

Economic Stimulus:  
Lessons from 2001-2004 and Prospects for 2008

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# Stimulus Then and Now: Similarities and Differences

## “Tax Rebates”

2001 Advance Payments

2008 Economic Stimulus Payments

## “Bonus Depreciation”

2003/2004      Expense 30% or 50% of qualified investment

2008              Expense 50% of qualified investment

## Comparison of Tax Rebates: *What*

2001

Advance payment: Benefit of new 10% tax rate bracket

2008

Stimulus payment: Ad hoc

## Comparison of Tax Rebates: *Duration*

2001

10% tax rate bracket continued in future years

Other tax cuts phased in 2001-2006

2008

One-time payment

Not linked to other tax rate changes

## Comparison of Tax Rebates: *Recipients*

2001

Taxpayers in 10% bracket

Households: 0-\$12,000 taxable income

Singles: 0-\$6,000 taxable income

2008

Households with taxable income > \$3,000 in 2007

Certain households with no taxable income

Phase out for high income taxpayers

>\$75,000 singles, >\$150,000 households

## Comparison of Tax Rebates: *How and When Sent*

2001

Checks mailed July, August, September 2001

2008

EFT in May 2008,  
Checks mailed in May, June, July 2008

Non-taxpayers must file a 2007 return to receive rebate

Both 2001 and 2008

Timing of payments based on Social Security number

## Comparison of Tax Rebates: *Aggregate Magnitude*

2001

\$38 billion

0.4 percent of annual GDP

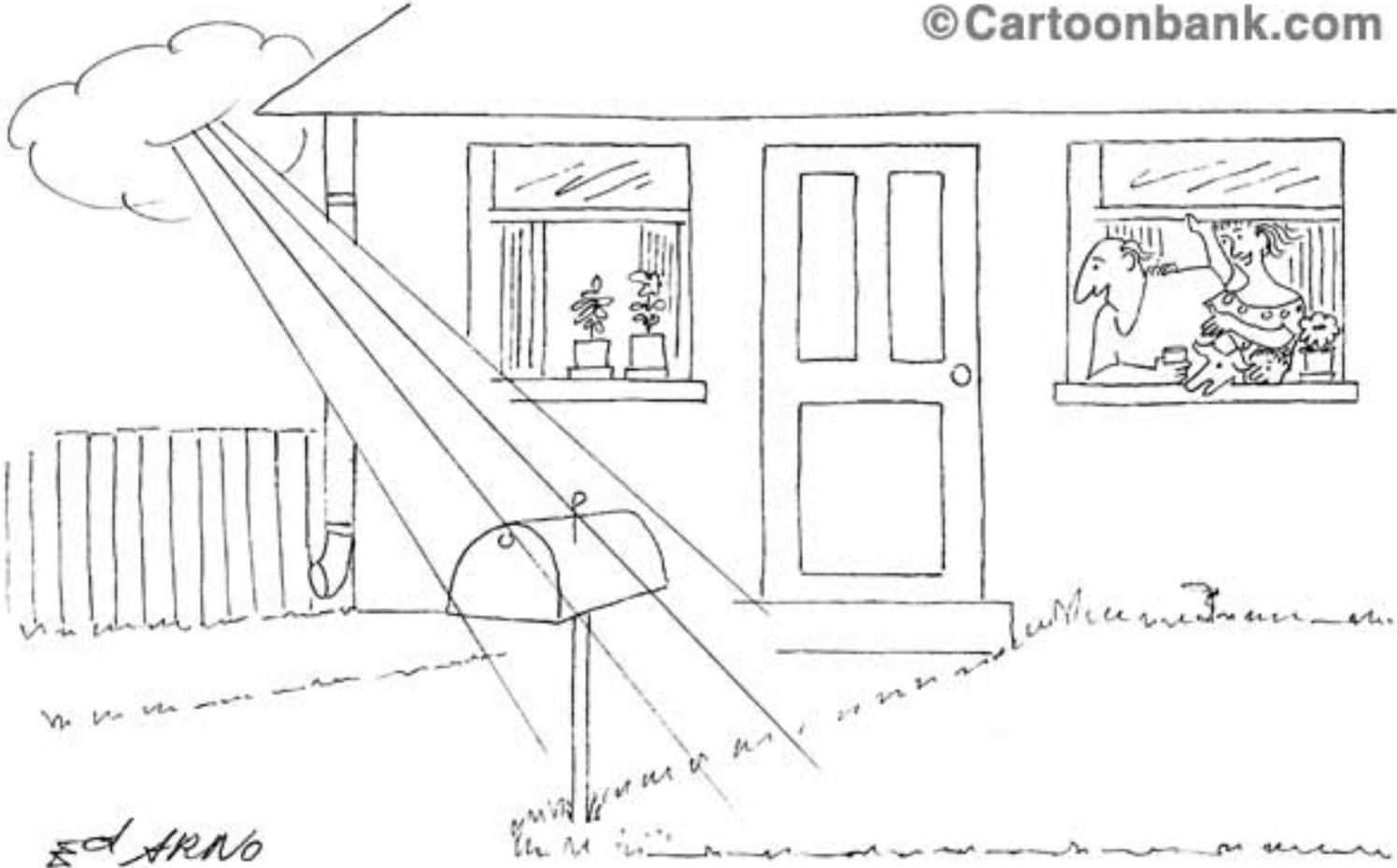
3.8 percent of annual individual income taxes

2008

\$100 billion

0.7 percent of annual GDP

8.2 percent of annual individual income taxes



*"My guess is our tax rebate has arrived."*

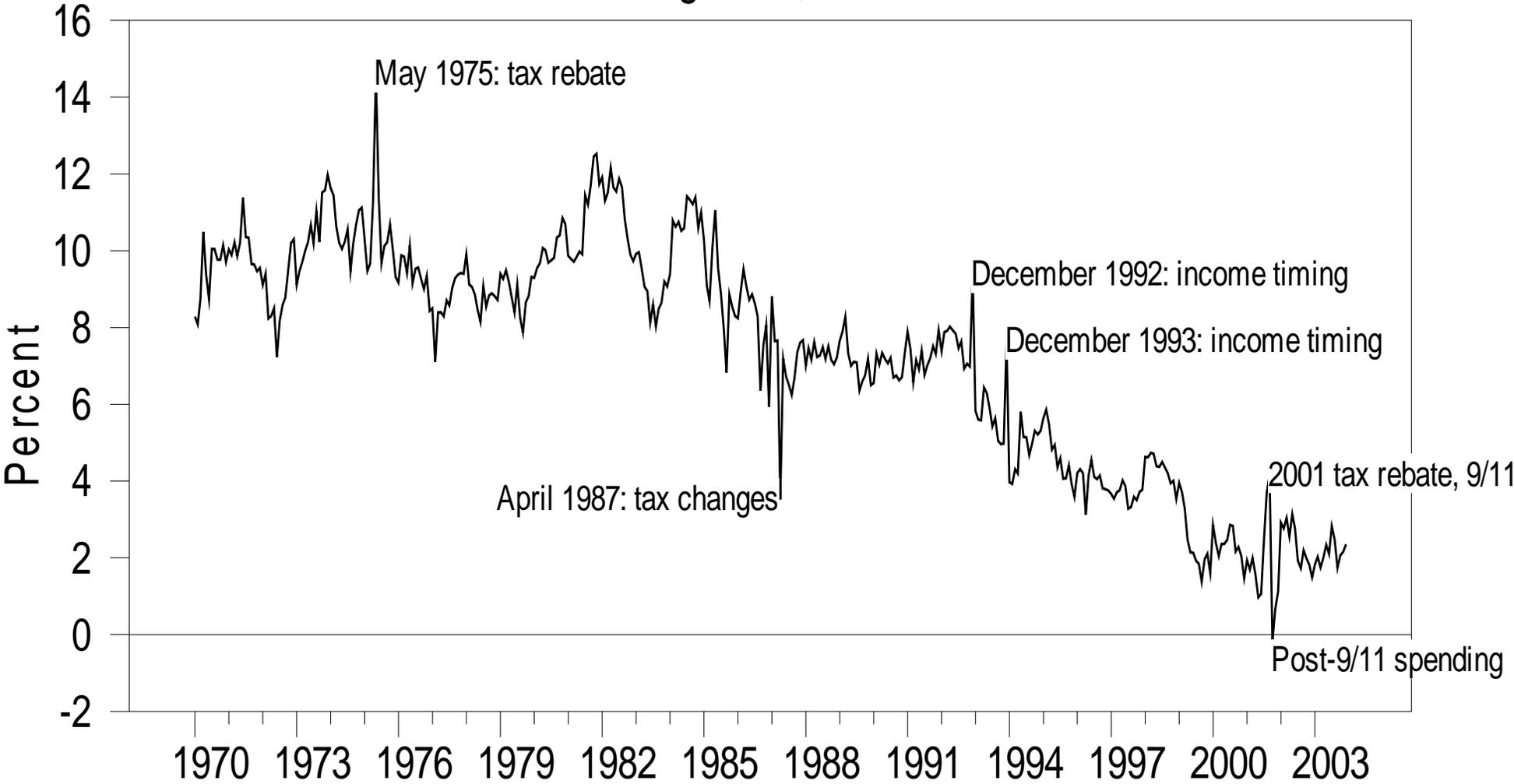
## Aggregate Evidence on Effects of 2001 Rebates

Identification problem: Other aggregate shocks

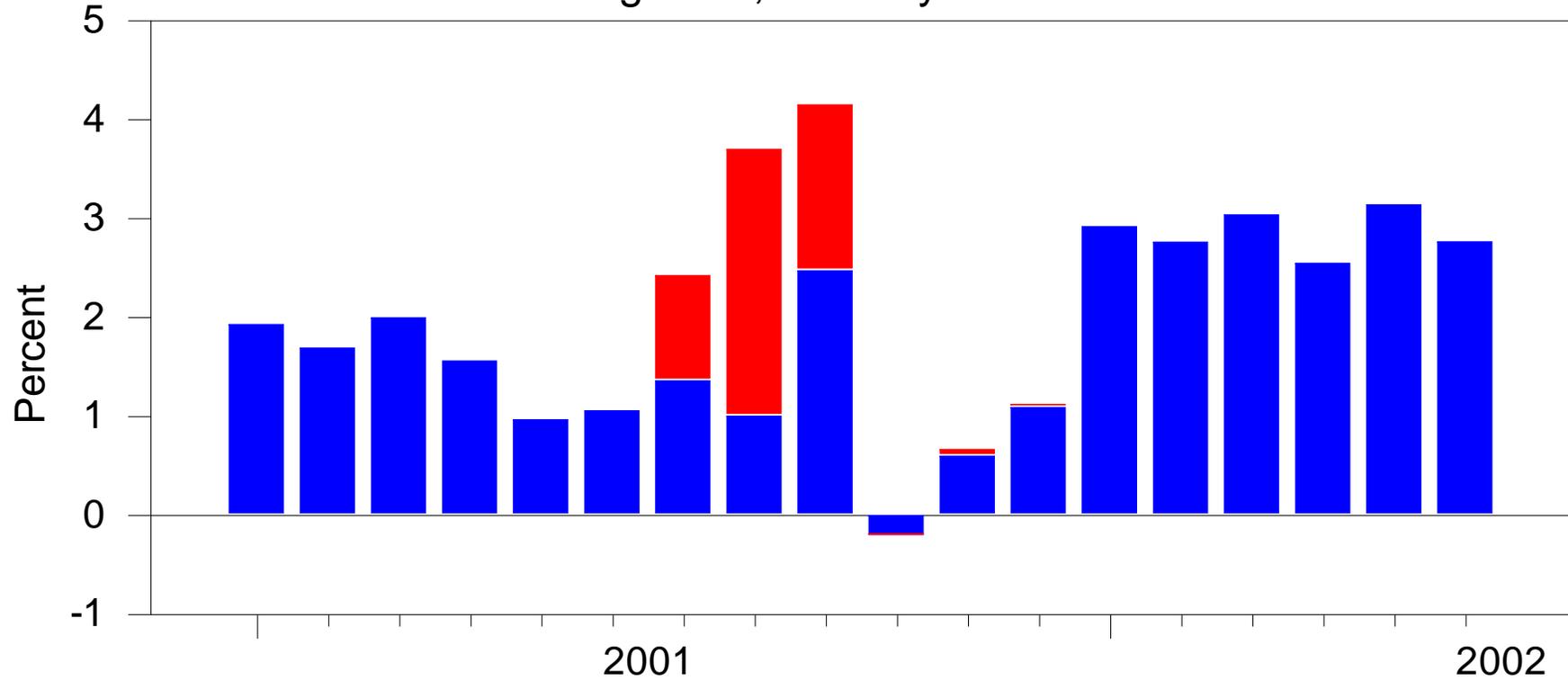
Yet, if rebates had aggregate effects, expect to see something in the data

Temporary changes in tax payments  
tend to show up in saving

# Personal Saving Rate, 1970 to 2007



### Personal Saving Rate, January 2001 to June 2002



Note: Red area is portion of saving accounted for by rebate.

## Saving rate

Rebate mainly saved on impact

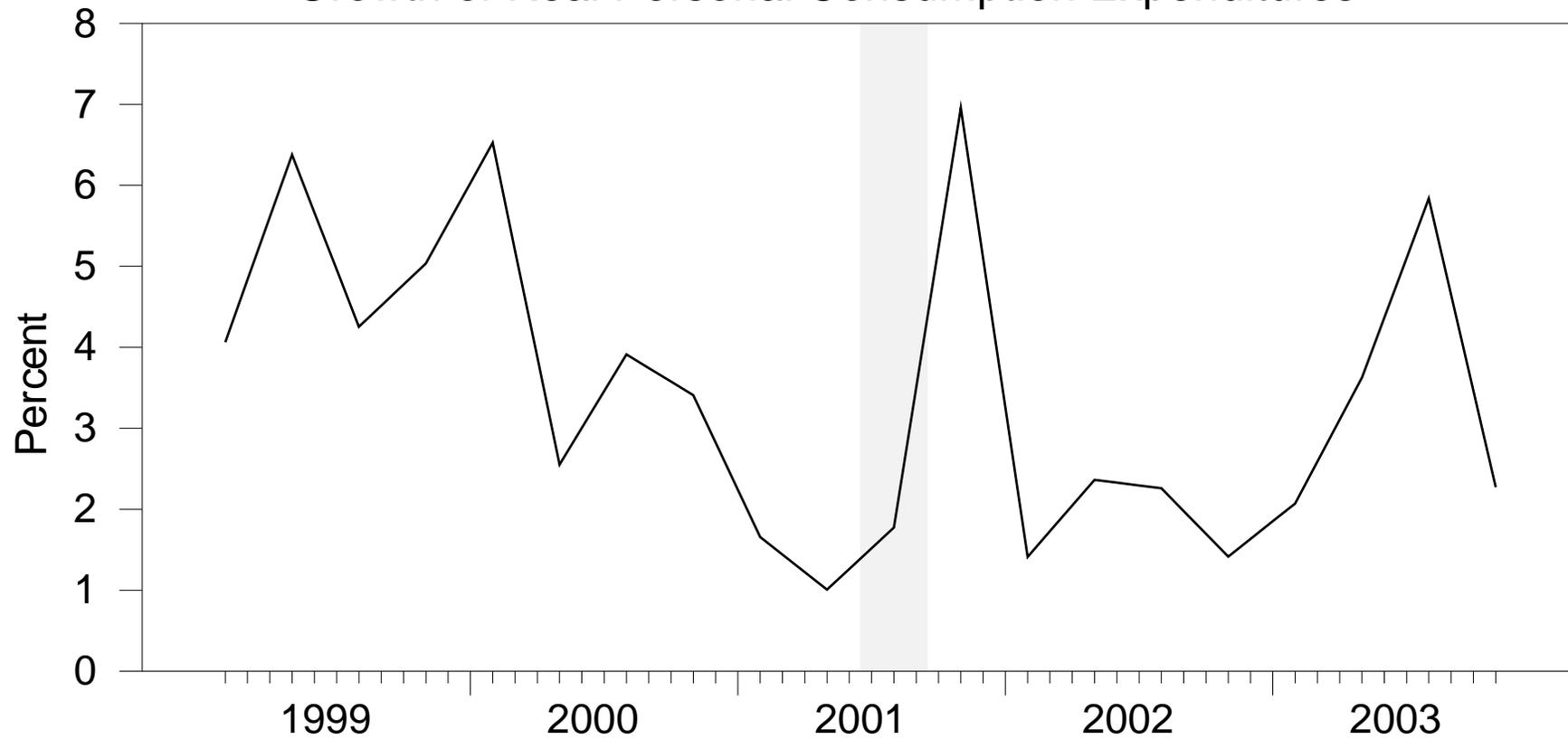
Collapse of saving rate in 2001:4:

Delayed rebate spending, or post-9/11 shocks?

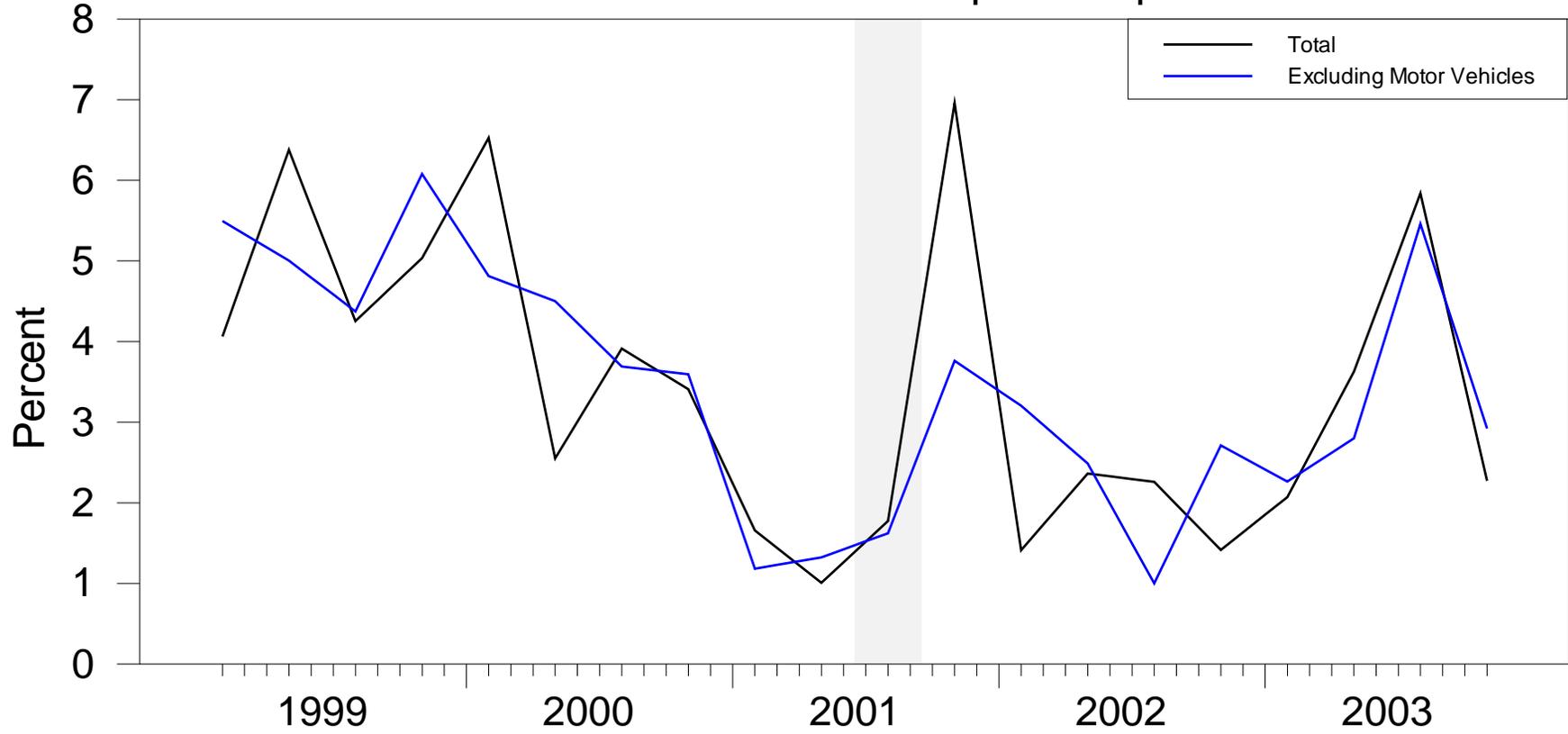
Consumption data reveal ambiguity: shocks vs rebates

Graph of aggregate consumption growth after rebate misleading

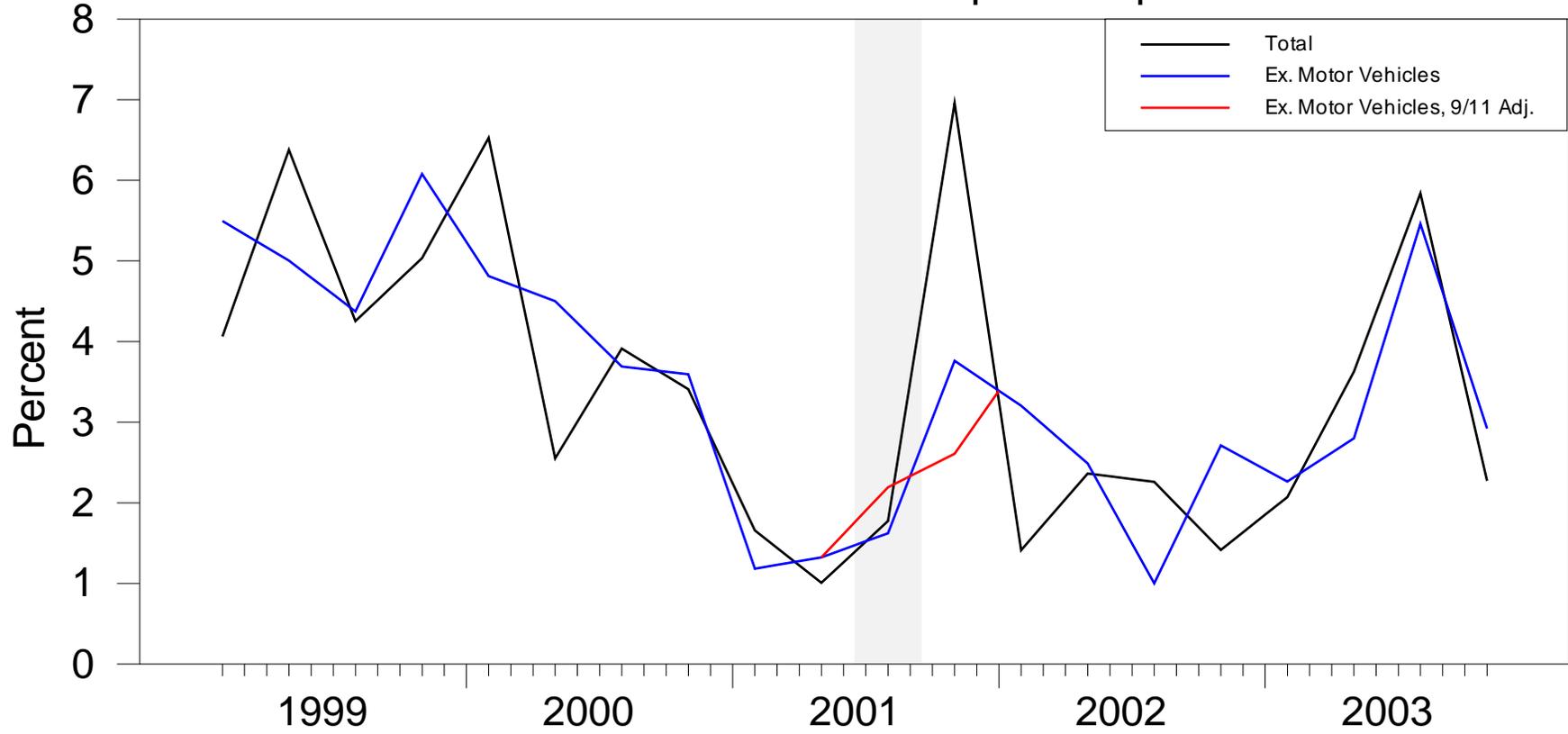
### Growth of Real Personal Consumption Expenditures



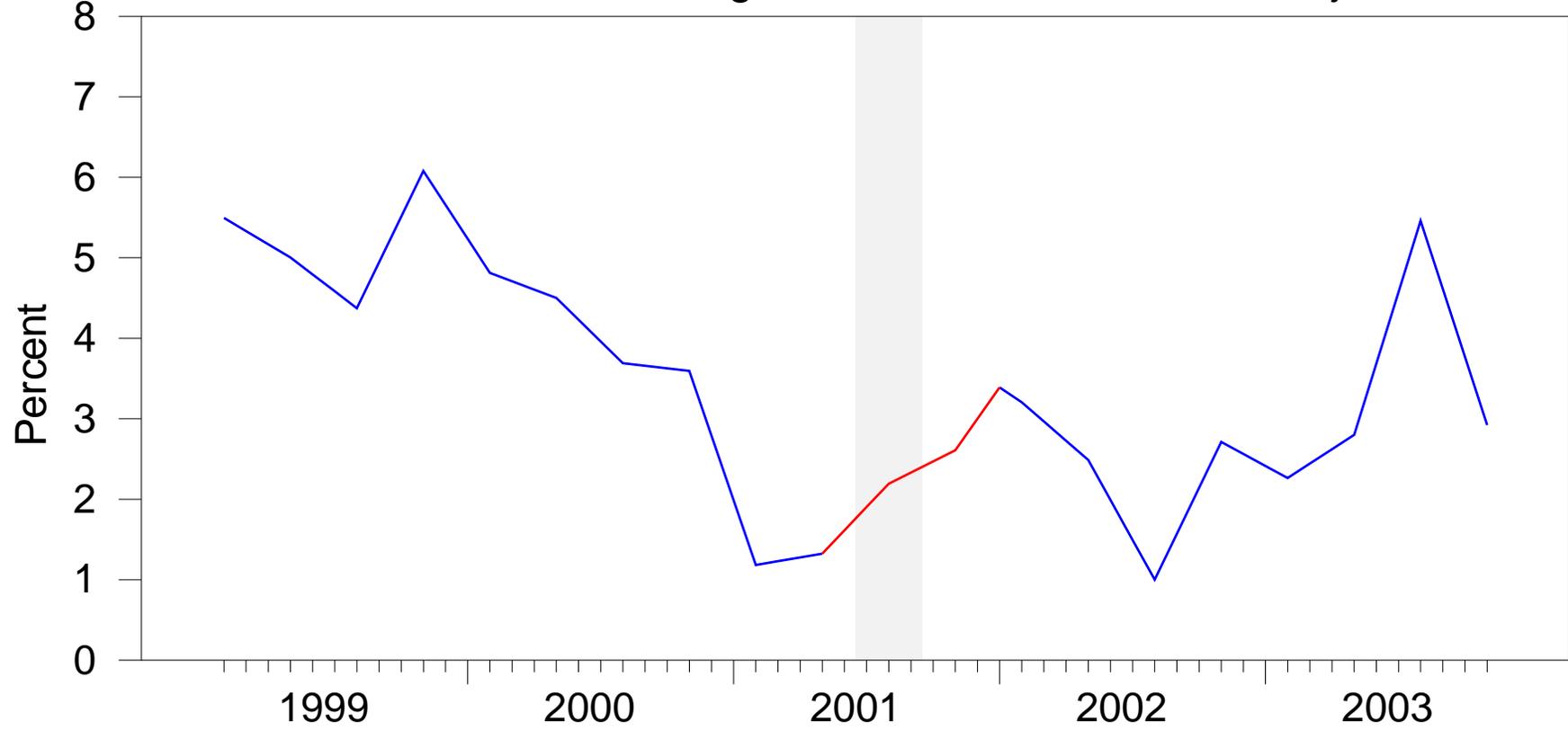
# Growth of Real Personal Consumption Expenditures



# Growth of Real Personal Consumption Expenditures



Growth of Real PCE excluding Motor Vehicles with 9/11 Adjustment



## Evidence from Surveys

Earlier this year a Federal law was passed cutting income tax rates and expanding certain credits and deductions. The tax cuts will be phased in over the next ten years. This year many households will receive a tax rebate check in the mail. In most cases, the tax rebate will be \$300 for single individuals and \$600 for married couples.

Thinking about your (family's) financial situation this year, will the tax rebate lead you mostly to increase spending, mostly to increase saving, or mostly to pay off debt?

--Shapiro and Slemrod, *American Economic Review* (2003)

## 2001 Rebate

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Spend Rebate	Save Rebate	Pay Debt With Rebate	Will Not Get Rebate	Don't Know/ Refused	Total
267	423	563	204	49	1506
<b>21.3%</b>	33.8%	44.9%			100%

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Survey of Consumers: August-October 2001

## 2008 Rebate

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Spend Rebate	Save Rebate	Pay Debt With Rebate	Will Not Get Rebate	Don't Know/ Refused	Total
268	457	647	103	34	1509
19.5%	33.3%	47.2%			100%

Survey of Consumers: February-April 2008.

“Mostly Spend” versus Marginal Propensity to Consume:

1/5 Mostly Spend  $\Rightarrow$  1/3 MPC

## Comparison with Evidence from CEX

Johnson, Parker, and Souleles,  
*American Economic Review* (2006)

Use cross-sectional and time-series variation in  
receipt of rebate

MPC (nondurables)

first quarter	0.386 (0.135)
cumulative (2 quarters)	0.691 (0.260)

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*"A final question. Would you put your money where your mouth is?"*

# Survey Evidence on Ultimate Spending

2002 follow up survey

Will you use the additional saving to make a purchase later this year, or will you keep up your higher saving for at least a year?

85% will keep saving for a year

Similarly, 93% will keep debt lower for a year

2008 survey

Use saving/debt repayment to spend later?

Mostly save: 18% will spend later

Mostly pay debt: 8% will spend later

⇒ Ultimate mostly spend rate to **29.6%**

## Survey versus CEX results

Nearly identical answers about impact effect:  
 $MPC \approx 1/3$

Different answer about ultimate spending

Issues with CEX estimates of spending rates:

Large confidence intervals on lagged effects

Only applies to nondurables

⇒ MPC of 2/3 incredibly large?

Identification mainly from cross-section

⇒ Macro shocks still a confound

E.g., 9/11,  
changes in tax rates and withholding

2008: opportunity to compare methods

## Likely Aggregate Effects of Economic Stimulus Payments

\$100 billion  $\times$  (1/3)  $\approx$  0.25 percent of *annual* GDP

Noticeable growth rate impact over a quarter or so

Fed Policy reaction: Interest rates probably came down slower in early 2008 because of stimulus package

Bonus Depreciation: A capsule summary of effects

Incentives for investment are very narrowly targeted

Depreciation allowances already accelerated

Greatest subsidy for equipment with longer lives

## Subsidy from 50% bonus

Tax Life (years)	Subsidy	Share in GDP	Examples
5	0.8-1.3%	5.1%	Computers; office equipment; autos and trucks
7	1.1-1.8%	2.7%	Miscellaneous equipment, office furniture, agricultural equipment
10	1.6-2.8%	0.0%	Water transportation equipment, single purpose agricultural structures
15	2.6-3.9%	0.3%	Radio towers; cable lines; pipelines; electricity generation and distribution systems, drainage systems, docks, bridges; engines and turbines.
20	3.3-4.8%	0.3%	Farm buildings; railroad structures, telephone communications, electric utilities, water utilities structures including dams, and canals
39	0%	1.7%	Commercial structures.

# Analysis of 2002-2004 Bonus Depreciation

House and Shapiro, *American Economic Review* (Jun 2008)

## Theory

Shadow price of long-lived capital moves one-for-one with temporary subsidy

Can estimate investment supply elasticity from quantities

No “pothole” after expiration

## Evidence from 2002-2004

Subsidized capital responded significantly:  
40% increase relative to steady state

Estimated elasticity of supply high:  
6 to 14 (low adjustment costs)

Aggregate effect modest:  
0.1% of GDP (simulation)

Prices do not move:  
internal costs, measurement error

Timing: Anticipation/Expiration

## Cash flow implications of Bonus Depreciation

Significant, benefits inframarginal investment

2004 bonus depreciation deductions reduced corporate taxes by 1/4 (Knittel)

Many firms eligible for bonus did not elect it (Knittel)

# Aggregate Impact of Bonus Depreciation

Modest effects on investment

Cash flow effects likely to be negligible:

Only unconstrained firms, i.e., with profits, benefit from bonus

Timing of cash flow:

Higher in 2008, lower subsequently

Will the stimulus packages spur spending?

Weak case for spending a high fraction of either rebate or cash flow from bonus

Incentive effects modest to nil

But \$100 billion rebate large;  
boost to growth in mid-2008 even with low MPC

How much of stimulus was offset by marginally tighter monetary policy?

Other equilibrium effects damp stimulus:  
Higher interest rates; imports