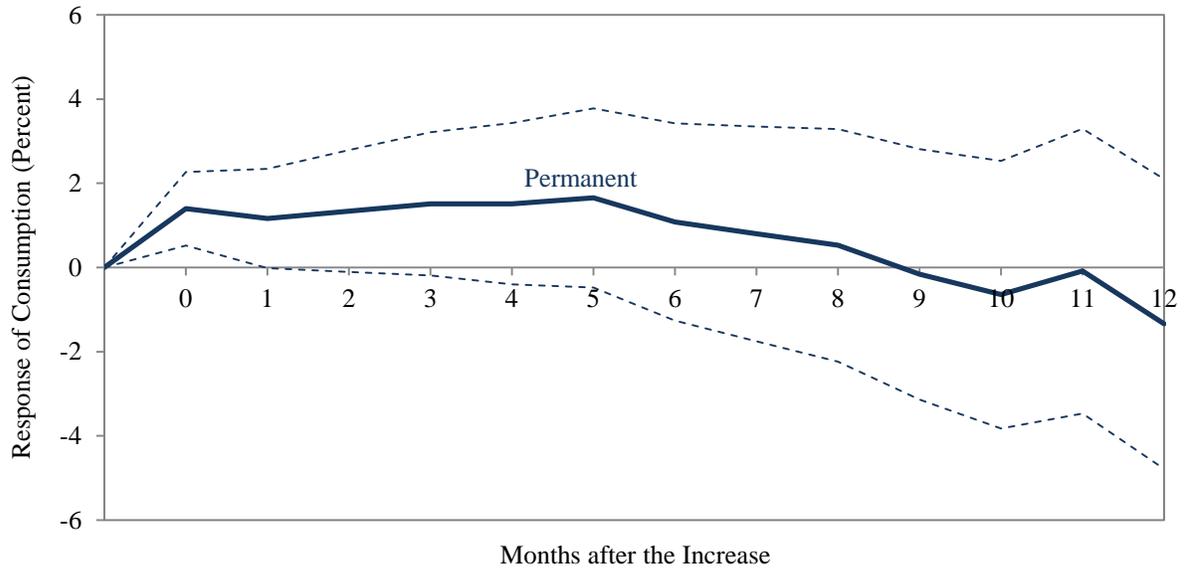
**b. Cumulative Impact on Consumption**



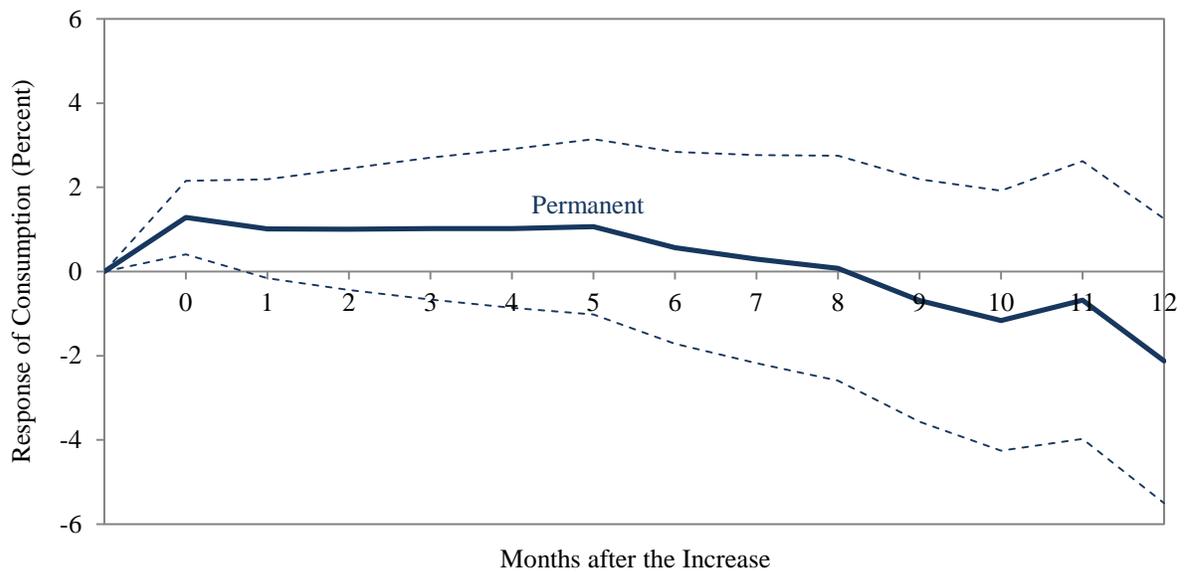
Notes: The regression coefficients and the figure show the results from estimating equation (2) over the sample period 1952:1–1991:12, including 3 leads, the contemporaneous value, and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

**FIGURE B3**  
**Consumption Results Including Various Control Variables**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**a. Controlling for the Contemporaneous Value and 12 Lags of Oil Price Inflation**

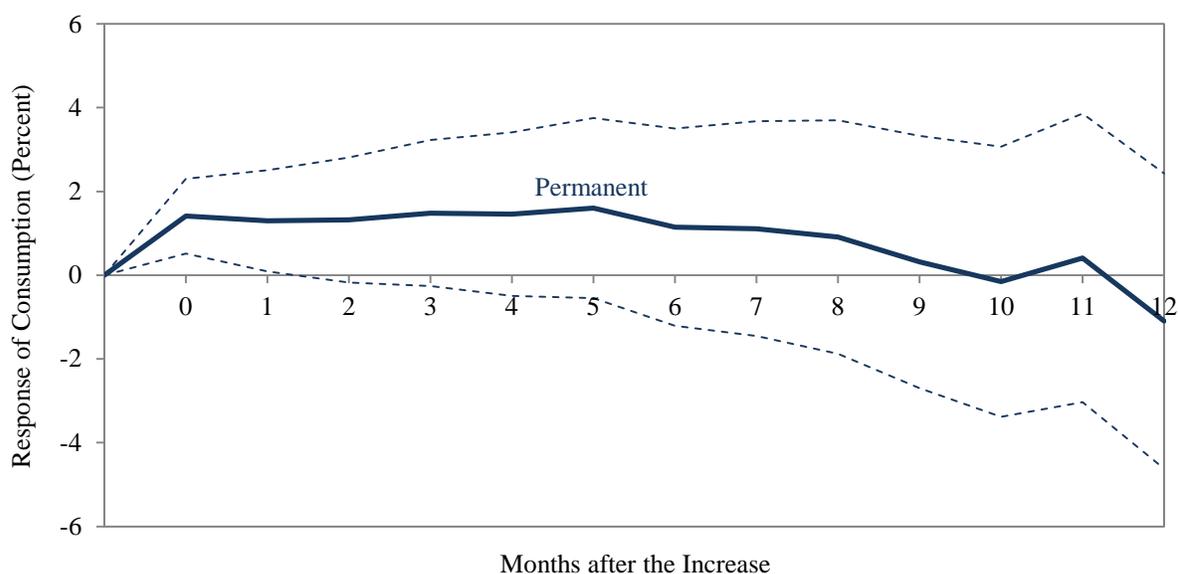


**b. Controlling for the Contemporaneous Value and 12 Lags of Monetary Policy Shocks**



**FIGURE B3 (Continued)**  
**Consumption Results Including Various Control Variables**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

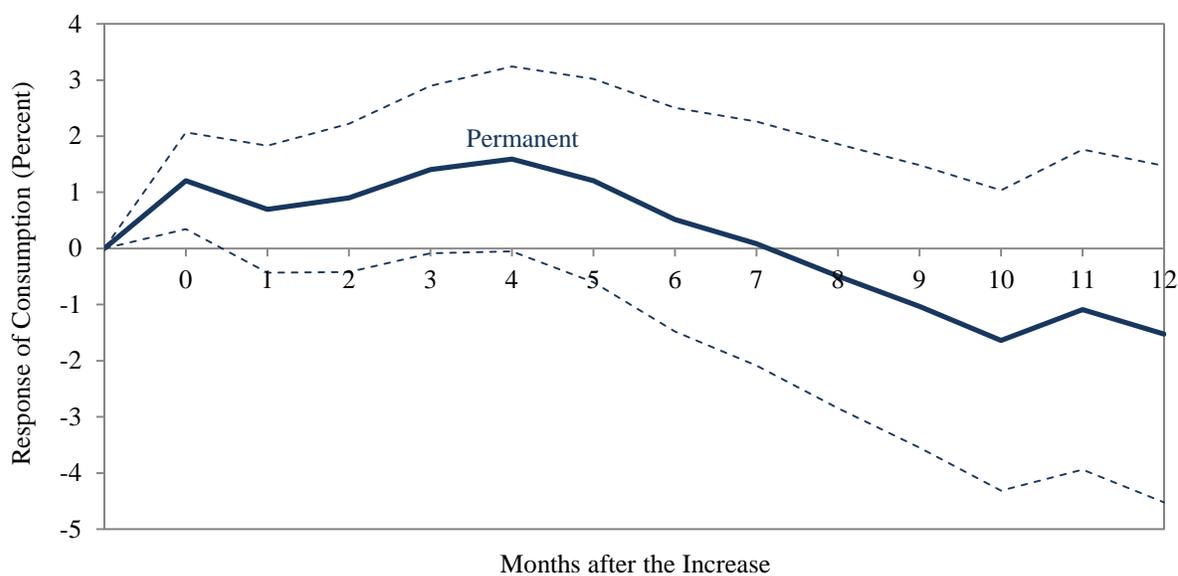
**c. Controlling for the Contemporaneous Value and 24 Lags of Monetary Policy Shocks**



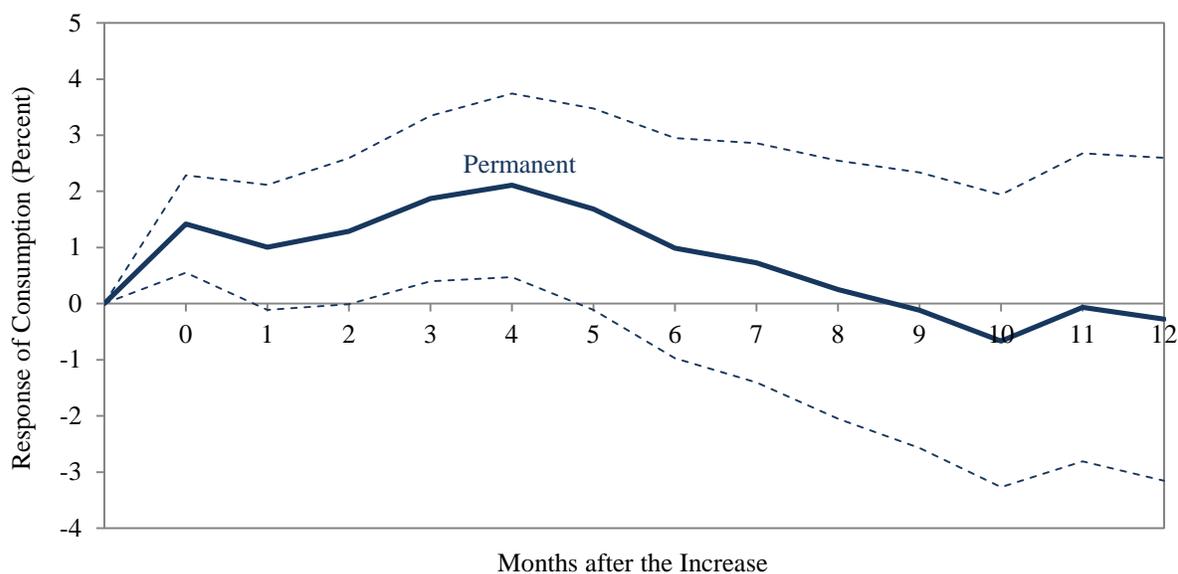
Notes: The figures show the results from estimating equation (2) over the sample period 1952:1–1991:12, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including various additional control variables. Panel (a) includes the contemporaneous value and 12 lags of the change in the logarithm of oil prices; panel (b) includes the contemporaneous value and 12 lags of the Romer and Romer dummy variable for shifts to contractionary monetary policy; and panel (c) includes the contemporaneous value and 24 lags of the Romer and Romer dummy. See the text for the details and the sources of the control variables. The dashed lines show the two-standard-error confidence bands.

**FIGURE B4**  
**Consumption Results Estimated Using the Jordà Local Projection Approach**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**a. Three Variables (Consumption, Permanent and Temporary Benefit Increases)**

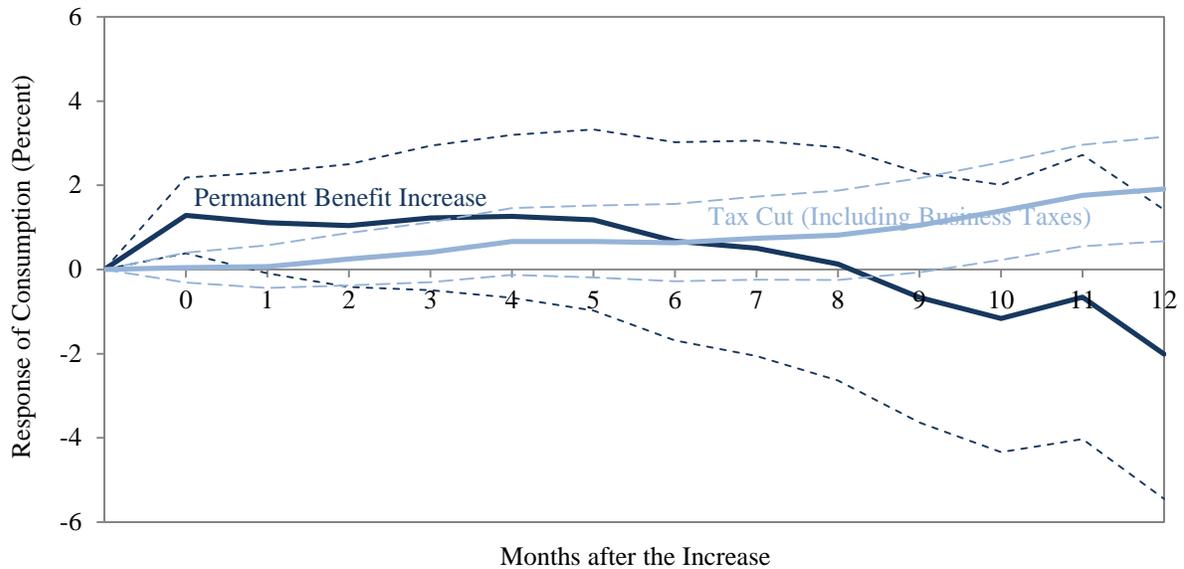


**b. Four Variables (Consumption, Permanent and Temporary Benefit Increases, Prices)**



Notes: The responses in each figure are estimated by regressing the logarithm of consumption at various horizons after time  $t$  on permanent and temporary benefit increases at time  $t$ . Panel (a) includes 12 lags of each of permanent benefit increases, temporary benefit increases, and the logarithm of consumption as controls. Panel (b) includes the same controls plus 12 lags of the logarithm of prices. The data used are for 1952:1–1991:12. The dashed lines show the two-standard-error confidence bands.

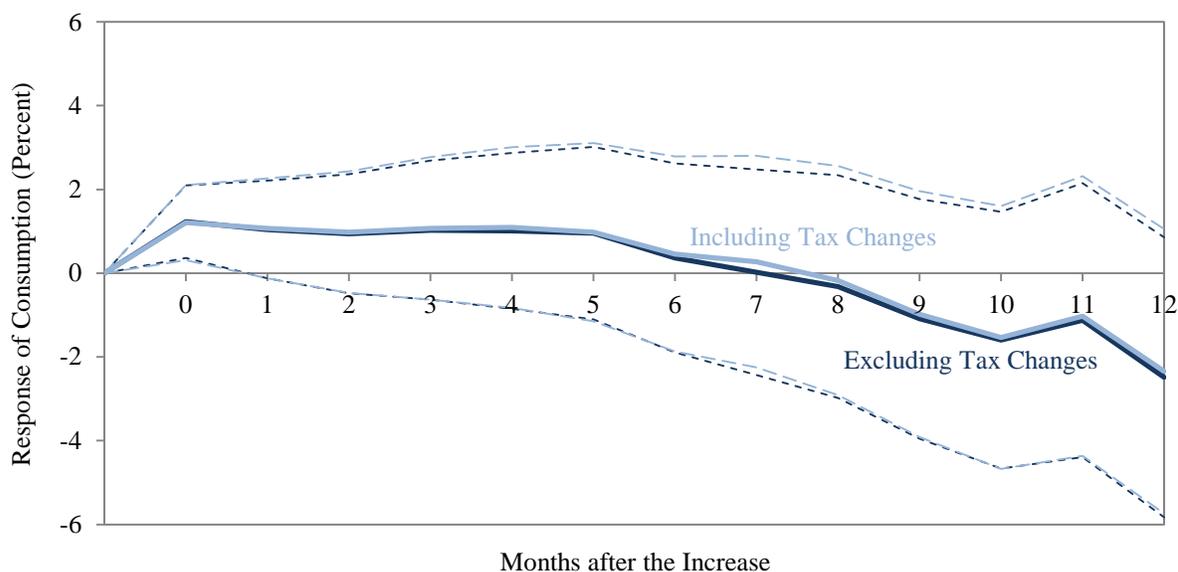
**FIGURE B5**  
**Consumption Results for Benefit Increases and Tax Cuts (Including Business Tax Changes)**  
 (Cumulative Impact of a Benefit Increase and a Tax Cut of 1 Percent of Personal Income on Consumption)



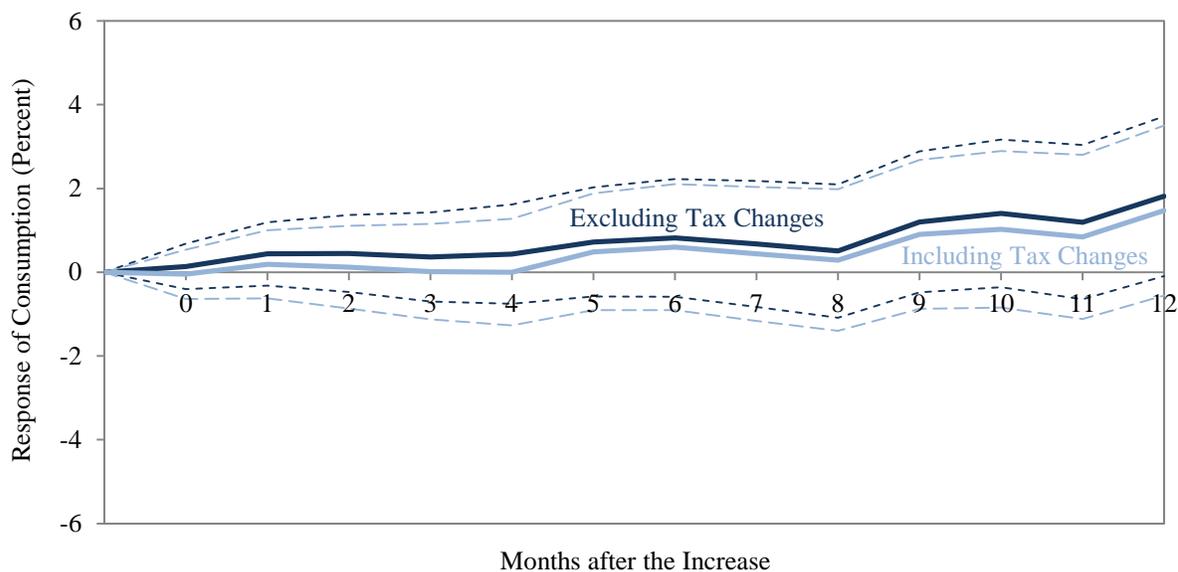
Notes: The figure shows the results from estimating equation (2) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The tax variable used includes business tax changes; see text for details. The sample period is 1952:1–1991:12. The dashed lines show the two-standard-error confidence bands.

**FIGURE B6**  
**Consumption Results for Benefit Increases with and without Tax Changes**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**a. Permanent Benefit Increase**



**b. Temporary Benefit Increase**

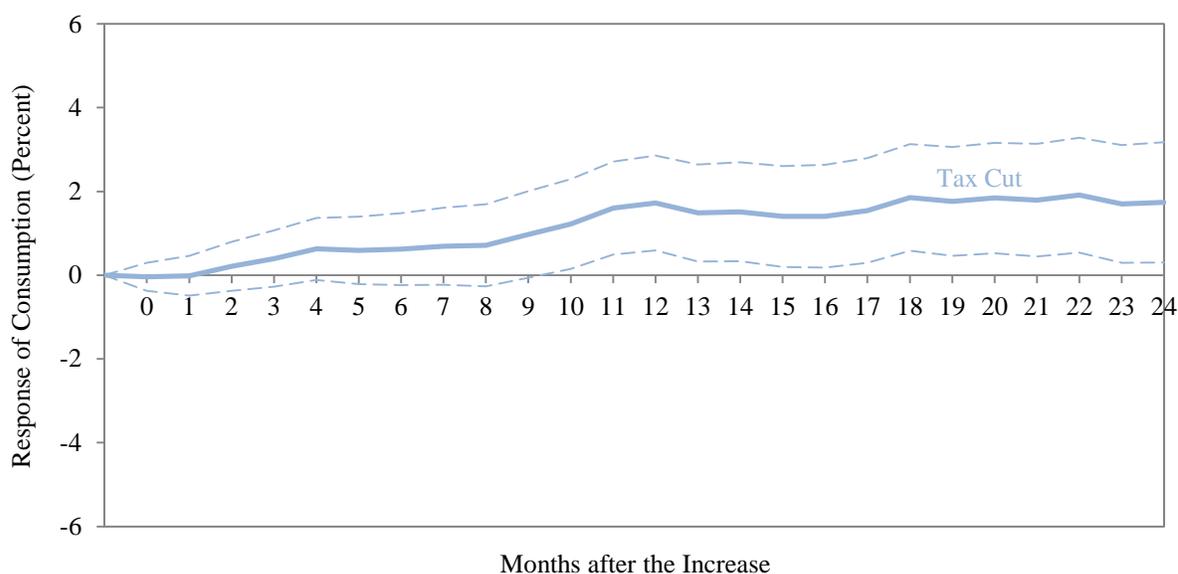


Notes: The dark blue line in each panel shows the baseline results from estimating equation (2) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The light blue line in each panel shows the results from estimating equation (2) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The sample period is 1952:1–1991:12. The dashed lines show the two-standard-error confidence bands.

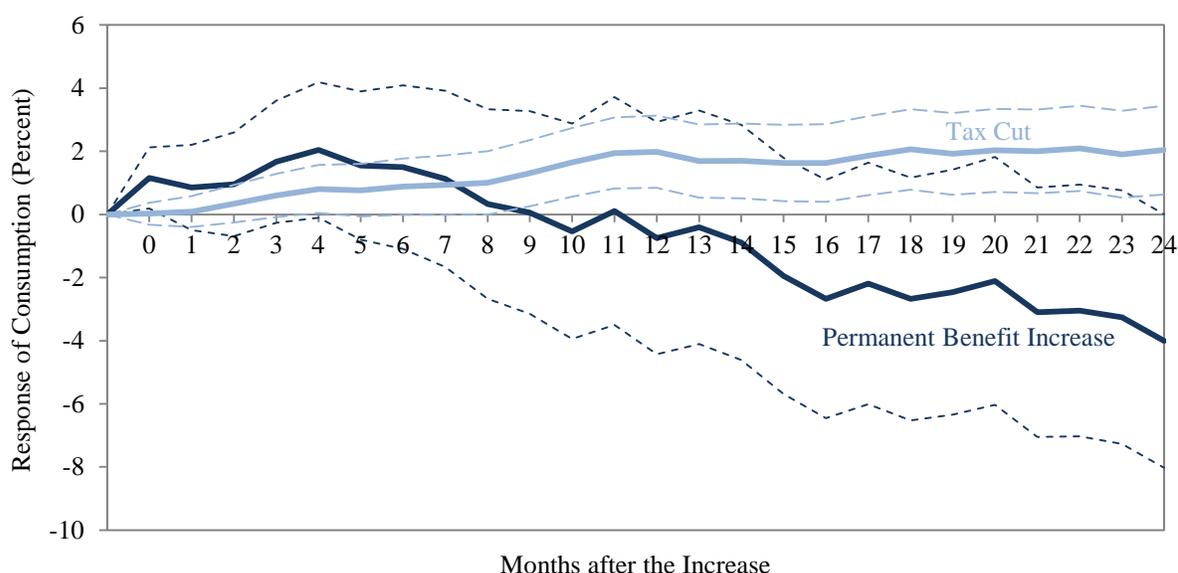
**FIGURE B7**  
**Consumption Results Going out 24 Months**

(Cumulative Impact of a Benefit Increase and a Tax Cut of 1 Percent of Personal Income on Consumption)

**a. Impact of a Tax Cut**

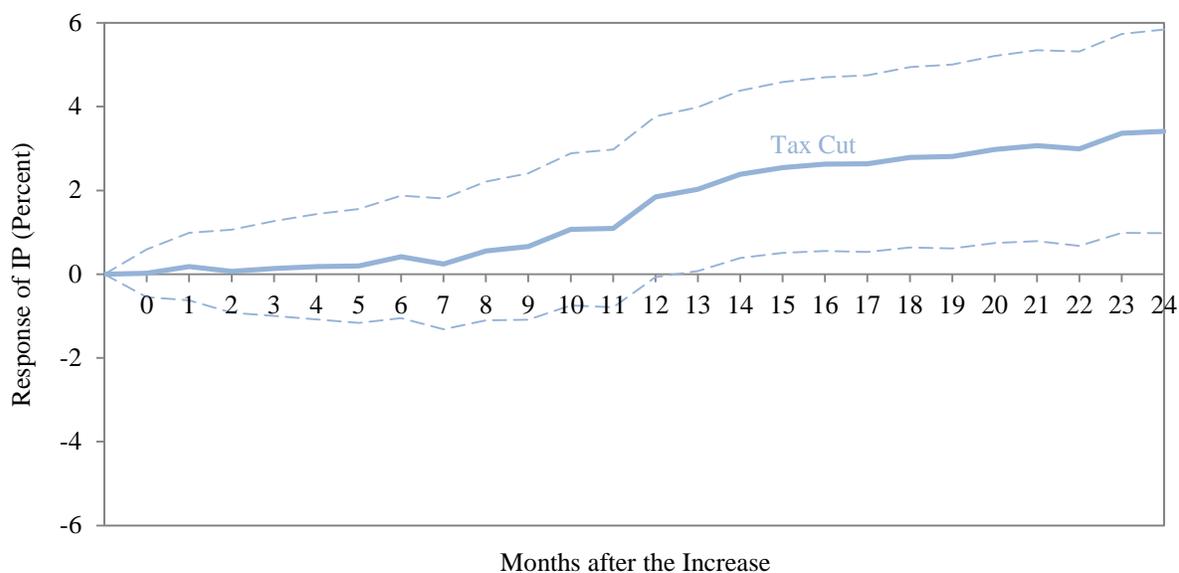


**b. Impact of a Permanent Benefit Increase and a Tax Cut**



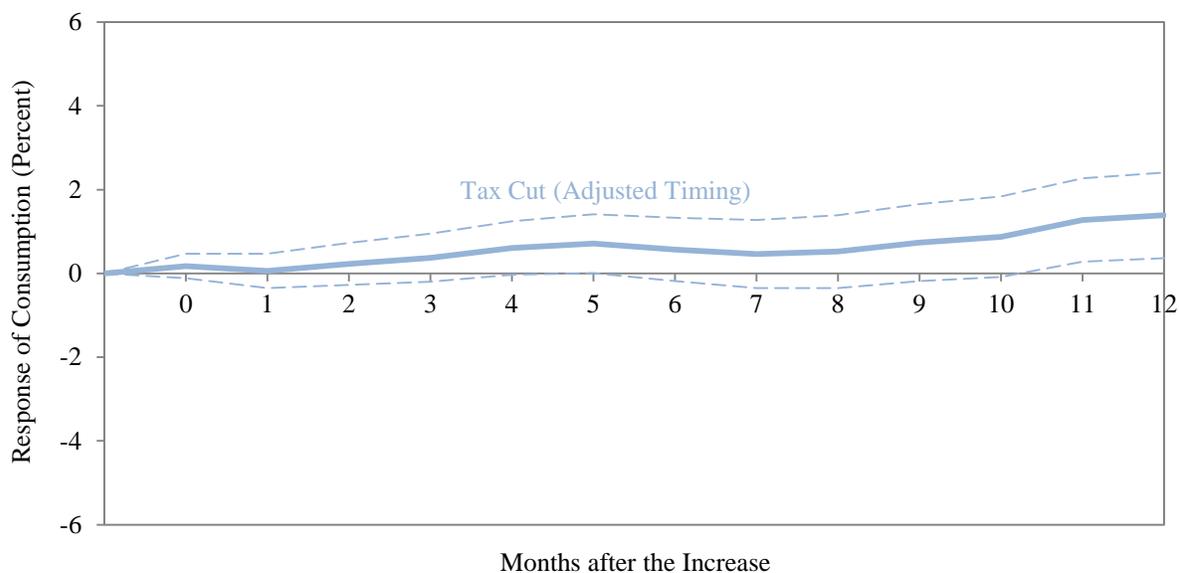
Notes: The results in panel (a) are from estimating equation (2) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The results in panel (b) are from estimating equation (2) including the contemporaneous value and 24 lags of both permanent and temporary benefit increases, and the contemporaneous value and 24 lags of the tax variable. The sample period in panel (a) is 1952:1–1991:12; in panel (b) it is 1953:1–1991:12. The dashed lines show the two-standard-error confidence bands.

**FIGURE B8**  
**Industrial Production Results for Tax Cuts Going out 24 Months**  
 (Cumulative Impact of a Tax Cut of 1 Percent of Personal Income on Industrial Production)



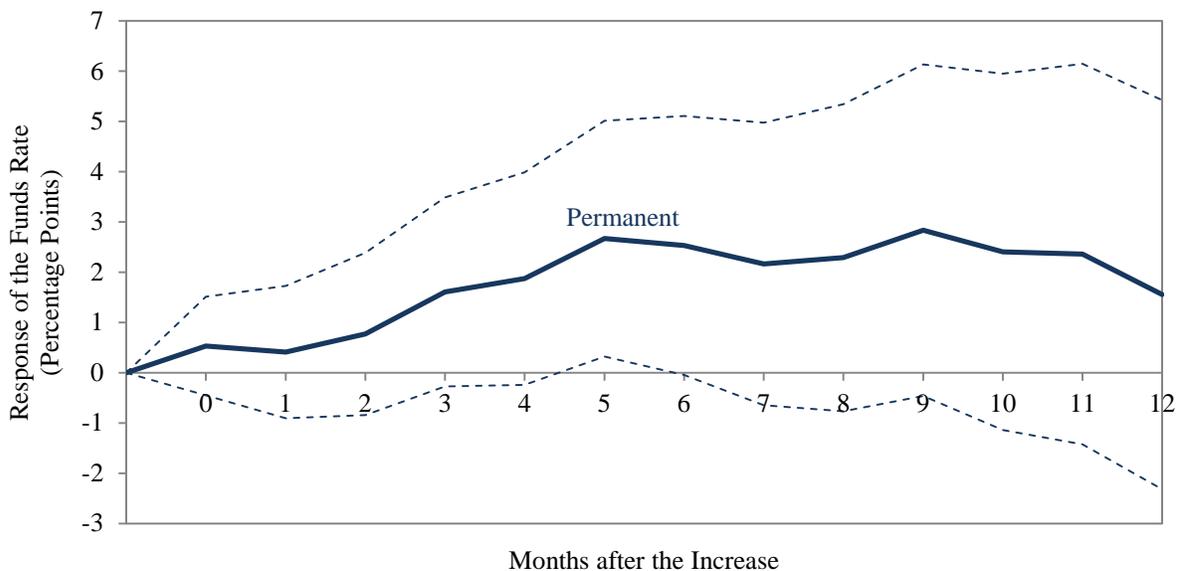
Notes: The figure shows the results from estimating equation (2) with the change in the logarithm of the index of industrial production as the dependent variable. The regression includes the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and includes the contemporaneous value and 24 lags of the tax variable as additional controls. The sample period is 1952:1–1991:12. The dashed lines show the two-standard-error confidence bands.

**FIGURE B9**  
**Consumption Results for Tax Cuts (Timing Adjusted to Reflect Withholding)**  
 (Cumulative Impact of a Tax Cut of 1 Percent of Personal Income on Consumption)



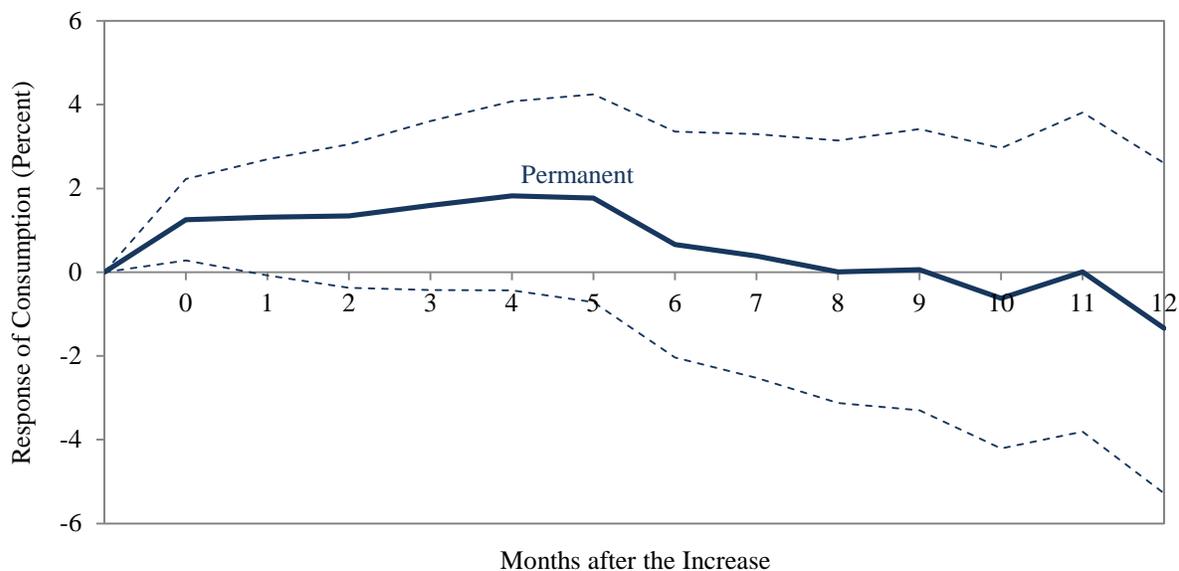
Notes: The figure shows the results from estimating equation (2) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The tax variable used adjusts the timing of the 1964 and Reagan tax cuts to more closely reflect the change in withholding; see text for details. The sample period is 1952:1–1991:12. The dashed lines show the two-standard-error confidence bands.

**FIGURE B10**  
**Baseline Funds Rate Results for the Post-1959 Sample**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)



Notes: The figure shows the results from estimating equation (3) over the sample period 1959:2–1991:12, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

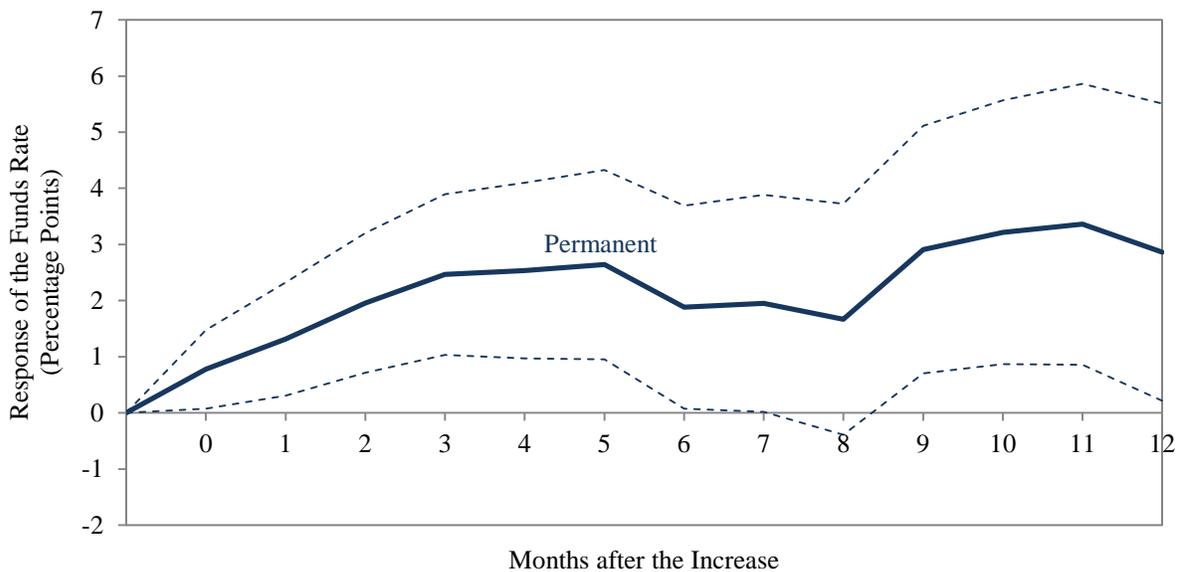
**FIGURE B11**  
**Baseline Consumption Results for the Pre-Volcker Sample Period**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)



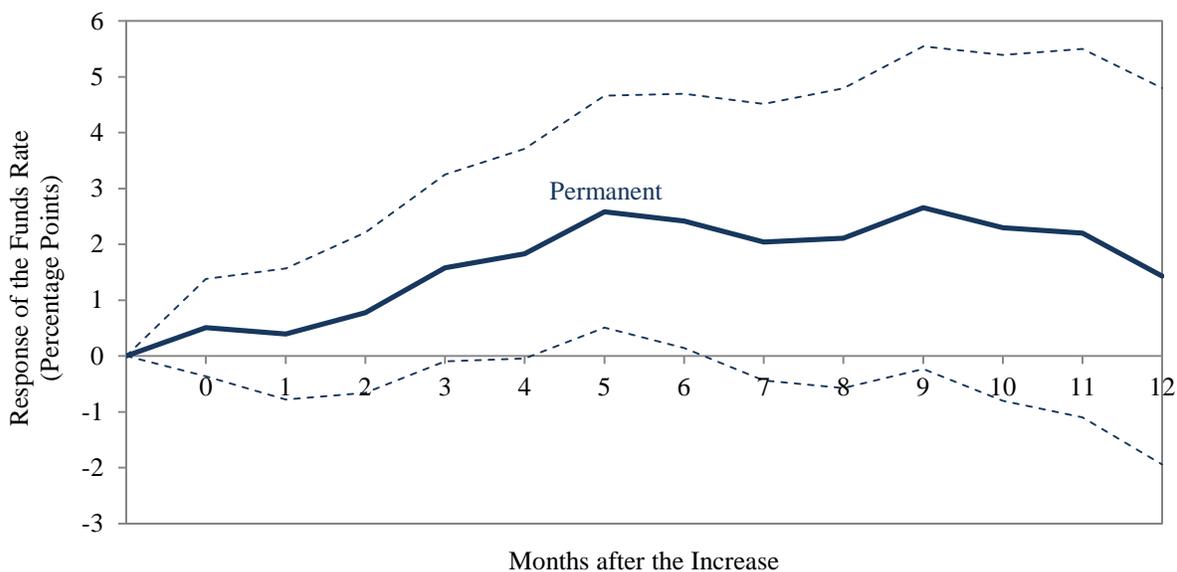
Notes: The figure shows the results from estimating equation (2) over the sample period 1952:1–1979:9, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

**FIGURE B12**  
**Baseline Federal Funds Rates Results for Alternative Sample Periods**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)

**a. 1952:1–1974:12**

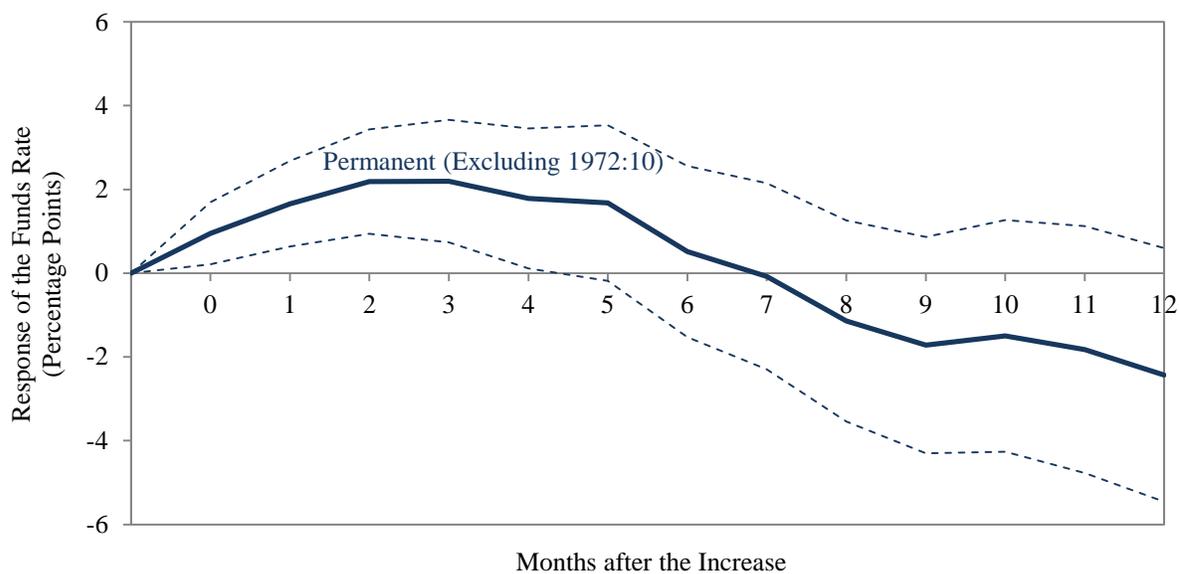


**b. 1952:1–1991:12**



**FIGURE B12 (Continued)**  
**Baseline Federal Funds Rates Results for Alternative Sample Periods**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)

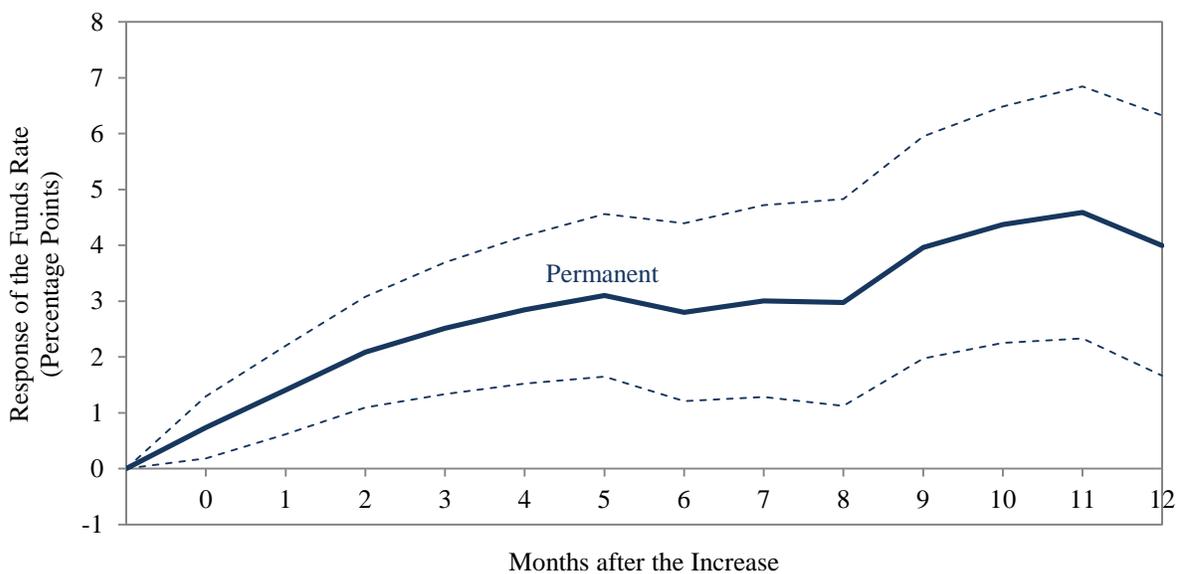
**c. 1952:1–1979:9, Excluding the Permanent Benefit Increase in 1972:10**



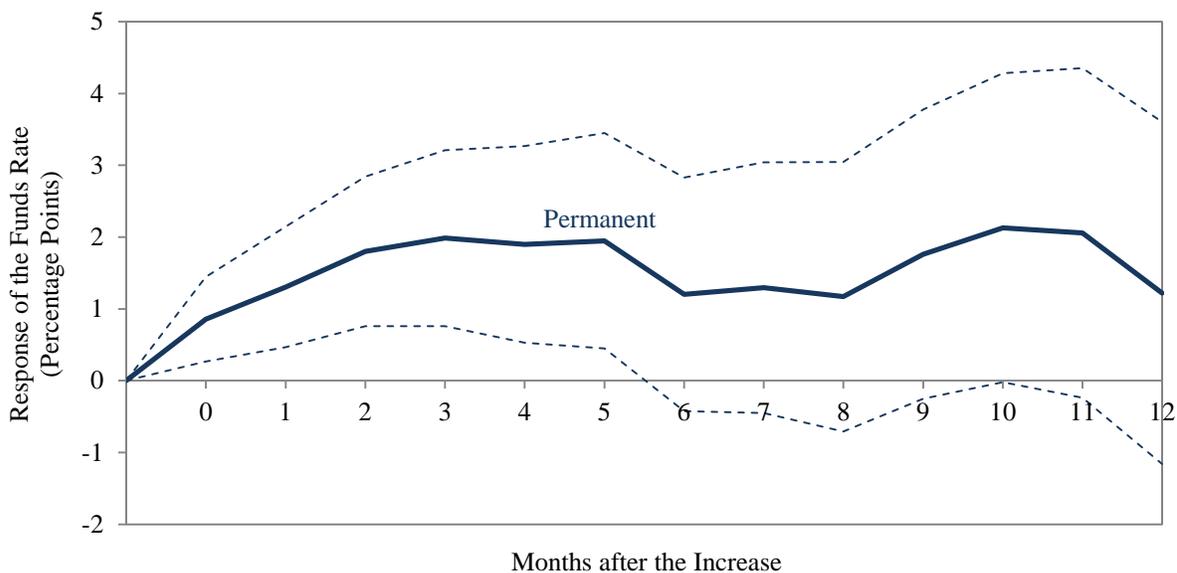
Notes: The figures show the results from estimating equation (3) over various alternative sample periods, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

**FIGURE B13**  
**Federal Funds Rate Results Including Various Control Variables**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)

**a. Controlling for the Contemporaneous Value and 12 Lags of Oil Price Inflation**

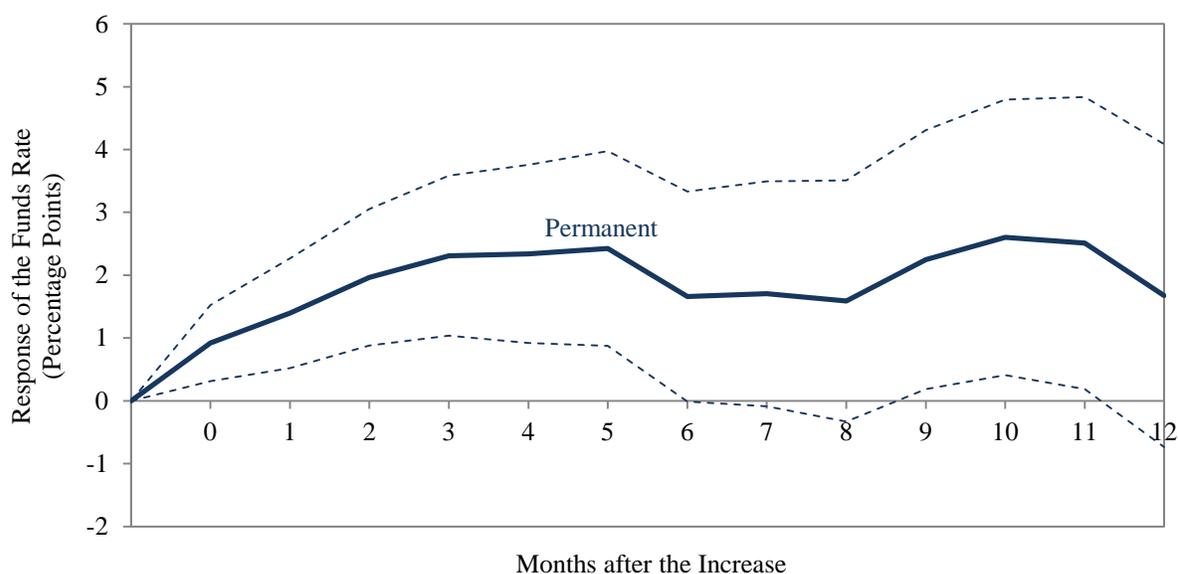


**b. Controlling for the Contemporaneous Value and 12 Lags of Monetary Policy Shocks**



**FIGURE B13 (Continued)**  
**Federal Funds Rate Results Including Various Control Variables**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)

**c. Controlling for the Contemporaneous Value and 24 Lags of Monetary Policy Shocks**



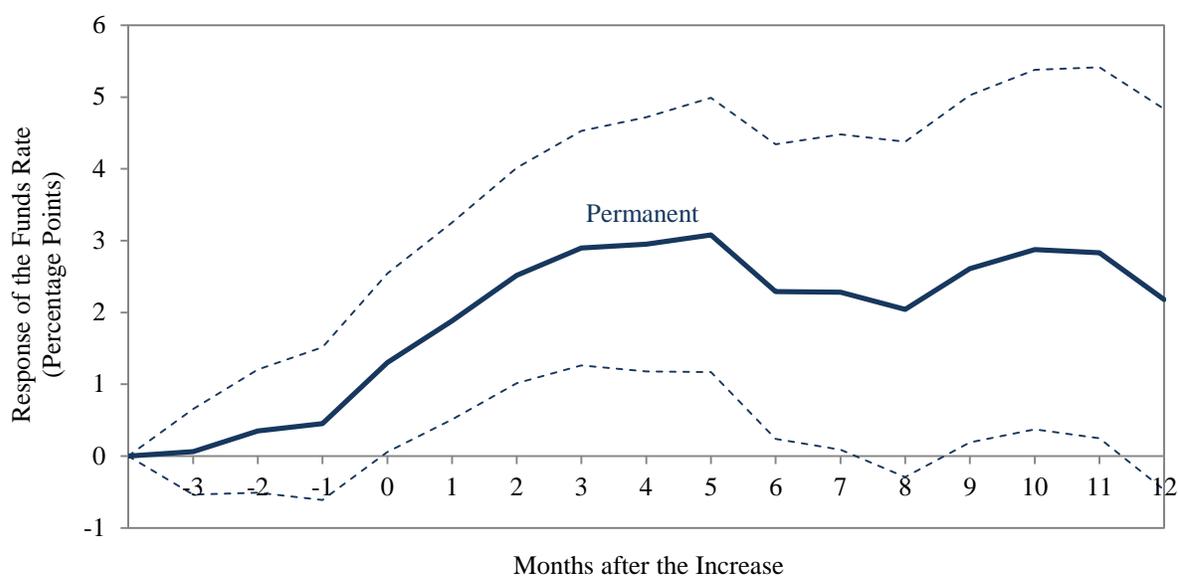
Notes: The figures show the results from estimating equation (3) over the sample period 1952:1–1979:9, including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including various additional control variables. Panel (a) includes the contemporaneous value and 12 lags of the change in the logarithm of oil prices; panel (b) includes the contemporaneous value and 12 lags of the Romer and Romer dummy variable for shifts to contractionary monetary policy; and panel (c) includes the contemporaneous value and 24 lags of the Romer and Romer dummy. See the text for the details and the sources of the control variables. The dashed lines in the figure show the two-standard-error confidence bands.

**FIGURE B14**  
**Baseline Federal Funds Rate Results Including Three Leads**  
 (Regression Coefficients and Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income)

**a. Regression Coefficients for Permanent Benefit Increases**

Lag of the Permanent Benefits Variable	Coefficient Estimate	Standard Error	<i>t</i> -Statistic
-3	0.06	0.30	0.20
-2	0.29	0.30	0.97
-1	0.11	0.30	0.35
0	0.85	0.30	2.84
1	0.58	0.29	2.01
2	0.63	0.29	2.21
3	0.38	0.31	1.25
4	0.05	0.31	0.17
5	0.13	0.31	0.42
6	-0.79	0.31	-2.58
7	-0.01	0.31	-0.03
8	-0.24	0.31	-0.79
9	0.57	0.32	1.79
10	0.27	0.32	0.85
11	-0.04	0.32	-0.14
12	-0.65	0.32	-2.04

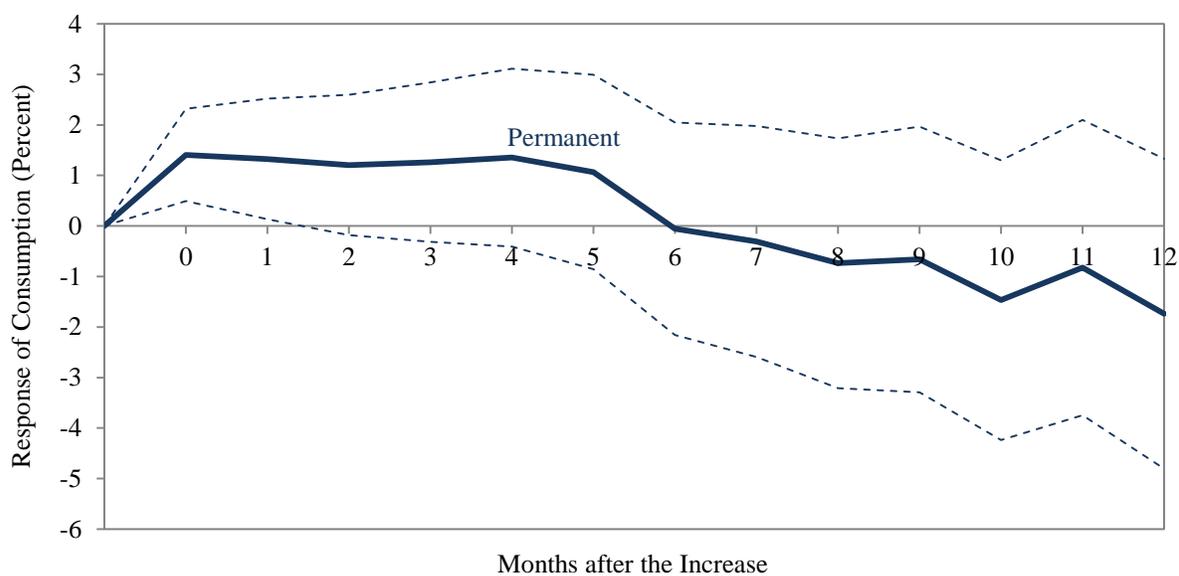
**b. Cumulative Impact on the Funds Rate**



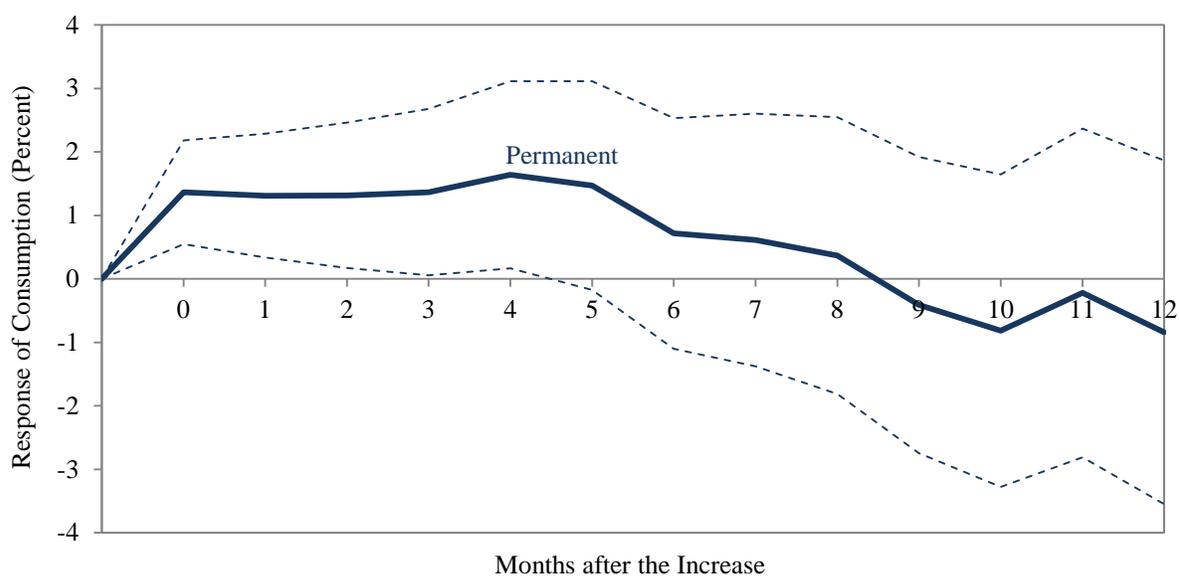
Notes: The regression coefficients and the figure show the results from estimating equation (3) over the sample period 1952:1–1979:9, including 3 leads, the contemporaneous value, and 12 lags of both permanent and temporary benefit increases. The dashed lines show the two-standard-error confidence bands.

**FIGURE B15**  
**Consumption Results for Permanent Benefit Increases from a Five-Variable VAR**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on Consumption)

**a. Pre-Volcker Sample (1952:1–1979:9)**



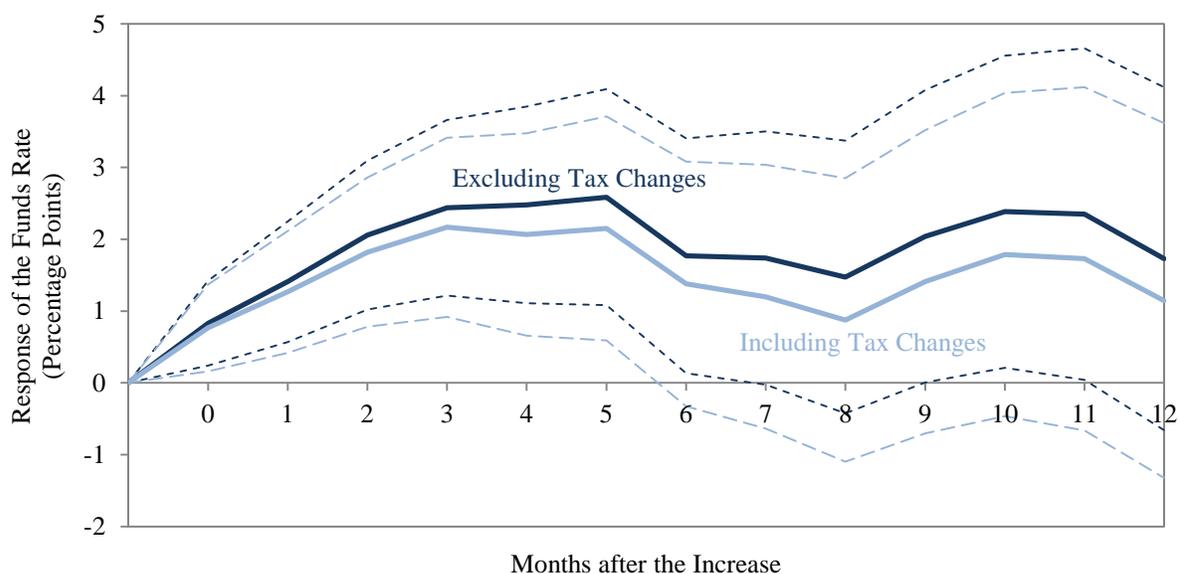
**b. Full Sample (1952:1–1991:12)**



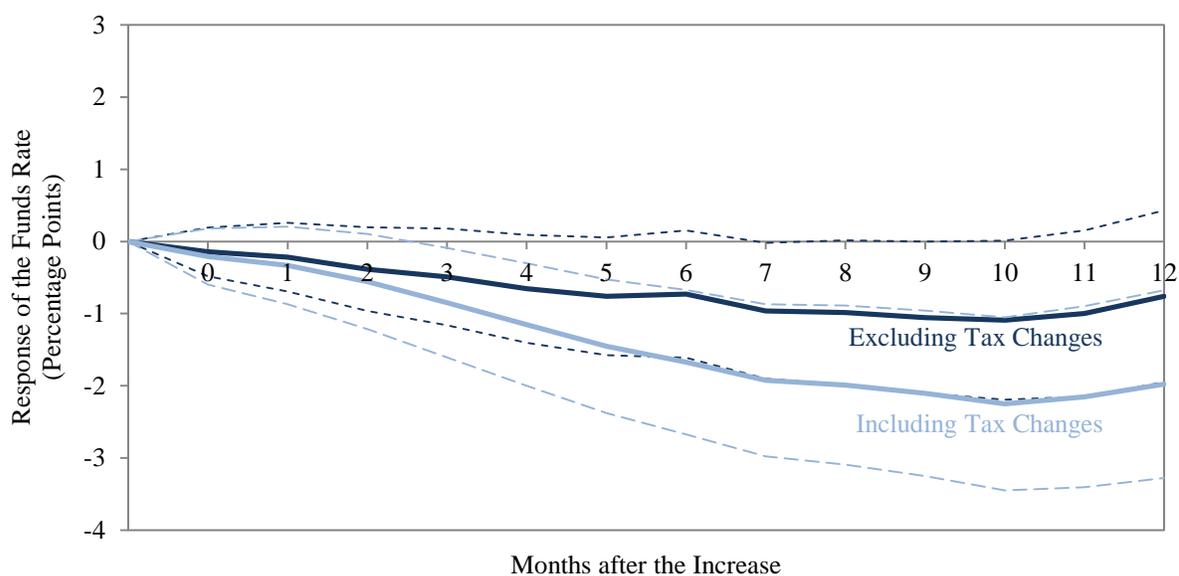
Notes: The figure shows the results from estimating a vector autoregression including five variables (permanent benefit increases, temporary benefit increases, the logarithm of prices, the logarithm of personal consumption expenditures, and the federal funds rate) over the pre-Volcker (1952:1–1979:9) and full (1952:1–1991:12) sample periods. The dashed lines show the two-standard-error confidence bands.

**FIGURE B16**  
**Federal Funds Rate Results for Benefit Increases with and without Tax Changes**  
 (Cumulative Impact of a Benefit Increase of 1 Percent of Personal Income on the Funds Rate)

**a. Permanent Benefit Increase**



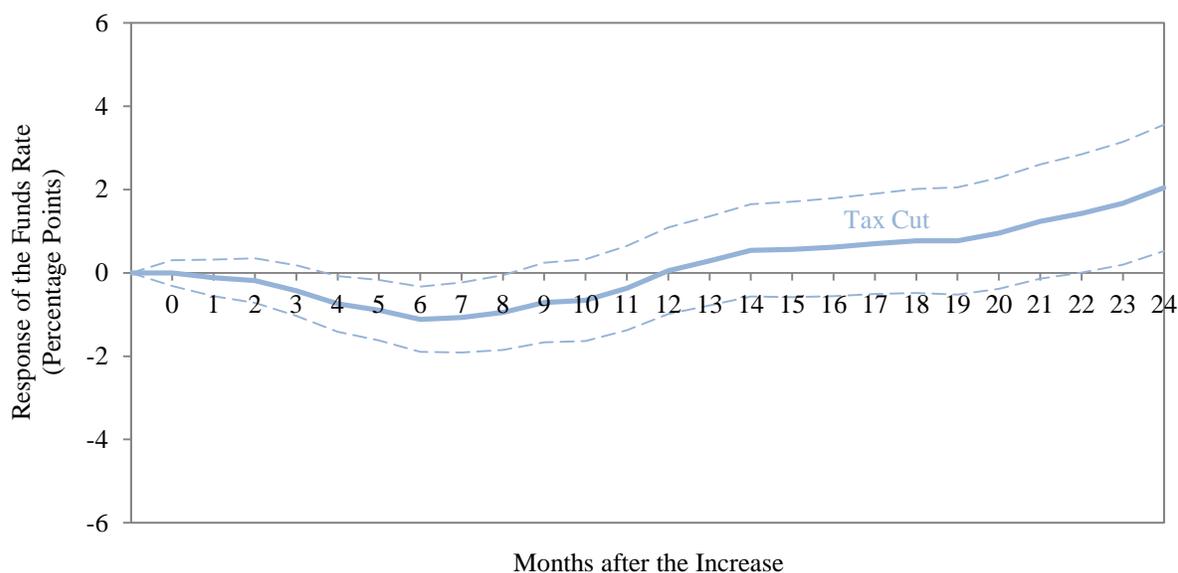
**b. Temporary Benefit Increase**



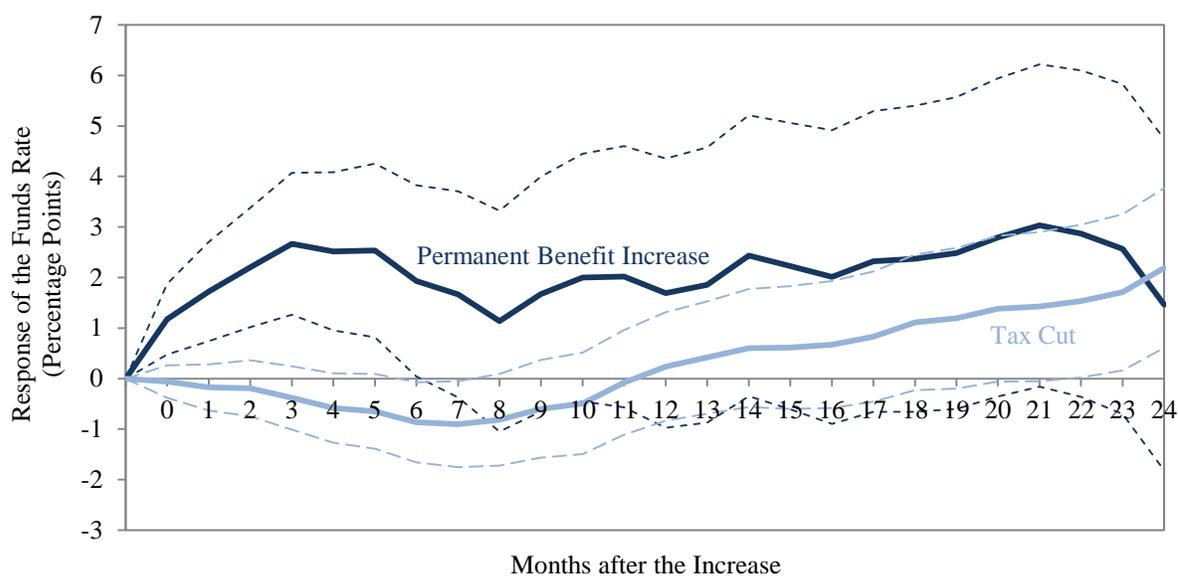
Notes: The dark blue line in each panel shows the baseline results from estimating equation (3) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases. The light blue line in each panel shows the results from estimating equation (3) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The sample period is 1952:1–1979:9. The dashed lines show the two-standard-error confidence bands.

**FIGURE B17**  
**Federal Funds Rate Results Going out 24 Months**  
 (Cumulative Impact of a Benefit Increase and a Tax Cut of 1 Percent of Personal Income  
 on the Funds Rate)

**a. Impact of a Tax Cut**

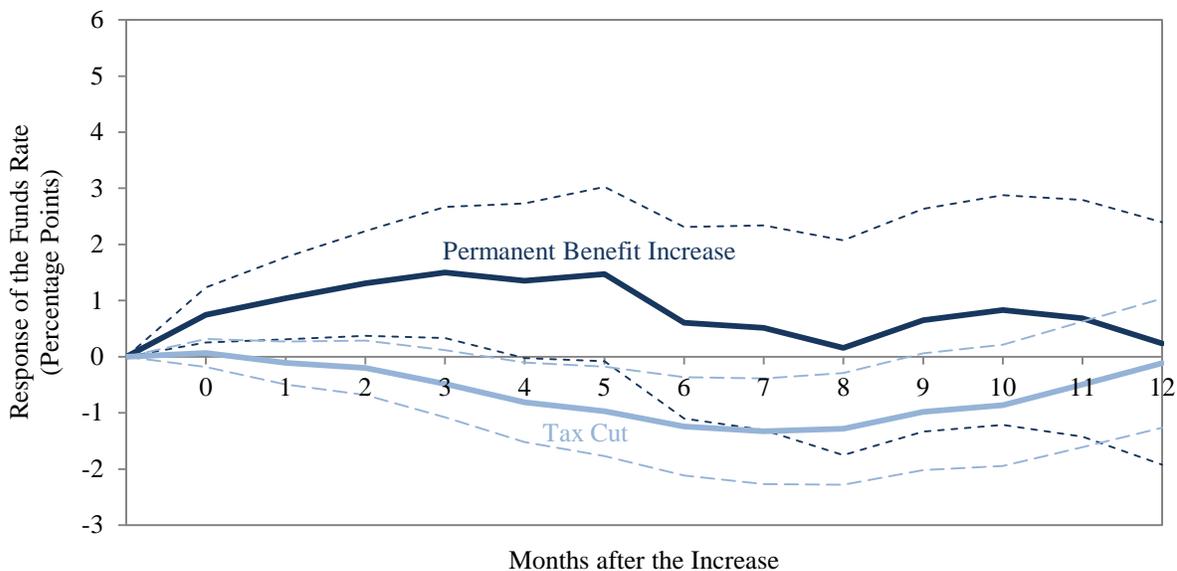


**b. Impact of a Permanent Benefit Increase and a Tax Cut**



Notes: The results in panel (a) are from estimating equation (3) including the contemporaneous value and 12 lags of both permanent and temporary benefit increases, and including the contemporaneous value and 24 lags of the tax variable as additional controls. The results in panel (b) are from estimating equation (3) including the contemporaneous value and 24 lags of both permanent and temporary benefit increases, and the contemporaneous value and 24 lags of the tax variable. In panel (a), the sample period is 1952:1–1979:9; in panel (b) it is 1953:1–1979:9. The dashed lines show the two-standard-error confidence bands.

**FIGURE B18**  
**Federal Funds Rate Results for Benefit Increases and Tax Cuts from a Six-Variable VAR**  
 (Cumulative Impact of a Benefit Increase and a Tax Cut of 1 Percent of Personal Income  
 on the Funds Rate)



Notes: The figure shows the results from estimating a vector autoregression including six variables (permanent benefit increases, temporary benefit increases, tax changes, the logarithm of prices, the logarithm of personal consumption expenditures, and the federal funds rate) over the sample period 1952:1–1979:9. The dashed lines show the two-standard-error confidence bands.