
Conventional Wisdom versus The Data

October 11, 2011

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www.antonydavies.org

The Players and the Goals

In this experiment, each team controls a firm that sells to a group of consumers.

Firms select what price to charge.

→ Lower price means consumers purchase more units.

→ Higher price means consumers purchase fewer units.

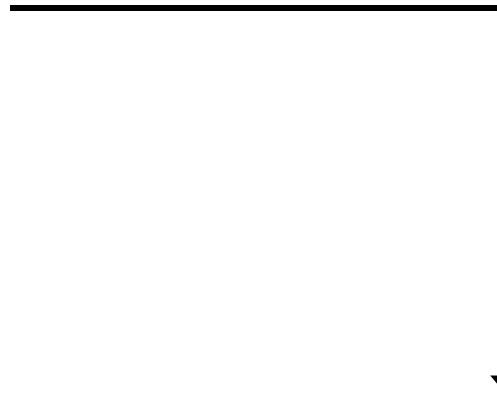
The Players and the Goals

Goal: Make the most profit possible.

$$\text{Profit} = \text{Revenue} - \text{Cost}$$



(Price per unit) (Units sold)



(\$1) (Units sold)

Example

This is the demand for your product.

Choose what price to charge so as to maximize your profit.

Price per Unit	Quantity Sold
\$0.50	940
\$1.00	930
\$1.50	920
\$2.00	910
\$2.50	900
\$3.00	890
\$3.50	880
\$4.00	870
\$4.50	860
\$5.00	850
\$5.50	840
\$6.00	830
\$6.50	820
\$7.00	810
\$7.50	800
\$8.00	790
\$8.50	780
\$9.00	770
\$9.50	760
\$10.00	750
\$10.50	740
\$11.00	730
\$11.50	720
\$12.00	710
\$12.50	700
\$13.00	690
\$13.50	680
\$14.00	670
\$14.50	660
\$15.00	650

Price per Unit	Quantity Sold
\$15.50	640
\$16.00	630
\$16.50	620
\$17.00	610
\$17.50	600
\$18.00	590
\$18.50	580
\$19.00	570
\$19.50	560
\$20.00	550
\$20.50	540
\$21.00	530
\$21.50	520
\$22.00	510
\$22.50	500
\$23.00	490
\$23.50	480
\$24.00	470
\$24.50	460
\$25.00	450
\$25.50	440
\$26.00	430
\$26.50	420
\$27.00	410
\$27.50	400
\$28.00	390
\$28.50	380
\$29.00	370
\$29.50	360
\$30.00	350

Example

Suppose you charge \$10.00 per unit.

How many units will you sell?

750

What is your revenue?

$(\$10) (750) = \$7,500$

What is your cost?

$(\$1) (750) = \750

What is your profit?

$\$7,500 - \$750 = \$6,750$

Price per Unit	Quantity Sold
\$0.50	940
\$1.00	930
\$1.50	920
\$2.00	910
\$2.50	900
\$3.00	890
\$3.50	880
\$4.00	870
\$4.50	860
\$5.00	850
\$5.50	840
\$6.00	830
\$6.50	820
\$7.00	810
\$7.50	800
\$8.00	790
\$8.50	780
\$9.00	770
\$9.50	760
\$10.00	750
\$10.50	740
\$11.00	730
\$11.50	720
\$12.00	710
\$12.50	700
\$13.00	690
\$13.50	680
\$14.00	670
\$14.50	660
\$15.00	650

Price per Unit	Quantity Sold
\$15.50	640
\$16.00	630
\$16.50	620
\$17.00	610
\$17.50	600
\$18.00	590
\$18.50	580
\$19.00	570
\$19.50	560
\$20.00	550
\$20.50	540
\$21.00	530
\$21.50	520
\$22.00	510
\$22.50	500
\$23.00	490
\$23.50	480
\$24.00	470
\$24.50	460
\$25.00	450
\$25.50	440
\$26.00	430
\$26.50	420
\$27.00	410
\$27.50	400
\$28.00	390
\$28.50	380
\$29.00	370
\$29.50	360
\$30.00	350

Example

Suppose you charge
\$20.00 per unit.

*How many units will you
sell?*

550

What is your revenue?

(\$20) (550) = \$11,000

What is your cost?

(\$1) (550) = \$550

What is your profit?

\$11,000 – \$550 = \$10,450

Price per Unit	Quantity Sold
\$0.50	940
\$1.00	930
\$1.50	920
\$2.00	910
\$2.50	900
\$3.00	890
\$3.50	880
\$4.00	870
\$4.50	860
\$5.00	850
\$5.50	840
\$6.00	830
\$6.50	820
\$7.00	810
\$7.50	800
\$8.00	790
\$8.50	780
\$9.00	770
\$9.50	760
\$10.00	750
\$10.50	740
\$11.00	730
\$11.50	720
\$12.00	710
\$12.50	700
\$13.00	690
\$13.50	680
\$14.00	670
\$14.50	660
\$15.00	650

Price per Unit	Quantity Sold
\$15.50	640
\$16.00	630
\$16.50	620
\$17.00	610
\$17.50	600
\$18.00	590
\$18.50	580
\$19.00	570
\$19.50	560
\$20.00	550
\$20.50	540
\$21.00	530
\$21.50	520
\$22.00	510
\$22.50	500
\$23.00	490
\$23.50	480
\$24.00	470
\$24.50	460
\$25.00	450
\$25.50	440
\$26.00	430
\$26.50	420
\$27.00	410
\$27.50	400
\$28.00	390
\$28.50	380
\$29.00	370
\$29.50	360
\$30.00	350

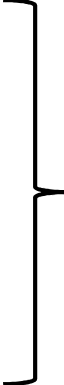
Example

Suppose you charge
\$10.00 per unit.

Profit = \$6,750

Suppose you charge
\$20.00 per unit.

Profit = \$10,450



Of these, \$20.00 is the
better price to charge.

Round 1

Choose the price you will charge for your product.

Every unit you sell costs you \$1 to produce.

Price per Unit	Quantity Sold	Price per Unit	Quantity Sold
\$0.50	137	\$15.50	61
\$1.00	134	\$16.00	59
\$1.50	131	\$16.50	57
\$2.00	128	\$17.00	55
\$2.50	125	\$17.50	53
\$3.00	123	\$18.00	51
\$3.50	120	\$18.50	50
\$4.00	117	\$19.00	48
\$4.50	114	\$19.50	46
\$5.00	112	\$20.00	44
\$5.50	109	\$20.50	42
\$6.00	106	\$21.00	40
\$6.50	104	\$21.50	39
\$7.00	101	\$22.00	37
\$7.50	98	\$22.50	35
\$8.00	96	\$23.00	34
\$8.50	93	\$23.50	32
\$9.00	91	\$24.00	31
\$9.50	88	\$24.50	29
\$10.00	86	\$25.00	28
\$10.50	84	\$25.50	26
\$11.00	81	\$26.00	25
\$11.50	79	\$26.50	23
\$12.00	77	\$27.00	22
\$12.50	74	\$27.50	20
\$13.00	72	\$28.00	19
\$13.50	70	\$28.50	18
\$14.00	68	\$29.00	16
\$14.50	66	\$29.50	15
\$15.00	64	\$30.00	14

Round 1

Price per Unit	Quantity Sold	Revenue	Cost	Profit	Price per Unit	Quantity Sold	Revenue	Cost	Profit
\$0.50	137	\$68.50	\$137.00	(\$68.50)	\$15.50	61	\$945.50	\$61.00	\$884.50
\$1.00	134	\$134.00	\$134.00	\$0.00	\$16.00	59	\$944.00	\$59.00	\$885.00
\$1.50	131	\$196.50	\$131.00	\$65.50	\$16.50	57	\$940.50	\$57.00	\$883.50
\$2.00	128	\$256.00	\$128.00	\$128.00	\$17.00	55	\$935.00	\$55.00	\$880.00
\$2.50	125	\$312.50	\$125.00	\$187.50	\$17.50	53	\$927.50	\$53.00	\$874.50
\$3.00	123	\$369.00	\$123.00	\$246.00	\$18.00	51	\$918.00	\$51.00	\$867.00
\$3.50	120	\$420.00	\$120.00	\$300.00	\$18.50	50	\$925.00	\$50.00	\$875.00
\$4.00	117	\$468.00	\$117.00	\$351.00	\$19.00	48	\$912.00	\$48.00	\$864.00
\$4.50	114	\$513.00	\$114.00	\$399.00	\$19.50	46	\$897.00	\$46.00	\$851.00
\$5.00	112	\$560.00	\$112.00	\$448.00	\$20.00	44	\$880.00	\$44.00	\$836.00
\$5.50	109	\$599.50	\$109.00	\$490.50	\$20.50	42	\$861.00	\$42.00	\$819.00
\$6.00	106	\$636.00	\$106.00	\$530.00	\$21.00	40	\$840.00	\$40.00	\$800.00
\$6.50	104	\$676.00	\$104.00	\$572.00	\$21.50	39	\$838.50	\$39.00	\$799.50
\$7.00	101	\$707.00	\$101.00	\$606.00	\$22.00	37	\$814.00	\$37.00	\$777.00
\$7.50	98	\$735.00	\$98.00	\$637.00	\$22.50	35	\$787.50	\$35.00	\$752.50
\$8.00	96	\$768.00	\$96.00	\$672.00	\$23.00	34	\$782.00	\$34.00	\$748.00
\$8.50	93	\$790.50	\$93.00	\$697.50	\$23.50	32	\$752.00	\$32.00	\$720.00
\$9.00	91	\$819.00	\$91.00	\$728.00	\$24.00	31	\$744.00	\$31.00	\$713.00
\$9.50	88	\$836.00	\$88.00	\$748.00	\$24.50	29	\$710.50	\$29.00	\$681.50
\$10.00	86	\$860.00	\$86.00	\$774.00	\$25.00	28	\$700.00	\$28.00	\$672.00
\$10.50	84	\$882.00	\$84.00	\$798.00	\$25.50	26	\$663.00	\$26.00	\$637.00
\$11.00	81	\$891.00	\$81.00	\$810.00	\$26.00	25	\$650.00	\$25.00	\$625.00
\$11.50	79	\$908.50	\$79.00	\$829.50	\$26.50	23	\$609.50	\$23.00	\$586.50
\$12.00	77	\$924.00	\$77.00	\$847.00	\$27.00	22	\$594.00	\$22.00	\$572.00
\$12.50	74	\$925.00	\$74.00	\$851.00	\$27.50	20	\$550.00	\$20.00	\$530.00
\$13.00	72	\$936.00	\$72.00	\$864.00	\$28.00	19	\$532.00	\$19.00	\$513.00
\$13.50	70	\$945.00	\$70.00	\$875.00	\$28.50	18	\$513.00	\$18.00	\$495.00
\$14.00	68	\$952.00	\$68.00	\$884.00	\$29.00	16	\$464.00	\$16.00	\$448.00
\$14.50	66	\$957.00	\$66.00	\$891.00	\$29.50	15	\$442.50	\$15.00	\$427.50
\$15.00	64	\$960.00	\$64.00	\$896.00	\$30.00	14	\$420.00	\$14.00	\$406.00

Round 2: Tax the Consumers

In this round, consumers will pay an additional \$5 per unit tax.

You choose a price. The consumers pay that price per unit to you plus they pay another \$5 per unit to the government.

Round 2

In this round, consumers will pay an additional \$5 per unit tax.

If you charge \$7, how many units will consumers buy?

710

What is your revenue?

$(\$7)(710) = \$4,970$

What is your cost?

$(\$1)(710) = \710

What is your profit?

$(\$7)(710) - (\$1)(710) = \$4,260$

Price per Unit	Quantity Sold
\$0.50	940
\$1.00	930
\$1.50	920
\$2.00	910
\$2.50	900
\$3.00	890
\$3.50	880
\$4.00	870
\$4.50	860
\$5.00	850
\$5.50	840
\$6.00	830
\$6.50	820
\$7.00	810
\$7.50	800
\$8.00	790
\$8.50	780
\$9.00	770
\$9.50	760
\$10.00	750
\$10.50	740
\$11.00	730
\$11.50	720
\$12.00	710
\$12.50	700
\$13.00	690
\$13.50	680
\$14.00	670
\$14.50	660
\$15.00	650

You charge \$7.

\$7.00

Consumers pay \$7 + \$5 = \$12.

710

Consumers buy 710 units.

Price per Unit	Quantity Sold
\$15.50	640
\$16.00	630
\$16.50	620
\$17.00	610
\$17.50	600
\$18.00	590
\$18.50	580
\$19.00	570
\$19.50	560
\$20.00	550
\$20.50	540
\$21.00	530
\$21.50	520
\$22.00	510
\$22.50	500
\$23.00	490
\$23.50	480
\$24.00	470
\$25.00	450
\$25.50	440
\$26.00	430
\$26.50	420
\$27.00	410
\$27.50	400
\$28.00	390
\$29.50	360
\$30.00	350

Round 2

Choose the price you will charge for your product.

The consumer pays your price plus another \$5 to the government.

Every unit you sell costs you \$1 to produce.

Price per Unit	Quantity Sold	Price per Unit	Quantity Sold
\$0.50	137	\$15.50	61
\$1.00	134	\$16.00	59
\$1.50	131	\$16.50	57
\$2.00	128	\$17.00	55
\$2.50	125	\$17.50	53
\$3.00	123	\$18.00	51
\$3.50	120	\$18.50	50
\$4.00	117	\$19.00	48
\$4.50	114	\$19.50	46
\$5.00	112	\$20.00	44
\$5.50	109	\$20.50	42
\$6.00	106	\$21.00	40
\$6.50	104	\$21.50	39
\$7.00	101	\$22.00	37
\$7.50	98	\$22.50	35
\$8.00	96	\$23.00	34
\$8.50	93	\$23.50	32
\$9.00	91	\$24.00	31
\$9.50	88	\$24.50	29
\$10.00	86	\$25.00	28
\$10.50	84	\$25.50	26
\$11.00	81	\$26.00	25
\$11.50	79	\$26.50	23
\$12.00	77	\$27.00	22
\$12.50	74	\$27.50	20
\$13.00	72	\$28.00	19
\$13.50	70	\$28.50	18
\$14.00	68	\$29.00	16
\$14.50	66	\$29.50	15
\$15.00	64	\$30.00	14

Round 2: Tax the Consumers

Price per Unit	Quantity Sold	Revenue	Cost	Profit	Price per Unit	Quantity Sold	Revenue	Cost	Profit
\$0.50	109	\$54.50	\$109.00	(\$54.50)	\$15.50	42	\$651.00	\$42.00	\$609.00
\$1.00	106	\$106.00	\$106.00	\$0.00	\$16.00	40	\$640.00	\$40.00	\$600.00
\$1.50	104	\$156.00	\$104.00	\$52.00	\$16.50	39	\$643.50	\$39.00	\$604.50
\$2.00	101	\$202.00	\$101.00	\$101.00	\$17.00	37	\$629.00	\$37.00	\$592.00
\$2.50	98	\$245.00	\$98.00	\$147.00	\$17.50	35	\$612.50	\$35.00	\$577.50
\$3.00	96	\$288.00	\$96.00	\$192.00	\$18.00	34	\$612.00	\$34.00	\$578.00
\$3.50	93	\$325.50	\$93.00	\$232.50	\$18.50	32	\$592.00	\$32.00	\$560.00
\$4.00	91	\$364.00	\$91.00	\$273.00	\$19.00	31	\$589.00	\$31.00	\$558.00
\$4.50	88	\$396.00	\$88.00	\$308.00	\$19.50	29	\$565.50	\$29.00	\$536.50
\$5.00	86	\$430.00	\$86.00	\$344.00	\$20.00	28	\$560.00	\$28.00	\$532.00
\$5.50	84	\$462.00	\$84.00	\$378.00	\$20.50	26	\$533.00	\$26.00	\$507.00
\$6.00	81	\$486.00	\$81.00	\$405.00	\$21.00	25	\$525.00	\$25.00	\$500.00
\$6.50	79	\$513.50	\$79.00	\$434.50	\$21.50	23	\$494.50	\$23.00	\$471.50
\$7.00	77	\$539.00	\$77.00	\$462.00	\$22.00	22	\$484.00	\$22.00	\$462.00
\$7.50	74	\$555.00	\$74.00	\$481.00	\$22.50	20	\$450.00	\$20.00	\$430.00
\$8.00	72	\$576.00	\$72.00	\$504.00	\$23.00	19	\$437.00	\$19.00	\$418.00
\$8.50	70	\$595.00	\$70.00	\$525.00	\$23.50	18	\$423.00	\$18.00	\$405.00
\$9.00	68	\$612.00	\$68.00	\$544.00	\$24.00	16	\$384.00	\$16.00	\$368.00
\$9.50	66	\$627.00	\$66.00	\$561.00	\$24.50	15	\$367.50	\$15.00	\$352.50
\$10.00	64	\$640.00	\$64.00	\$576.00	\$25.00	14	\$350.00	\$14.00	\$336.00
\$10.50	61	\$640.50	\$61.00	\$579.50					
\$11.00	59	\$649.00	\$59.00	\$590.00					
\$11.50	57	\$655.50	\$57.00	\$598.50					
\$12.00	55	\$660.00	\$55.00	\$605.00					
\$12.50	53	\$662.50	\$53.00	\$609.50					
\$13.00	51	\$663.00	\$51.00	\$612.00					
\$13.50	50	\$675.00	\$50.00	\$625.00					
\$14.00	48	\$672.00	\$48.00	\$624.00					
\$14.50	46	\$667.00	\$46.00	\$621.00					
\$15.00	44	\$660.00	\$44.00	\$616.00					

Round 3: Tax the Firms

In this round, firms will pay a \$5 per unit tax for every unit they sell.

The price consumers pay is the price you charge.

Round 3

In this round, firms will pay a \$5 per unit tax.

Your cost per unit is now \$1 (for the unit) plus another \$5 (for the tax).

If you charge \$9, how many units will consumers buy?

770

What is your profit?

$$(\$9)(770) - (\$1)(770) - (\$5)(770) = \$2,310$$

Price per Unit	Quantity Sold
\$0.50	940
\$1.00	930
\$1.50	920
\$2.00	910
\$2.50	900
\$3.00	890
\$3.50	880
\$4.00	870
\$4.50	860
\$5.00	850
\$5.50	840
\$6.00	830
\$6.50	820
\$7.00	810
\$7.50	800
\$8.00	790
\$8.50	780
\$9.00	770
\$9.50	760
\$10.00	750
\$10.50	740
\$11.00	730
\$11.50	720
\$12.00	710
\$12.50	700
\$13.00	690
\$13.50	680
\$14.00	670
\$14.50	660
\$15.00	650

Price per Unit	Quantity Sold
\$15.50	640
\$16.00	630
\$16.50	620
\$17.00	610
\$17.50	600
\$18.00	590
\$18.50	580
\$19.00	570
\$19.50	560
\$20.00	550
\$20.50	540
\$21.00	530
\$21.50	520
\$22.00	510
\$22.50	500
\$23.00	490
\$23.50	480
\$24.00	470
\$24.50	460
\$25.00	450
\$25.50	440
\$26.00	430
\$26.50	420
\$27.00	410
\$27.50	400
\$28.00	390
\$28.50	380
\$29.00	370
\$29.50	360
\$30.00	350

Round 3

Choose the price you will charge for your product.

Every unit you sell costs you \$1 to produce.

In addition, you pay the government \$5 for each unit you produce.

Price per Unit	Quantity Sold	Price per Unit	Quantity Sold
\$0.50	137	\$15.50	61
\$1.00	134	\$16.00	59
\$1.50	131	\$16.50	57
\$2.00	128	\$17.00	55
\$2.50	125	\$17.50	53
\$3.00	123	\$18.00	51
\$3.50	120	\$18.50	50
\$4.00	117	\$19.00	48
\$4.50	114	\$19.50	46
\$5.00	112	\$20.00	44
\$5.50	109	\$20.50	42
\$6.00	106	\$21.00	40
\$6.50	104	\$21.50	39
\$7.00	101	\$22.00	37
\$7.50	98	\$22.50	35
\$8.00	96	\$23.00	34
\$8.50	93	\$23.50	32
\$9.00	91	\$24.00	31
\$9.50	88	\$24.50	29
\$10.00	86	\$25.00	28
\$10.50	84	\$25.50	26
\$11.00	81	\$26.00	25
\$11.50	79	\$26.50	23
\$12.00	77	\$27.00	22
\$12.50	74	\$27.50	20
\$13.00	72	\$28.00	19
\$13.50	70	\$28.50	18
\$14.00	68	\$29.00	16
\$14.50	66	\$29.50	15
\$15.00	64	\$30.00	14

Round 3: Tax the Firms

Price per Unit	Quantity Sold	Revenue	Cost	Profit	Price per Unit	Quantity Sold	Revenue	Cost	Profit
\$0.50	137	\$68.50	\$822.00	(\$753.50)	\$15.50	61	\$945.50	\$366.00	\$579.50
\$1.00	134	\$134.00	\$804.00	(\$670.00)	\$16.00	59	\$944.00	\$354.00	\$590.00
\$1.50	131	\$196.50	\$786.00	(\$589.50)	\$16.50	57	\$940.50	\$342.00	\$598.50
\$2.00	128	\$256.00	\$768.00	(\$512.00)	\$17.00	55	\$935.00	\$330.00	\$605.00
\$2.50	125	\$312.50	\$750.00	(\$437.50)	\$17.50	53	\$927.50	\$318.00	\$609.50
\$3.00	123	\$369.00	\$738.00	(\$369.00)	\$18.00	51	\$918.00	\$306.00	\$612.00
\$3.50	120	\$420.00	\$720.00	(\$300.00)	\$18.50	50	\$925.00	\$300.00	\$625.00
\$4.00	117	\$468.00	\$702.00	(\$234.00)	\$19.00	48	\$912.00	\$288.00	\$624.00
\$4.50	114	\$513.00	\$684.00	(\$171.00)	\$19.50	46	\$897.00	\$276.00	\$621.00
\$5.00	112	\$560.00	\$672.00	(\$112.00)	\$20.00	44	\$880.00	\$264.00	\$616.00
\$5.50	109	\$599.50	\$654.00	(\$54.50)	\$20.50	42	\$861.00	\$252.00	\$609.00
\$6.00	106	\$636.00	\$636.00	\$0.00	\$21.00	40	\$840.00	\$240.00	\$600.00
\$6.50	104	\$676.00	\$624.00	\$52.00	\$21.50	39	\$838.50	\$234.00	\$604.50
\$7.00	101	\$707.00	\$606.00	\$101.00	\$22.00	37	\$814.00	\$222.00	\$592.00
\$7.50	98	\$735.00	\$588.00	\$147.00	\$22.50	35	\$787.50	\$210.00	\$577.50
\$8.00	96	\$768.00	\$576.00	\$192.00	\$23.00	34	\$782.00	\$204.00	\$578.00
\$8.50	93	\$790.50	\$558.00	\$232.50	\$23.50	32	\$752.00	\$192.00	\$560.00
\$9.00	91	\$819.00	\$546.00	\$273.00	\$24.00	31	\$744.00	\$186.00	\$558.00
\$9.50	88	\$836.00	\$528.00	\$308.00	\$24.50	29	\$710.50	\$174.00	\$536.50
\$10.00	86	\$860.00	\$516.00	\$344.00	\$25.00	28	\$700.00	\$168.00	\$532.00
\$10.50	84	\$882.00	\$504.00	\$378.00	\$25.50	26	\$663.00	\$156.00	\$507.00
\$11.00	81	\$891.00	\$486.00	\$405.00	\$26.00	25	\$650.00	\$150.00	\$500.00
\$11.50	79	\$908.50	\$474.00	\$434.50	\$26.50	23	\$609.50	\$138.00	\$471.50
\$12.00	77	\$924.00	\$462.00	\$462.00	\$27.00	22	\$594.00	\$132.00	\$462.00
\$12.50	74	\$925.00	\$444.00	\$481.00	\$27.50	20	\$550.00	\$120.00	\$430.00
\$13.00	72	\$936.00	\$432.00	\$504.00	\$28.00	19	\$532.00	\$114.00	\$418.00
\$13.50	70	\$945.00	\$420.00	\$525.00	\$28.50	18	\$513.00	\$108.00	\$405.00
\$14.00	68	\$952.00	\$408.00	\$544.00	\$29.00	16	\$464.00	\$96.00	\$368.00
\$14.50	66	\$957.00	\$396.00	\$561.00	\$29.50	15	\$442.50	\$90.00	\$352.50
\$15.00	64	\$960.00	\$384.00	\$576.00	\$30.00	14	\$420.00	\$84.00	\$336.00

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00		
Per Unit Tax on Consumers	\$0.00		
Per Unit Tax on Firms	\$0.00		
Price Consumer Pays	\$15.00		
Price Firm Receives	\$15.00		
Units Sold			
Tax Revenue			

In round 3, the government taxed the firms \$5.

Won't firms just pass the tax on to consumers?

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00		\$18.50
Per Unit Tax on Consumers	\$0.00		\$0.00
Per Unit Tax on Firms	\$0.00		\$5.00
Price Consumer Pays	\$15.00		\$18.50
Price Firm Receives	\$15.00		\$13.50
Units Sold			
Tax Revenue			

Firms pass part of the tax (\$3.50) on to consumers but pay the remainder of the tax (\$1.50) out of their profits.

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00		\$18.50
Per Unit Tax on Consumers	\$0.00		\$0.00
Per Unit Tax on Firms	\$0.00		\$5.00
Price Consumer Pays	\$15.00		\$18.50
Price Firm Receives	\$15.00		\$13.50
Units Sold			
Tax Revenue			

In round 2, the government taxed the consumers \$5.

Won't consumers be forced to pay the full \$5 tax?

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00	\$13.50	\$18.50
Per Unit Tax on Consumers	\$0.00	\$5.00	\$0.00
Per Unit Tax on Firms	\$0.00	\$0.00	\$5.00
Price Consumer Pays	\$15.00	\$18.50	\$18.50
Price Firm Receives	\$15.00	\$13.50	\$13.50
Units Sold			
Tax Revenue			

Firms pay part of the tax (\$1.50) out of their profits and leave consumers to pay the remainder of the tax (\$3.50).

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00	\$13.50	\$18.50
Per Unit Tax on Consumers	\$0.00	\$5.00	\$0.00
Per Unit Tax on Firms	\$0.00	\$0.00	\$5.00
Price Consumer Pays	\$15.00	\$18.50	\$18.50
Price Firm Receives	\$15.00	\$13.50	\$13.50
Units Sold			
Tax Revenue			

Lesson #1: The government has no control over who ultimately pays a tax.

(even when the firm is a monopoly)

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00	\$13.50	\$18.50
Per Unit Tax on Consumers	\$0.00	\$5.00	\$0.00
Per Unit Tax on Firms	\$0.00	\$0.00	\$5.00
Price Consumer Pays	\$15.00	\$18.50	\$18.50
Price Firm Receives	\$15.00	\$13.50	\$13.50
Units Sold	64		
Tax Revenue	\$0.00		

When there was no tax, consumers bought 64 units.

A \$5 per unit tax should generate $(\$5)(64) = \320 in tax revenue.

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00	\$13.50	\$18.50
Per Unit Tax on Consumers	\$0.00	\$5.00	\$0.00
Per Unit Tax on Firms	\$0.00	\$0.00	\$5.00
Price Consumer Pays	\$15.00	\$18.50	\$18.50
Price Firm Receives	\$15.00	\$13.50	\$13.50
Units Sold	64	50	
Tax Revenue	\$0.00	\$250.00	



Instead of raising \$320 in tax revenue, the government only raises \$250.

Results

	No Tax	Tax Consumers	Tax Producers
Retail Price	\$15.00	\$13.50	\$18.50
Per Unit Tax on Consumers	\$0.00	\$5.00	\$0.00
Per Unit Tax on Firms	\$0.00	\$0.00	\$5.00
Price Consumer Pays	\$15.00	\$18.50	\$18.50
Price Firm Receives	\$15.00	\$13.50	\$13.50
Units Sold	64	50	
Tax Revenue	\$0.00	\$250.00	

Lesson #2: The government determines the tax rate, not the tax revenue.

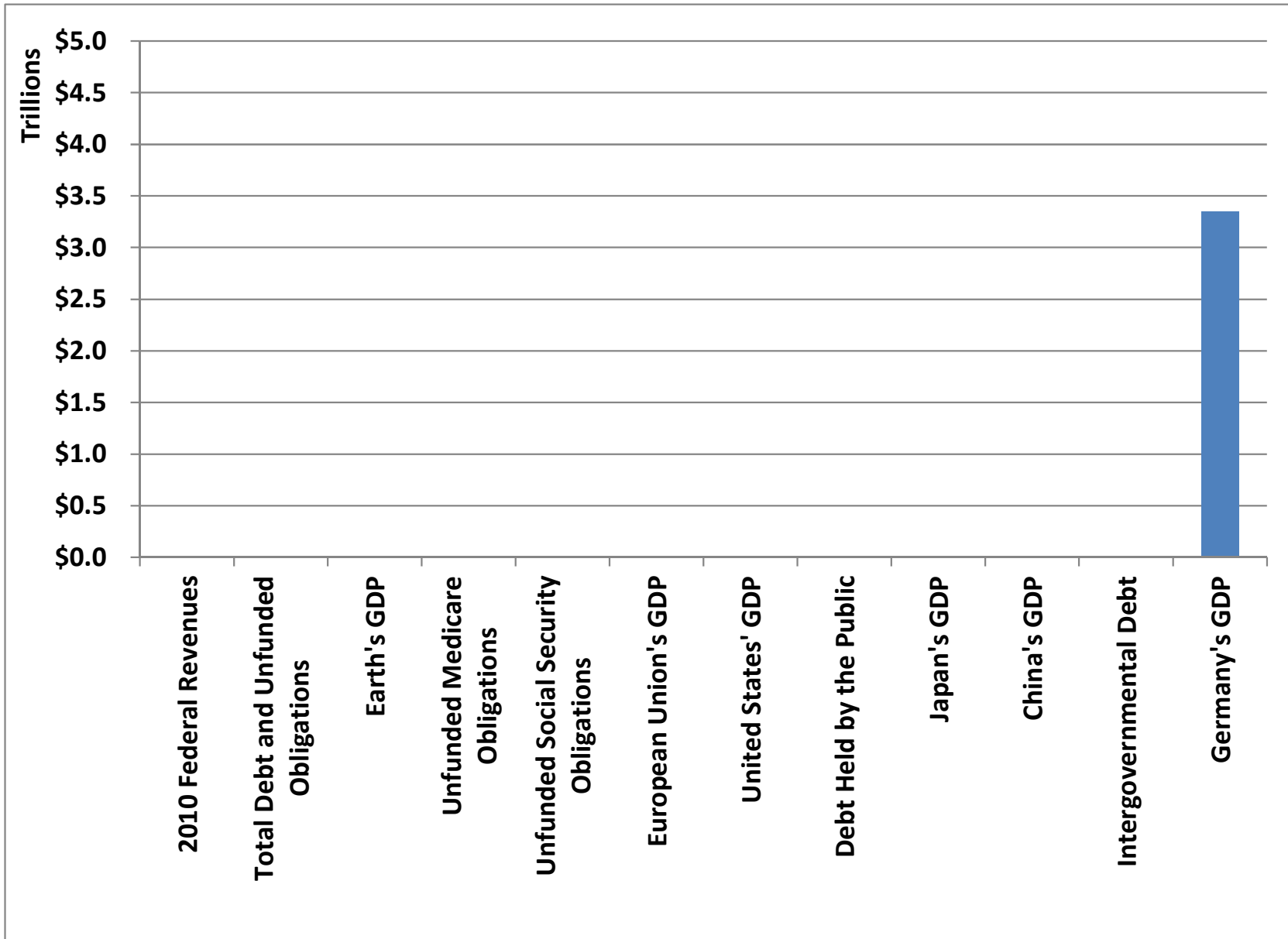
(regardless of whom it taxes)

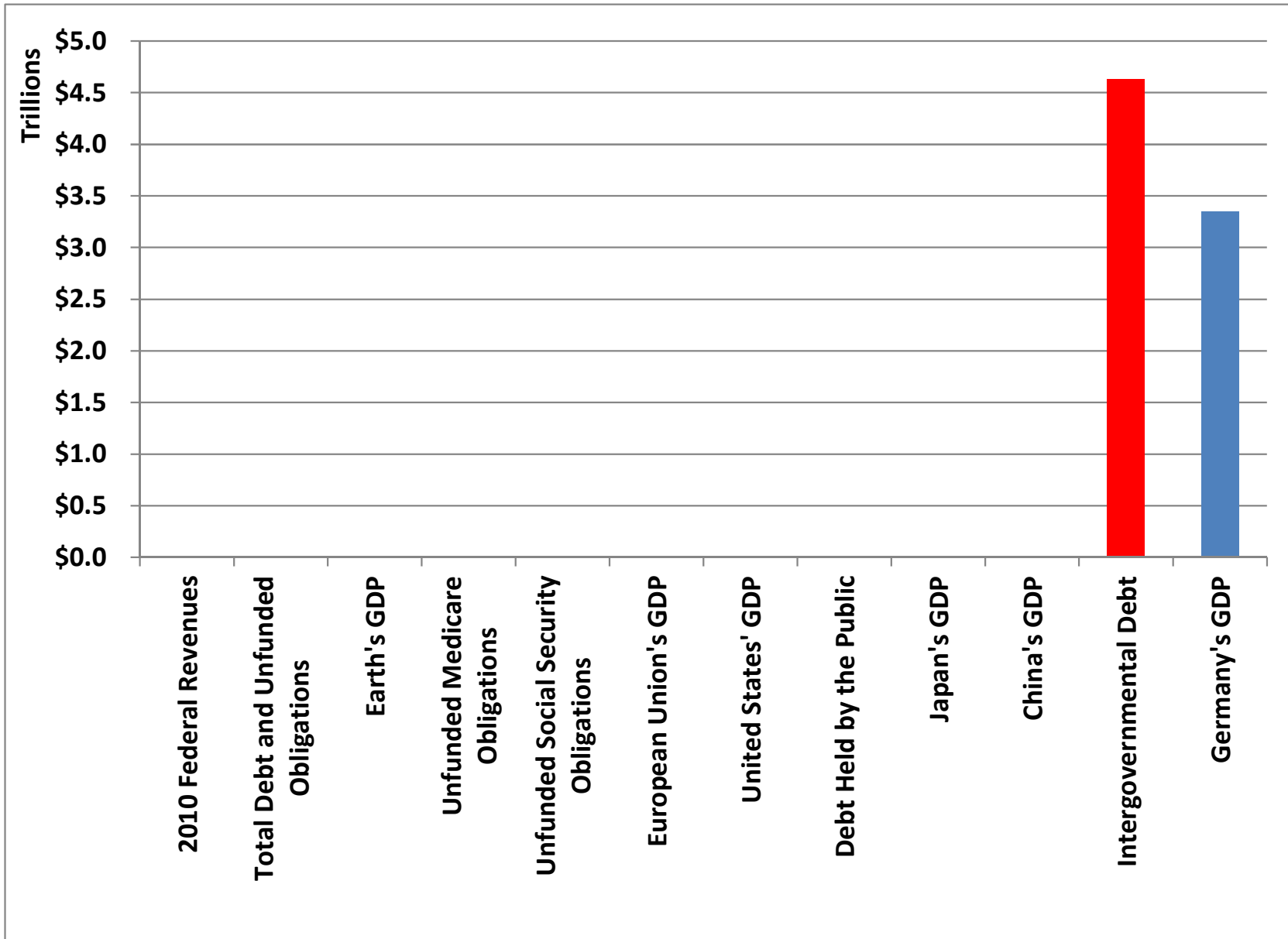
Lesson #1: The government has no control over who ultimately pays a tax.

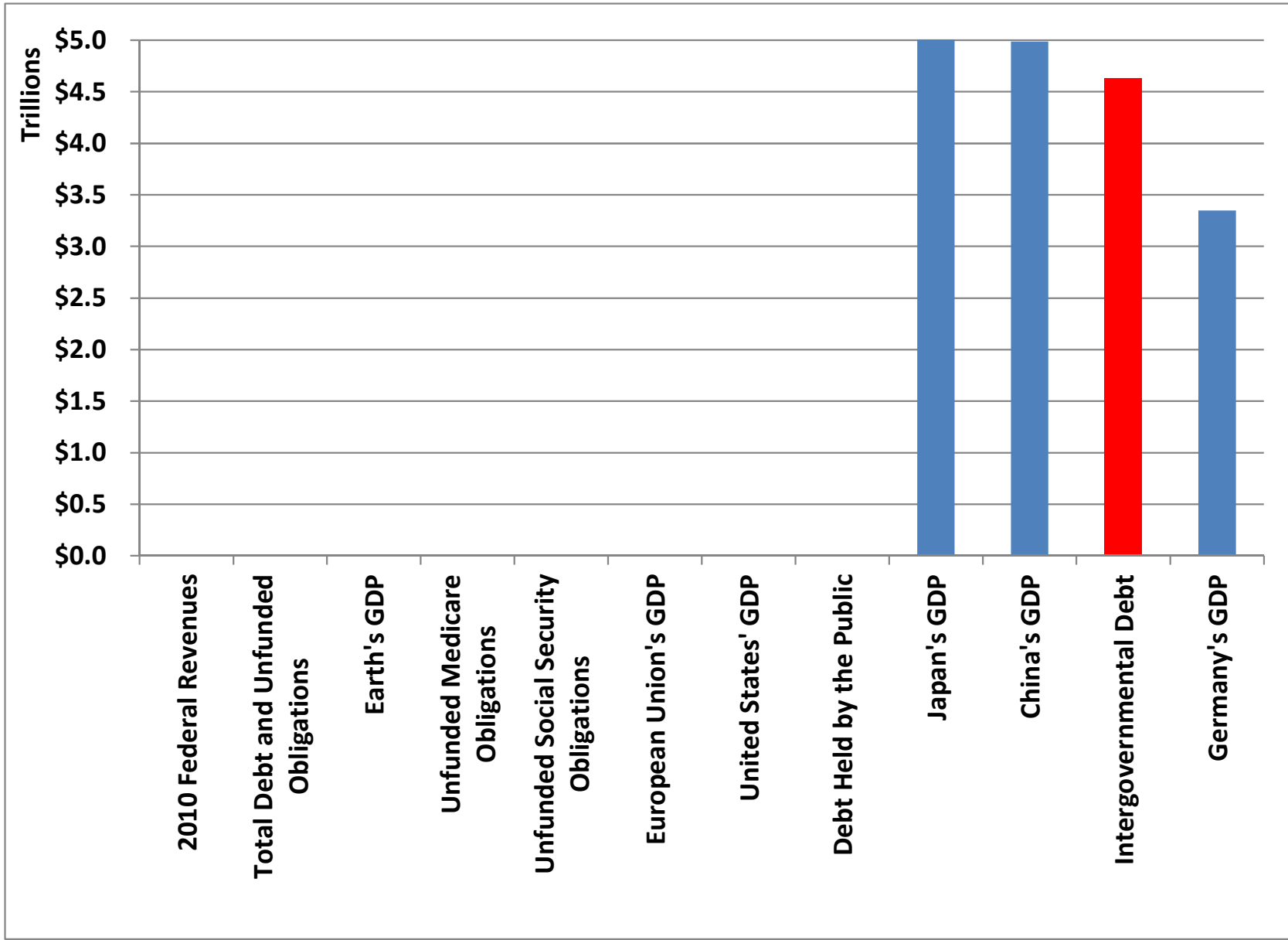
Lesson #2: The government determines the tax rate, not the tax revenue.

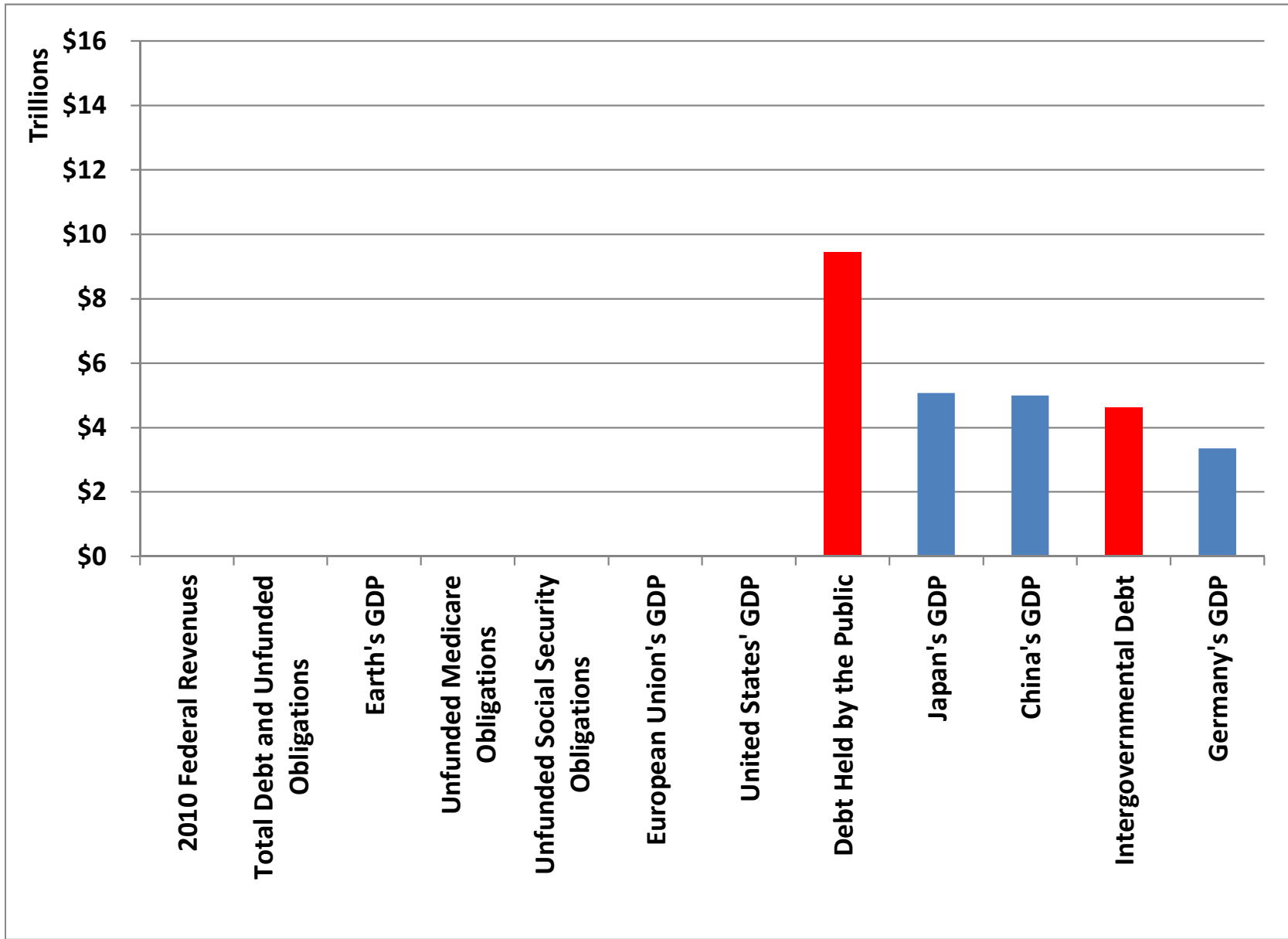
Conventional Wisdom #1

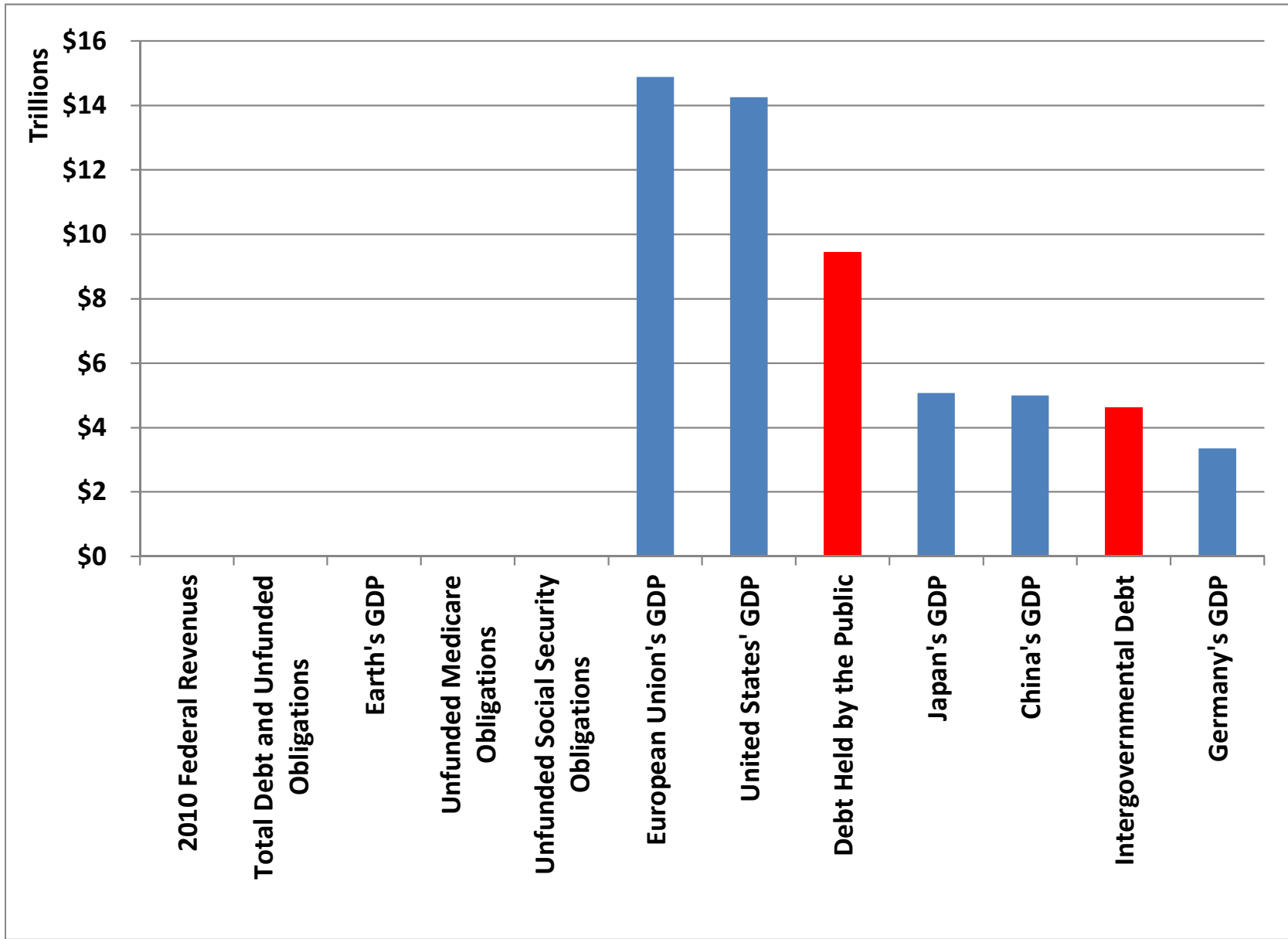
The government is financially sound.

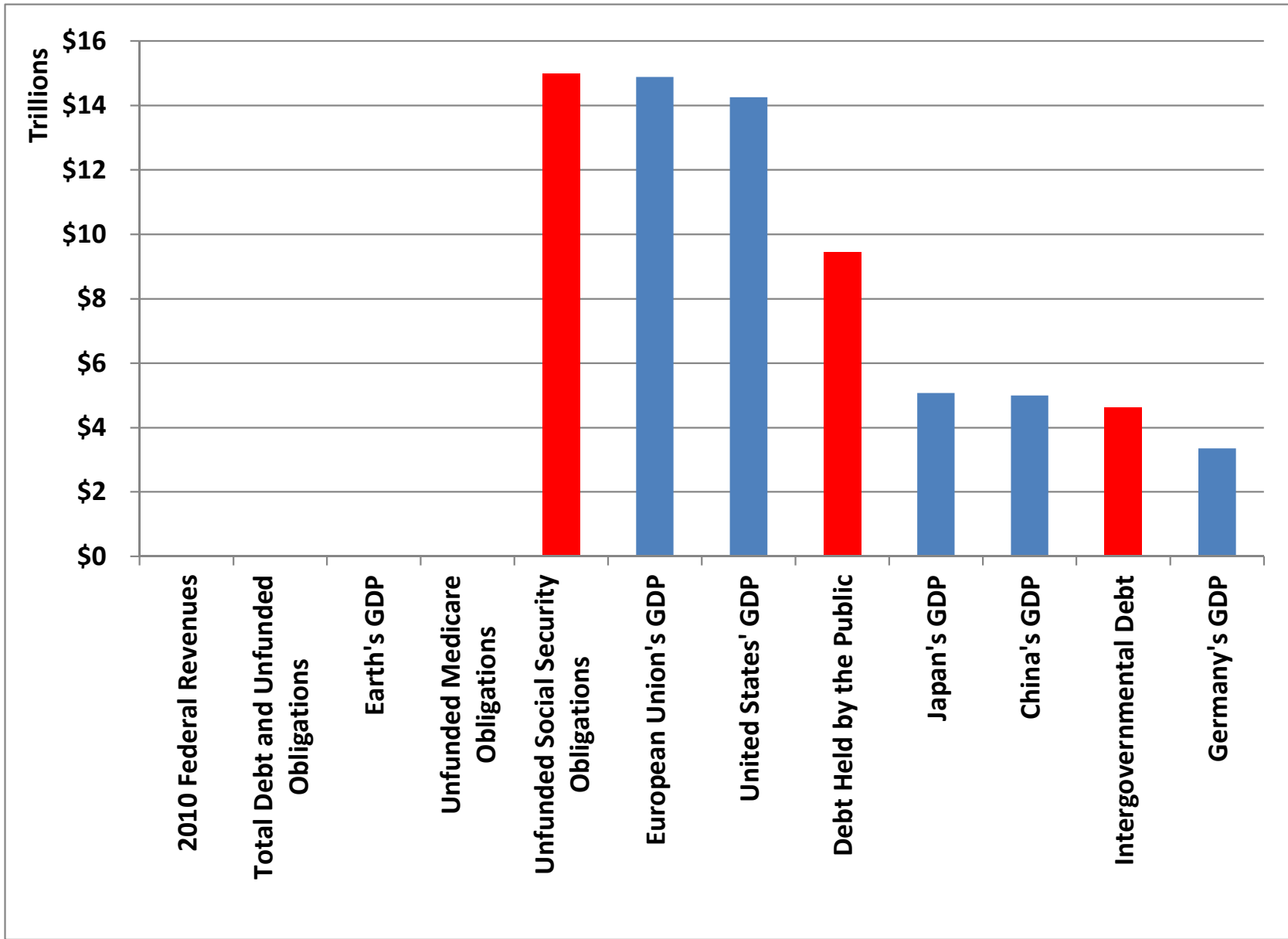


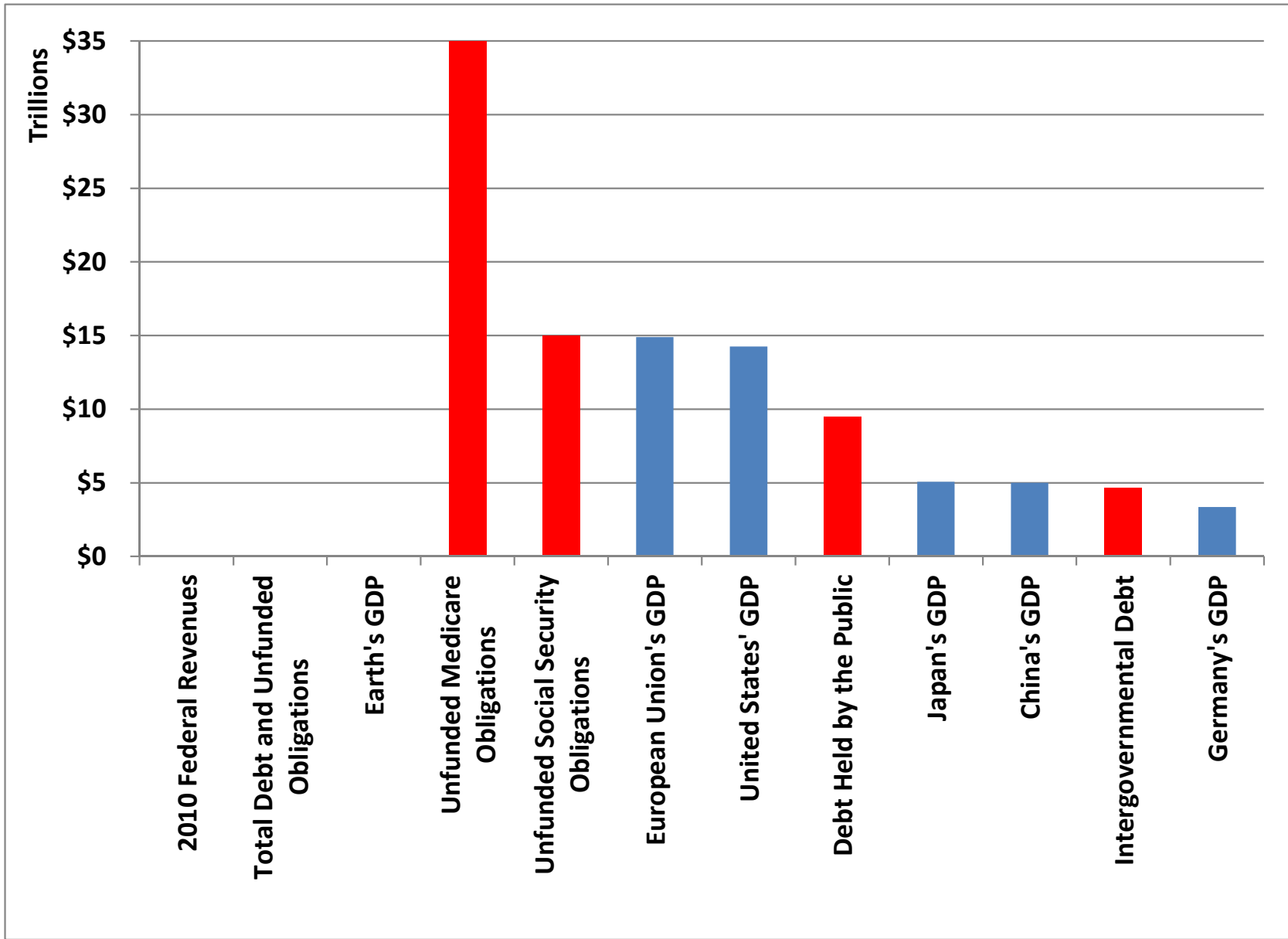


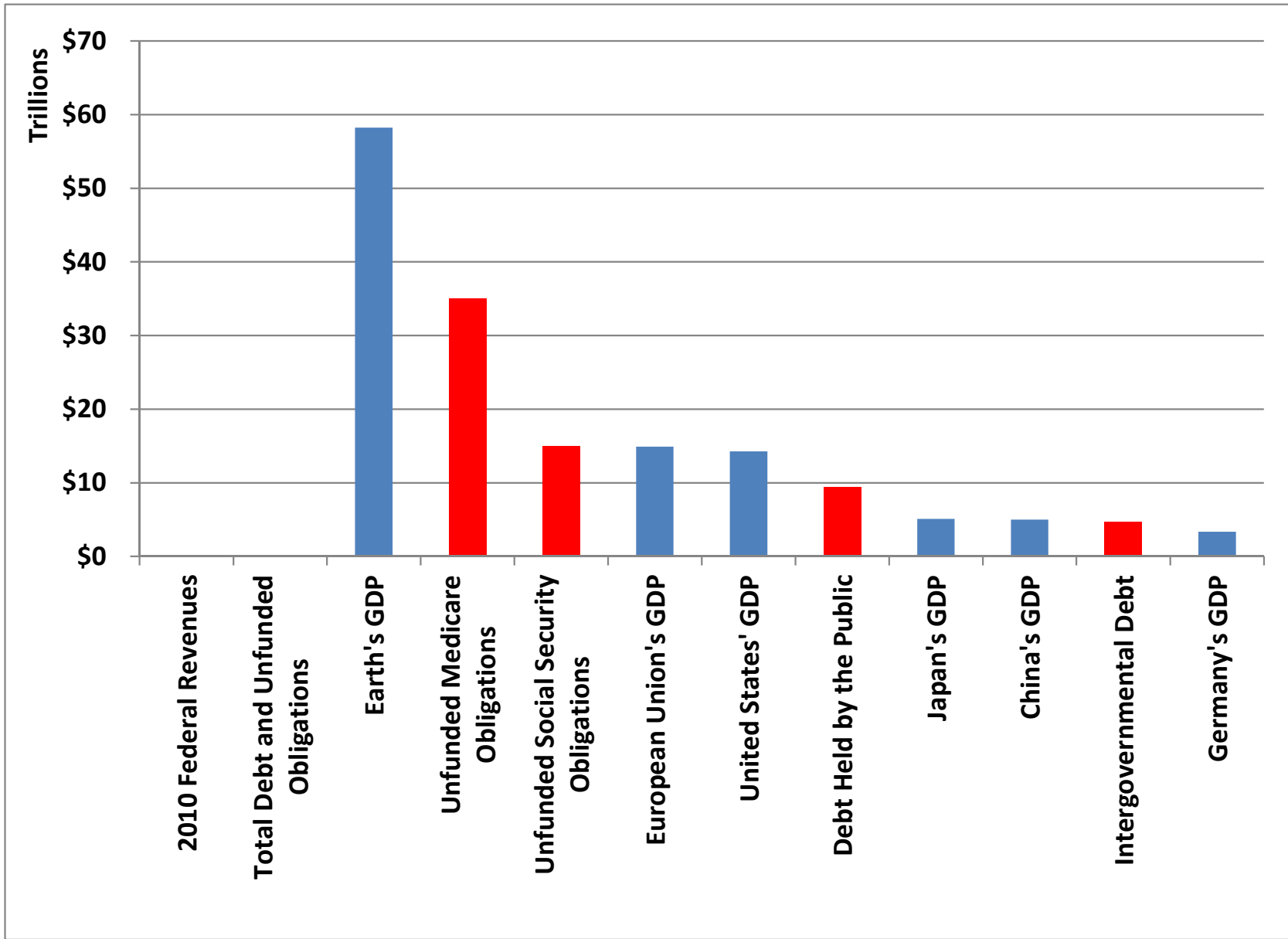


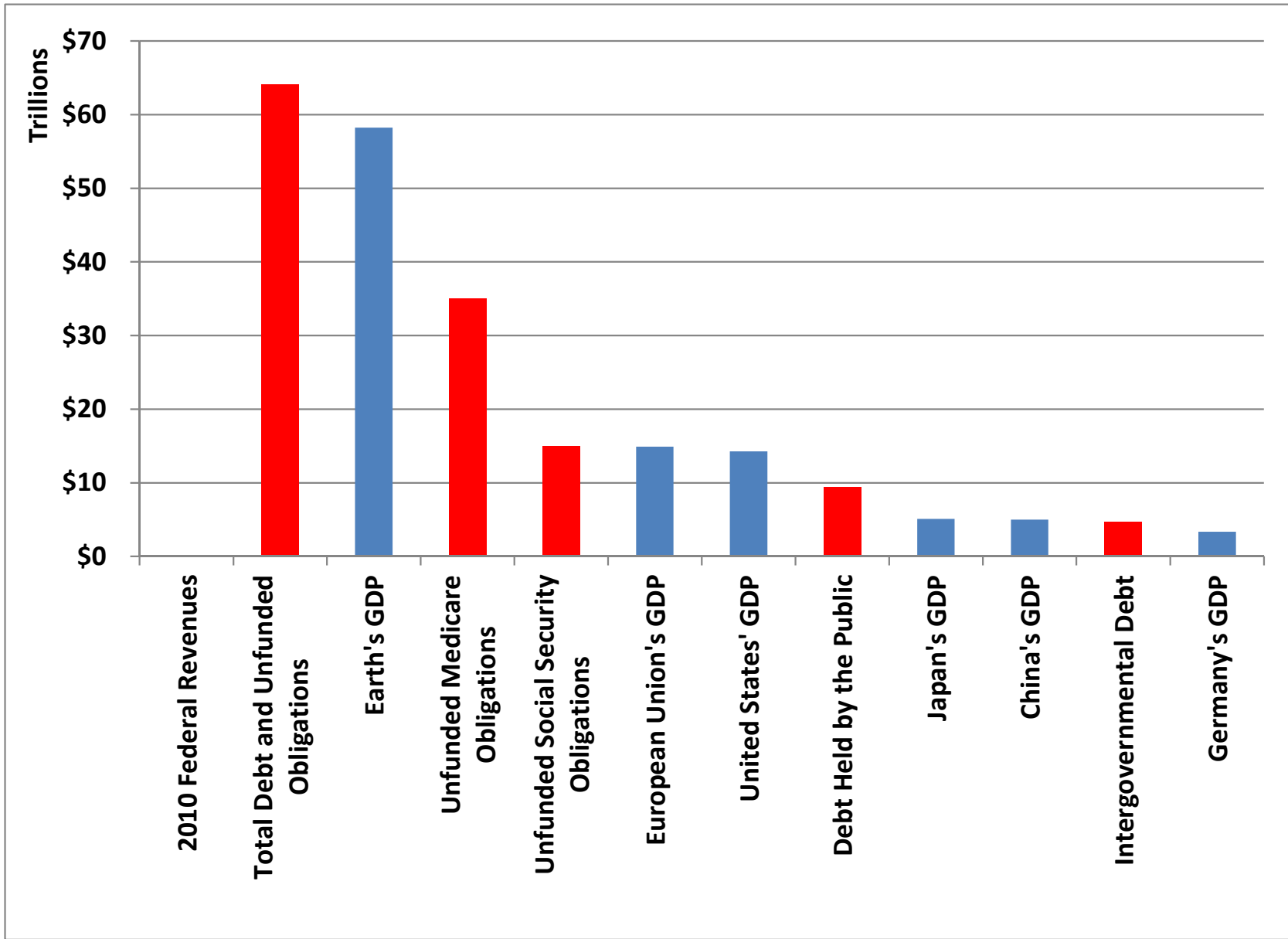


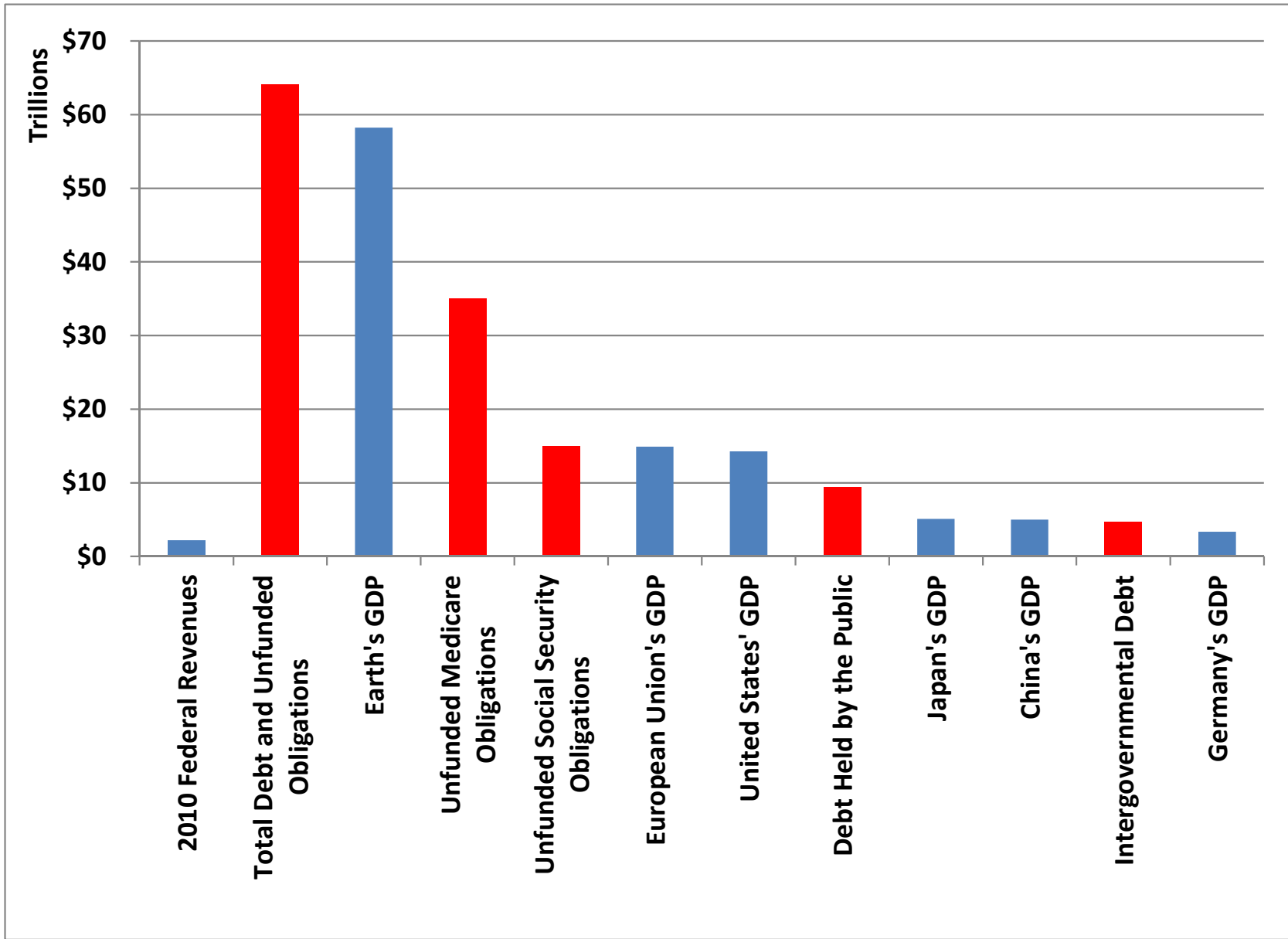












In perspective...

The President's 2012 budget included a \$300 million cut in Community Development Block Grants.

The cuts will fund the government for a total of 45 minutes.



Conventional Wisdom #1

The government is financially sound.

The Data: The Planet Rule

The amount of money the Federal government owes or has promised exceeds the economic output of the entire planet.

Conventional Wisdom #1

The government is financially sound.

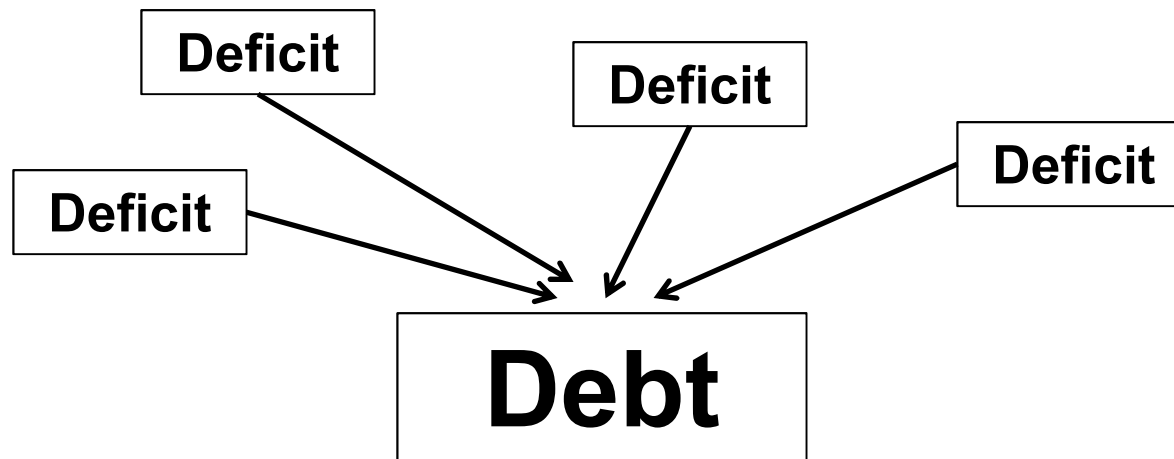
The Data: The 10-24 Rule

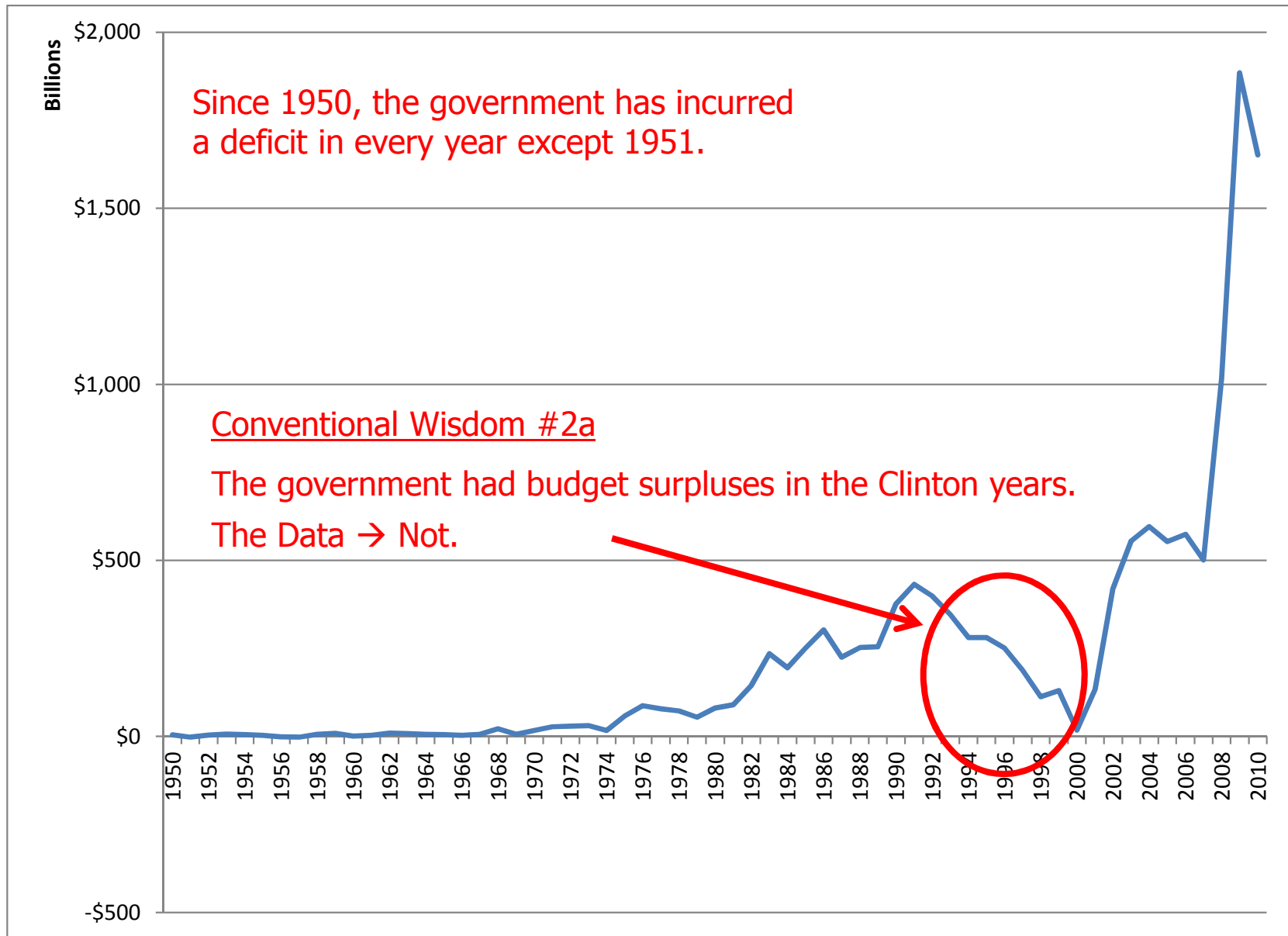
The government spends \$10 billion every 24 hours.

Conventional Wisdom #2

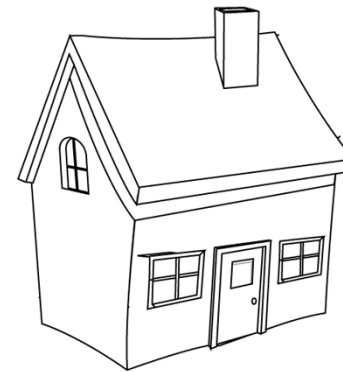
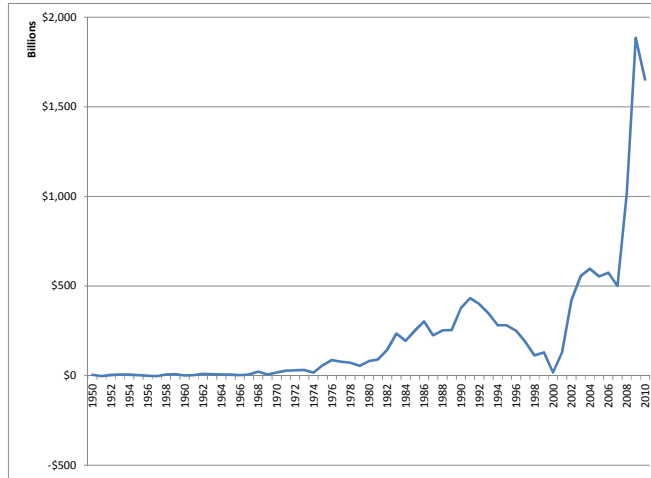
The government has a debt problem.

What causes debt?





Data source: US Department of the Treasury (public debt outstanding)



Federal tax revenues = \$2.2 trillion

Federal spending = \$3.8 trillion

Federal debt = \$14.6 trillion

Income = \$50,000

Spending = \$84,000

Debt = \$330,000

Conventional Wisdom #2

The government has a debt problem.

The Data: Get The Causality Right Rule

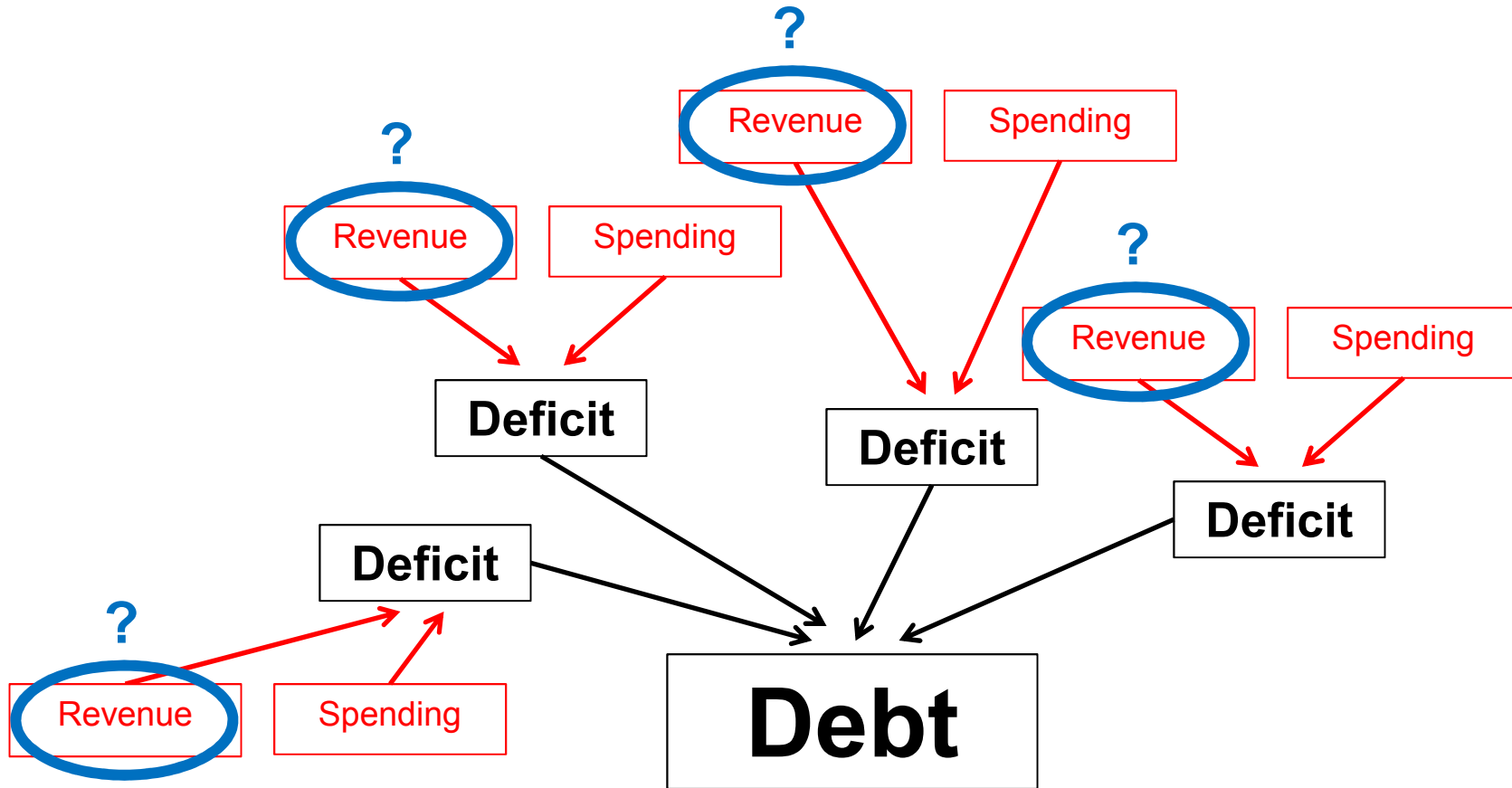
The debt is an effect. Deficits cause the debt.

Conventional Wisdom #3

The government has a deficit problem.

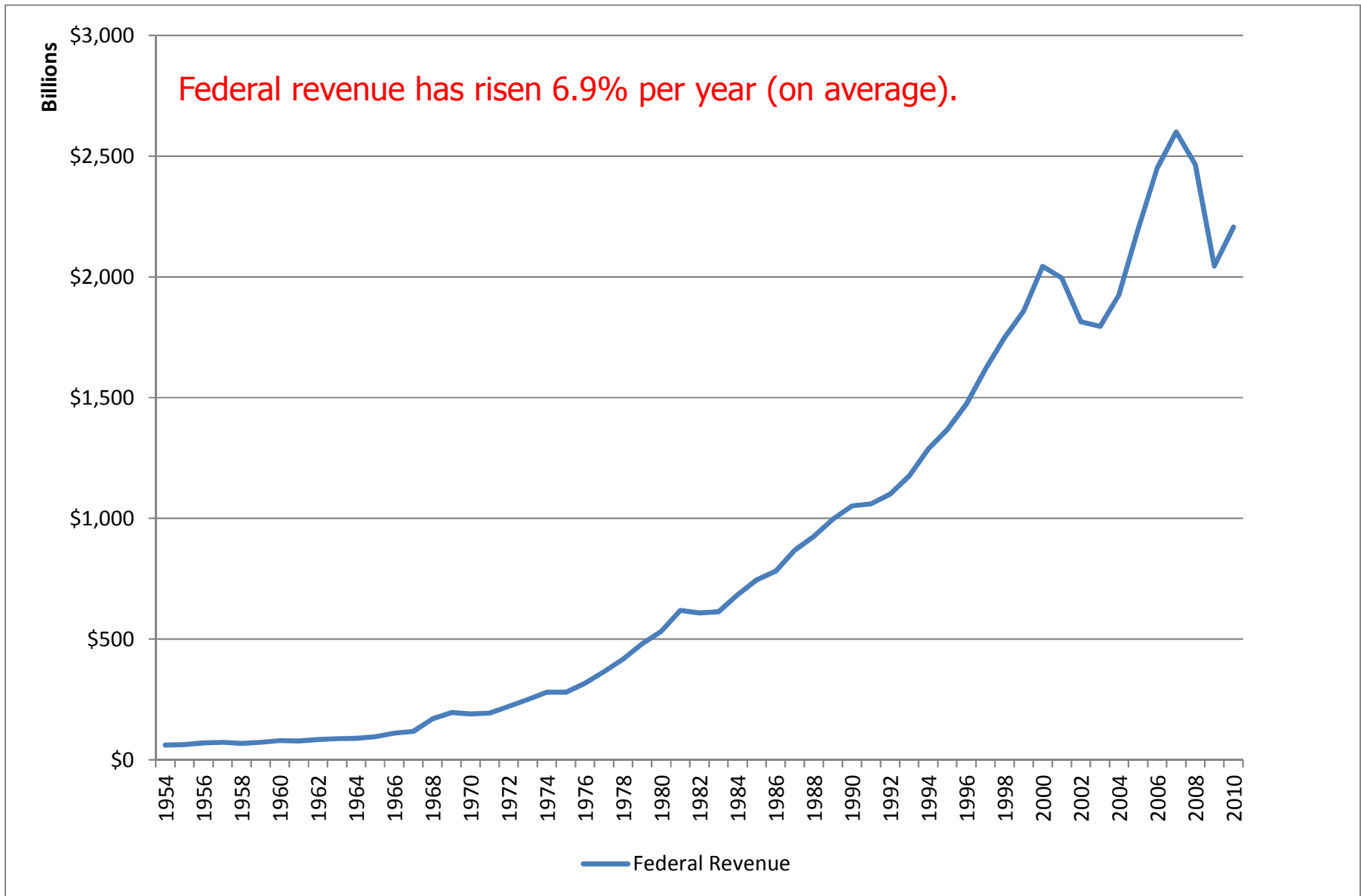
What causes deficit?

Perhaps we have a revenue problem.



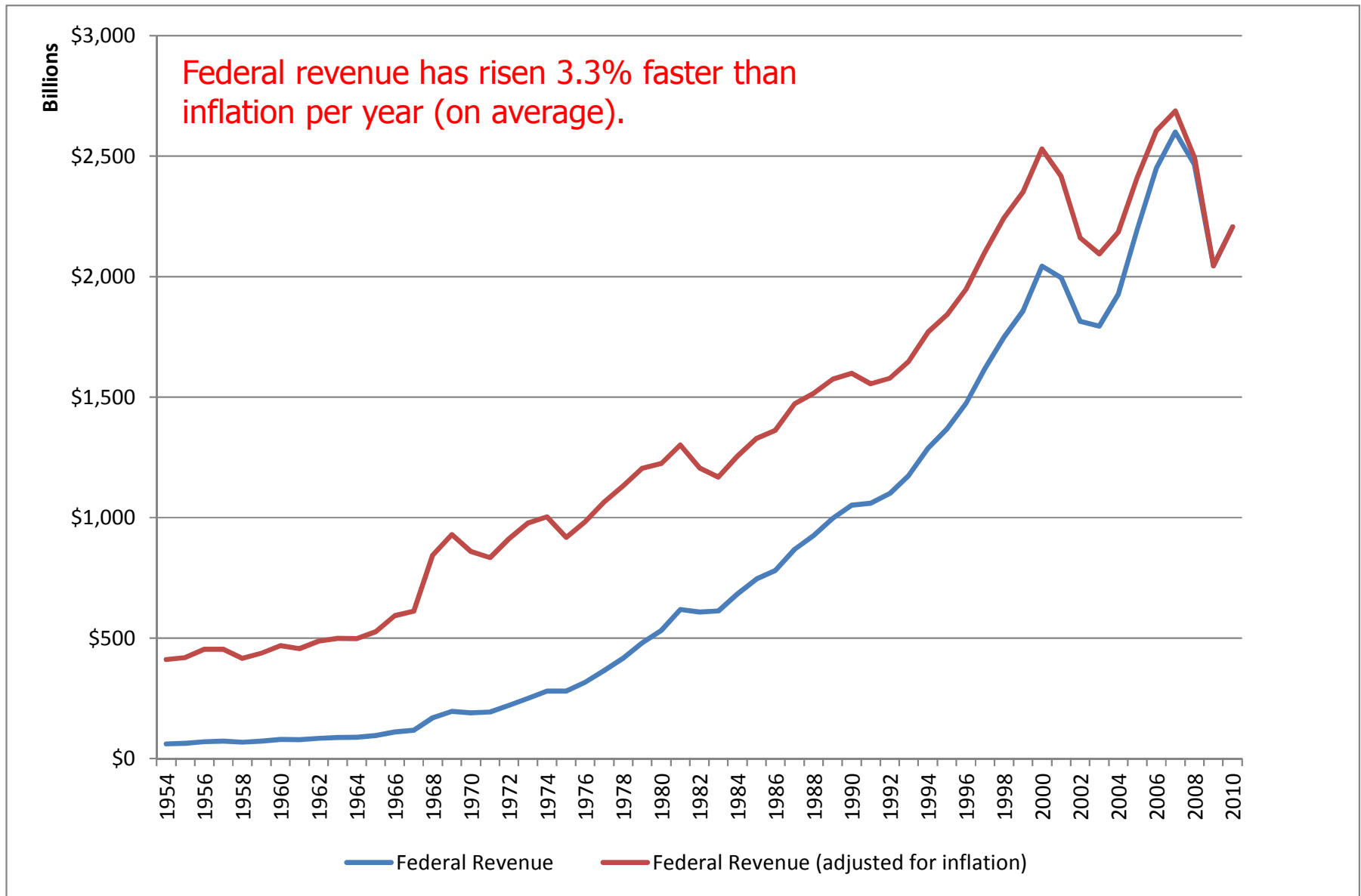
Conventional Wisdom #3

The government has a ~~deficit~~ problem.
revenue



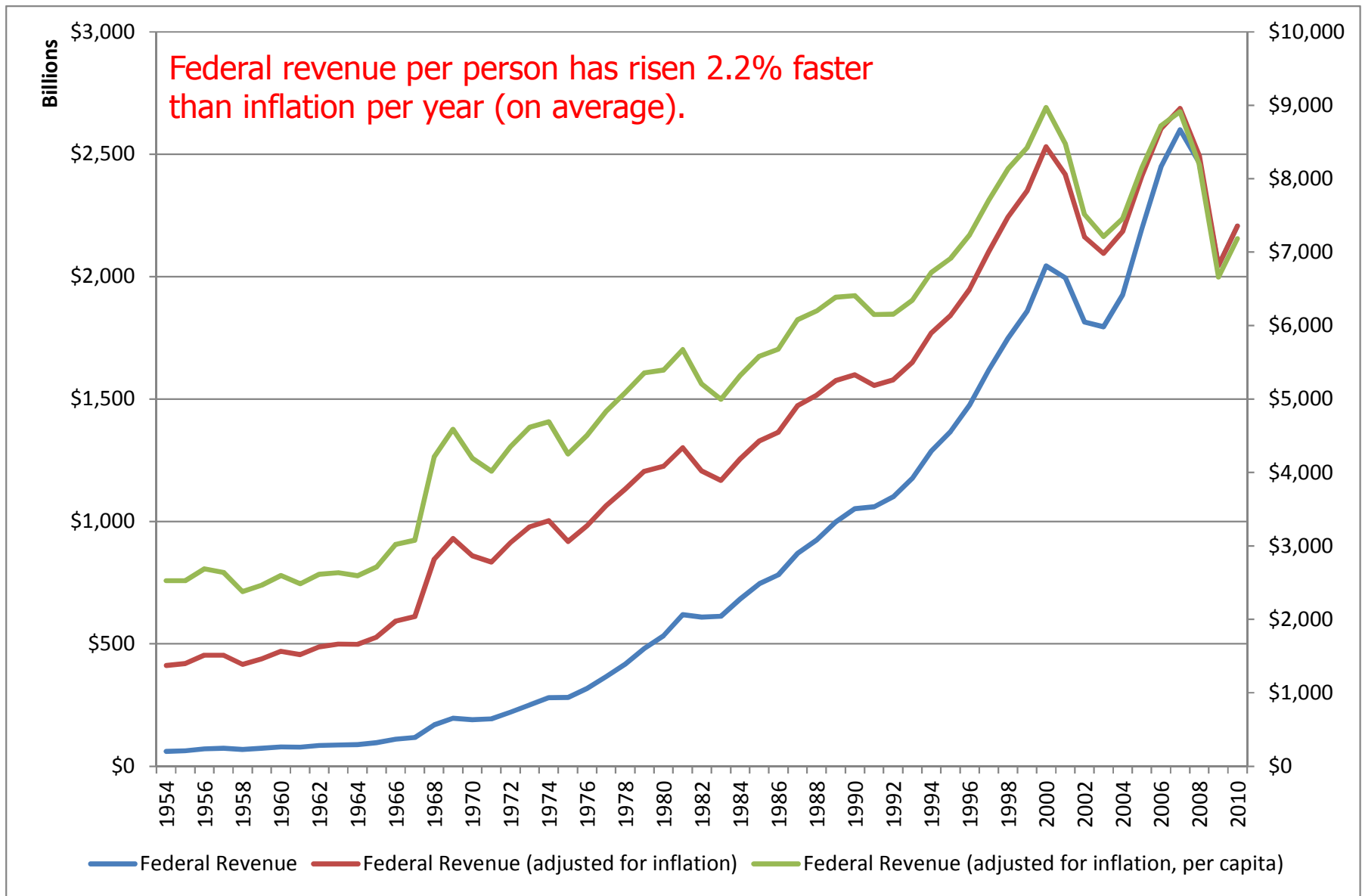
Data source: US Department of the Treasury

Not fair. Prices have been rising over time.



Data source: US Department of the Treasury

Not fair. The population has been growing over time.



Data source: US Department of the Treasury

Conventional Wisdom #3

The government has a ~~deficit~~ problem.
revenue

The Data: The Rolling in Benjamins Rule

Tax revenue per capita rises 2% faster than inflation.

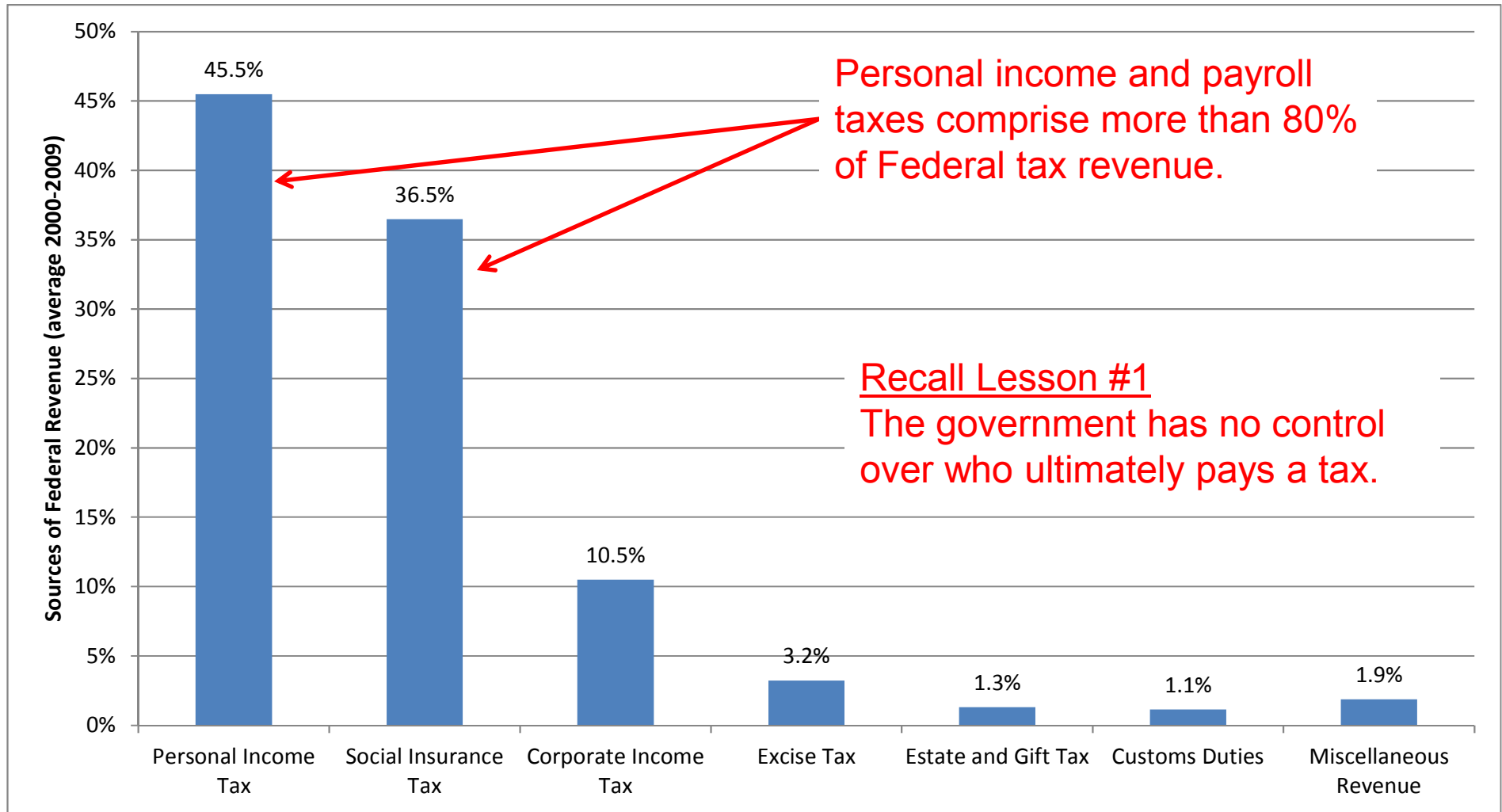
**Tax revenue may be rising,
but it isn't rising fast enough.**

To reduce the deficit, we need to raise tax rates.

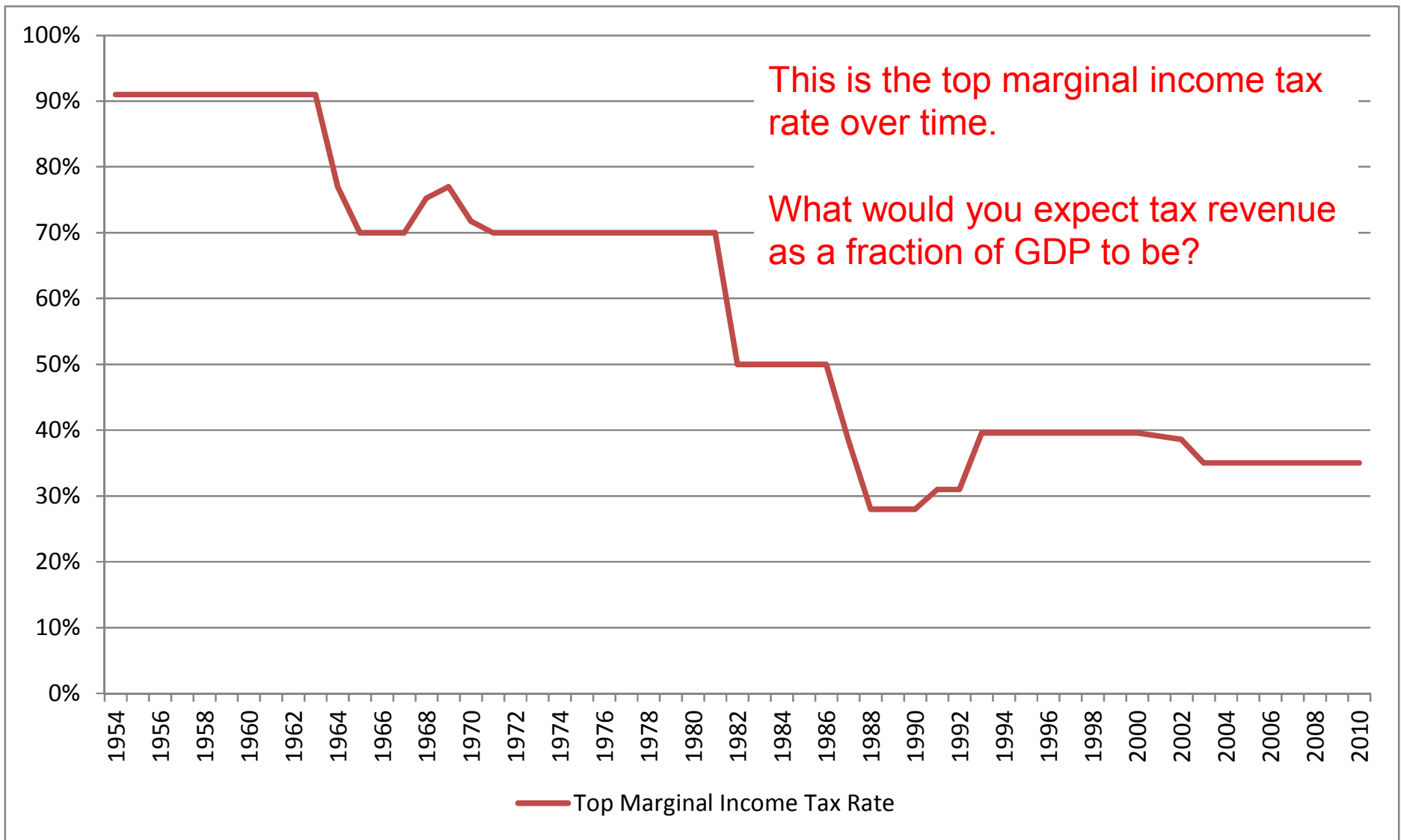
Conventional Wisdom #4

Raising tax rates increases tax revenue.

Sources of Federal Revenue (as fraction of total revenue)

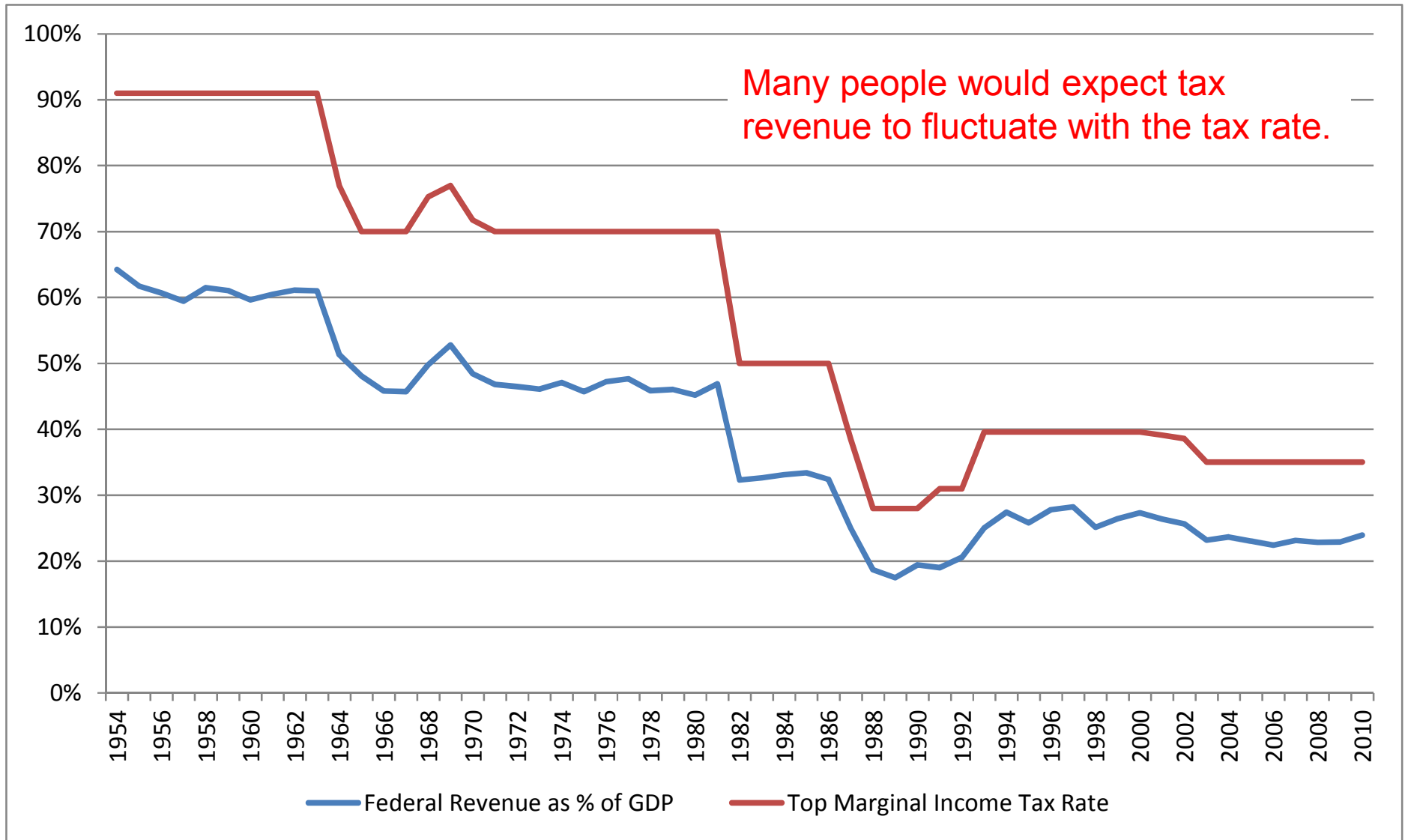


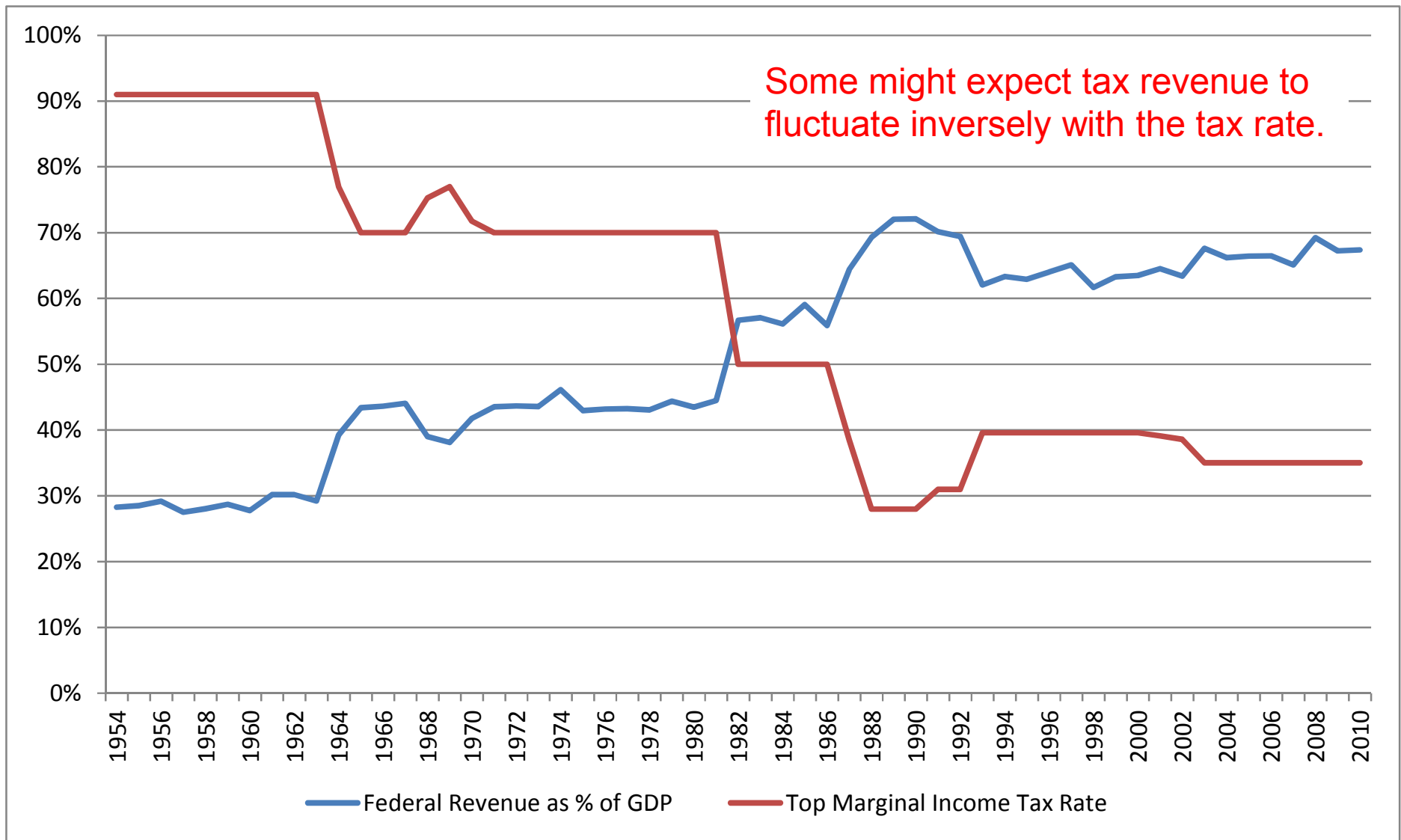
Data source: Congressional Budget Office

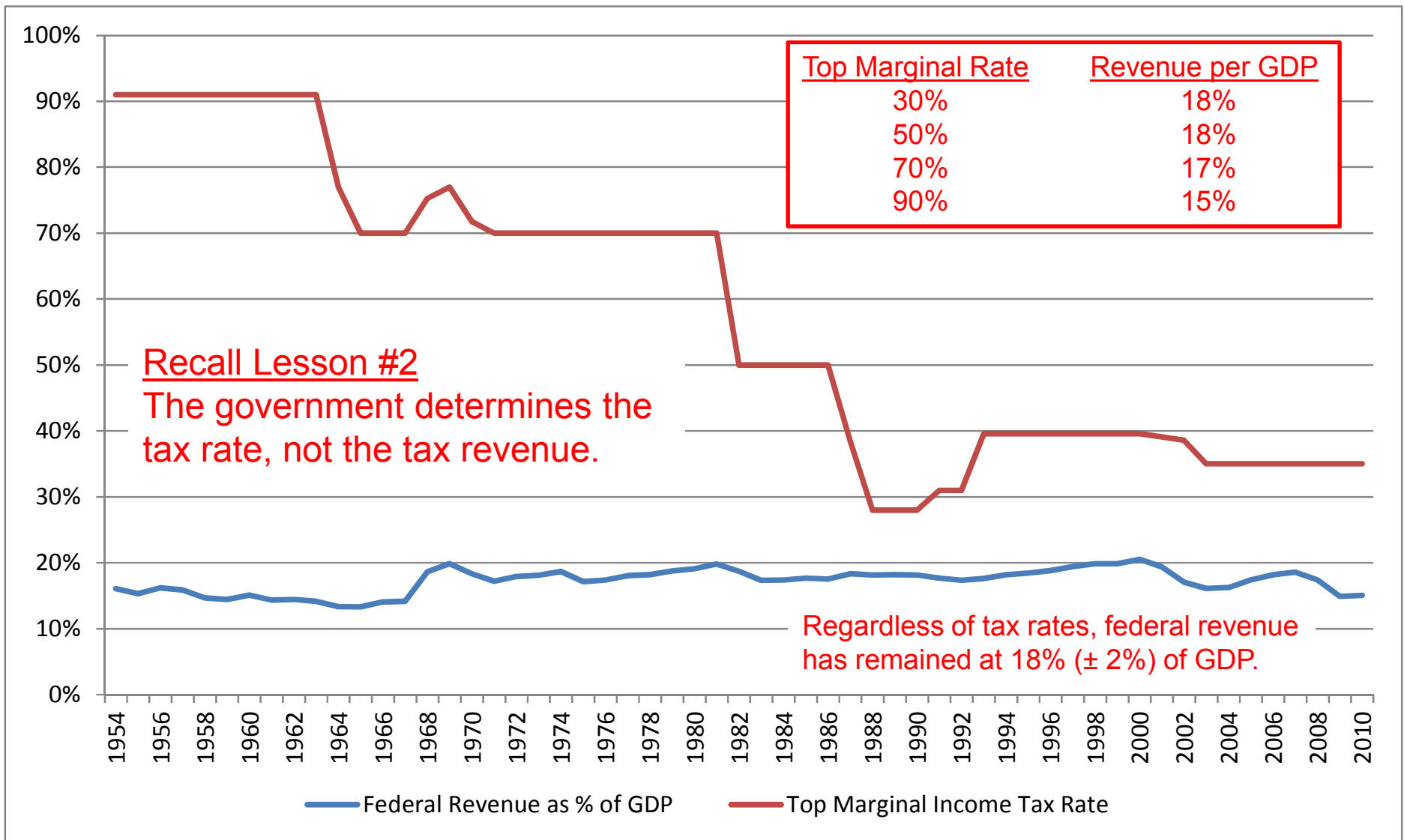


Data sources: Internal Revenue Service, Bureau of the Census

Many people would expect tax revenue to fluctuate with the tax rate.







Data sources: Internal Revenue Service, Bureau of the Census

<u>Top Marginal Rate</u>	<u>Revenue per GDP</u>
30%	18%
50%	18%
70%	17%
90%	15%

<u>Effective Corporate Rate</u>	<u>Revenue per GDP</u>
< 25%	18%
25% to 35%	18%
> 35%	17%

<u>Average Marginal Rate</u>	<u>Revenue per GDP</u>
25% to 30%	15%
30% to 35%	17%
35% to 40%	18%
40% to 45%	18%

<u>Capital Gains Rate</u>	<u>Revenue per GDP</u>
< 20%	18%
20% to 30%	17%
> 30%	18%

<u>SS & Medicare Rate</u>	<u>Revenue per GDP</u>
< 5%	15%
5% to 10%	17%
10% to 15%	17%
> 15%	18%

<u>Total of All Rates</u>	<u>Revenue per GDP</u>
< 70%	16%
70% to 80%	18%
> 80%	18%

Data sources: Internal Revenue Service, Bureau of the Census

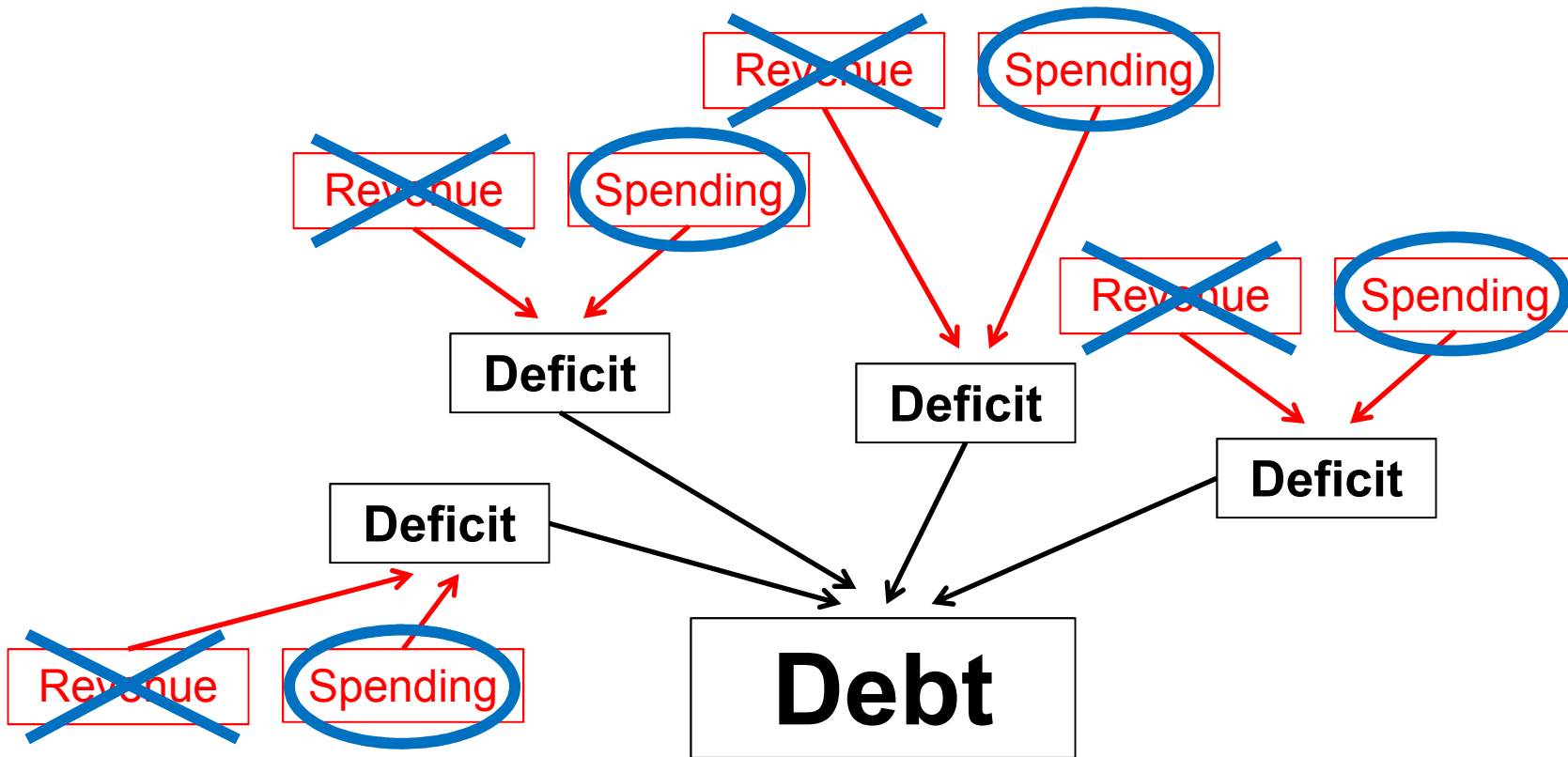
Conventional Wisdom #4

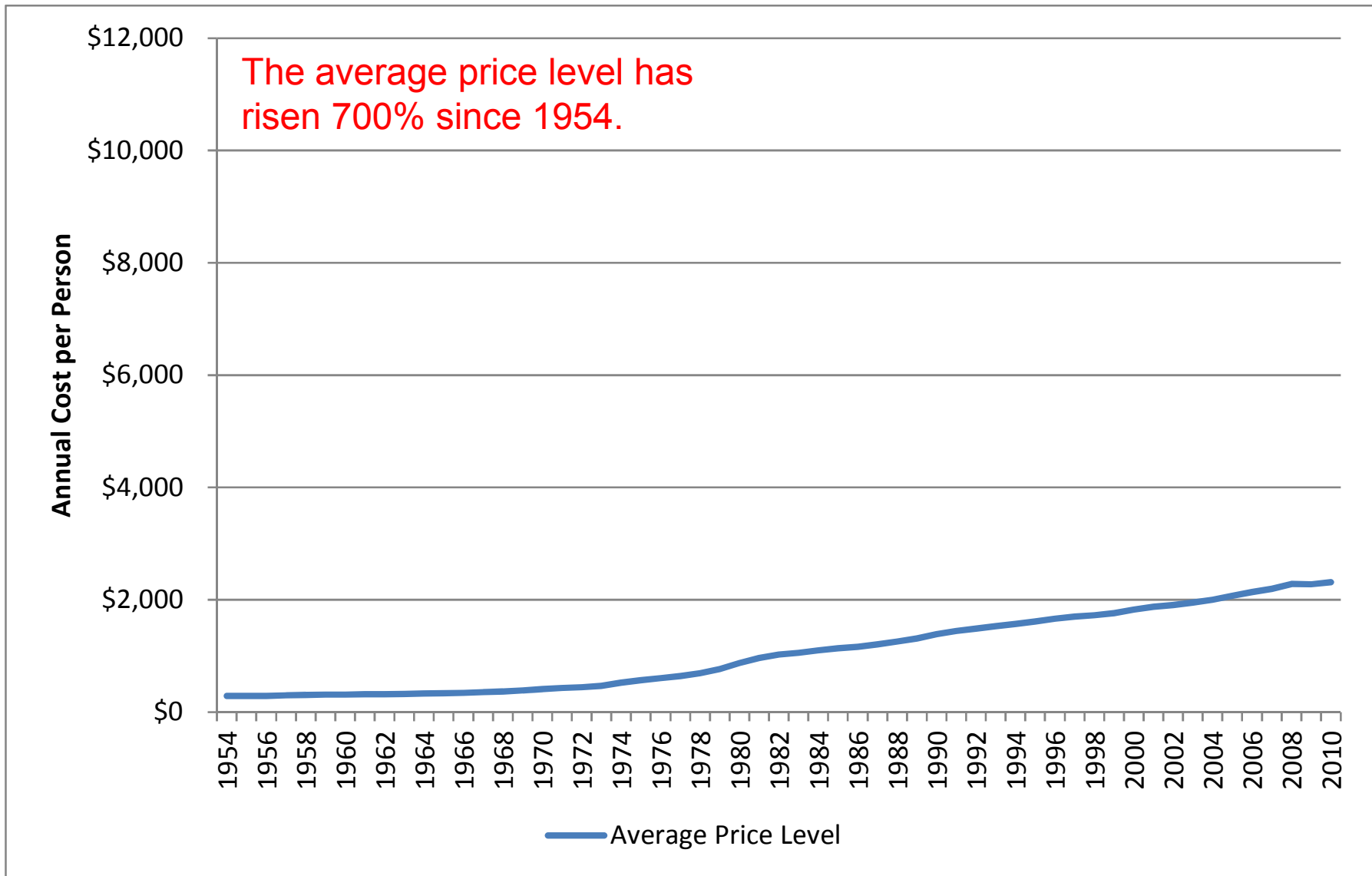
Raising tax rates increases tax revenue.

The Data: The 18% Rule

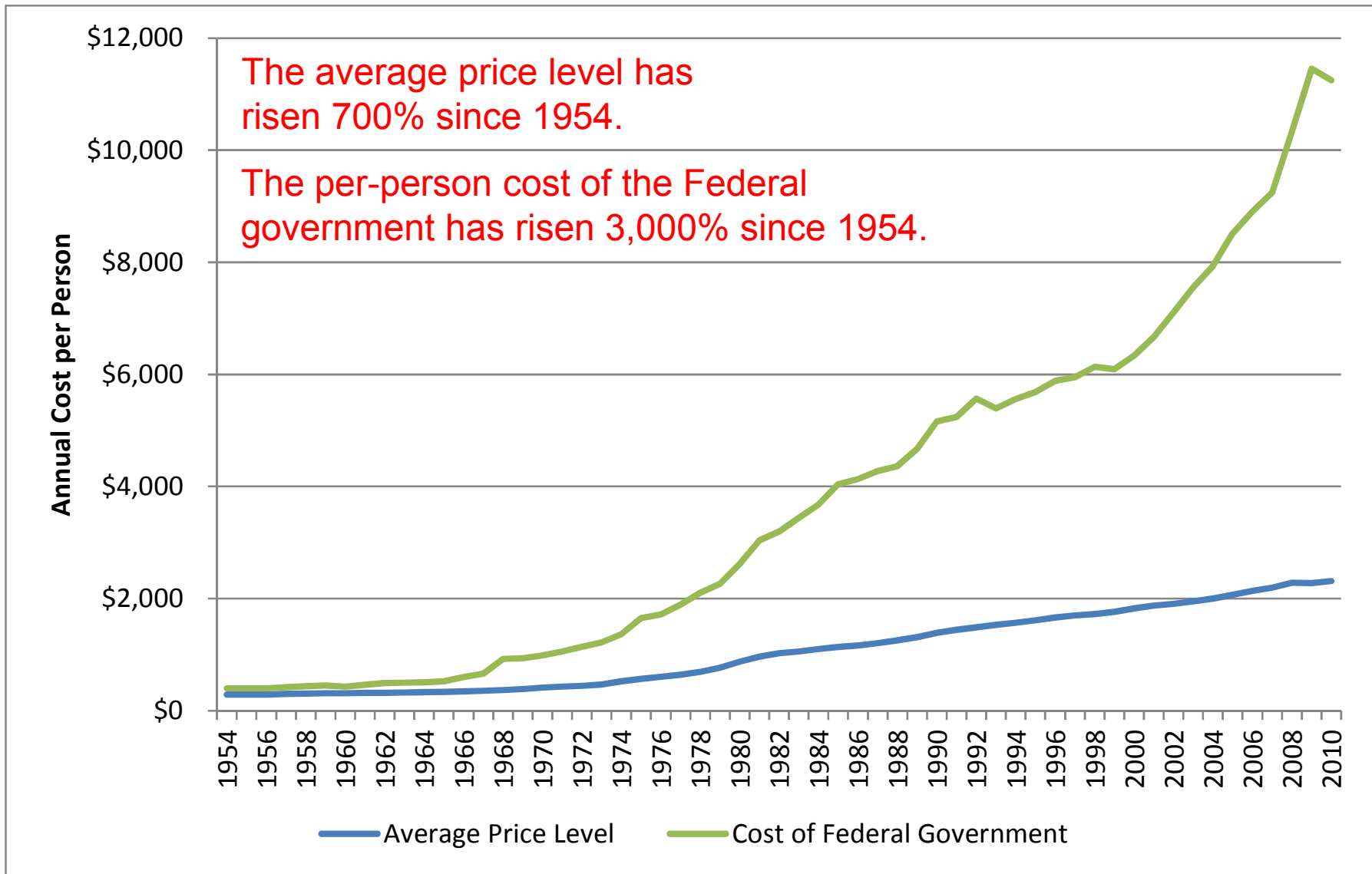
Regardless of tax rates, tax revenue is 18% of GDP.

If revenue is a fixed 18% of GDP, then the debt problem must really be a spending problem.

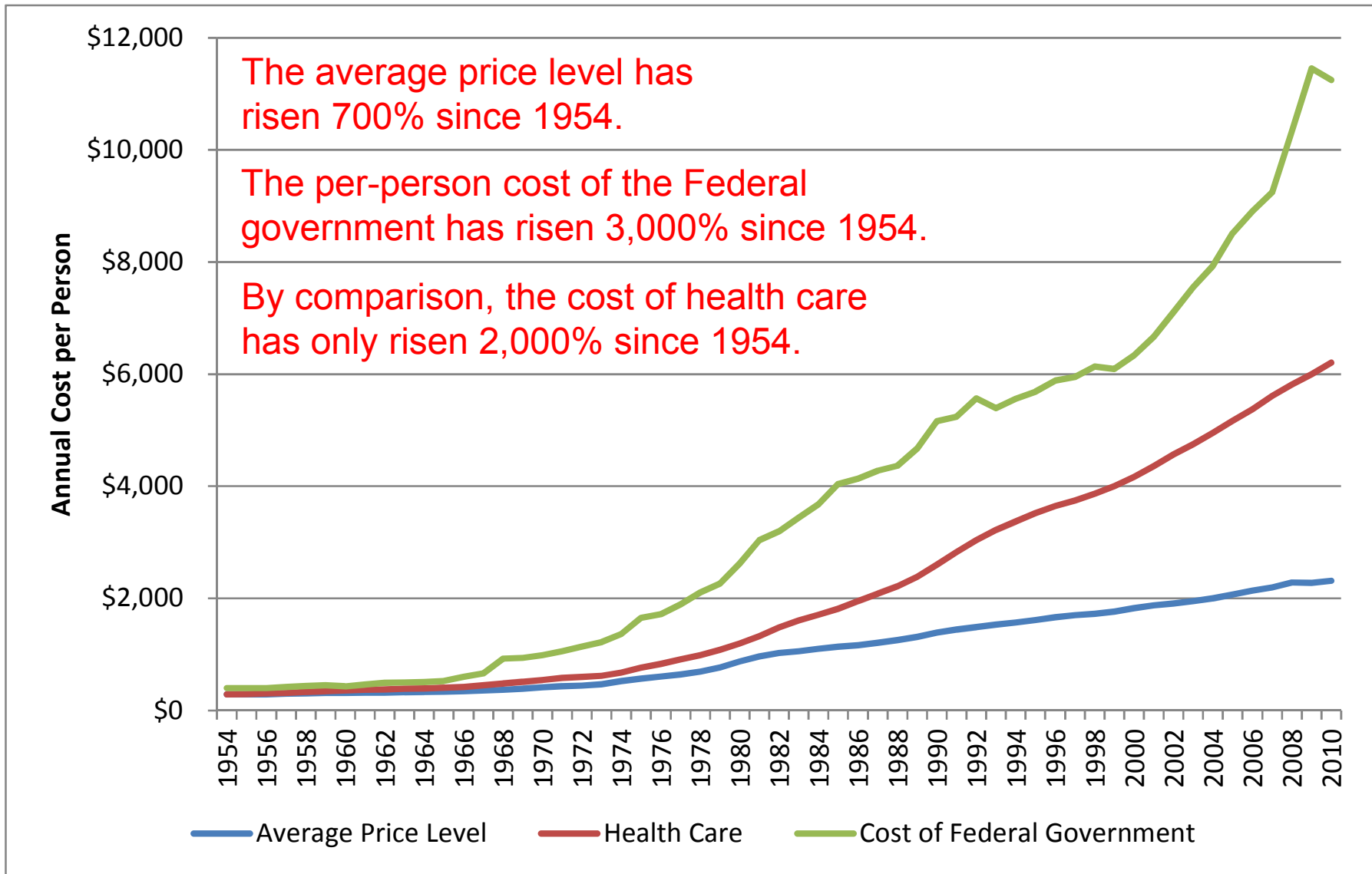




Data sources: Bureau of Labor Statistics, Bureau of Economic Analysis



Data sources: Bureau of Labor Statistics, Bureau of Economic Analysis



Data sources: Bureau of Labor Statistics, Bureau of the Census

Conventional Wisdom #2

The government has a debt problem.

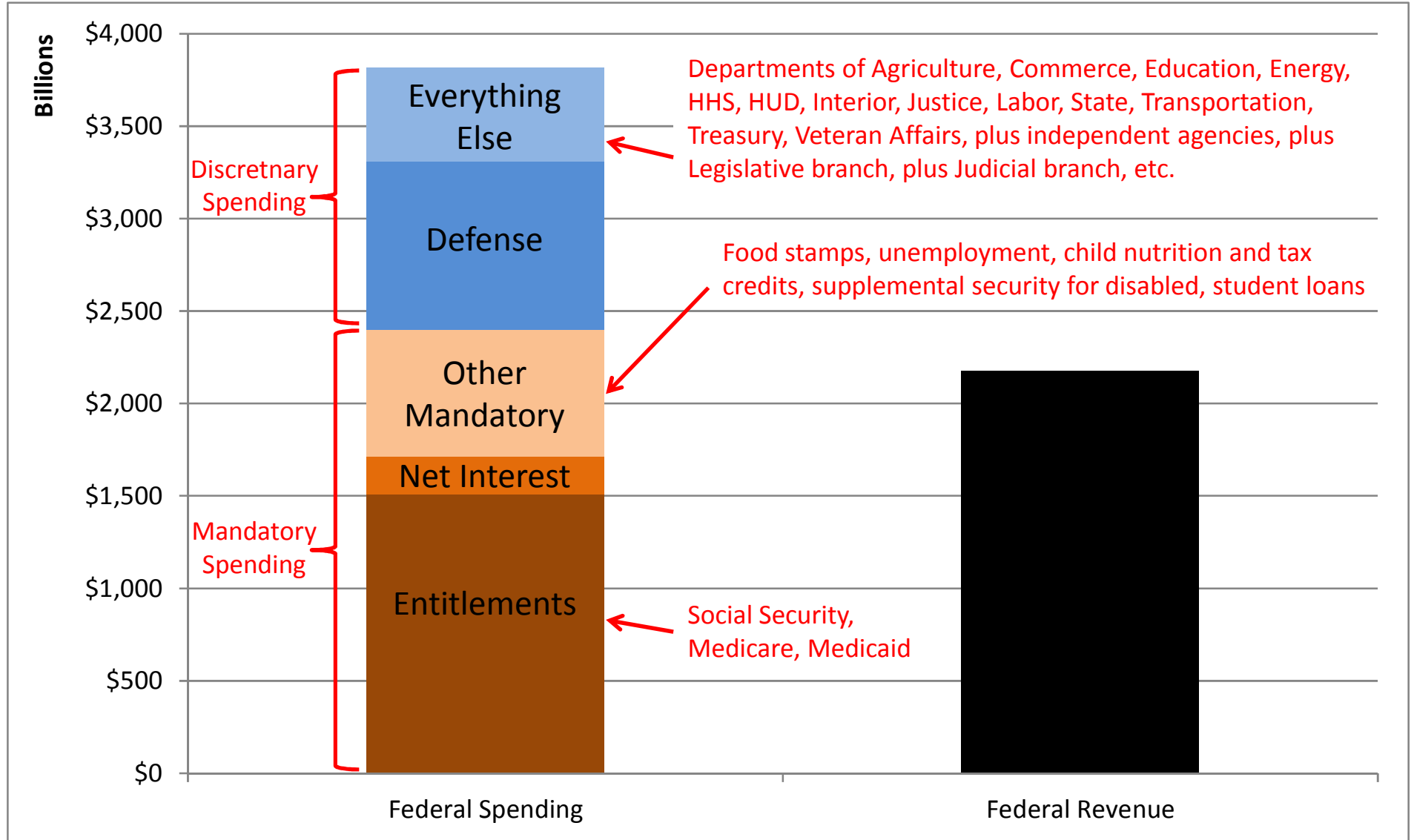
The Data: Get The Causality Right Rule

Debt is symptom. The disease is spending.

Fine!

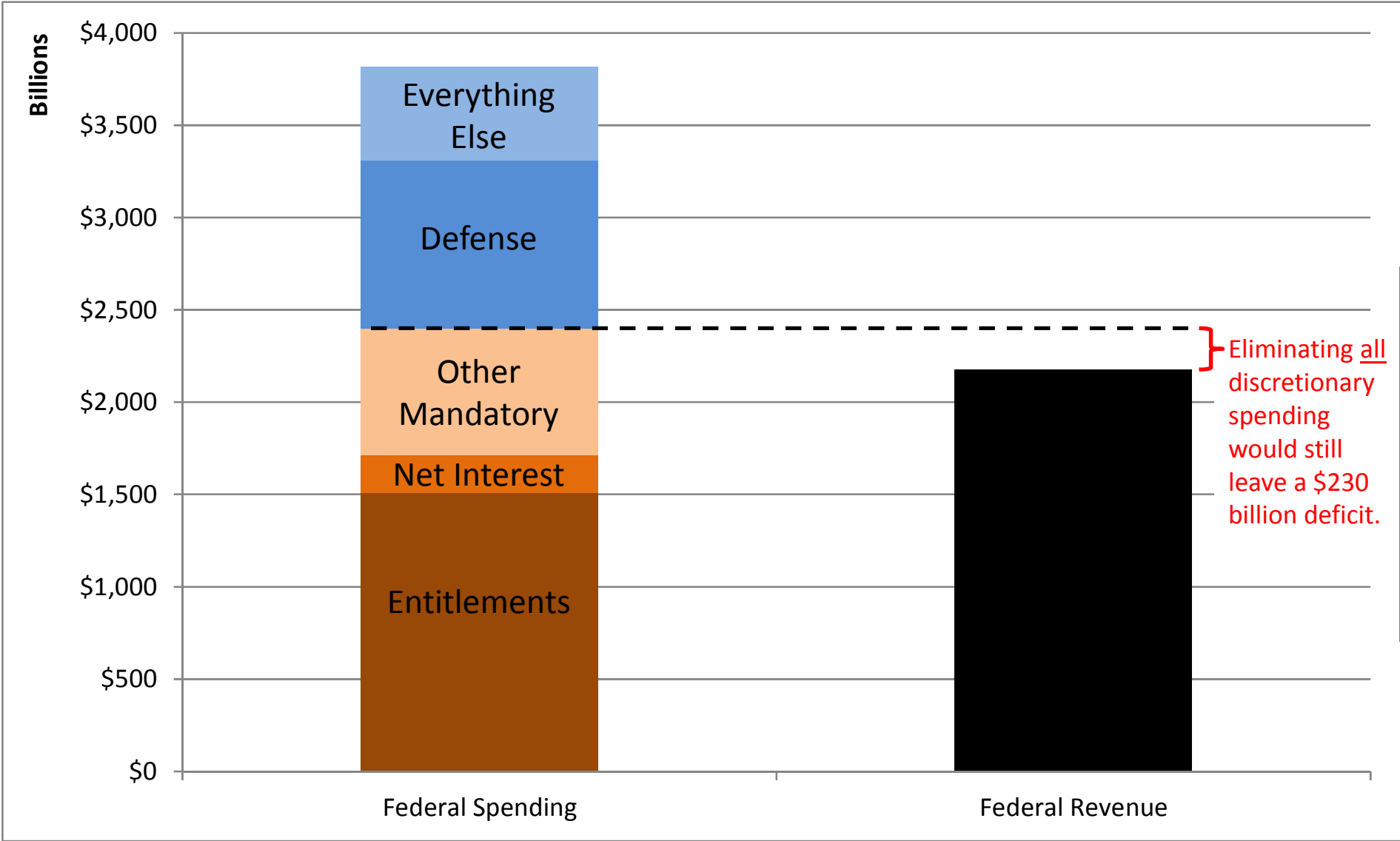
Government spending is rising, but it's because of wars, NASA, subsidies to oil companies, [fill in your favorite evil]...

2011 Federal Budget



Data source: The President's Budget for Fiscal Year 2011, Office of Management and Budget

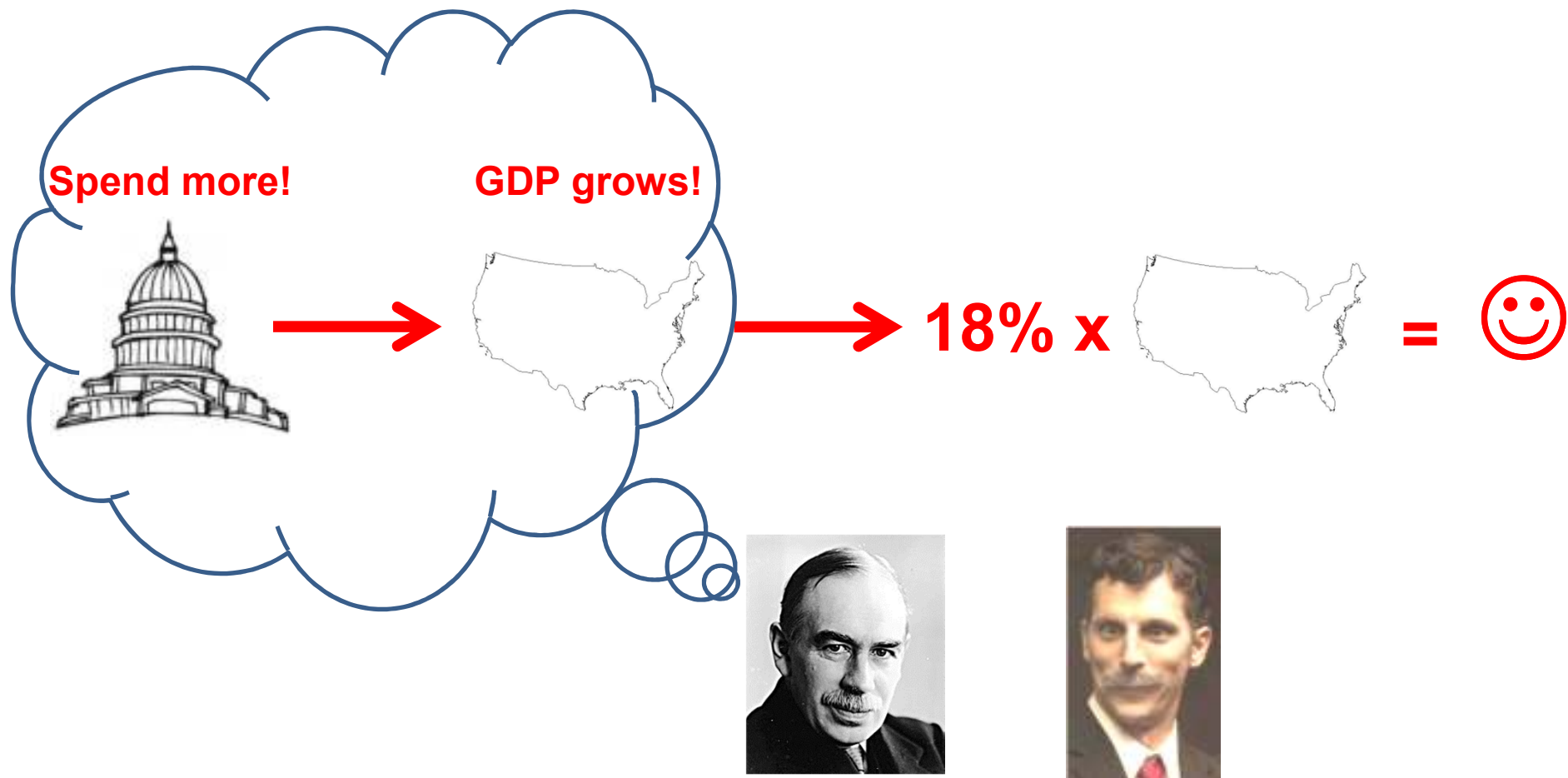
2011 Federal Budget



Data source: The President’s Budget for Fiscal Year 2011, Office of Management and Budget

Reconsider revenue

We only get 18% of GDP in revenue, so let's stimulate GDP!



Conventional Wisdom #5

Government spending stimulates the economy.



TARP = \$356 b.



Federal Reserve = \$1,500 b.



Total (net) stimulus = \$3 trillion



Housing Initiatives = \$130 b.

Stimulus = \$578 b.



Data source: money.cnn.com/news/storysupplement/economy/bailouttracker/

Total (net) stimulus = \$3 trillion

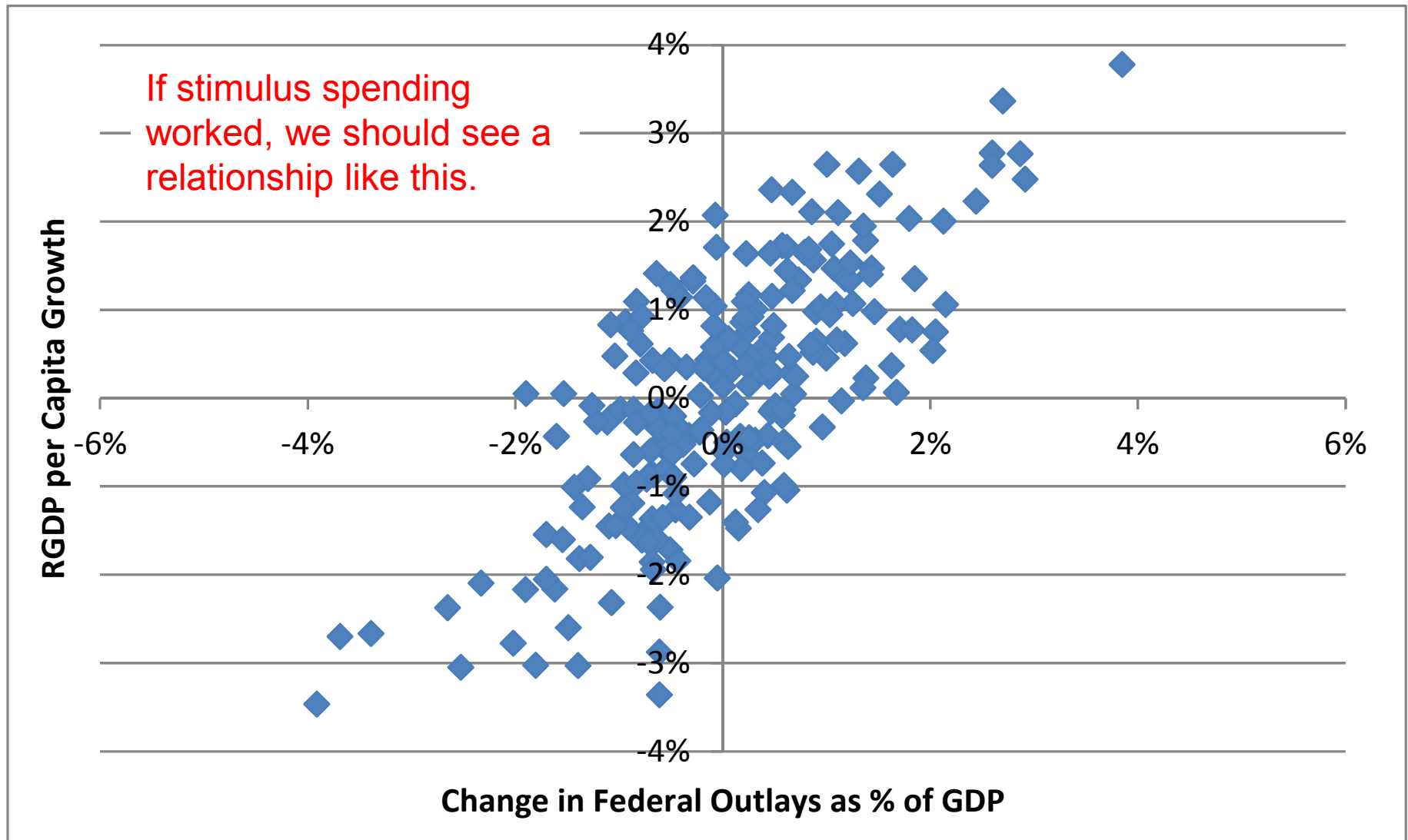


Unemployment Rate: 10%

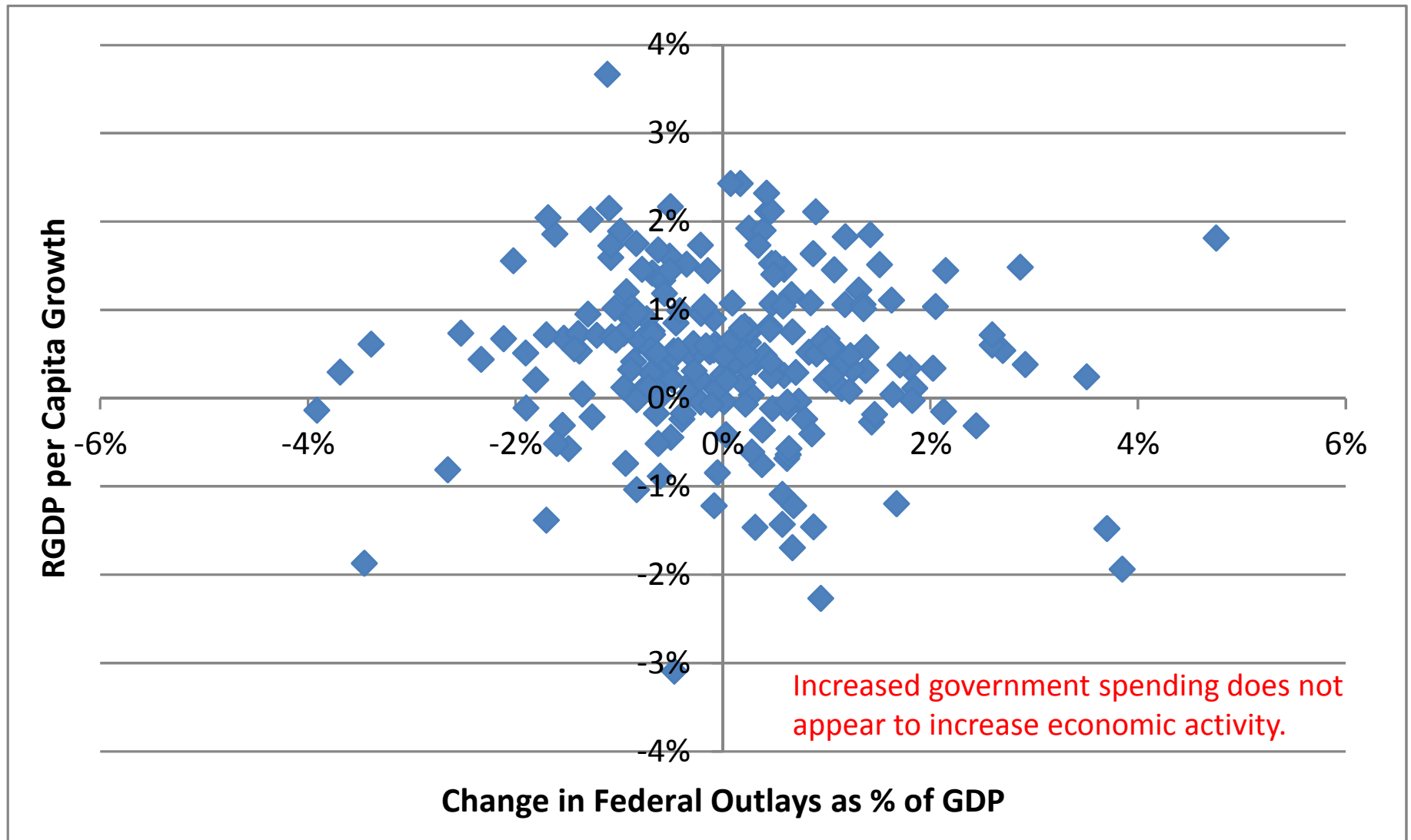


Historically, how has the economy reacted to stimulus spending?

Stimulus Spending and Economic Growth



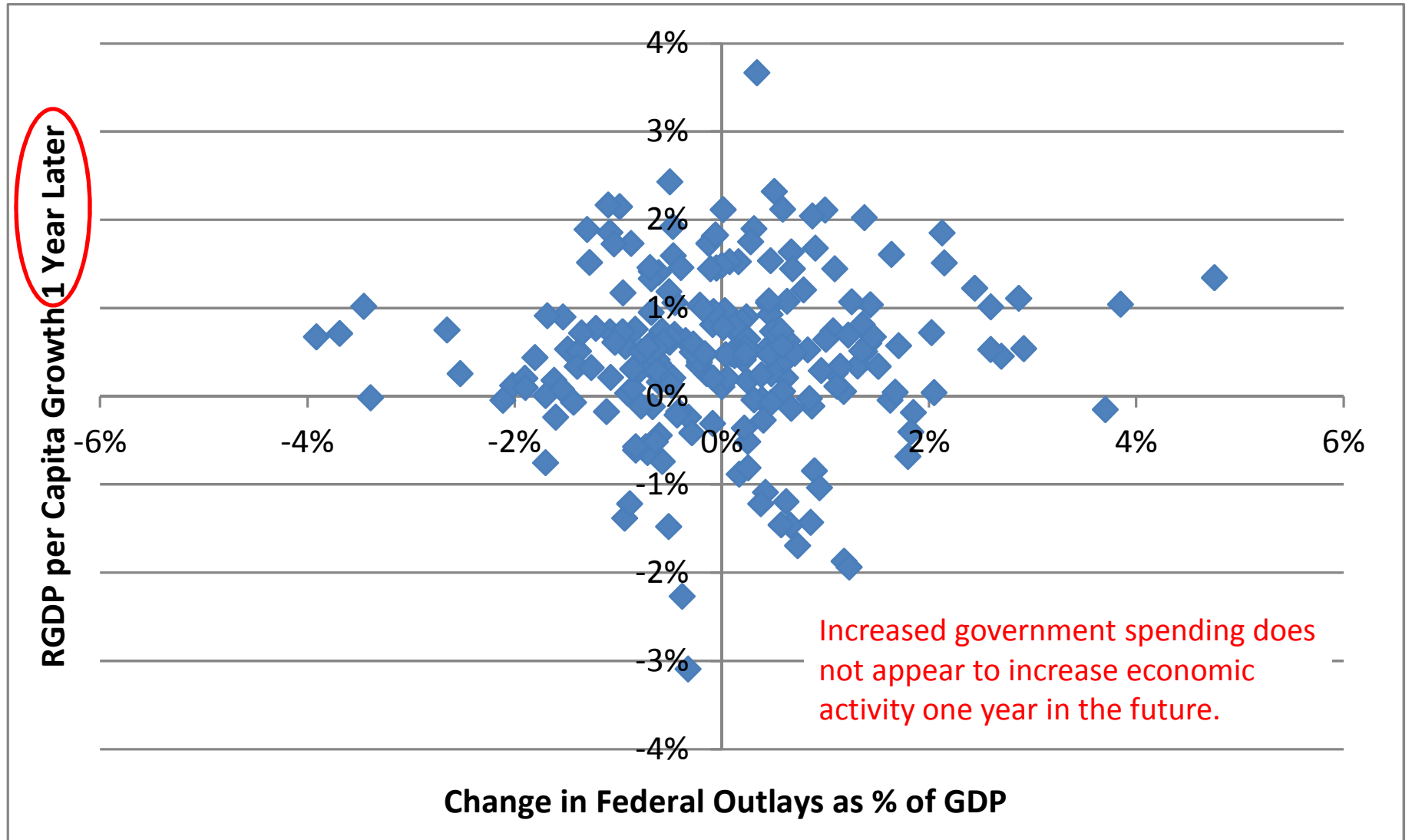
Stimulus Spending and Economic Growth (1954.1 to 2011.1)



Data source: Bureau of Economic Analysis, National Income and Product Accounts

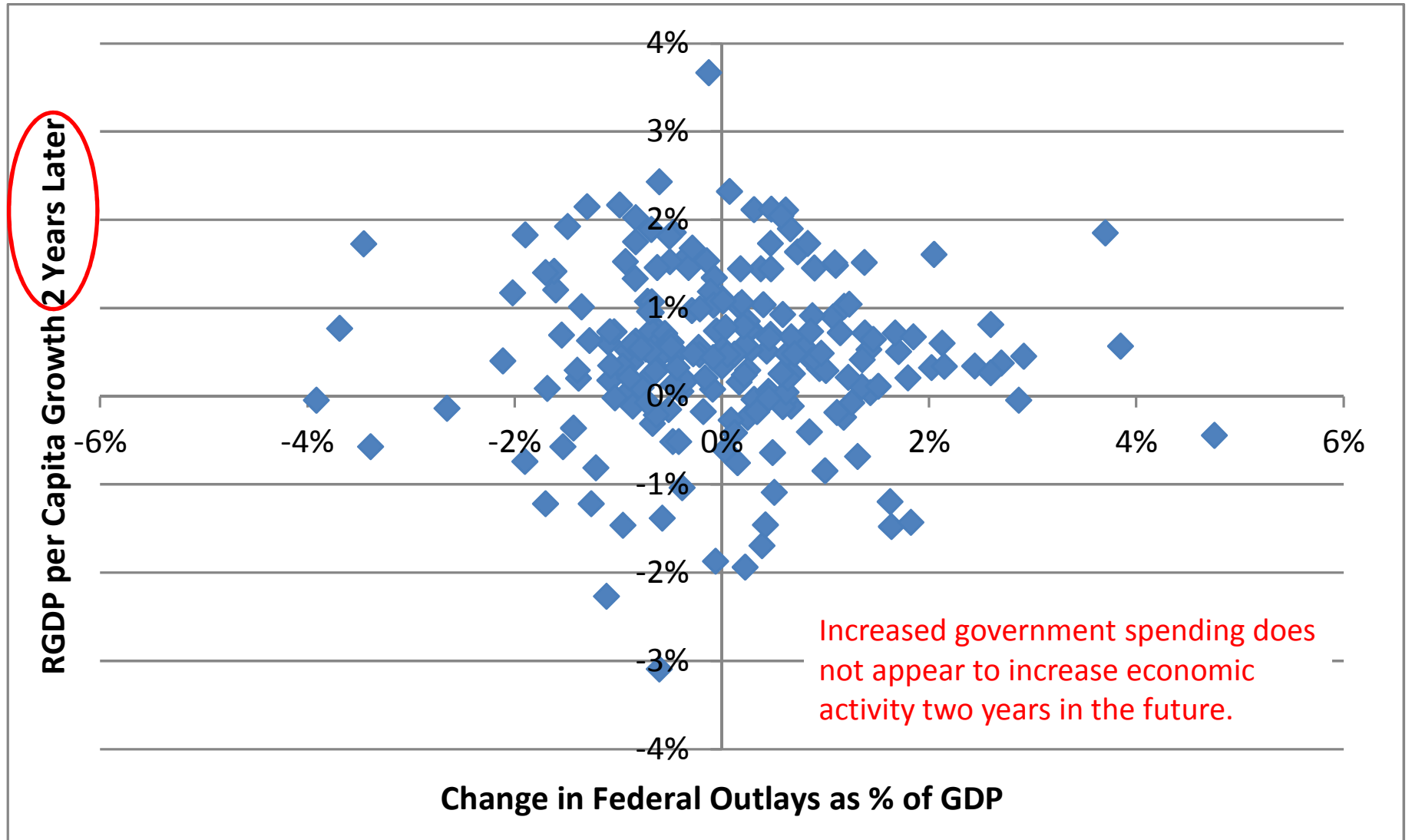
Maybe stimulus spending doesn't have an immediate effect. What is the effect over time?

Stimulus Spending and Economic Growth (1954.1 to 2011.1)



Data source: Bureau of Economic Analysis, National Income and Product Accounts

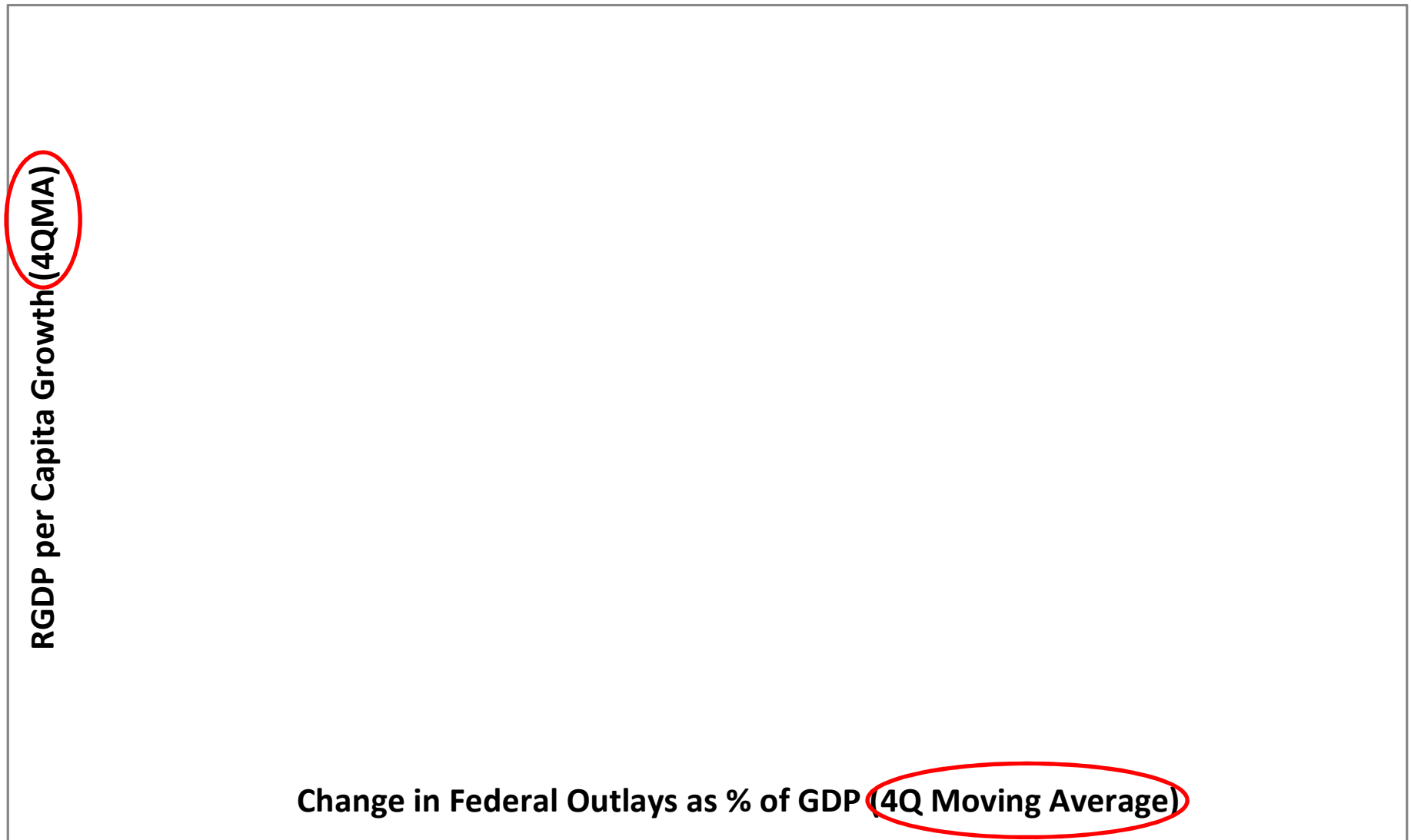
Stimulus Spending and Economic Growth (1954.1 to 2011.1)



Data source: Bureau of Economic Analysis, National Income and Product Accounts

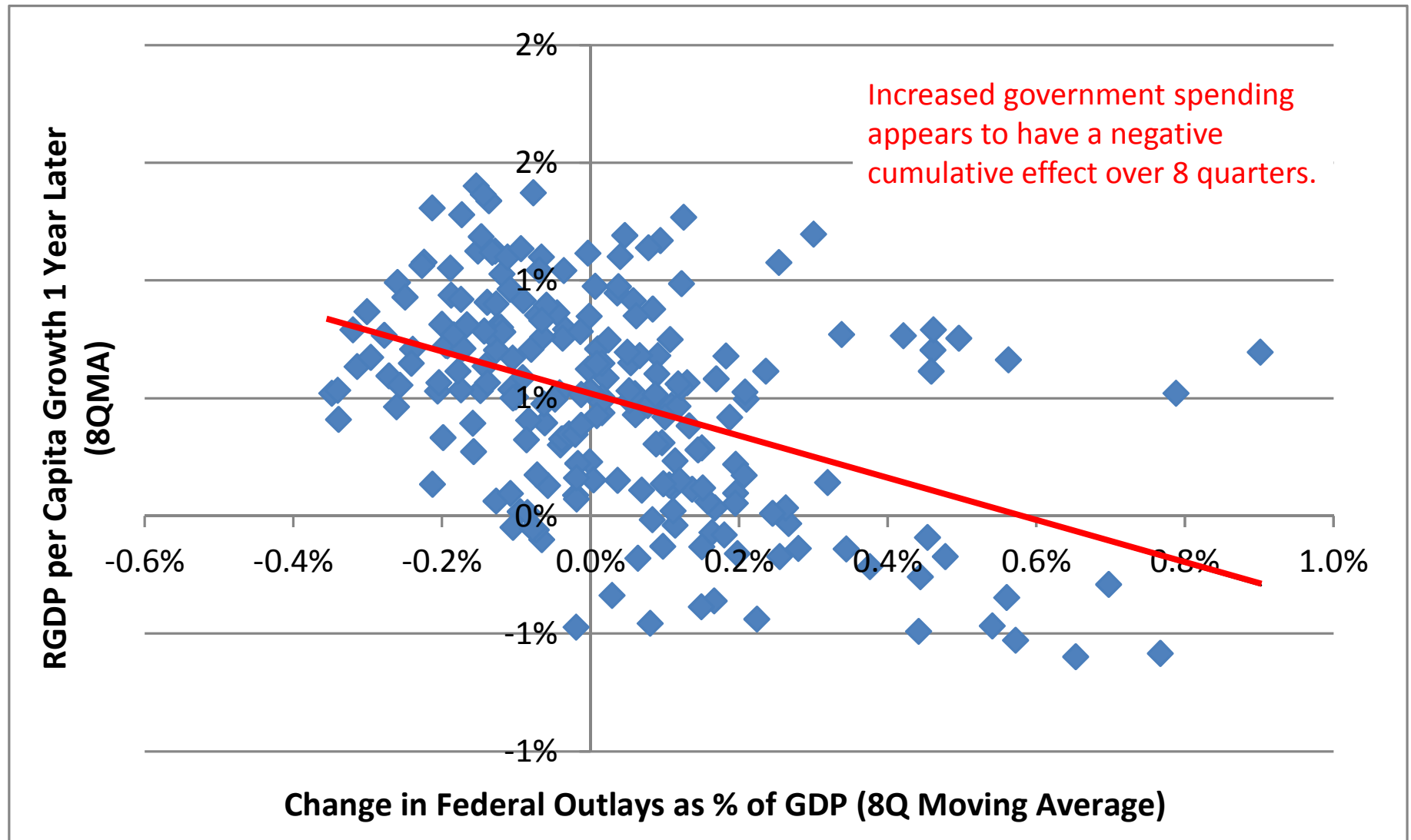
Maybe stimulus spending's effects are cumulative. What is the cumulative effect?

Stimulus Spending and Economic Growth (1954.1 to 2011.1)



Data source: Bureau of Economic Analysis, National Income and Product Accounts

Stimulus Spending and Economic Growth (1954.1 to 2011.1)



Data source: Bureau of Economic Analysis, National Income and Product Accounts

Conventional Wisdom #5

Government spending stimulates the economy.

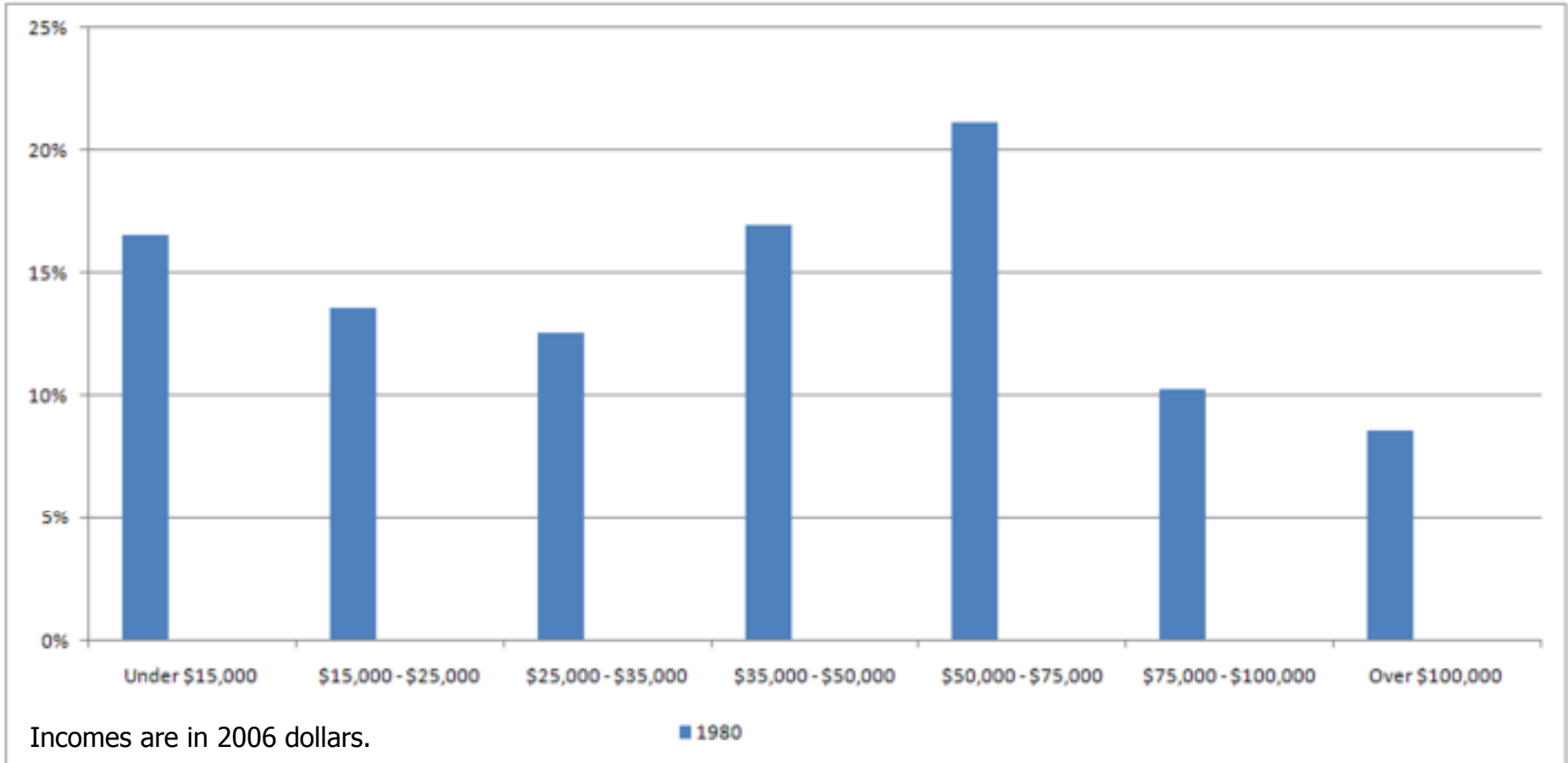
Data: The Keynes-was-wrong-and-that's-why-we-don't-
teach-him-anymore Rule

On average, government spending suppresses the economy.

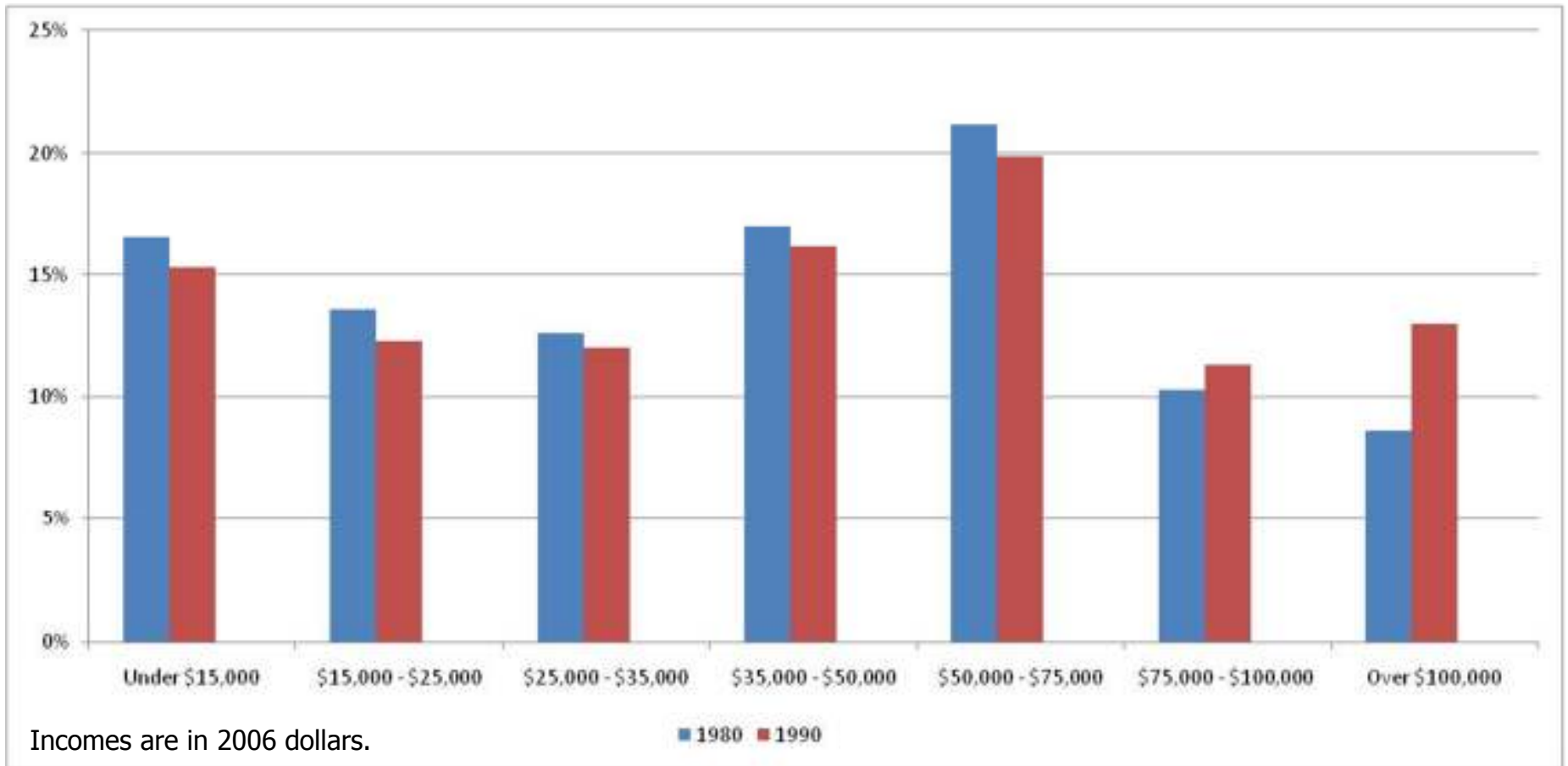
We have to do something! The rich are getting richer and the poor are getting poorer!

Conventional Wisdom #6

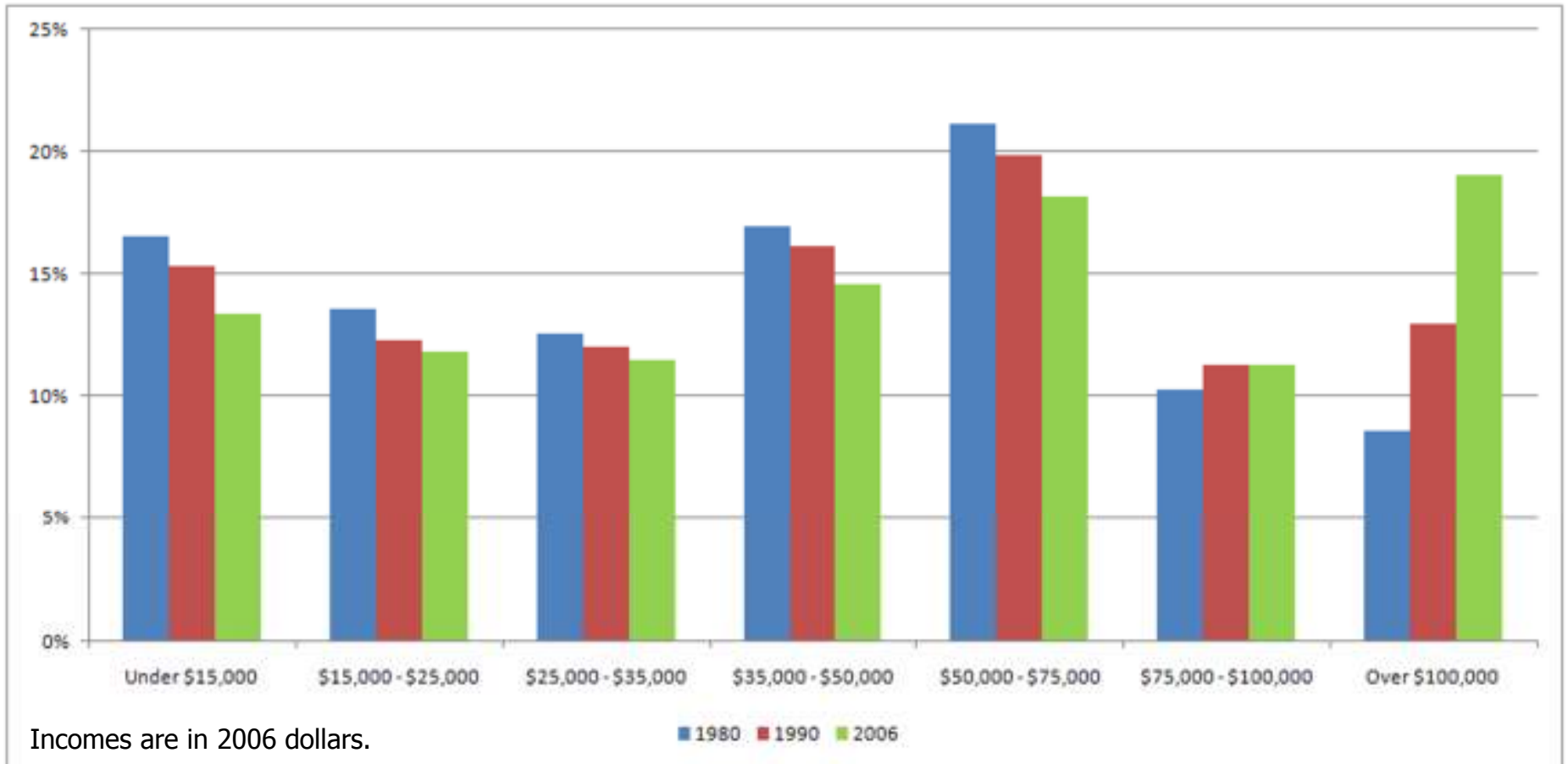
The rich get richer while the poor get poorer.



Data source: Statistical Abstract of the United States, U.S. Bureau of the Census, 2009, Table 668.

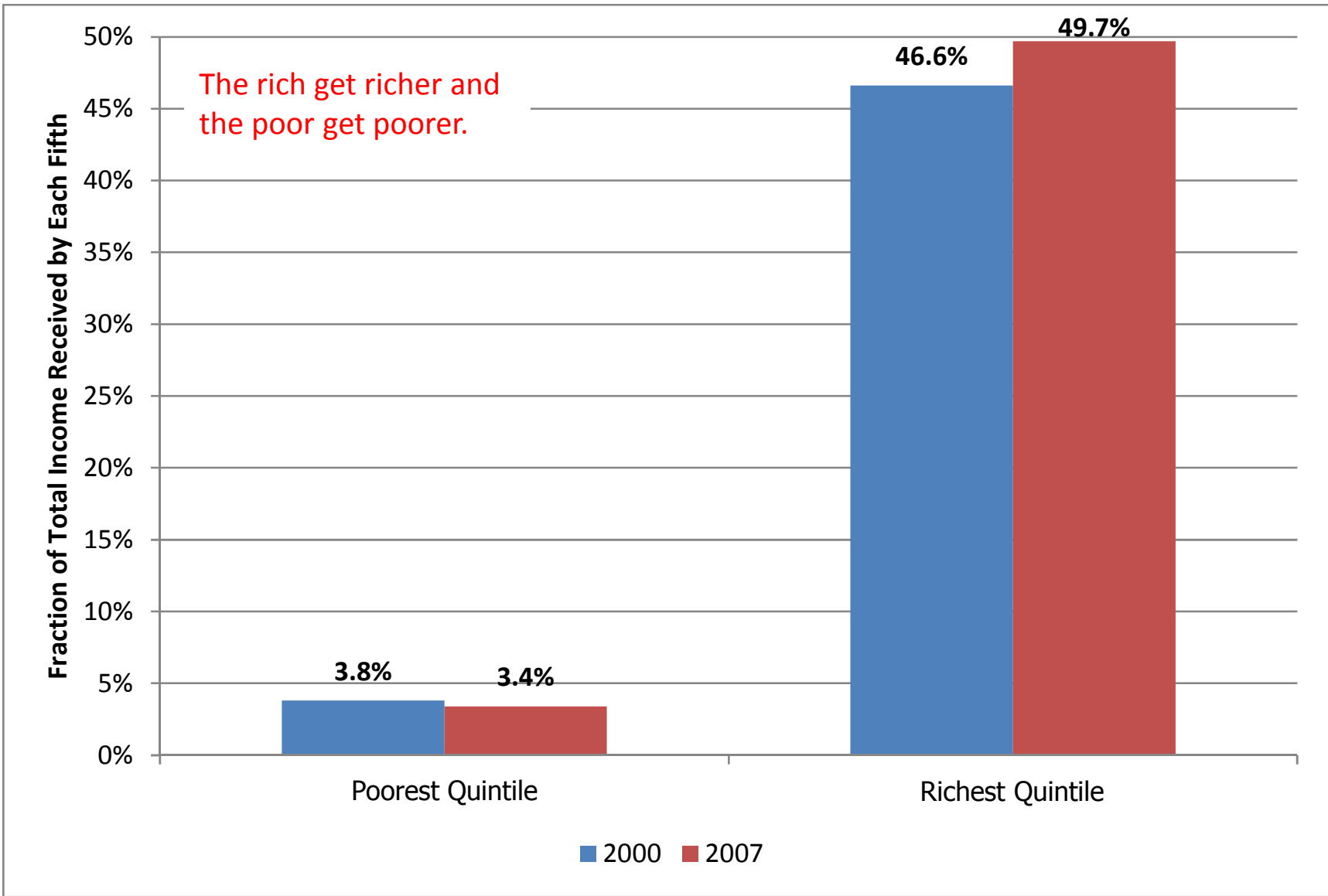


Data source: Statistical Abstract of the United States, U.S. Bureau of the Census, 2009, Table 668.

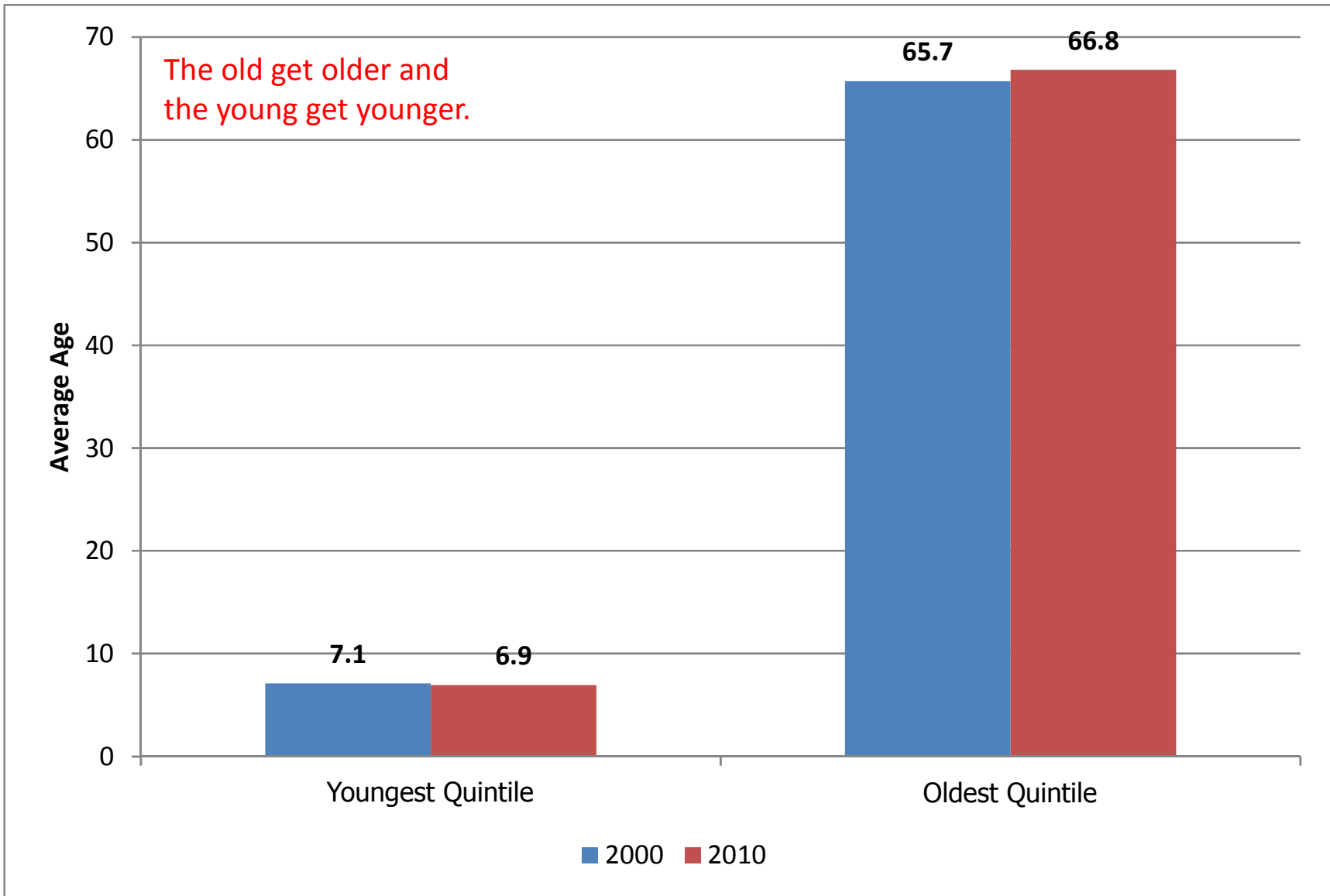


Data source: Statistical Abstract of the United States, U.S. Bureau of the Census, 2009, Table 668.

wtf?



Data source: Statistical Abstract of the United States, U.S. Bureau of the Census, 2010, Table 678.

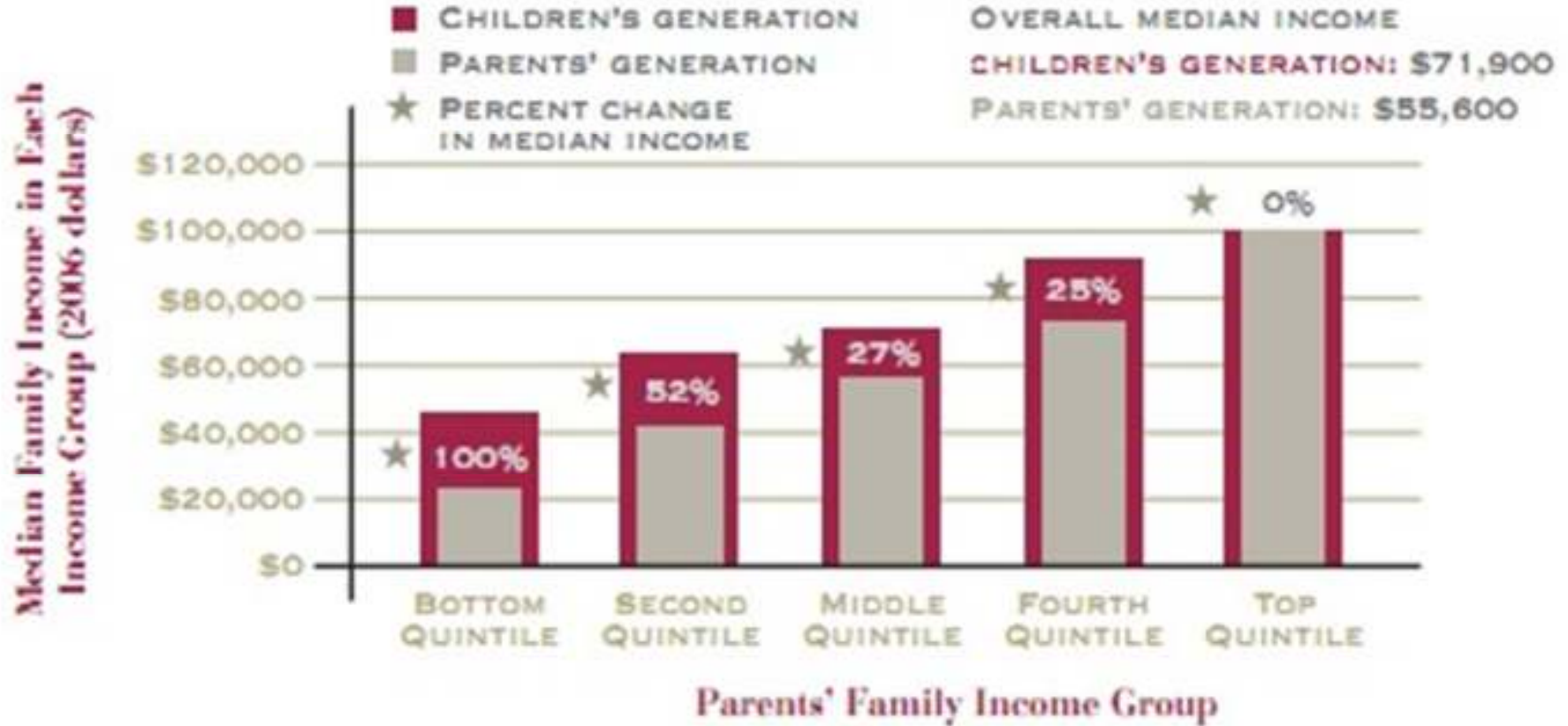


Data source: Statistical Abstract of the United States, U.S. Bureau of the Census, 2010, Tables 8, 9.

FIGURE 3

Change in Median Family Income from Parents' to Children's Generation

(matched-pairs, sorted by parental income group)



Source: Brookings tabulations of PSID data on family income averaged over several years.

Source: Pew Economic Mobility Project

Conventional Wisdom #7

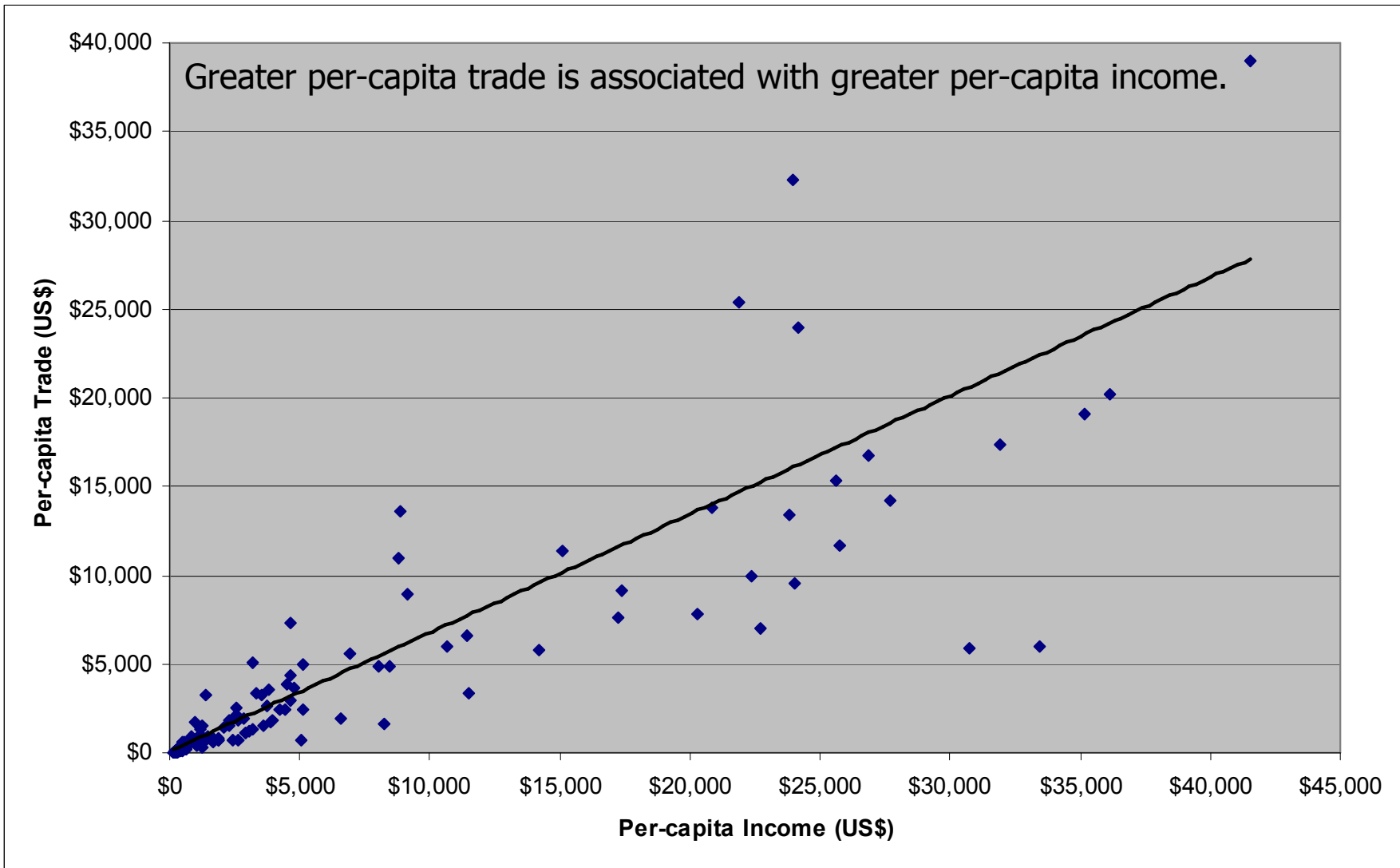
The rich get richer while the poor get poorer.

Data: The Poor Get Richer Rule

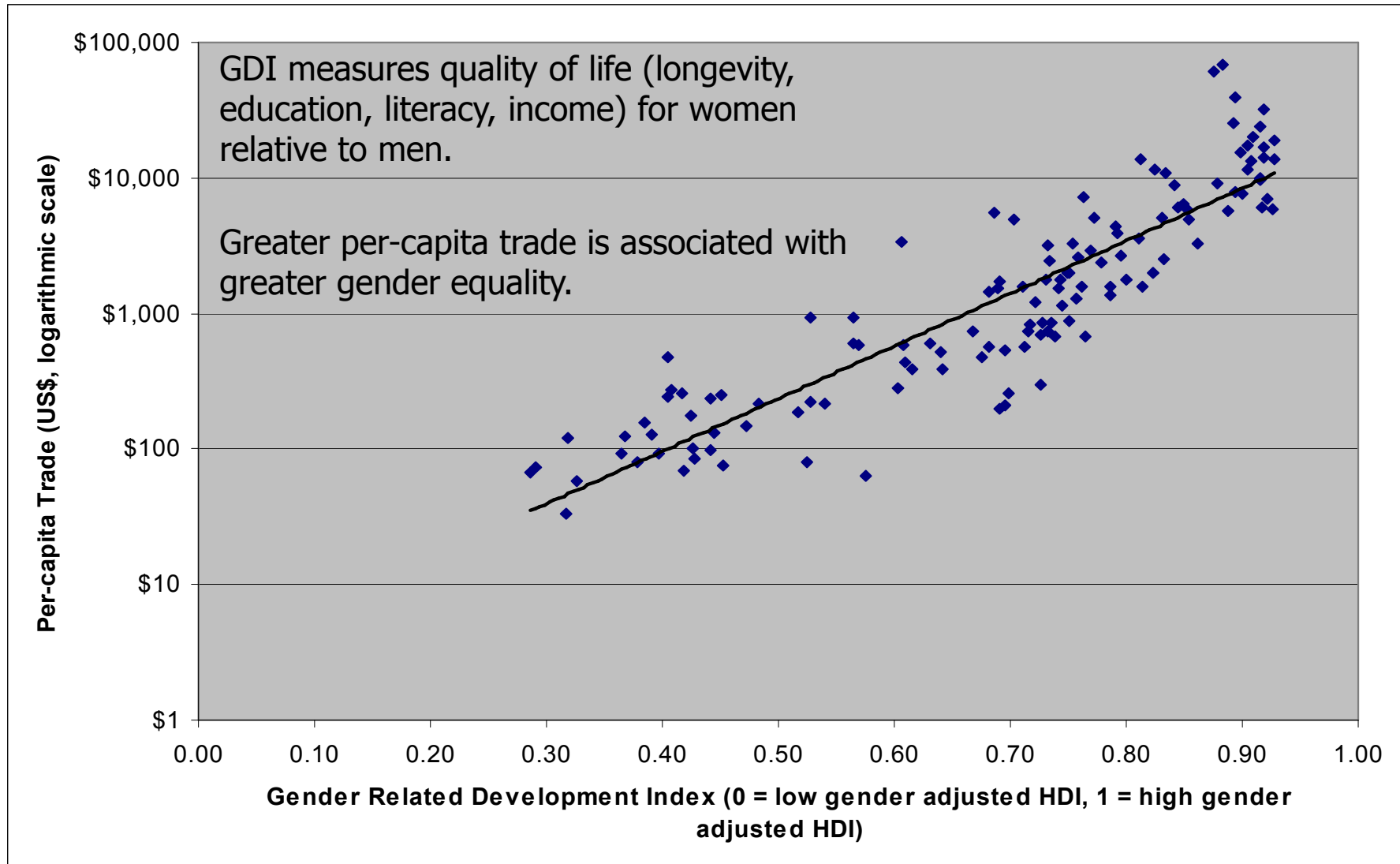
The rich get richer and the poor get richer (and the poor get richer faster than the rich get richer).

Conventional Wisdom #8

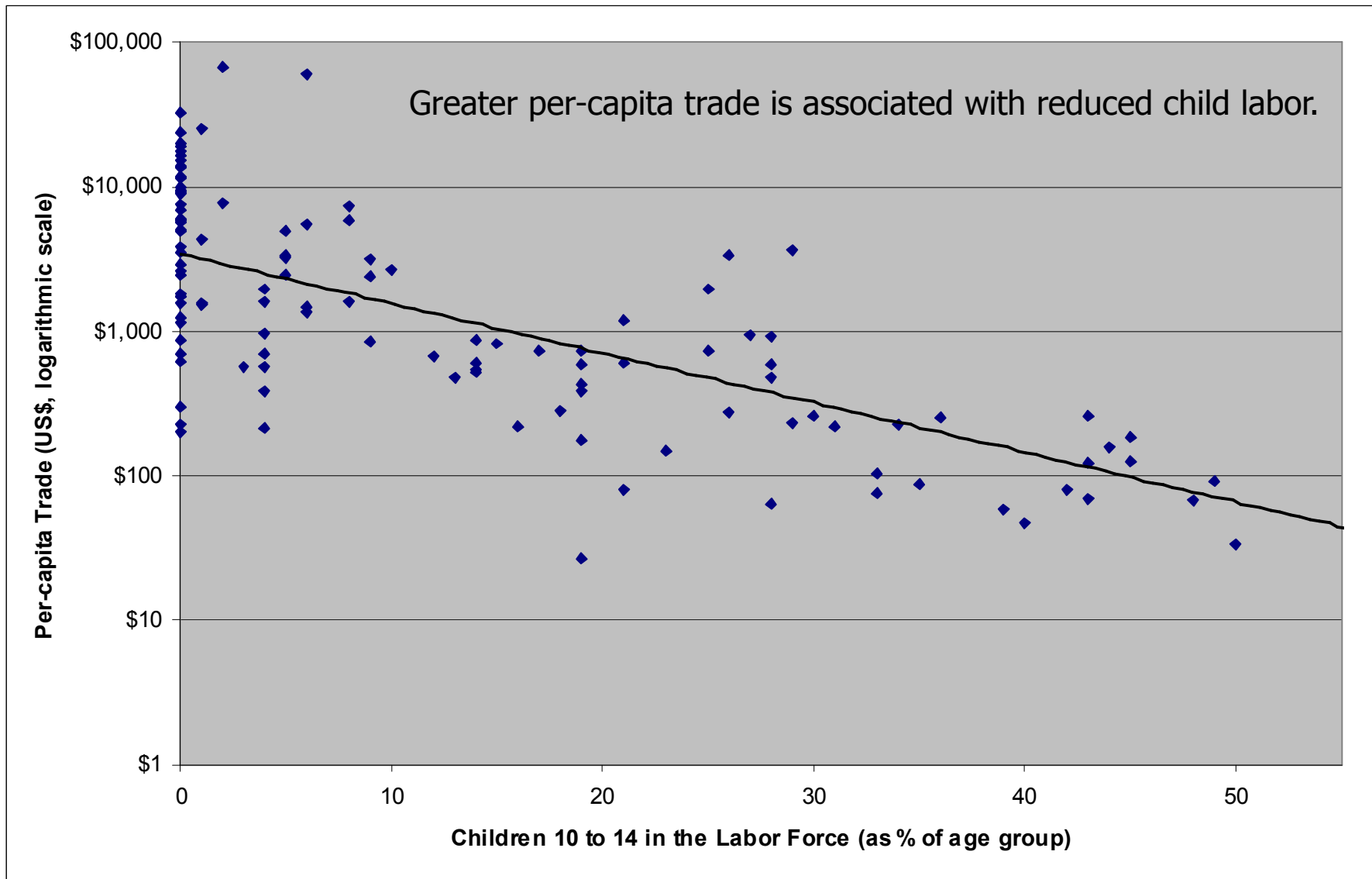
Trade exploits and impoverishes the poor for the benefit
of the rich.



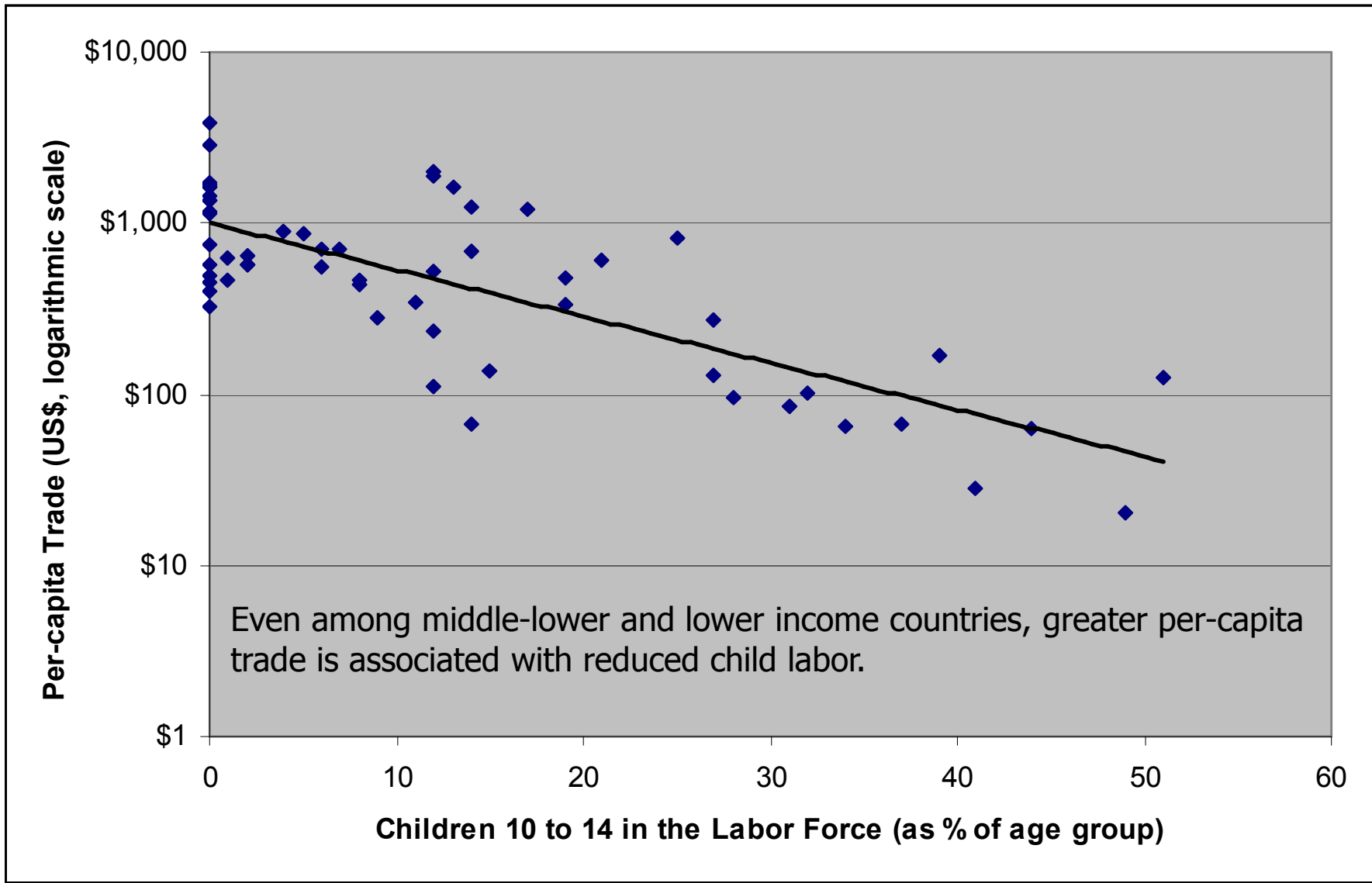
Data source: International Monetary Fund



Data sources: International Monetary Fund and United Nations Development Programme



Data sources: International Monetary Fund and World Bank



Data sources: International Monetary Fund and World Bank

Conventional Wisdom #8

Trade exploits and impoverishes the poor for the benefit of the rich.

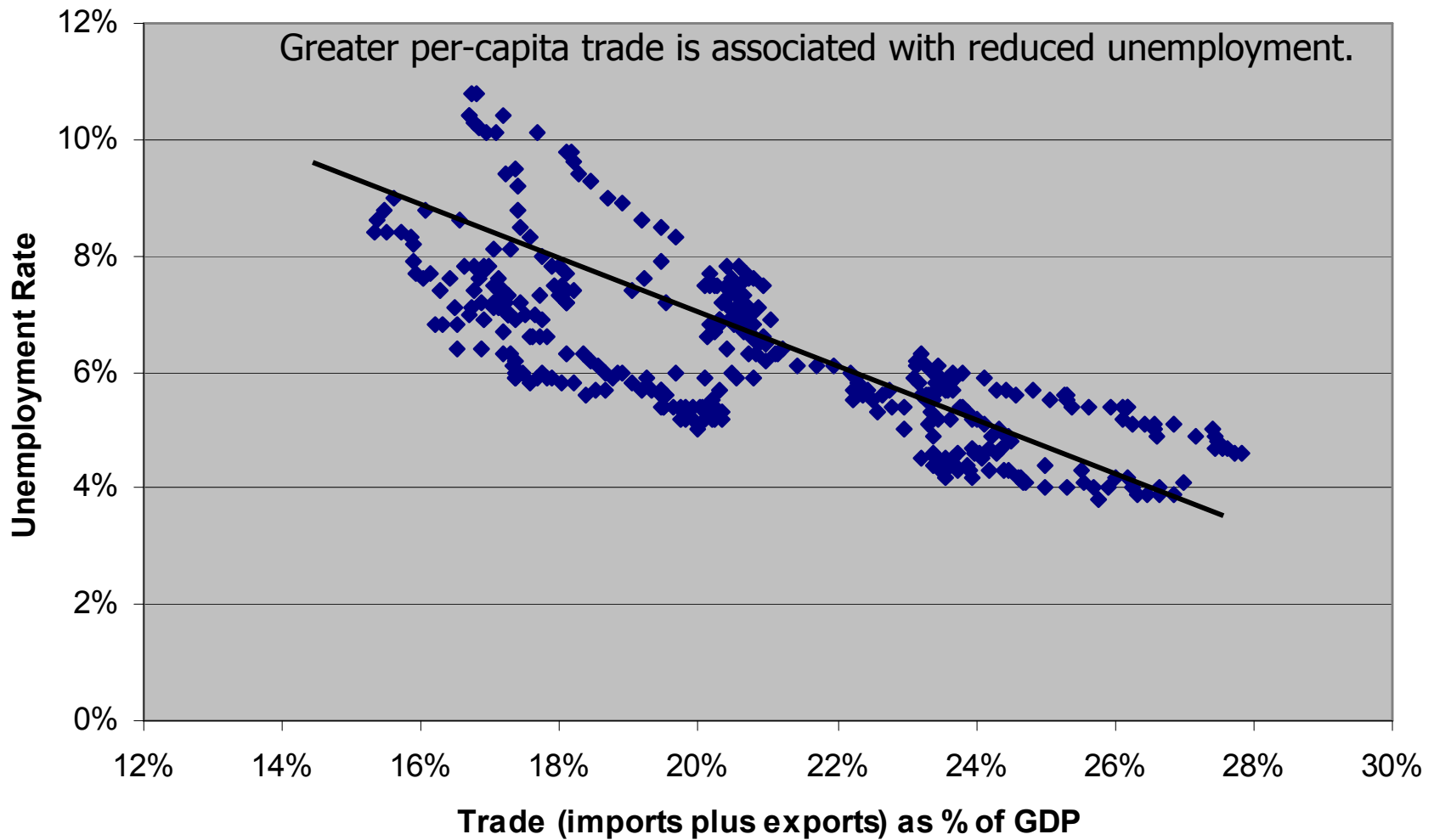
Data: The Trade is Empowerment Rule...

Trade is associated with less exploitation and greater wealth.

Conventional Wisdom #9

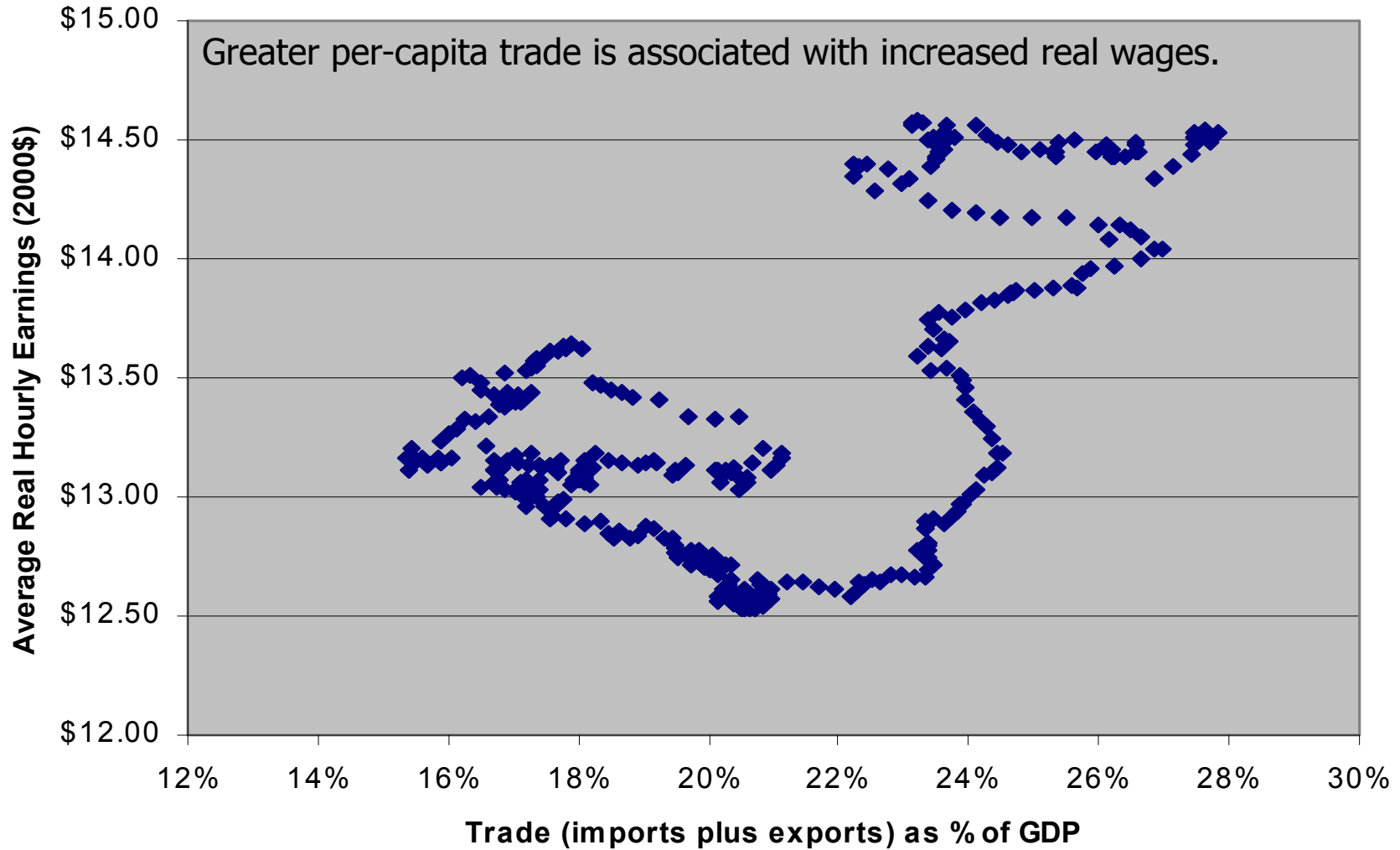
Trade costs American jobs.

January 1975 to June 2006



Data sources: Bureau of Labor Statistics and Bureau of Economic Analysis

January 1975 to June 2006



Data sources: Bureau of Labor Statistics and Bureau of Economic Analysis

Conventional Wisdom #9

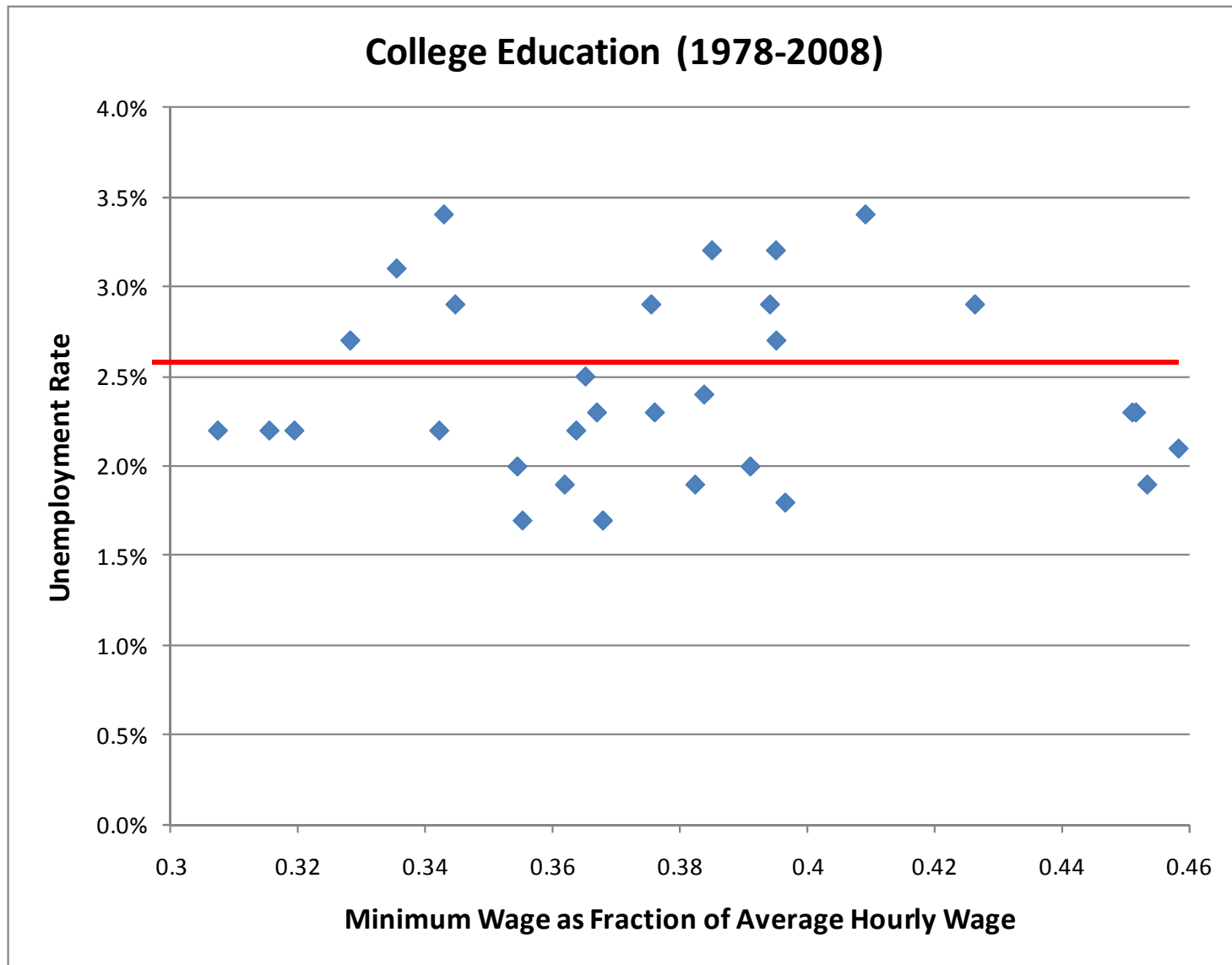
Trade costs American jobs.

Data: ...And Yes, It Applies to Americans Too Rule

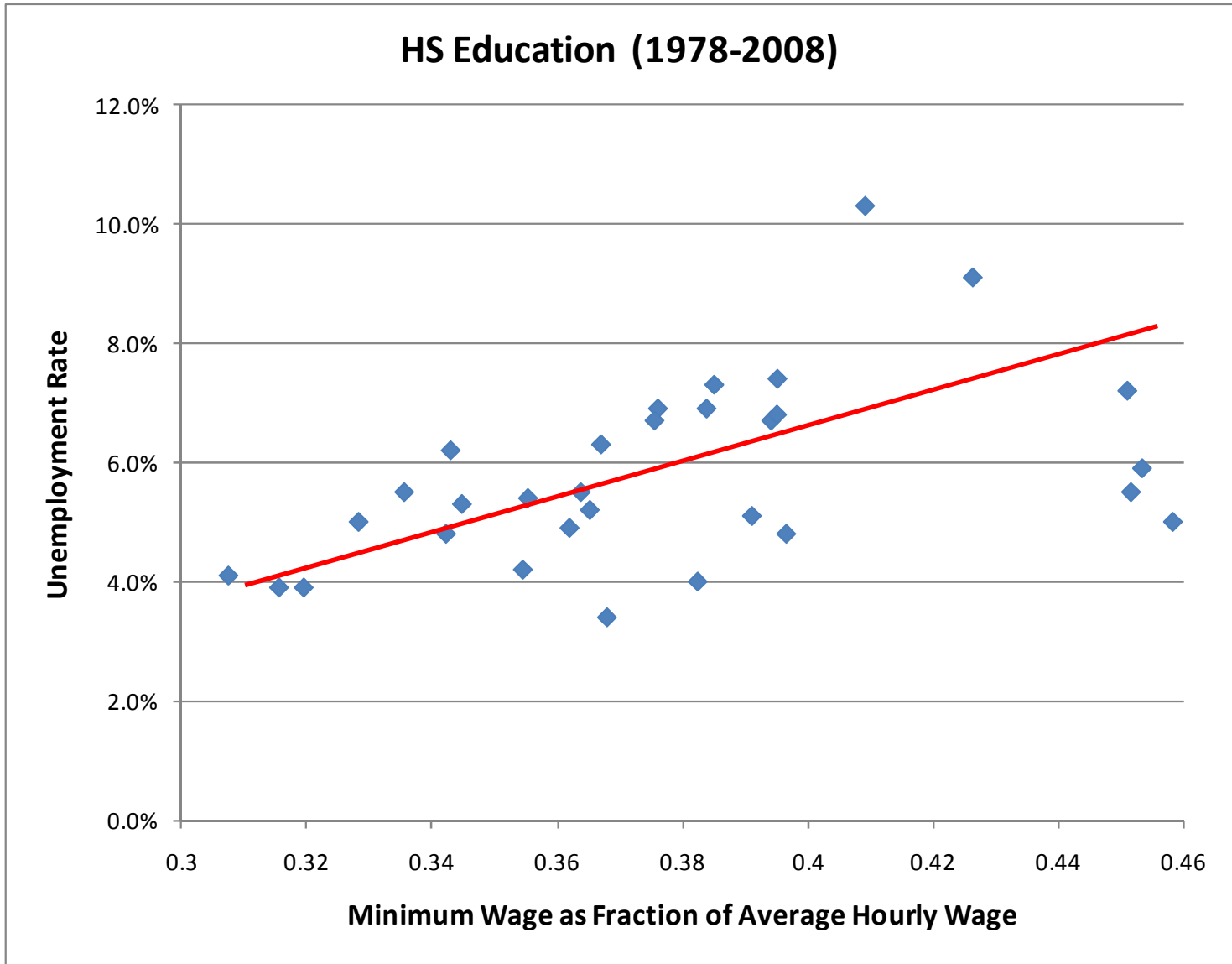
Trade is associated with less unemployment and improved wages in the US.

Conventional Wisdom #10

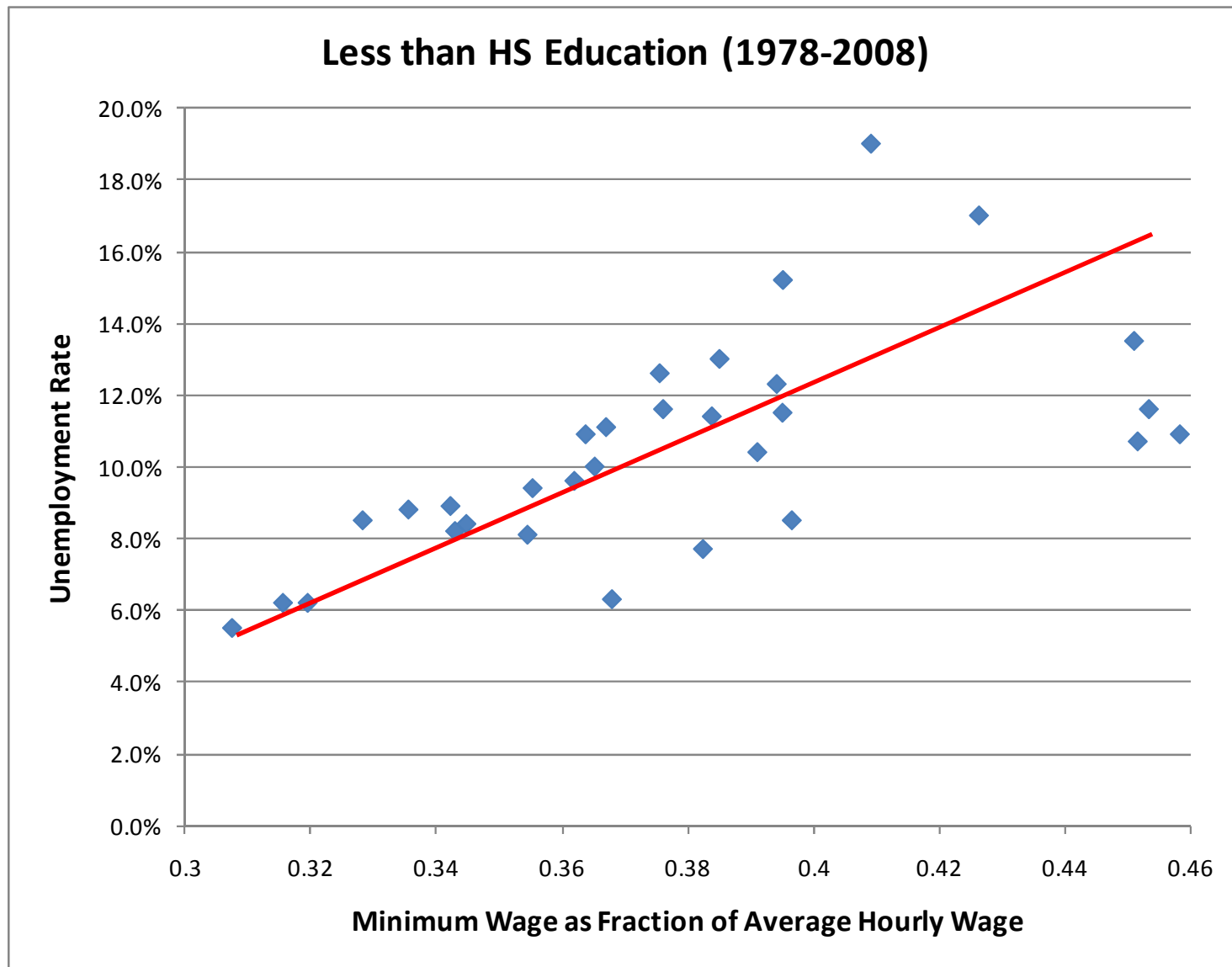
The minimum wage helps minimum wage workers.



Data sources: Statistical Abstract of the United States and Bureau of Labor Statistics



Data sources: Statistical Abstract of the United States and Bureau of Labor Statistics



Data sources: Statistical Abstract of the United States and Bureau of Labor Statistics

Conventional Wisdom #10

The minimum wage helps minimum wage workers.

Data: The Unemploy the Uneducated Rule

The minimum wage causes unemployment and the effect is most pronounced among the least educated.

Lesson #1

The government has no control over who ultimately pays a tax.

Lesson #2

The government determines the tax rate, not the tax revenue.

Planet Rule

The amount of money the Federal government owes or has promised exceeds the economic output of the entire planet.

10-24 Rule

The government spends \$10 billion every 24 hours.

Get the Causality Right Rule

The debt is an effect. Deficits cause the debt and spending causes deficits. The problem is spending.

Rolling in Benjamins Rule

Tax revenue per capita rises 2% faster than inflation.

18% Rule

Regardless of tax rates, tax revenue is 18% of GDP.

KWWATWWDTHA Rule

On average, government spending suppresses the economy.

Poor Get Richer Rule

The rich get richer and the poor get richer (and the poor get richer faster than the rich get richer).

Trade is Empowerment Rule...

Trade is associated with less exploitation and greater wealth.

Yes, It Applies to Americans Too Rule

Trade is associated with less unemployment and improved wages in the US.

Unemploy the Uneducated Rule

The minimum wage causes unemployment and the effect is most pronounced among the least educated.

Conventional Wisdom versus The Data

October 11, 2011

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