

Searching for Fiscal Stability:
When is Austerity the Answer and When is it not
the Answer?

ISEO Summer School

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The fiscal stability challenge

Many countries now have high debt levels and have lost the confidence of the markets, forcing them to pay unsustainably high yields on debt.

They are now flirting with meltdowns that would lead to greatly weakened financial institutions, rapidly rising unemployment, and falling income levels.

“Confidence leaves with the cavalry, but only returns on little cat feet.”



INTRODUCTION

Context: Unsustainable Debt Situations

- Many analysts predict that Greece, Spain, Portugal, like Argentina (2001) and Thailand (1997), could suffer a calamitous reduction in gross national product and living standards—maybe by one quarter or even one third.

Key Concern

- Large government deficits will lead to an unsustainable debt burden and severe negative economic consequences that result from lost access to capital markets.

Immediate Results

- Lost confidence in a country's bonds, rapidly rising interest rates, a collapsing currency value, an ending of capital inflows and the possible emergence of a rapid outflow of capital, and sharp deterioration in financial markets.

Longer Term Impacts

- A painful recession; business investment and consumer spending are hit by the inability to obtain financing; 20-25% unemployment

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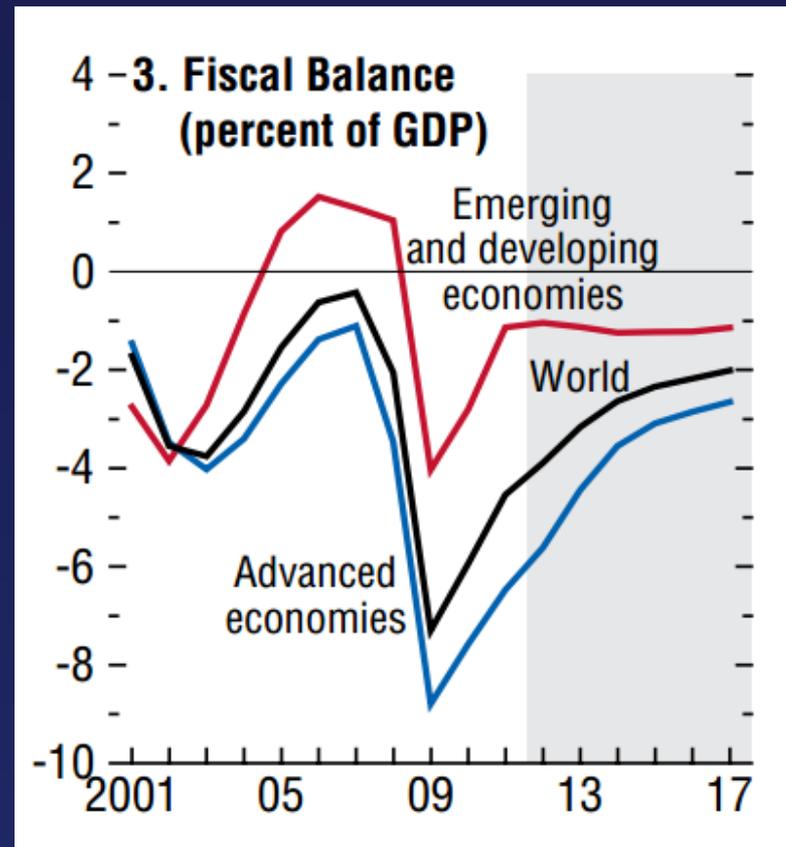
Module IV: Topics for Discussion

Module I: Characteristics of Debt Problems

1. Magnitude of the Debt Problem
2. Causes of Debt Problems (the cases of Greece and the U.S.)
3. Effects of Large Deficits

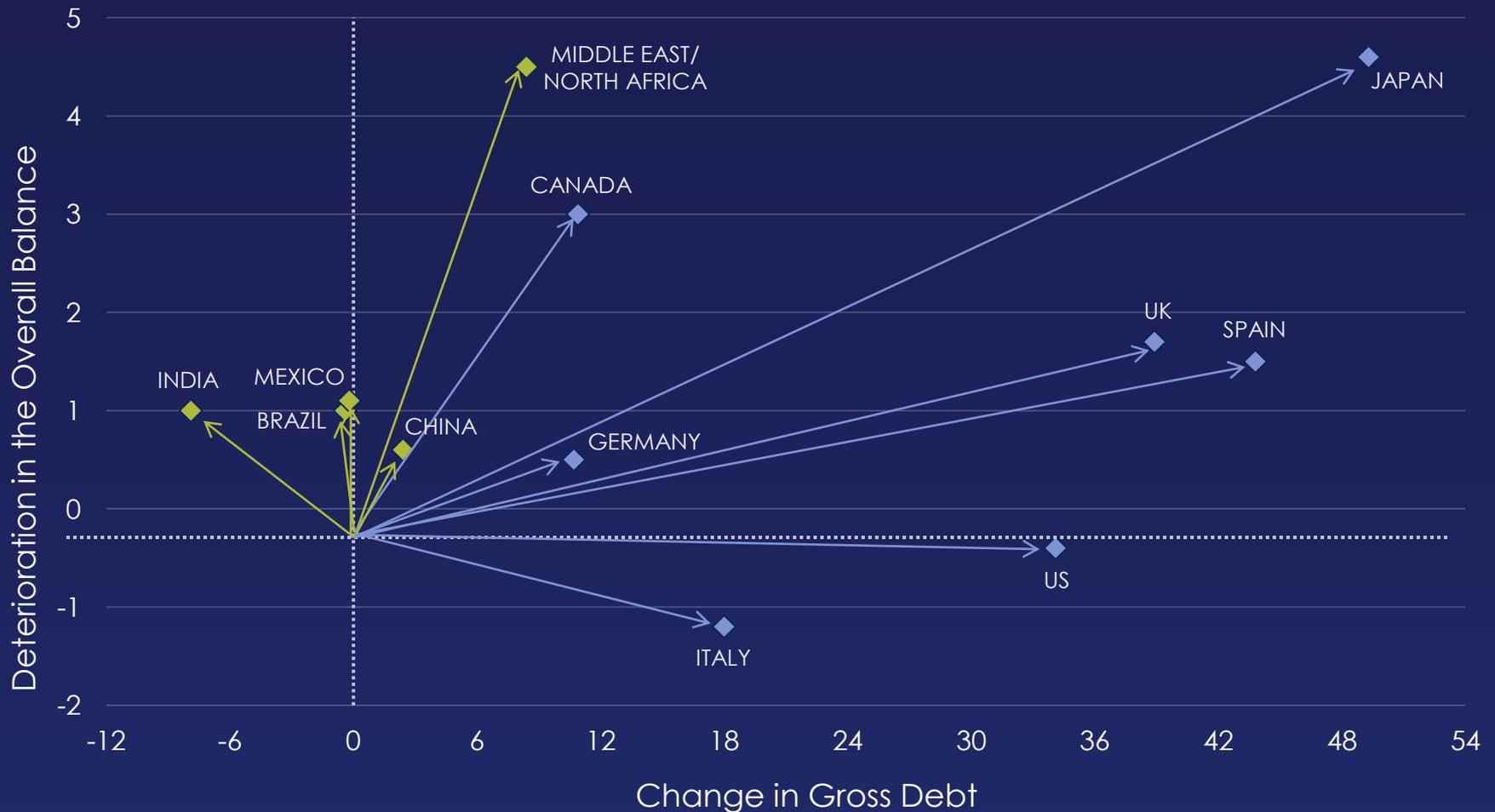
Almost all countries are experiencing larger deficits, but they are worse in advanced economies.

Evolution of Fiscal Balance in Advanced & Emerging Economies
Percent of GDP



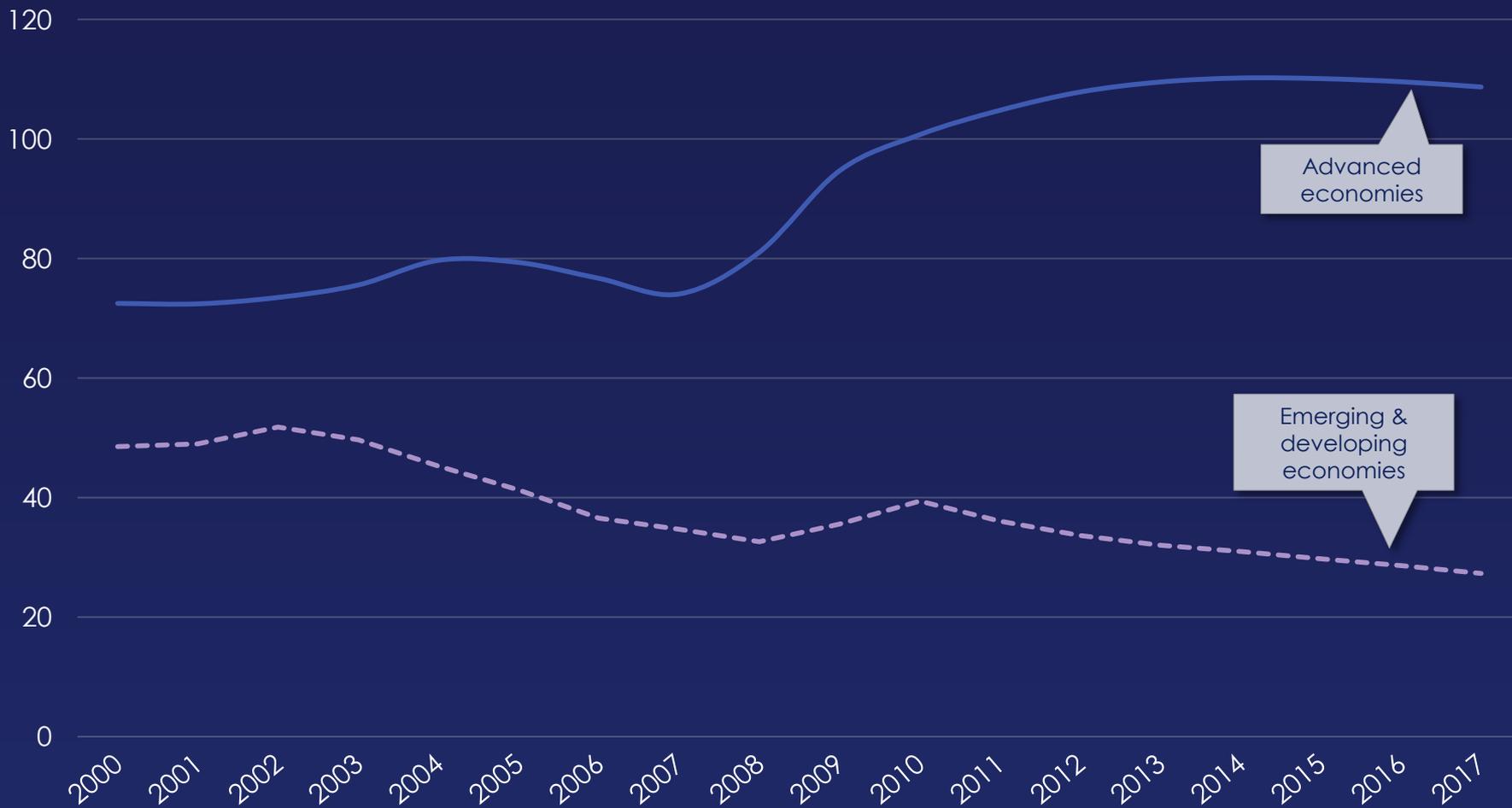
Among countries seeing the largest jump in debt: Japan, Spain, the U.K., and the U.S.

Evolution of Debt Positions in Advanced & Emerging Economies, 2008-2013
Percent of GDP



Gross debt ratios in many advanced countries are on track to increase by 40 percentage points from 2007 to 2015.

General Government Gross Debt Percent of GDP



Source: IMF WEO database (April 2012)

A critical aspect of debt management: the amount of maturing debt in one given year.

Advanced Economies' Gross Financing Needs, 2012 Percent of GDP

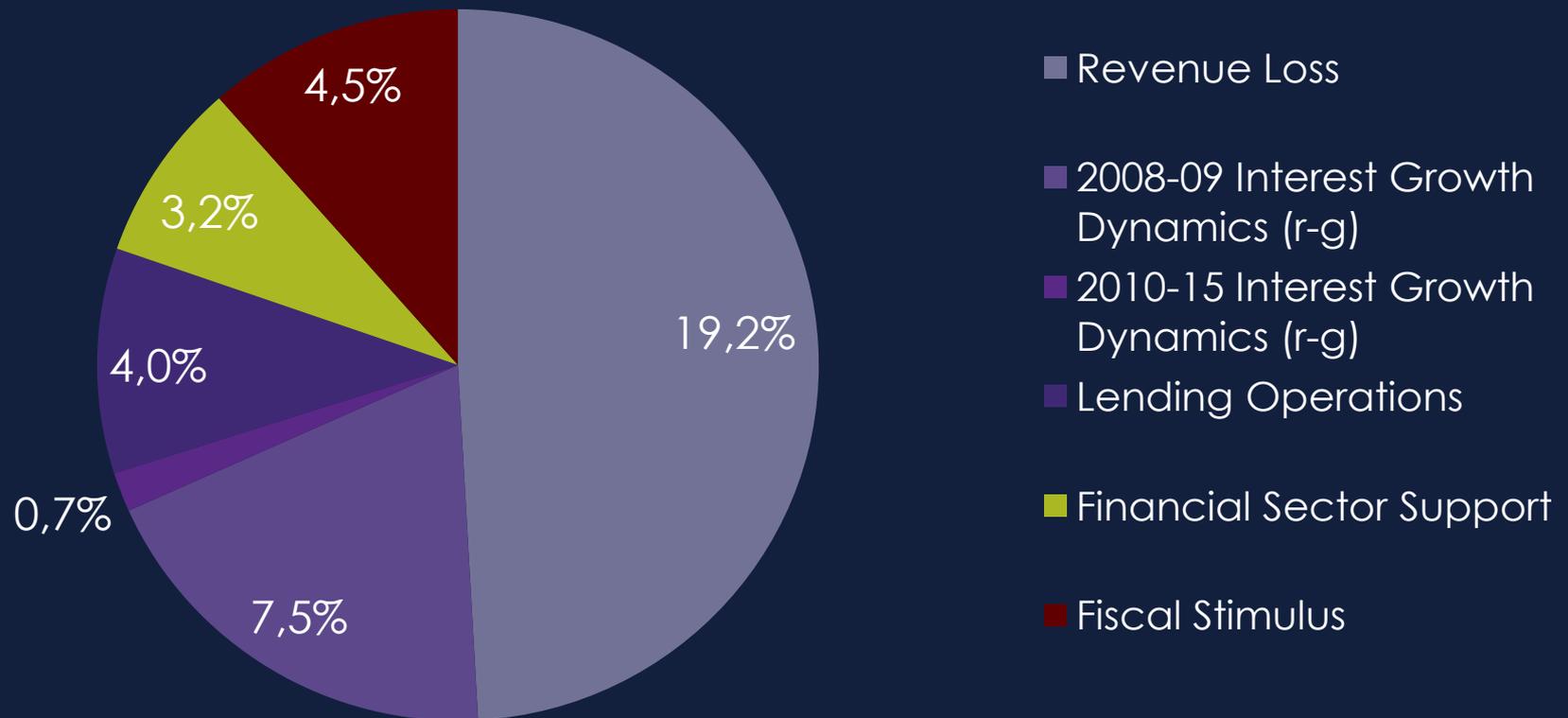
Country	Maturing Debt	Deficit	Gross Financing Needs	Gross Debt	Average Maturity (Year)
Canada	12.5	-3.7	16.1	84.7	5.7
Germany	8.1	-0.8	8.9	78.9	6.3
Greece*	13.4	-8.1	21.5	153.2	10.4
Ireland	3.6	-11.7	15.3	113.1	6.4
Italy	26.4	-2.4	28.7	123.4	6.9
Japan	49.1	-10.0	59.1	235.8	5.9
Portugal	22.2	-4.5	26.7	112.4	5.6
Spain	14.9	-6.0	20.9	79.0	5.9
United Kingdom	6.9	-8.0	14.8	88.4	14.2
United States	17.7	-8.1	25.8	106.6	5.1

*Greece data on maturing debt, deficit, and gross financing needs are for 2010.

Source: IMF WEO database (April 2012); IMF Fiscal Monitor (April 2012)

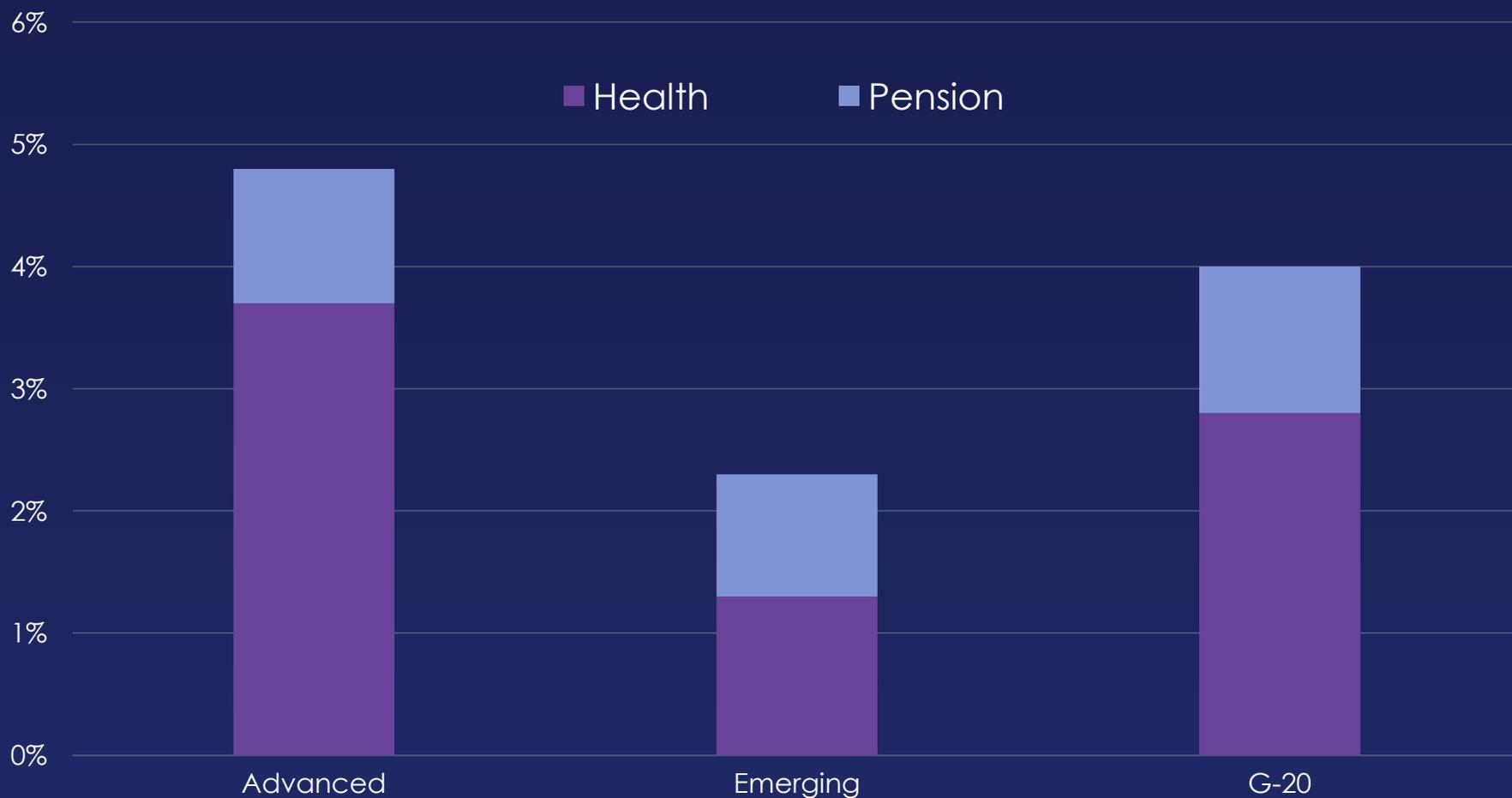
Among the key causes of rising G-20 debt levels: recession, bailouts, and stimulus packages.

G-20 Advanced Economies: Increase in Public Debt, 2008-15
(Total Increase: 39.1% of GDP; 2009 PPP weighted GDP)



Another key cause of rising G-20 debt levels: health and pension costs.

Projected Increase in Pension and Health Spending, 2010-30
Share of GDP



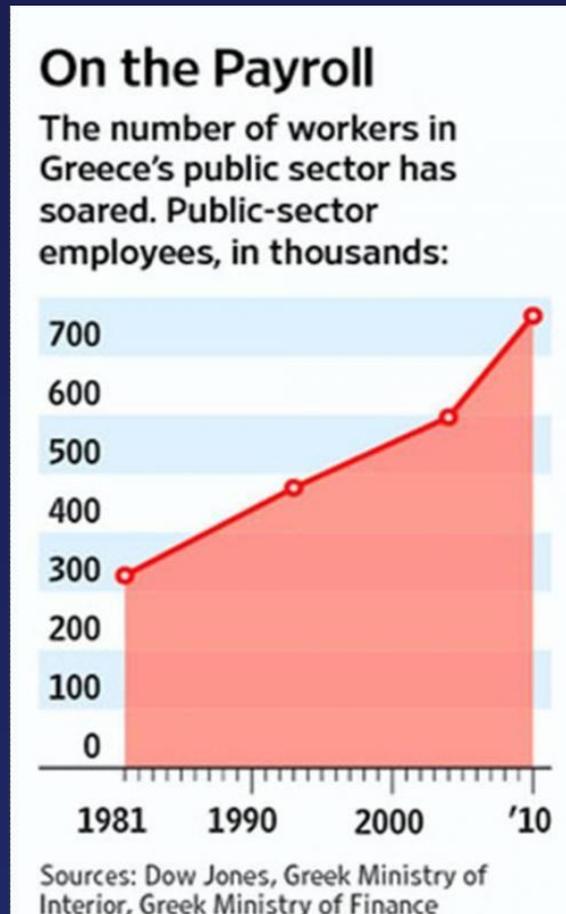
Source: IMF staff projections

Some causes of heavy Greek indebtedness

- Greek problem
 - Jump in share of labor force employed by the state
 - Public sector wages doubled between 2000-2010
 - Unit labor costs exploded compared with Germany
 - Current account balance turned heavily negative
 - Rapid growth in liabilities
 - Governance challenges: Tax evasion, etc.

A Greek problem: Public sector employment soared in the years leading up to the debt crisis.

Greece's Number of Public Sector Employees



Another Greek problem: Public sector wages more than doubled between 1999-2008.

Cumulative Growth of Public Sector Wages per Employee 1999-2008

Country	% Change 1999-2008
Ireland	110.8
Greece	108.7
Portugal	58.0
Spain	53.1
Italy	42.5
Euro area	34.9
France	31.3
Germany	13.1

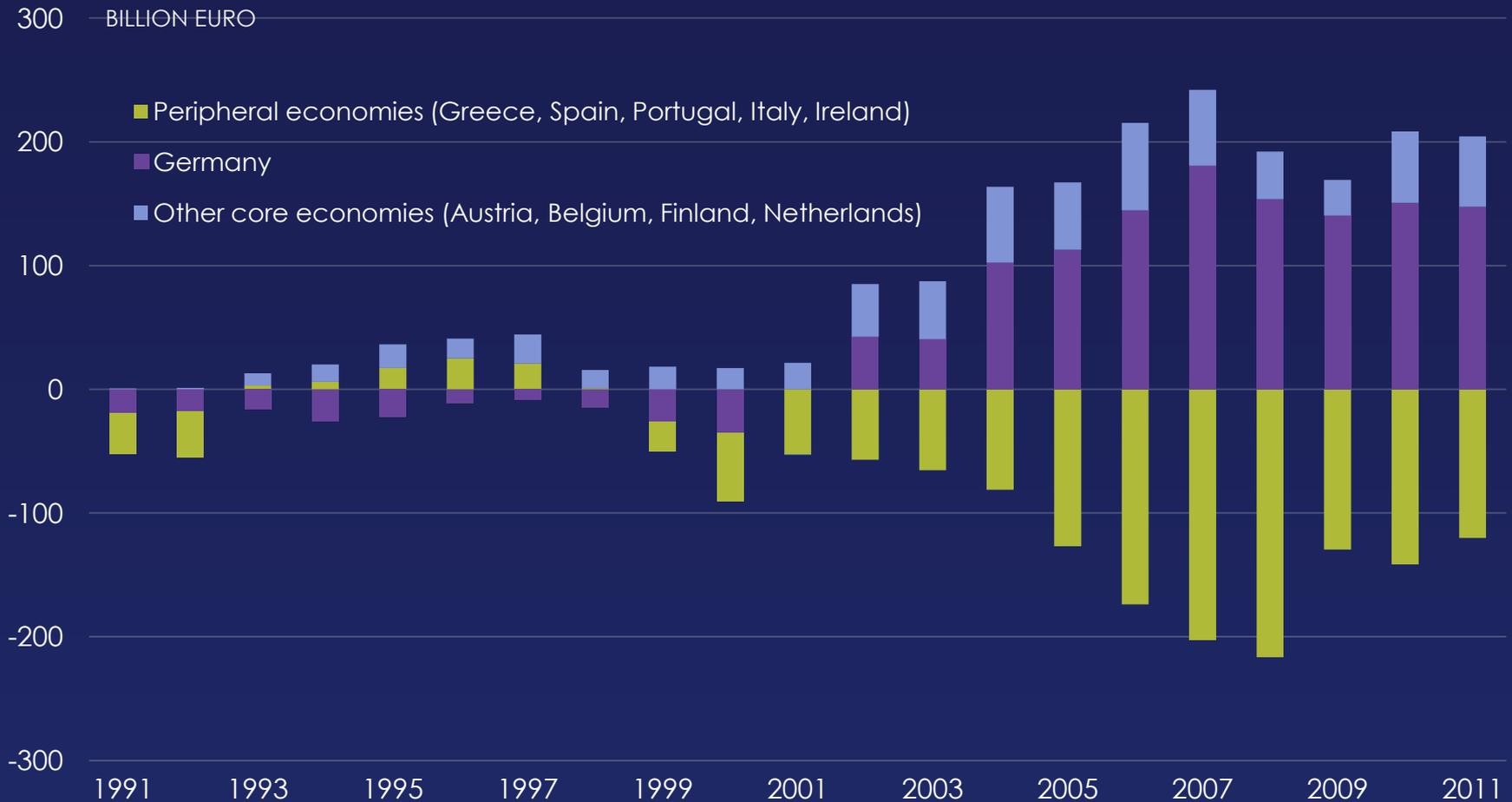
Another Greek problem: Unsustainable growth in unit labor costs.

Unit Labor Costs
Percent Change Year-Year



Trade imbalances have widened since the euro's introduction, with peripheral economies (like Greece) suffering the worst.

Current Account Balances for Selected Euro-Zone Countries



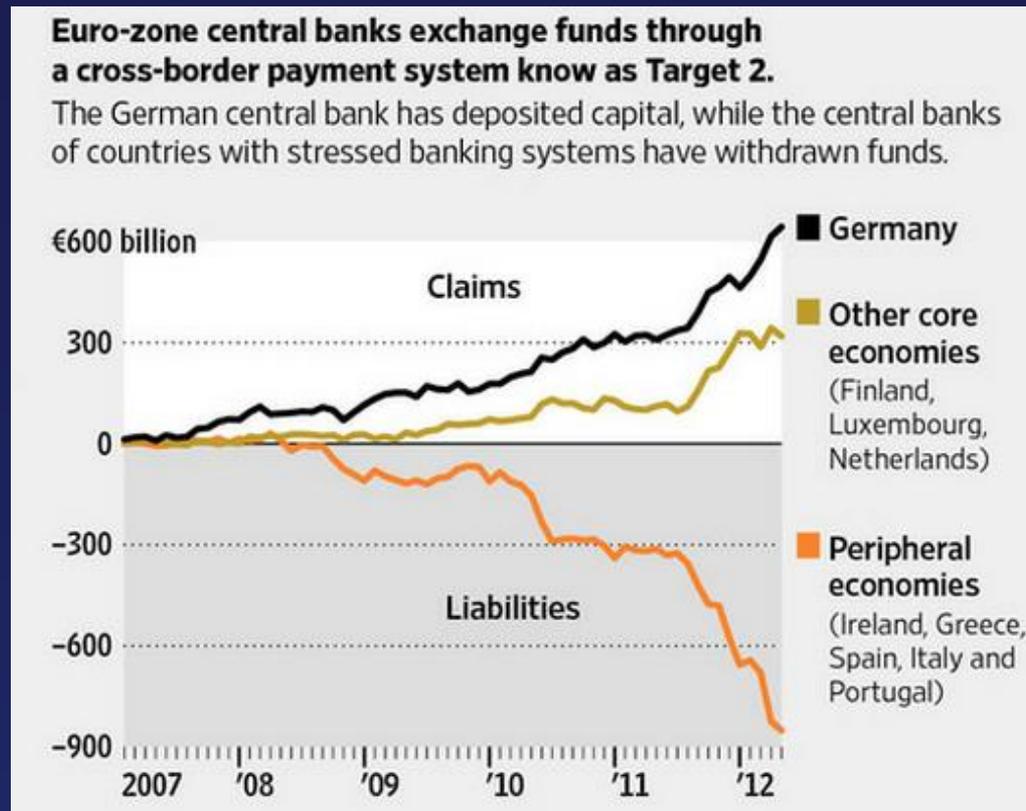
The solution that is unavailable unless...: Significant currency depreciation that might restore euro-zone competitiveness.

Real Currency Depreciation Required to Restore Competitiveness & Length of Adjustment

Country	Required Depreciation (against the Euro average)	Length of Adjustment
Portugal	-35%	15 years
Greece	-30%	15 years
Spain	-20%	10 years
France	-20%	10 years
Italy	-15% to -10%	5 to 10 years
Ireland	-5% to 0%	n/a
Germany	+25% (appreciation)	5 to 10 years (of 4% inflation)

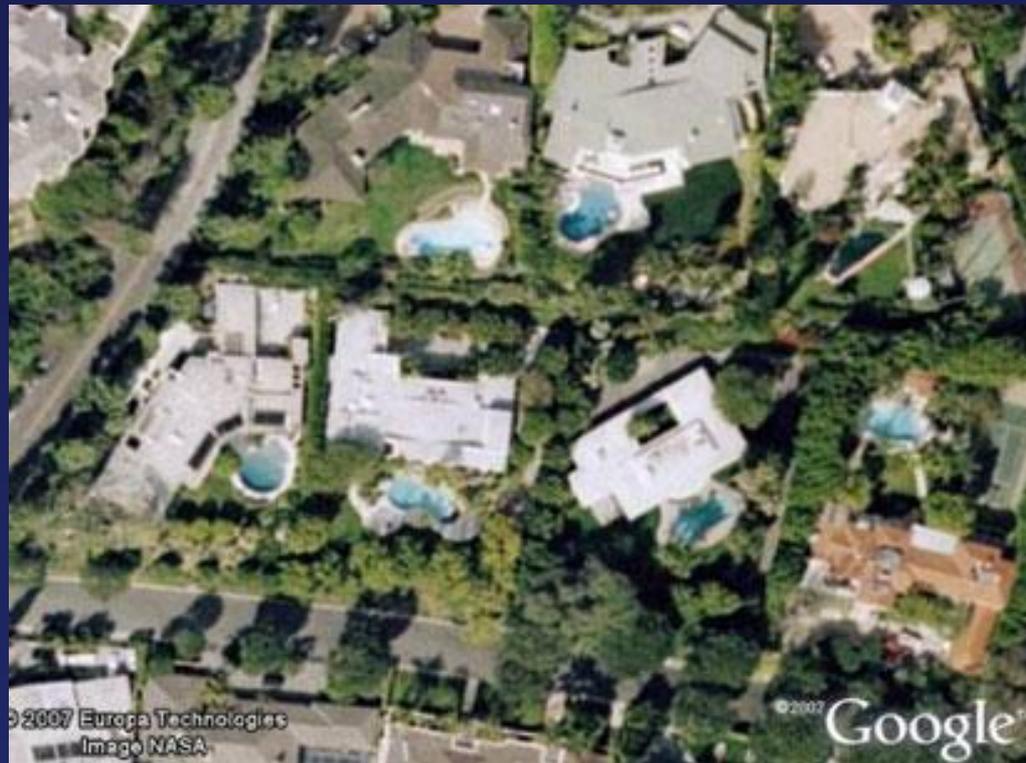
The cross-border payment system is lopsided, with peripheral countries building up heavy liabilities.

Claims and Liabilities of Select Euro-Zone Countries



Another major problem in Greece: governance issues. (Tax evasion and all that!)

Only 324 swimming pools in Athens are documented on tax forms. According to Google Earth, there are actually 17,000.



Are others that different? Markets worry that Portugal and other countries look similar to Greece in many ways.

Comparison of Economic Indicators, Greece & Portugal, 2012 Data

Country	Greece	Portugal	Germany
% Change in GDP	-4.7%	-3.3%	0.6%
Unemployment Rate	19.4%	14.4%	5.6%
General government gross debt	153% of GDP	112% of GDP	79% of GDP
Fiscal balance	-7.2% of GDP	-4.5% of GDP	-1.0% of GDP
Public sector employment / total employment	17%	14%	11%
Yield on 10-Yr Bond	27.1%	10.4%	1.6%
5-Yr Sovereign Credit Default Swaps	11284.9	1017.2	98.47

U.S. also faces severe budget pressures: Congressional Budget Office projects large deficits.

U.S. Federal Budget Deficit

CBO's Estimate of the President's FY 2013 Budget



Causes of U.S. Debt Situation

1. Underlying imbalances

- From fiscal years 2007 and 2008, the U.S. had an underlying fiscal imbalance of \$450 billion.

2. Cyclical effects

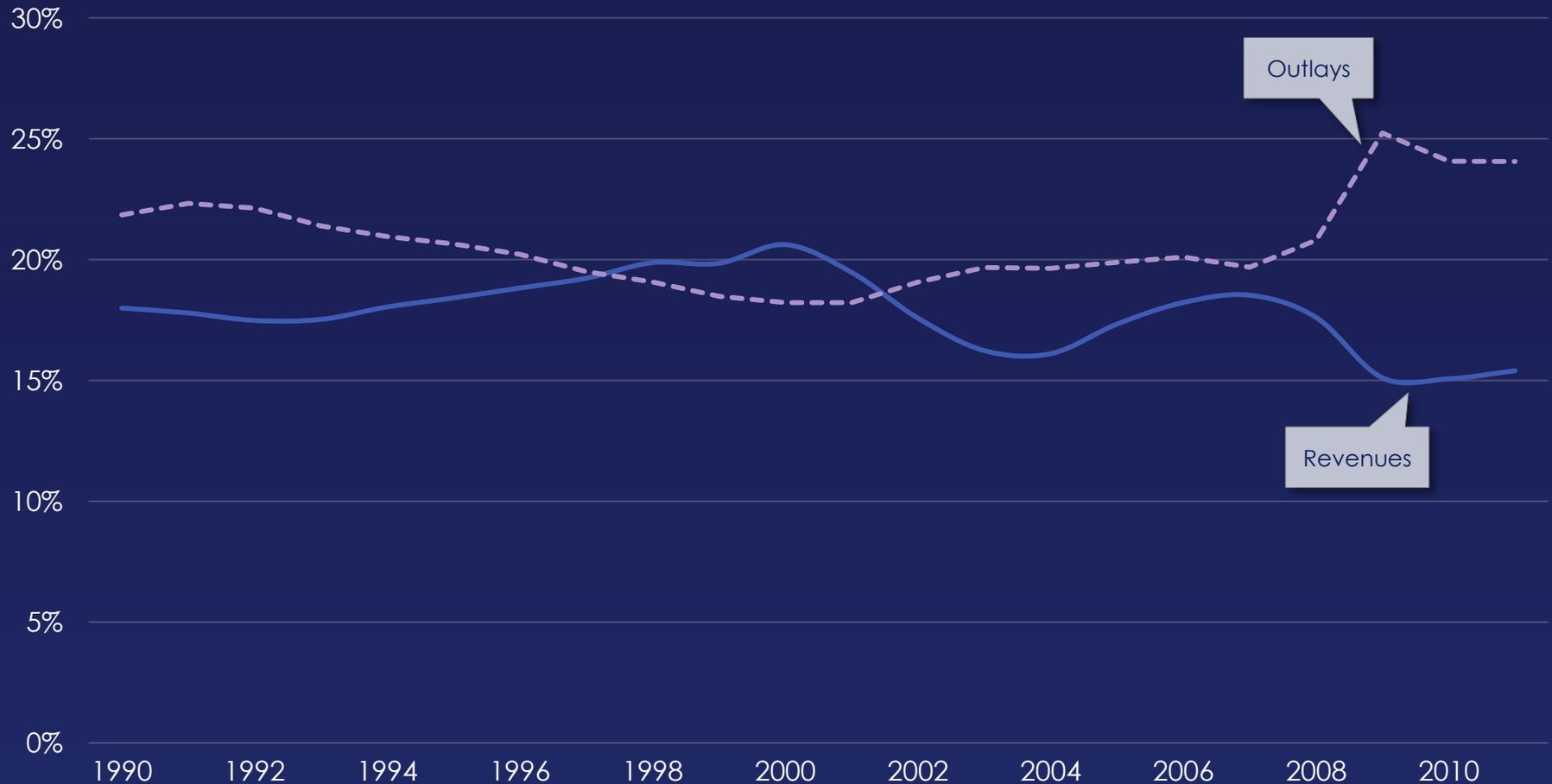
- The Great Recession of 2008-09 caused roughly a \$600 billion “revenue hole” due to high unemployment and smaller capital gains.
- Individual income tax collections fell by about \$300 billion and corporate taxes fell by about \$200 billion between fiscal year 2007 and fiscal year 2009 as profits fell. Capital gains taxes fell by \$60 billion.

3. Financial rescue packages

- The bailouts of the financial sector (TARP, AIG, Fannie Mae, etc.), the automobile sector, etc. cost hundreds of billions of dollars in cash in 2008 and 2009.

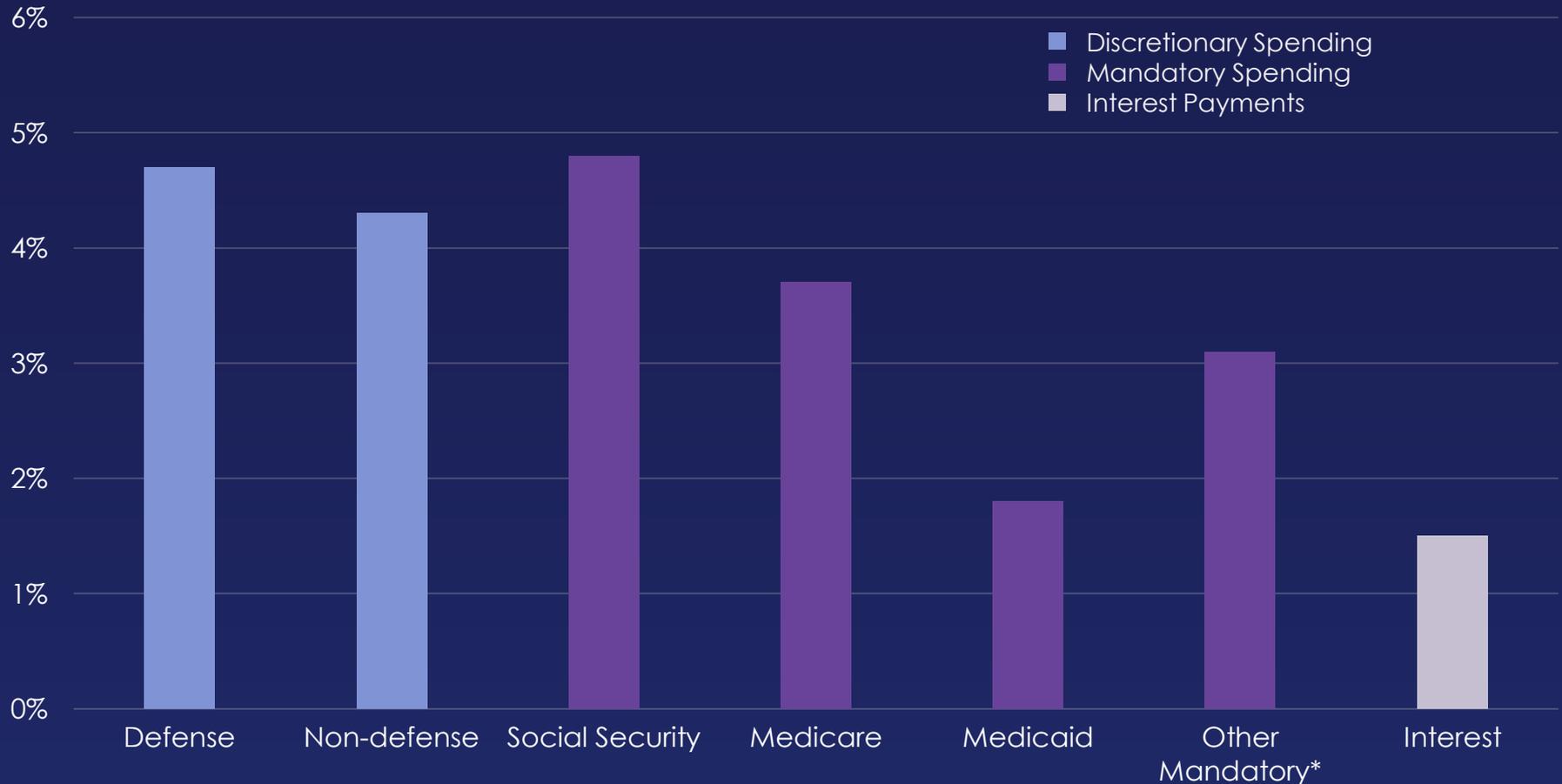
U.S.: Except for the Clinton era, spending has always exceeded revenues.

Federal Government Outlays and Revenues Percent of GDP



U.S.: Other root causes of unsustainable fiscal situation—Social Security, Medicare, and Medicaid.

2011 Federal Government Outlays Share of GDP



*Includes income security, other retirement & disability, other programs, and offsetting receipts.

Source: CBO Historical Tables, F.3-5

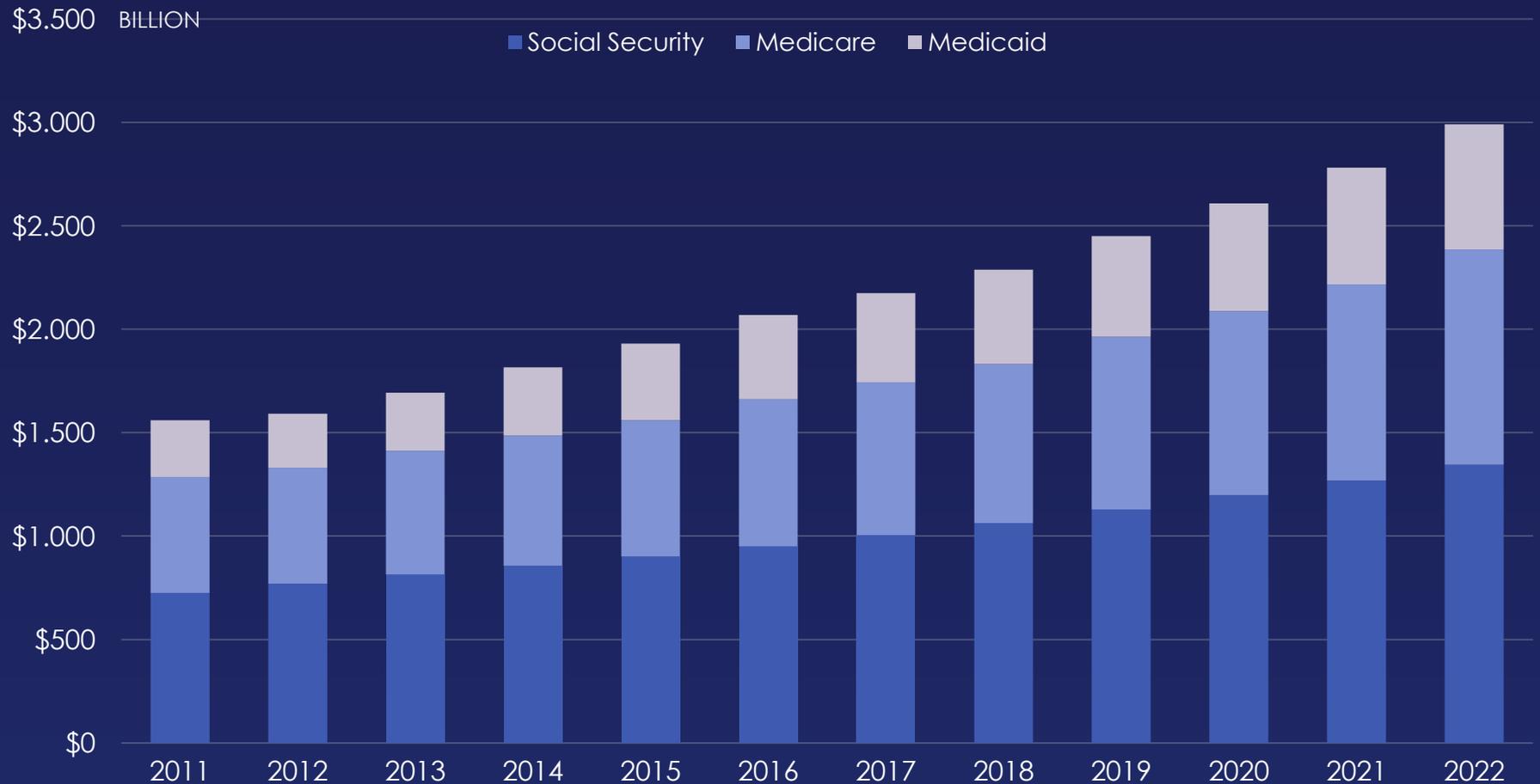
U.S.: Entitlement spending is one of the greatest challenges to bringing down the deficit and controlling national debt.

Three underlying factors drive unsustainable rates of entitlement spending:

- (1) Rising dependency ratio with fewer workers per retiree (was 45 to 1 in 1930s, now 3 to 1; heading to 2 to 1)
- (2) Increasing average life expectancy (average man now lives more than 20 years longer than when Social Security rules initially founded. Average Japanese woman now will live to 90 years old.)
- (3) Exploding healthcare costs (3X faster than overall inflation)

U.S.: Projected growth of entitlement spending under the CBO's baseline.

Entitlement Programs Spending Under CBO's Baseline



Source: CBO, "The Budget and Economic Outlook: Fiscal Years 2012-2022" (Jan 2012)

What are some of the main economic effects of large budget deficits or high debt levels on:

- Financial markets and interest rates?
- Investment spending?
- Saving decisions?
- Consumer confidence?
- Consumer spending?
- Foreign investors?
- Currency value?
- Inflation?
- Capital flight?
- Unemployment?
- GDP growth?
- Future policy options?

Economic and financial effects of large, sustained deficits.

“Ricardian Equivalence”

- Citizens typically respond to large and increasing budget deficits by reducing consumption and investment spending and increasing their savings, thereby slowing the pace of GDP growth in coming years.

“Crowding Out” Effect

- Higher interest rates will reduce private investment spending and the nation's private capital stock. The result, over time, will be lower labor productivity growth, and living standards that rise more slowly.

Inflation Risk

- An unsustainable fiscal position could lead indebted countries like the U.S. to monetize its debt, effectively inflating away part of the value of government bonds.

International Impacts on the Dollar, Interest Rates, and Growth

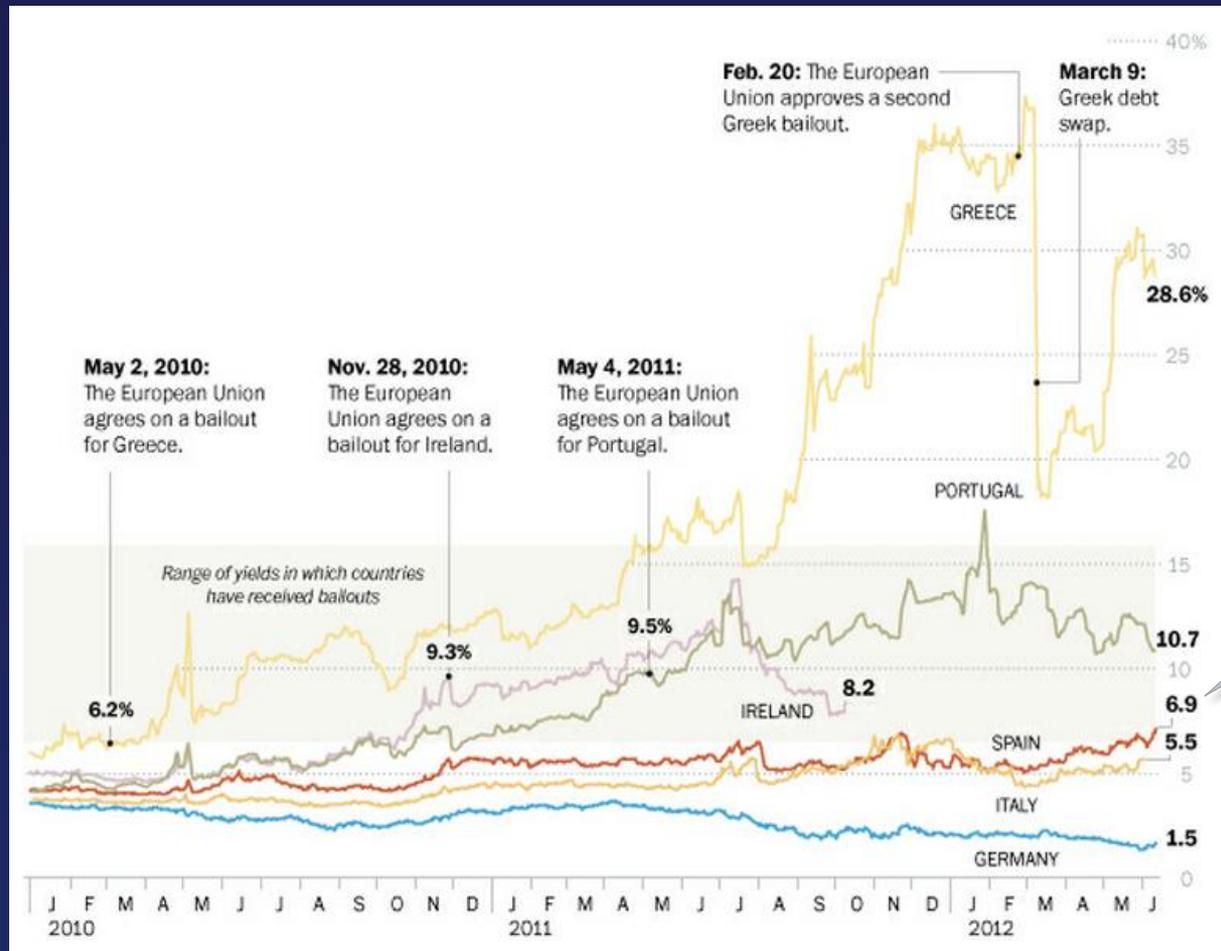
- A sharp decline in the exchange value of the dollar would mean lower yields on foreigners' U.S. investments and thus increase the yield that foreign investors would demand to purchase future dollar assets.

Implications for Future Policies

- In countries with high debt levels, fiscal stimulus could actually backfire if interest rates go up so much with additional spending or tax cuts that they cause private investment to decline and offset the supposed positive effects of fiscal pump priming.

A key effect of rising debt levels is rising interest rates on government borrowing.

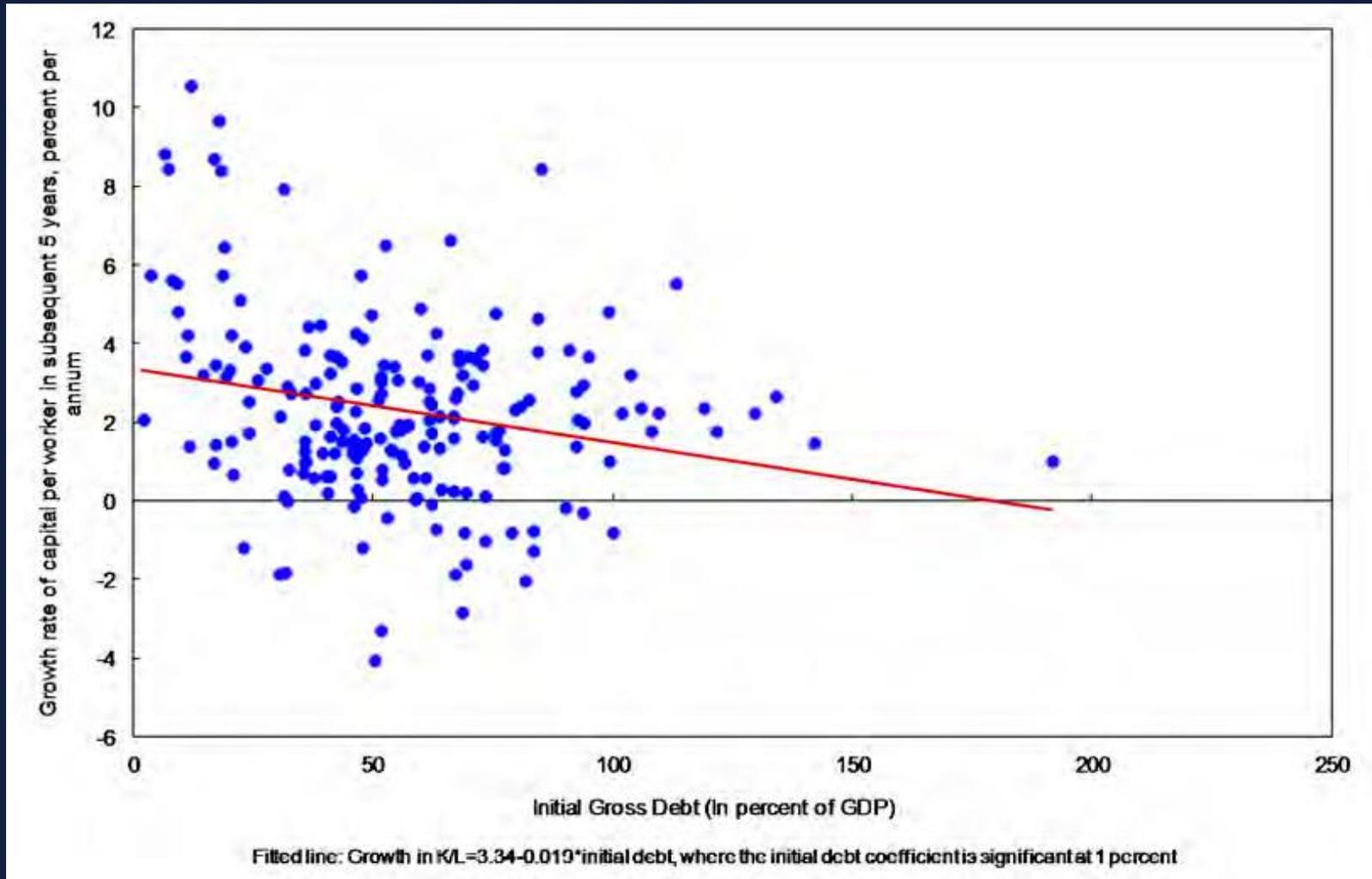
Interest Rates for 10-Year Bonds on the Secondary Market



6.9% yield on Spanish 10-yr bonds

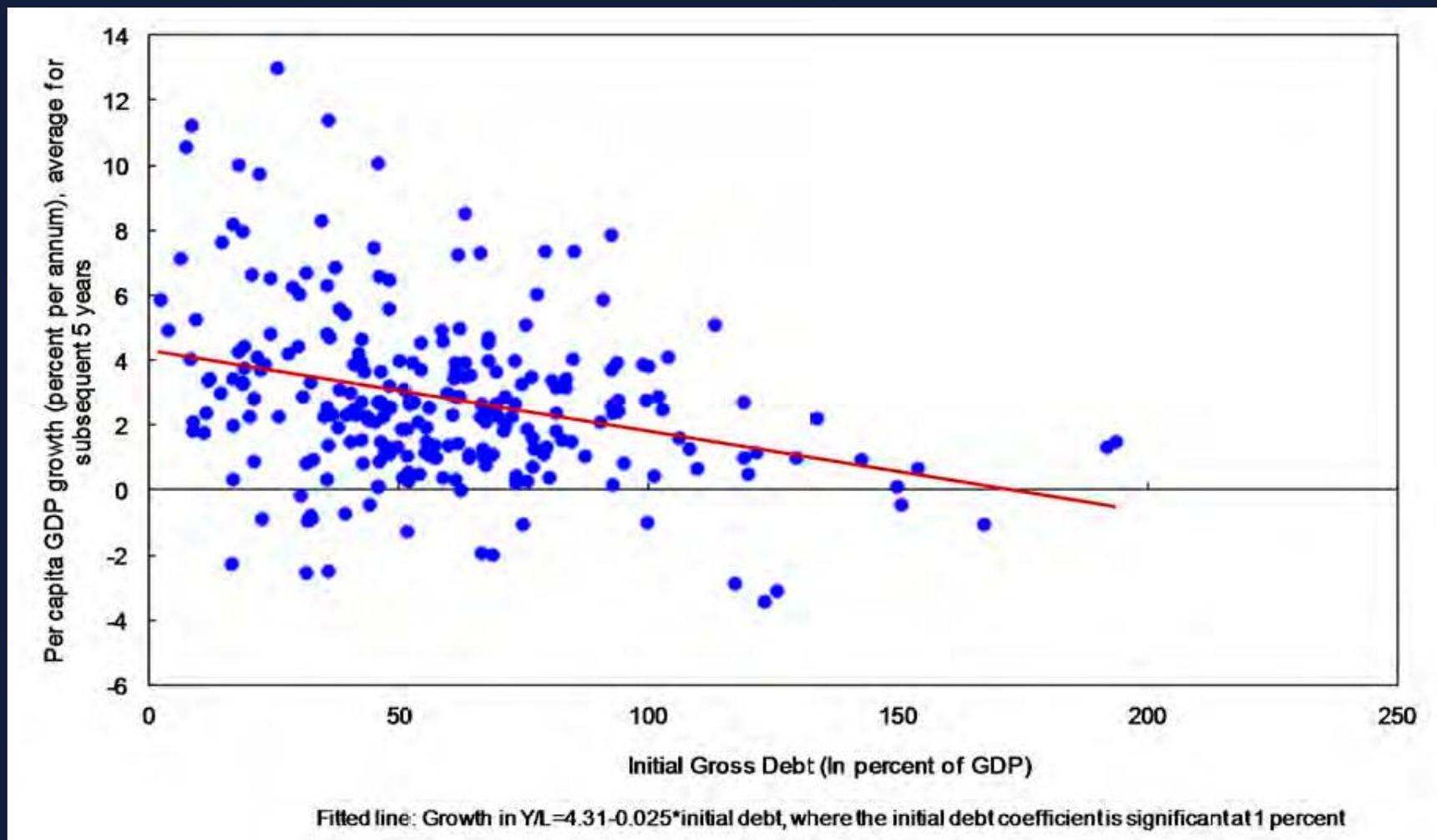
Higher borrowing costs mean less investment spending.
Countries with more debt have less capital per worker.

Government Debt and Capital per Worker Growth



And as a consequence, countries with higher debt burdens have lower per capita GDP growth.

Government Debt and Per Capita GDP Growth



Regression analysis consistently finds higher budget deficits and debt levels cause real GDP per capita to be lower.

Panel Regression: Growth and Initial Government Debt, 1970-2007
OECD and Emerging Economies (with over 5 million of population)

	(1) OLS	(2) SGMM	(3) SGMM	(4) SGMM	(5) SGMM
Explanatory Variables	Dependent Variable:		Growth of Output	Growth of TFP	Domestic
	Growth of Real Per Capita GDP		Per Worker		Investment
Lagged dependent variable			-2.810**	-4.459*	0.828***
			(-2.19)	(-1.96)	(-7.16)
Initial per capita real GDP	-2.187***	-2.823***			
	(-2.74)	(-3.33)			
Initial years of schooling	2.863***	4.161**	3.493	0.29	6.985**
	(-2.72)	(-2.12)	(-0.87)	(-0.13)	(-2.3)
Initial inflation rate	-2.234***	-2.296	-6.987*	-6.839*	-3.924**
	(-3.49)	(-1.43)	(-1.79)	(-1.92)	(-2.57)
Initial government size	0.087**	0.168	0.08	0.077	0.332
	(2.29)	(1.20)	(0.74)	(0.79)	(1.29)
Initial trade openness	-0.001	-0.004	-0.009	0.002	-0.044**
	(-0.25)	(-0.71)	(-0.85)	(-0.18)	(-2.36)
Initial financial depth	0.019***	0.026***	0.025**	0.018*	0.029
	(2.87)	(2.72)	(2.36)	(1.86)	(1.02)
Terms of trade growth	-0.019	-0.025	-0.063	-0.053**	0.173*
	(-0.88)	(-0.96)	(-1.44)	(-2.27)	(-1.8)
Banking crisis	-0.728**	-1.519	0.063	0.425	-0.42
	(-2.27)	(-1.42)	(-0.11)	(-0.26)	(-0.31)
Fiscal deficit	-0.044***	-0.036*	-0.007	-0.028	-0.01
	(-4.91)	(-1.78)	(-0.22)	(-0.91)	(-0.20)
Government debt, initial	-0.018**	-0.020**	-0.022**	-0.011	-0.038*
	(-2.66)	(-2.49)	(-2.29)	(-1.12)	(-1.78)

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Module II: Key Debt Sustainability Equation

$$s = \left(\frac{r - g}{1 + g} \right) d$$

s = Net Budget Position as a % of GDP not including interest costs

r = Real Interest Rate

g = Real GDP growth rate

d = Debt to GDP ratio at beginning of period

Example: Greece in 2010

$$5.27 = \left(\frac{.04 - (-.02)}{1 + (-.02)} \right) .86$$

r = 4 % real

g = - 2%

d = 86%

Key Lesson

When the real interest rate is greater than the rate of growth of the real economy, the net debt level will tend to increase, requiring a primary fiscal surplus to hold the debt position unchanged.

Countries must undergo significant fiscal consolidations in order to achieve target debt ratios by 2030.

Required Fiscal Adjustment

To achieve gross debt / GDP target of 60% by 2030

Country	Required Adjustment (% of GDP)
France	5.0
Germany	0.3
Ireland	10.7
Italy	4.4
Japan	18.2
United Kingdom	7.5
United States	10.9

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Interestingly, correcting a high level of debt does not automatically bring lower growth. It depends on initial conditions.

Growth of Real GDP Per Capita During Periods of Rising & Falling Debt Initial Debt > 60% of GDP



Source: IMF staff projections

Recent research on the link between fiscal consolidation and economic growth

Expansionary Austerity

Alesina & Ardagna (2010). "Large Changes in Fiscal Policy: Taxes versus Spending."

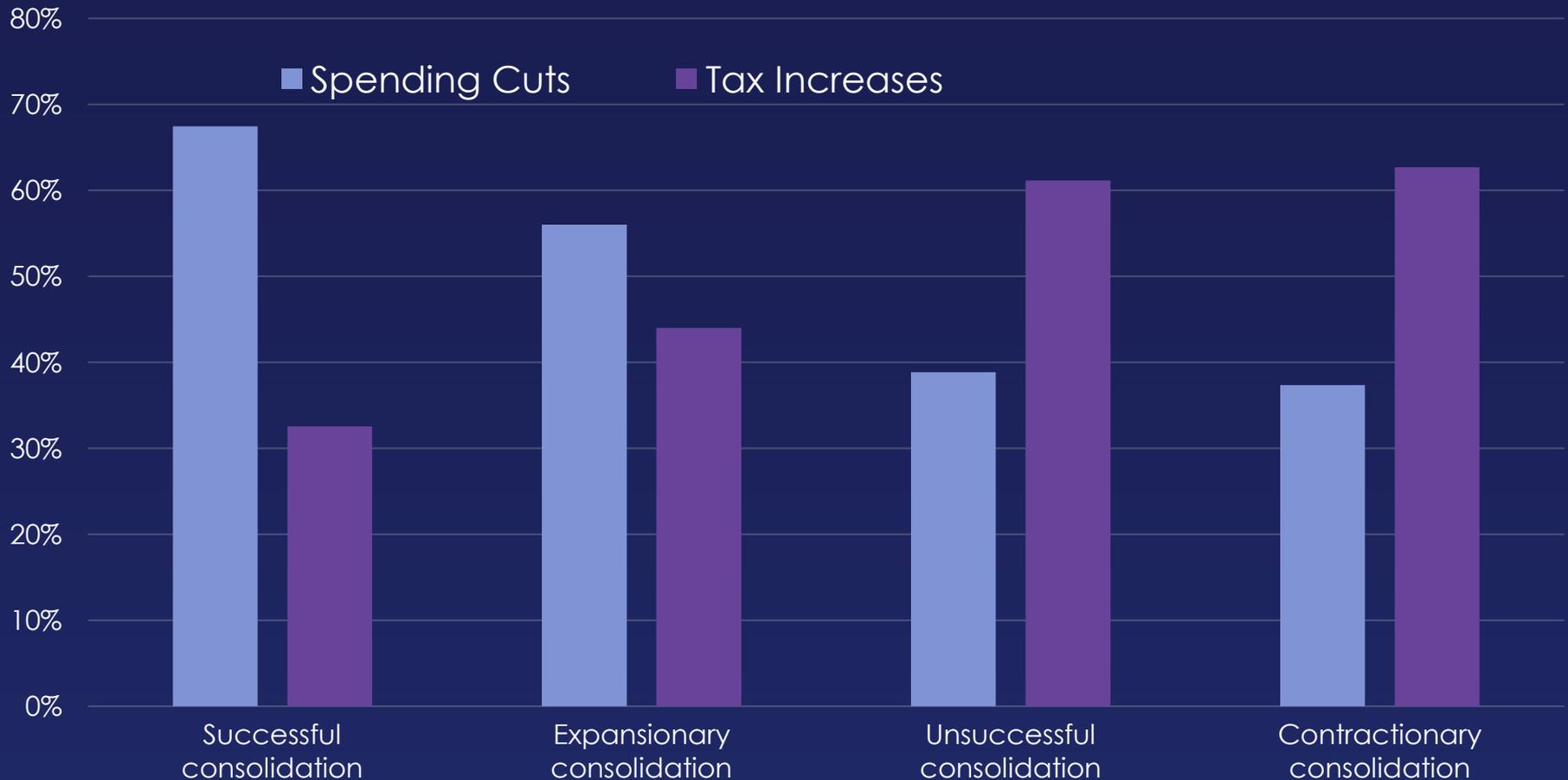
- Austerity can aid growth in the short run.
- Spending cuts are more effective than tax increases.

Glomm, Jung & Tran (2012). "Fiscal Austerity Measures: Spending Cuts vs. Tax Increases."

- In the Greek model, spending cuts are better for growth than tax increases, but worse for welfare effects.
- A mixed reform would have the largest positive effects on GDP growth—around 2.5%.

Is austerity the answer? Alesina & Ardagna argue that austerity can be expansionary, if undertaken through spending cuts.

Contribution of Spending Cuts & Tax Increases to Fiscal Consolidations



A reduction in primary expenditures is labeled "spending cuts," and an increase in total revenue is labeled "tax increases."

Source: Alesina, Alberto (Sep 2010). "Fiscal Adjustments: What Do We Know and What Are We Doing?"

Other recent research on the link between fiscal consolidation and economic growth finds clearer negative effects

Contractionary Austerity

DeLong & Summers (2012). “Fiscal Policy in a Depressed Economy.”

- If yields below 5%, high fiscal multiplier means spending cuts worsens the fiscal picture.
- In severely depressed economies, fiscal expansion can actually reduce real interest rates and long-run debt.

Perotti (2011). “The ‘Austerity Myth’: Gain Without Pain?”

- The effects of “expansionary austerity” are exaggerated, because currency depreciation and a further decline in interest rates are not available options for the euro-zone.

Ball, Leigh & Lougani (2011). “Painful Medicine.” IMF Finance & Development.

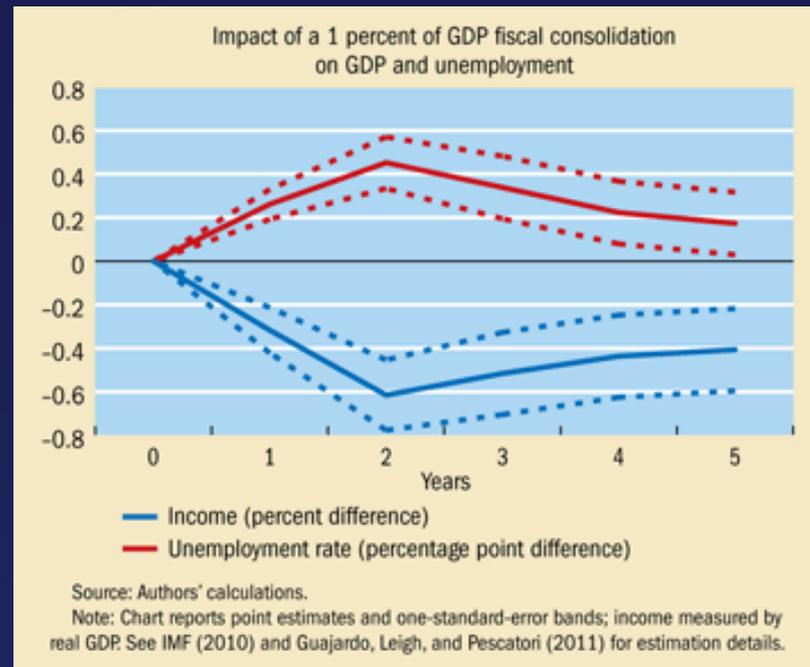
- Fiscal consolidation reduces GDP and raises unemployment, especially long-term.
- Spending cuts hurt wage income more than profit & rent income.

Benhabib, Evans & Honkapohja (2012). “Liquidity Traps and Expectation Dynamics: Fiscal Stimulus or Fiscal Austerity?”

- Fiscal stimulus is more likely to be effective than fiscal austerity—though both rely on initial expectations.
- Fiscal switching is the best policy: automatic fiscal stimulus if inflation falls below target level.

According to the IMF, fiscal consolidation on average reduces incomes and raises unemployment in the short run.

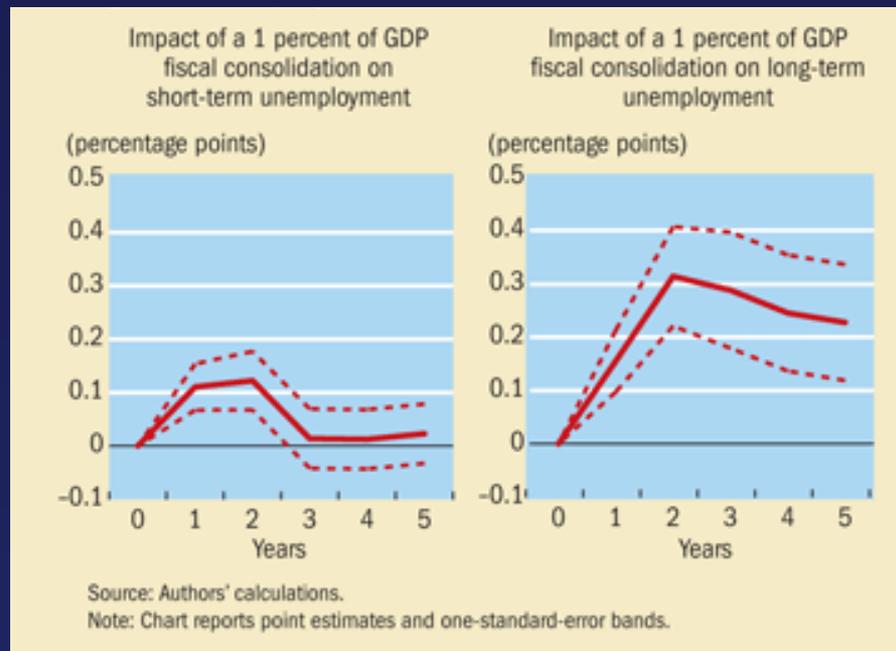
Impact of a 1% of GDP Fiscal Consolidation on GDP and Unemployment



IMF simulations suggest the impact on income may be twice as large as that shown above when central banks cannot cut interest rates and when many countries are undergoing simultaneous consolidation.

Fiscal consolidation also has a particularly harsh effect on long-term unemployment.

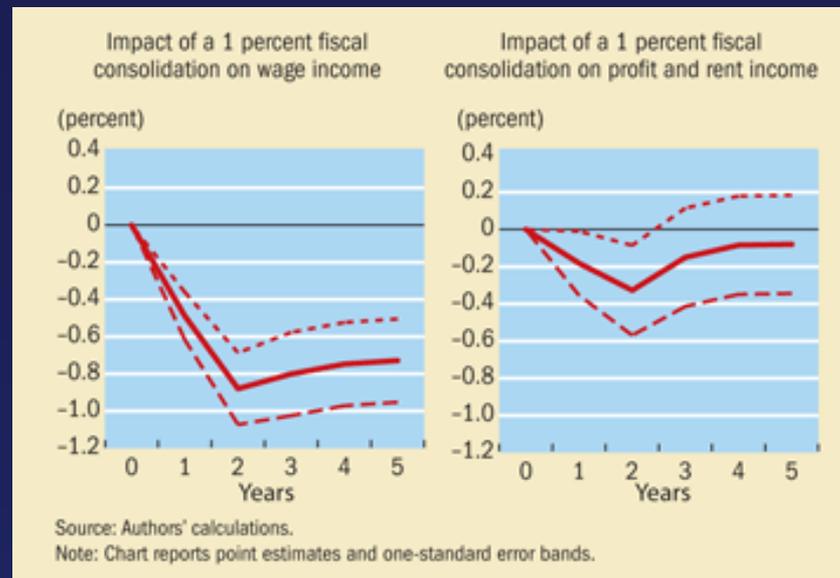
Impact of a 1% Consolidation on Short- & Long-Term Unemployment



Long-term unemployment refers to spells of unemployment lasting more than 6 months.

Fiscal consolidation has a larger negative effect on wage income than on profit & rent income.

Impact of a 1% Consolidation on Wage Income vs. Profit & Rent Income



For every 1% of GDP of fiscal consolidation, inflation-adjusted wage income typically shrinks by 0.9%, while inflation-adjusted profit & rents fall by only 0.3%.

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Module IV: What are the possible ways out of a heavily indebted situation?

What are the possible ways out of an unsustainable public debt problem?

- Grow your way out of the problem (faster GDP growth)
- Get lower interest rates on the public debt
- A bailout, via either a current transfer or capital transfer from abroad (the IMF or China to the rescue)
- Fiscal pain (either raise taxes or cut public spending)
- Inflate your way out (central bank action)
- Default (including all the popular euphemisms: repudiation, standstill, moratorium, restructuring, rescheduling of interest or principal repayment)

Lessons of Post World War II History: How did the U.S. and the U.K. reduce their large debt levels?

	United States	United Kingdom
Total reduction (% GDP)	90	212
Through growth	56	98
Through inflation	53	228
Through budget surpluses	-21	-124

Source: Niall Ferguson, 2010

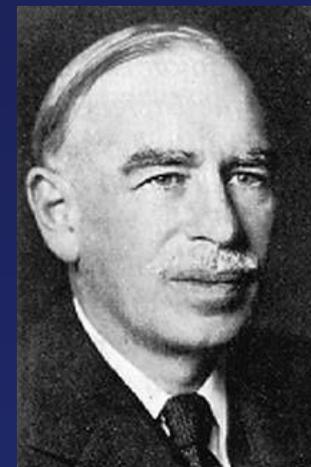
Different philosophical approaches: Keynes v. Hayek

Keynesian Theory

- Massive financial crisis > “bad” equilibrium with chronic underemployment
- “Any attempt to try to ‘cut itself out of the slump’ is tantamount to cutting one’s nose to spite one’s face.”
- Solution: “grow” your way out of the recession through government spending, low interest rates to promote business investment, and low taxation to promote spending.
- There will be time to pay down the debts once the economy is booming again. Don’t worry about the long term, for “in the long term we are all dead.”

Policy Options

- Boost government spending
- EFSF bonds / bailouts
- LTROs (reduce interest rates)
- Quantitative easing by the ECB
- Eurobonds
- Monetary union
- Loosen reigns on inflation



Keynes v. Hayek

Hayekian Theory

- Tricking the market into creating jobs doesn't work—must impose structural reforms, rather than generate artificial demand.
- Recessions are caused by excessive credit creation— the bust is a necessary outcome of the boom. “The boom is the illusion while the bust is the reality call.”
- Let the recession run its course and liquidate bad debts. Wage and interest rate drops won't necessary restore the economy to pre-bust levels, but you still have to let the markets clear and produce the optimal outcome.
- Hayek grudgingly accepted the euro, while warning that “unchecked party politics and stable money are inherently incompatible.”



Policy Options

- Spending cuts / austerity
- No stimulus
- Debt write-downs
- Greek departure from the euro zone
- Parallel currency: “Geuro”

Solution: We must have economic growth to solve fiscal problems.



Module IV: Topics for Discussion

1. Discuss the political economy of deficits in your country.
2. Discuss likely economic consequences of deficits for your country's economy. How would you country handle a 25% or 30% reduction in living standards?
3. Discuss the types of spending cuts and deficit reduction measures that may be necessary for your country to have a sustainable debt burden.
4. Discuss whether restoring fiscal discipline can be expansionary or contractionary in your country (e.g. what prevailing conditions will influence your country's response to changes in fiscal policy). What are the "initial conditions" in your country?

Scheduled U.S. fiscal consolidation in 2013 (the “fiscal cliff”)

Scheduled Fiscal Consolidation in 2013 Calendar Year¹

Tax Increase / Spending Cut	Expiration Date	Amount of Consolidation (\$ bn)	Political Prospects of Consolidation
TAX INCREASES			
Payroll tax holiday	Dec. 31, 2012	\$120	Expiration likely
Emergency Unemployment Compensation	January 2, 2013	\$44	Depends on economy
2001/03/10 tax cuts ² & AMT patch ³	² Dec. 31, 2012 ³ Dec. 31, 2011	\$309	Depends on election results
Other expiring tax provisions ⁴	Varies	\$105	Depends on election
SPENDING CUTS			
“Doc fix”	Dec. 31, 2012	\$22	Expiration unlikely
Defense spending cuts due to sequester	n/a	\$45	Mixed (partial waiver likely)
Nondefense spending cuts due to sequester	n/a	\$45	Depends on election results
Troop reduction in Afghanistan	n/a	-\$30	Reduction likely
SCHEDULED FISCAL CONSOLIDATION	--	\$660 (4.1% of GDP)	--

¹CBO & CRFB estimates adjusted to reflect calendar year.

⁴Includes about 80 provisions, including the research & experimentation tax credit and the first-year deduction for business equipment.

Source: CBO Budget Update, Jan 2012; Committee for a Responsible Federal Budget, Analysis of CBO’s Budget & Projections, Jan 2012.

CONCLUSIONS

- Large budget deficits, like in the U.S., are a function of the recent recession, fast growing entitlement spending, and financial bailout costs.
- Debt dynamics for countries are very troubling when viewed objectively via standard fiscal sustainability equations.
- A large and growing government debt burden could impel consumers to cut back on consumption and save more in the near term to pay higher future taxes. Businesses might be crowded out of credit markets by the large-scale government borrowing and may cut back sharply on their investment spending. The result would be a lower capital stock and lower productivity growth over the medium to long run.
- With globally interconnected financial markets and capital flows, even small developments could cause a collapse of confidence.
- Often when a fiscal debt crisis occurs on the scale of Greece today, Argentina in 2001, and Thailand in 1997, the unemployment rate jumps to 20 or 25 percent, a country's currency declines by 25 -35% on foreign exchange markets, and a country's living standard falls by 20-30%.

Module III: U.S.: A negative debt scenario.

- **July 2013:** U.S. long-term interest rates rebound from temporary lows established in the wake of the Greek debt crisis in the spring of 2012. Many European investors had panicked after the Greek debt crisis and shifted their investments into U.S. Treasuries as a “safe haven”—pushing U.S. interest rates down to historic lows. With European money going back home, yields on 10-year U.S. bonds rebound to 3.9%—about where they had been before the Greek crisis began.
- **September 2013:** political analysts note the gathering strength of the Tea Party movement in the U.S. and predict that Republicans will take control of the U.S. Senate at the midterm elections. Optimism spreads through the ranks of fiscal conservatives that unified government (one party control of the White House and both houses of Congress) will soon end. The financial markets like the prospects that Republicans will soon be able to block large spending initiatives by Democrats and the yield on the 10-year bond hovers around 4%.

- **October 2013:** During an Asia-Pacific Economic Cooperation (APEC) summit of Asian leaders in Korea, the Chinese President has a private bilateral meeting with President Obama. In the press conference that follows, he is asked by reporters what they discussed. He replies that he mentioned that the U.S. had to reign in its large fiscal deficits or risk making the U.S. a “less desirable” destination for foreign investment. Although Chinese Ministry of Foreign Affairs officials immediately scrambled to “clarify” their President’s statements, and stated that China had “no intention” of dumping U.S. Treasuries, the bond market tanks. The yield on the 10-year U.S. bond jumps by 20 basis points to 4.2%.
- **November 2013:** Tea Party Republicans gain political ground, and threaten another shut down of the federal government. Speaker John Boehner holds a press conference and states that “the voters have spoken and signaled that they clearly want a government that will shut down the government if necessary to impose fiscal discipline.” The bond market has another bad day. The yield on the 10-year bond jumps another 20 basis points to 4.4%.

- **February 2014:** At a joint cooperative meeting of U.S. and Chinese military leaders in Beijing, a senior Chinese army general states surprisingly bluntly that China has to think seriously about using its economic weapons as well as its military weapons to keep the country safe. He says that if the U.S. does not take stands that China approves of in Iran or other venues, China should start to dump some of its holdings of U.S. Treasuries to make the U.S. change its position. U.S. officials are aghast at his frankness and for days the information does not leak out. The U.S. officials seek clarification of the comments. The word comes back through back channels that many senior officials in the Chinese government have the same view, and although they do not want to be on record saying these things, they believe the old general's views are important to consider. A week later a reporter for the *Financial Times* breaks the story that China wants to use its holdings of Treasuries for military purposes. Many financial market participants jump to the conclusion that Chinese purchases of U.S. Treasuries are likely to fall off sharply. The yield on the 10-year bond jumps 50 basis points to 4.9%.
- **April 2014:** Doctors worry about the next round of Medicare payment cuts promised in President Obama's healthcare reform package. Altogether \$500 billion in cuts have been pledged as part of the formula for "paying" for the reform package. An American Medical Association policy group decides to organize a massive rally of doctors on the Mall in Washington, DC to protest the cuts. 200,000 doctors, all wearing their white lab coats, converge on Washington and hold a large rally. Speaker Nancy Pelosi agrees to appear on the podium at the protest rally and offers on the spot to block the Medicare cuts. Within five days the House of Representatives has passed a bill to block the cuts. The financial markets react very badly to this news and most analysts quickly raise their budget deficit forecasts. Yields on 10-year bonds jump by 60 basis points to 5.5%.

- **May 2014:** Moody's announces that because of the deterioration of the long-term U.S. budget situation, it is lowering the United States' sovereign credit rating from AA- to BAA. Investors panic and bond yields jump another 60 basis points overnight to 6.1%.
- **July 2012:** Monthly economic indicators have been surprisingly weak during the past two months. No one number is disastrously weak, but the overall tone of the numbers is soft. On a quiet and otherwise normal Friday, the U.S. payroll employment report is released and after a year of steady gains in jobs, this report shows a sharp reduction of 250,000 jobs. Market analysts panic and say that the report is evidence that businesses are being strapped by rising interest costs and must be cutting back on investment spending and hiring. Fiscal analysts note that with the U.S. economy slowing down and maybe entering another recession, tax revenues will fall again and make the deficit even worse. The yield on the 10-year bond jumps by 90 basis points in three days to 7.0%. Analysts are surprised at the magnitude of the jump, but decide that this is the kind of movement that is possible when confidence starts to ebb.

- **July 2014:** The *Financial Times* runs a story that says that three large London hedge funds have decided that U.S. bonds are set for an implosion, in the manner of the Greek debt implosion in 2011. The story says that they have taken out multi-billion positions to benefit from a collapse of U.S. bonds. The dollar collapses and loses 10% of its value against the euro and the pound sterling in one day. The yield on the 10-year bond jumps by 120 basis points in one day to 8.2%.
- **August 2014:** The Congressional Budget Office's midterm review of the U.S. budget situation is released and concludes that with the government now having to pay 8.2% for new bond issues, the debt burden will be expanding much faster than previously estimated. It reports that Congress must cut the deficit by 10% of GDP within 12 months in order not to have an exploding debt level.

- **September 2014:** The President and the leadership of the Congress hold an emergency budget meeting at the White House to discuss options. During the meeting, word is received that Goldman Sachs is in crisis. The firm had placed financial bets that yields on U.S. bond would spike sharply to 6%, but its research staff and Washington policy hands had convinced its traders that policymakers would not allow confidence to be lost completely and that when rates hit 6% there would be an effective policy response. When there was no such a response and bond yields jumped to more than 8%, the firm lost \$8 billion in a speculative play on the prior day and the firm was teetering on bankruptcy.

Module IV: Role Playing

1. You are the Prime Minister of Portugal. Your budget deficit is 10% of GDP. 25% of the workforce of your country works for in the government sector and you know that this workforce is bloated. But the government unions have vowed to shut the country down through labor strikes if you attempt to lay off government workers. In fact, the unions say that what their Greek unionist colleagues did in Athens was a peaceful stroll through the park compared with the riots they intent to encourage. You also know that you need to raise the retirement age for workers from 60 years to 67 years to restore soundness to your state pension system, but again unions have threatened to strike if you attempt to change the retirement age. One day during a scheduled annual visit by the Moody's sovereign bond rating agency's team, the team leader announces that it is placing Portugal on its watch list for a possible credit rating downgrade. What do you do?

Module IV: Role Playing

2. You are the Finance Minister of Ireland. Your country is on a potential downgrade list for S&P's sovereign bond rating service. The Prime Minister has asked you to put together a list of measures that you can recommend that would start to address the budget problems and start to restore confidence in the country's economic leadership. You will ask all government employees to take a 5% pay cut and to give up 5 days of annual vacation. You also are considering a deal with Goldman Sachs to securitize future tariff revenues to pull forward these revenues and be able to place a pot of funds on the government's books this year. Just as your list of possible measures is being finalized, you are informed that two of the country's largest banks are teetering and will require massive multi-billion bailout/rescue packages. Irish television is sending a reporter over to your office to interview you on the measures that you will recommend. You know the reporter will accuse you of "playing games" with the Goldman Sachs deal. What do you say?

Module IV: Role Playing

3. You are the Prime Minister of Mexico. Your country has been wracked by drug violence and a sharp loss of tourism revenues. Your domestic oil production is also falling due to systemic underinvestment in new facilities and new wells—due in large part to shortsightedness by your predecessor. You know that the International Monetary Fund is available with a loan package that will require painful austerity measures. Your leftist opposition, however, is getting ready for upcoming national elections. The opposition is taking a strident nationalist stance, saying that the country should ban the IMF visit. But the peso is taking a beating in global forex markets and has lost 20% of its value in the past 3 weeks. What should you do?

Recent research on the link between fiscal consolidation and economic growth

Austerity: Expansionary v. Contractionary

Alesina & Ardagna (2010):
“Expansionary”

- Austerity can aid growth in the short run.
- Spending cuts are more effective than tax increases.

Glomm, Jung & Tran (2012):
“Expansionary”

- In the Greek model, spending cuts are better for growth than tax increases, but worse for welfare effects.
- A mixed reform would have the largest positive effects on GDP growth—around 2.5%.

DeLong & Summers (2012):
“Contractionary”

- If yields are below 5%, a high fiscal multiplier means spending cuts would worsen the fiscal picture.
- In severely depressed economies, fiscal expansion can actually reduce real interest rates and long-run debt.

Perotti (2011):
“Contractionary”

- The effects of “expansionary austerity” are exaggerated, because currency depreciation and a further decline in interest rates are not available options for the euro-zone.

Ball, Leigh & Lougani (2011):
“Contractionary”

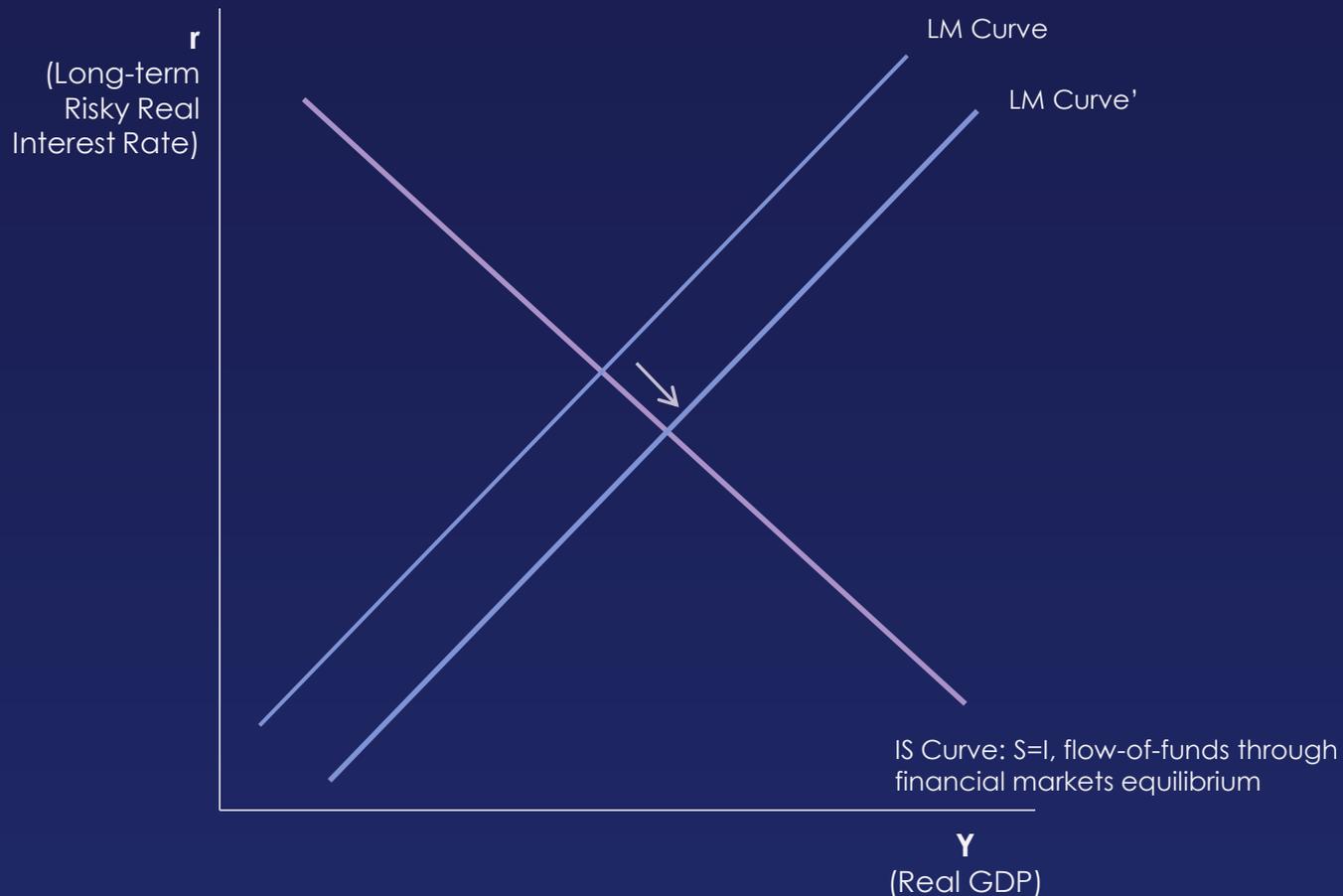
- Fiscal consolidation reduces GDP and raises unemployment, especially long-term.
- Spending cuts hurt wage income more than profit & rent income.

Benhabib, Evans & Honkapohja (2012): “Contractionary”

- Fiscal stimulus is more likely to be effective than fiscal austerity—though both rely on initial expectations.
- Fiscal switching is the best policy: automatic fiscal stimulus if inflation falls below the target level.

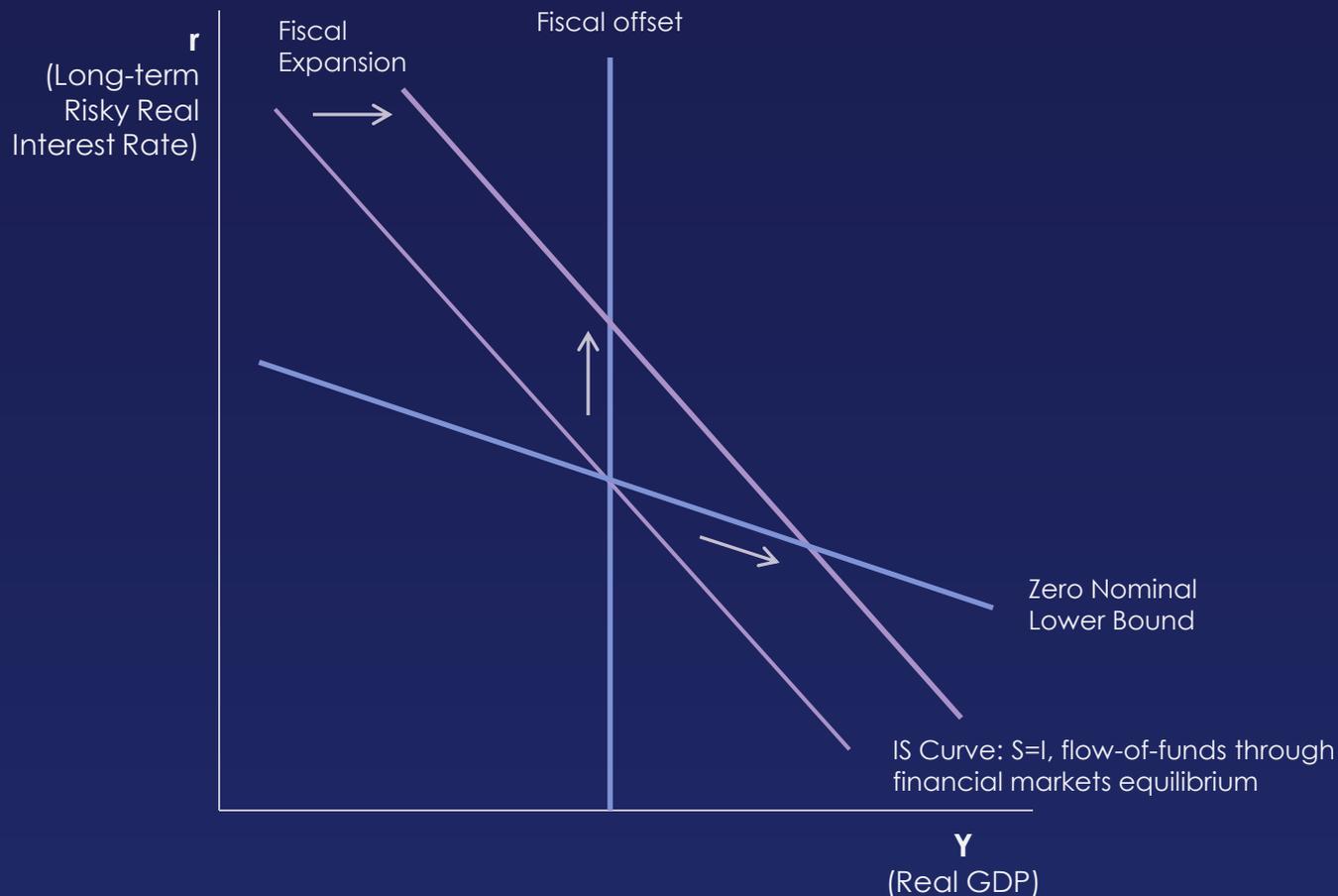
In the traditional IS-LM framework, monetary easing reduces interest rates and spurs growth.

Traditional IS-LM Framework



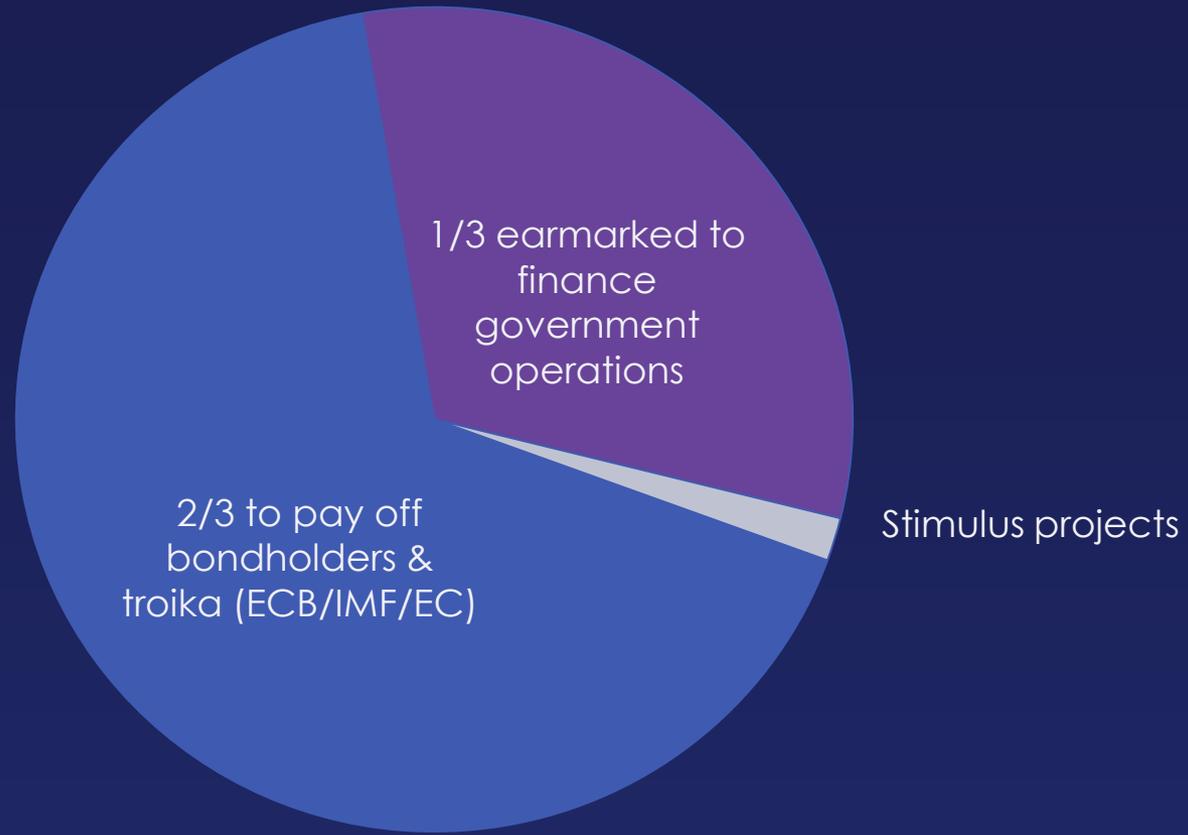
DeLong/Summers approach: In a depressed economy, fiscal expansion can actually lower interest rates.

The Fiscal Multiplier and the Monetary Policy Reaction Function



Most Greek aid is flowing back into EU pockets—it's being used to service the debt rather than pay for public services.

\$177 Billion in Aid to Greece
Where has the money gone?



Interestingly, correcting a high debt level does not automatically bring lower growth. (Depends on initial conditions!)

Growth of Real Per Capita GDP During Periods of Rising and Falling Debt
(Initial Debt > 60% of GDP)

