Fiscal policy: Government budget and revenues

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Definition

- The word **‘fisc’** means **‘state treasury’** and fiscal policy refers to policy concerning the use of ‘state treasury’ or the government finances to achieve macroeconomic goals
- ‘Any decisions to change the level, composition, or timing of **government expenditure** or to vary the burden, the structure or frequency of **tax payment** is fiscal policy’ (G.K. Shaw)

Definition

- **Fiscal policy** is concerned with all those activities which are adopted by the government to collect revenues and make the expenditures so that the economic stability could be attained without inflation or deflation (According to Samuelson)
- One major function of the government is to stabilize the economy (boost up growth, prevent unemployment or inflation/deflation)
- Stabilization can be achieved in part by manipulating the public budget-government spending and tax collections in order to increase output and employment or to reduce inflation.

Objectives of fiscal policy

- Economic growth
- Achieving economic stability
  - Price stability and inflation control
  - Full employment generation
- Efficient allocation of resources (Efficiency)
- Reduction in inequalities of income and wealth (Equity)
- Development of infrastructure

Fiscal Policy Options

- Classical Economics…the idea that the free market regulates itself
  - Great Depression pointed out the weakness of this thought
- Keynesian Economics
  - The idea that the government should increase spending to spark demand and help the economy
    - Know as demand side economics

Demand Side Economics (Keynesian)

- Results in the multiplier effect
  - Idea that $1 spending by the government results in many more in the private sector
- Automatic Stabilizers
  - If set up properly, fiscal policy can automatically stabilize the economy
    - Low income…lower taxes and more transfer payments
    - High income…more taxes and fewer transfer payments

Supply Side Economics (Neo classical)

- Belief stimulating the economy on demand side does not work, and that the economy should work to increase supply

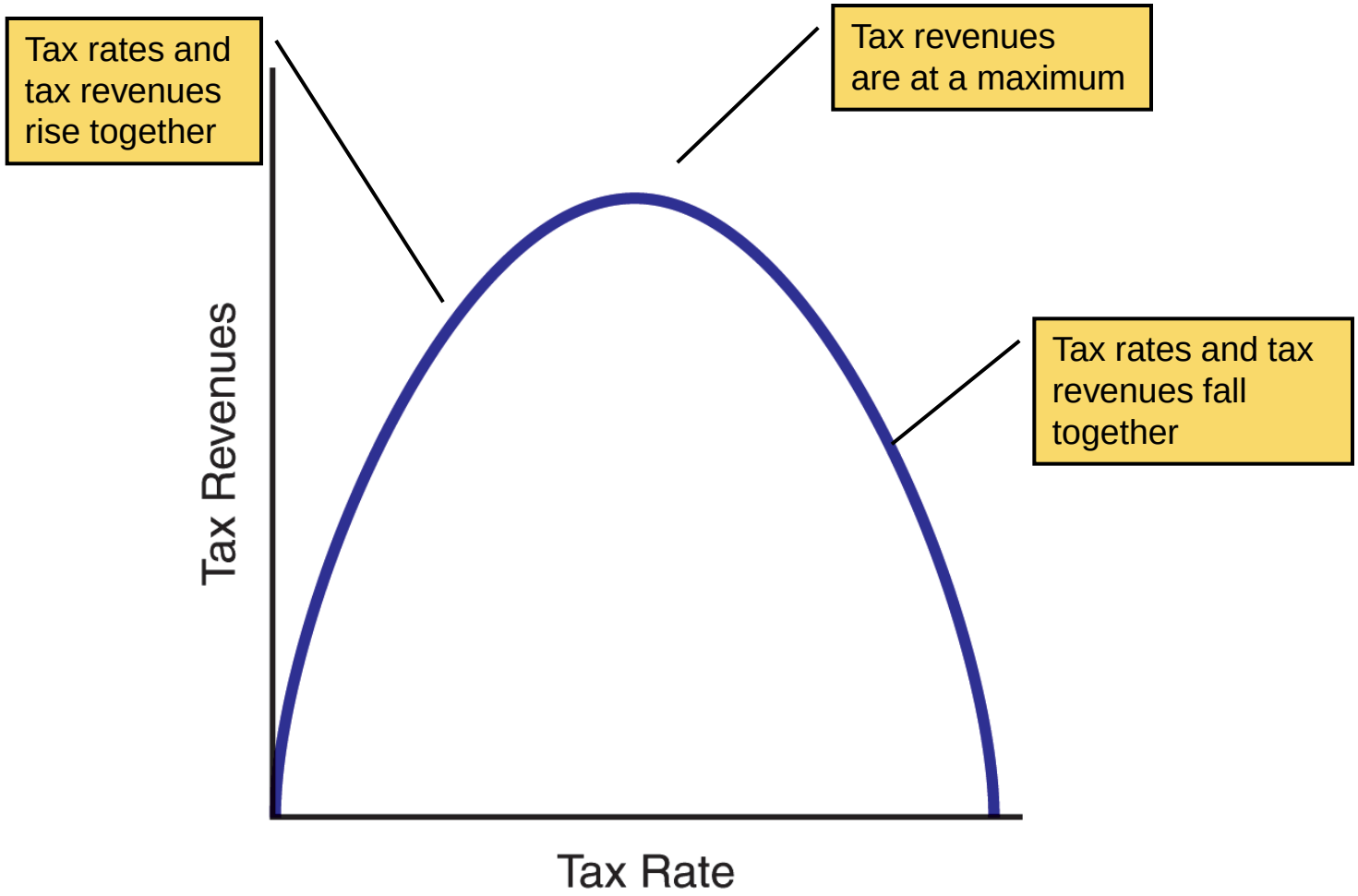
  - Too much government control will reduce productivity

  - Taxes that are too high will discourage work

    - Shown by the Laffer Curve

  - Lower tax tends to encourage business to apply better input and higher productivity

Laffer Curve



- **Non-Keynesian**
  - Rational Expectations (Forward adjustment)
  - Ricardian Equivalence (The proposition that a changes in the government fiscal policy has no effect on aggregate demand)

Two Types of Fiscal Policy

- Discretionary fiscal policy
  - Policymakers change tax policies or spending programs in response to fluctuations in the business cycle (at their discretion)
- Automatic stabilizers
  - Implemented without any deliberate action from policymakers
  - Found in the tax system and spending programs

Discretionary Fiscal Policy

- The discretionary changes in government expenditures and/or taxes in order to achieve certain national economic goals.
  - High employment (low unemployment)
  - Price stability
  - Economic growth
  - Improvement of international payments balance

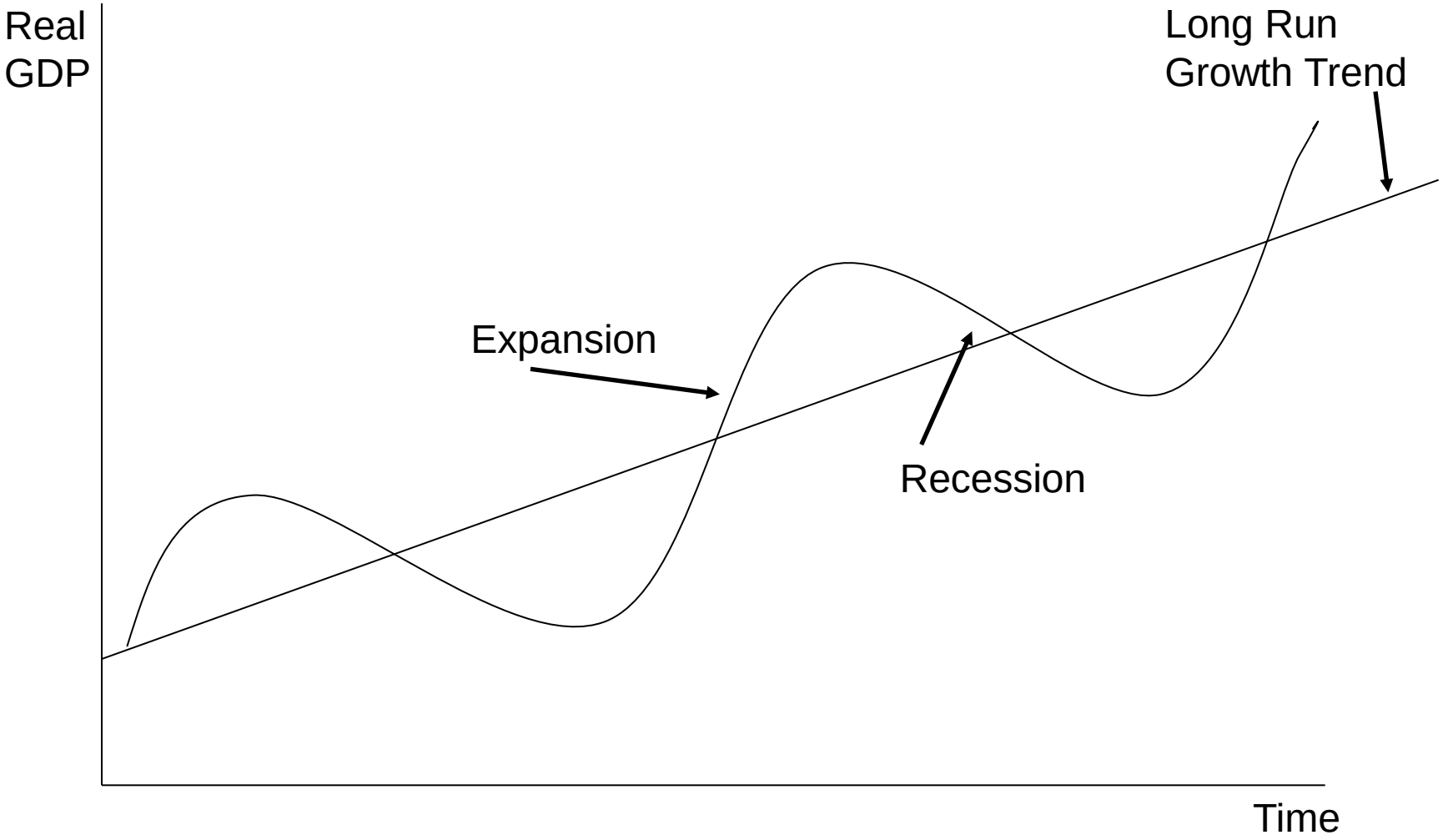
Discretionary Fiscal Policy (cont'd)

- An increase in government spending will stimulate economic activity
- Changes in government spending
  - Education spending
  - Healthcare spending
  - Budgets for government agencies

Discretionary Fiscal Policy (cont'd)

- Change in taxes
  - A rise in taxes causes a reduction in aggregate demand because it can reduce consumption spending, investment expenditures, and net exports.

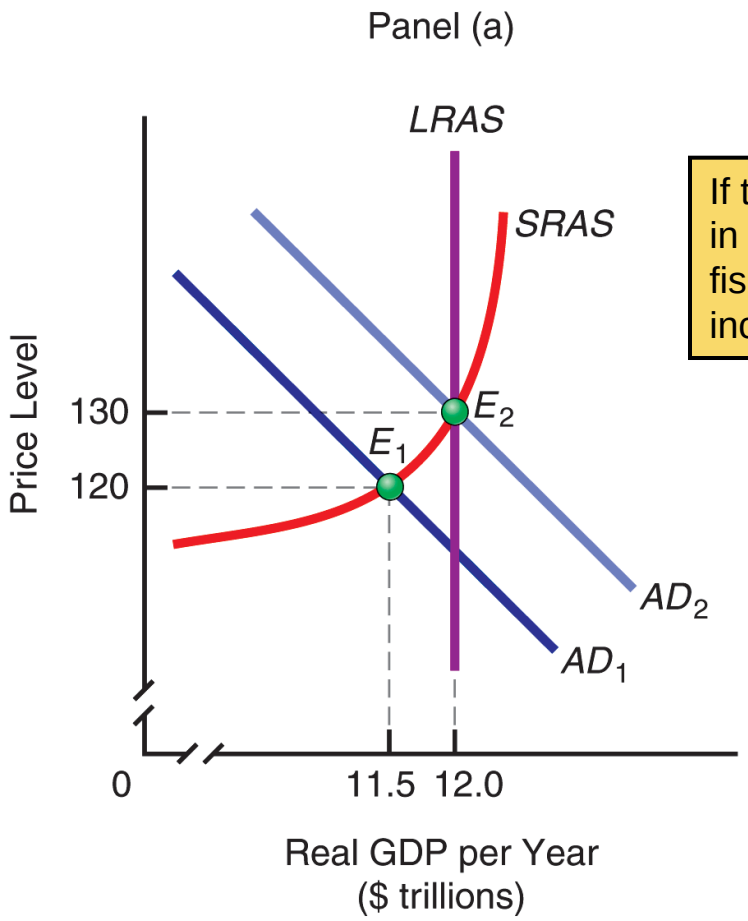
Business Cycle



Key stances of Fiscal Policy

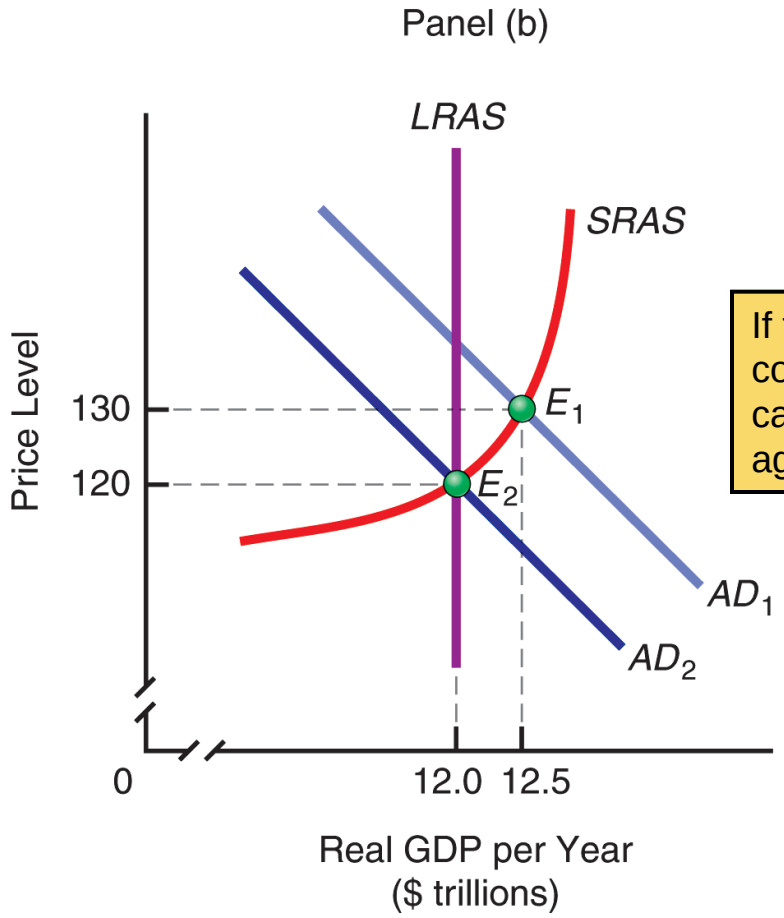
- **Neutral stance**: This results in large tax revenue. Government spending is fully funded by tax revenues and overall budget has a neutral effect on level of economic activity (G = T).
- **Expansionary stance**: when government increases government expenditure and/or reducing taxation in attempt to encourage the economic growth and increase money in the economy (G > T) Aims for resolving an economic recession - Higher spending, tax cuts
- **Contractionary stance**: when government increases taxation and/ or reduce government expenditure in attempt to reduce money in the economy and as a result inflation (G < T) Aims for easing inflation/ overheated economy - Lower spending, higher taxes

Expansionary and Contractionary Fiscal Policy: Changes in Government Spending, Panel (a)



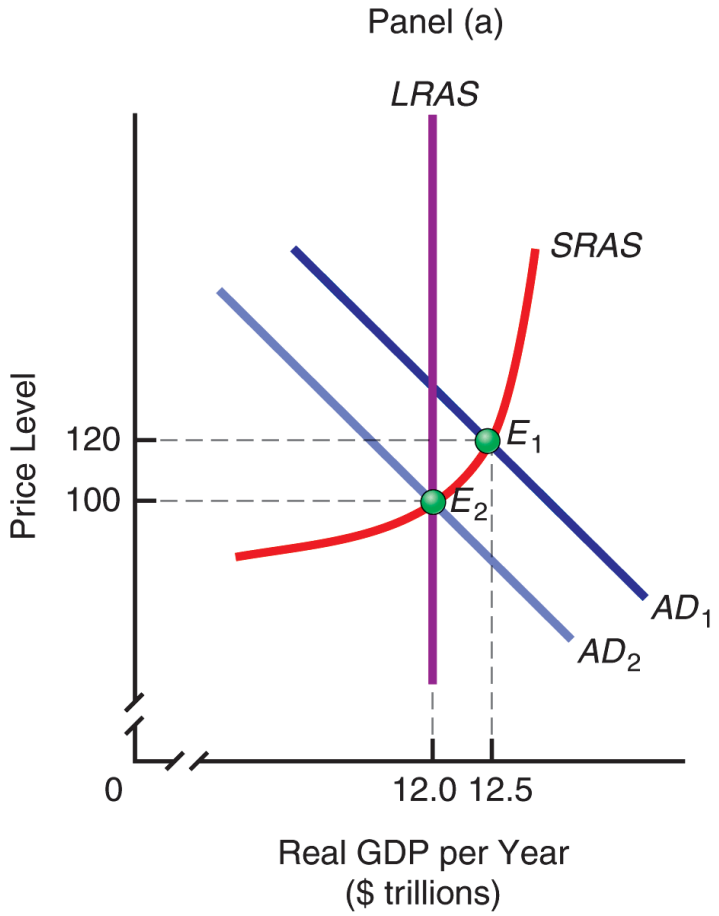
If there is a recessionary gap in panel (a), expansionary fiscal policy can presumably increase aggregate demand

Expansionary and Contractionary Fiscal Policy: Changes in Government Spending, Panel (b)



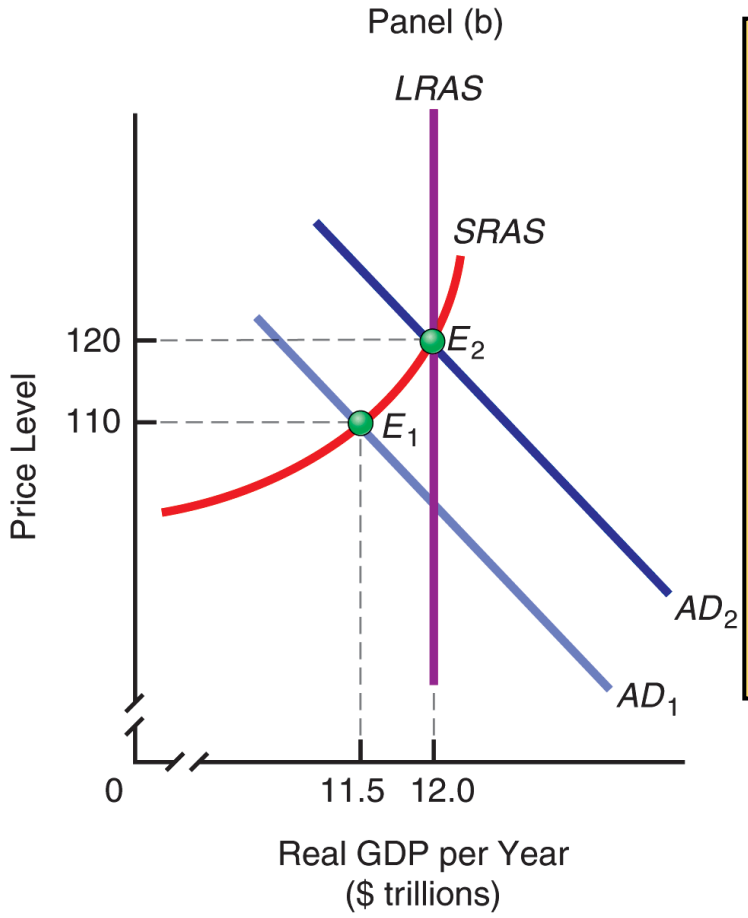
If there is an inflationary gap, contractionary fiscal policy can presumably decrease aggregate demand

Contractionary and Expansionary Fiscal Policy: Changes in Taxes, Panel (a)



- In panel (a), the economy is initially at E_1, where real GDP exceeds long-run equilibrium
- Contractionary fiscal policy can move aggregate demand AD_1 to AD_2 via a tax increase
- A new equilibrium is at E_2 at a lower price level
- Real GDP is now consistent with *LRAS*

Contractionary and Expansionary Fiscal Policy: Changes in Taxes, Panel (b)



- In panel (b) the economy is initially at E_1, where real GDP below long-run equilibrium with a recessionary gap (in this case $500 billion)
- Expansionary fiscal policy taxes are cut can move aggregate demand AD_1 moves to AD_2
- The economy moves from E_1 to E_2, and real GDP is now at $12 trillion per year
- We are at the long-run equilibrium level

Discretionary Fiscal Policy in Practice: Coping with Time Lags

- Recognition Time Lag
  - The time required to gather information about the current state of the economy
- Action Time Lag
  - The time required between recognizing an economic problem and putting policy into effect
- Effect Time Lag
  - The time it takes for a fiscal policy to affect the economy

Discretionary Fiscal Policy in Practice: Coping with Time Lags (cont'd)

- Fiscal policy time lags are long and a policy designed to correct a recession may not produce results until the economy is experiencing inflation.
- Fiscal policy time lags are variable in length (1–3 years), and the timing of the desired effect cannot be predicted.
- Because fiscal policy time lags tend to be *variable*, policymakers have a difficult time fine-tuning the economy.

Automatic Stabilizers

are economic policies and programs (in features of the tax and transfer systems) designed to offset fluctuations in a nation's economic activity without intervention by the government or policymakers on an individual basis.

- If set up properly, fiscal policy can automatically stabilize the economy
  - Low income…lower taxes and more transfer payments
  - High income…more taxes and fewer transfer payments

Automatic Stabilizers – Tax System

- Taxes are linked to economic activity
  - Progressive income tax rates (individual and corporate)
- Recessions → automatic "tax cut"
- Expansion → automatic "tax increase"

Automatic Stabilizers – Spending

- Government spending responds to the business cycle
  - Unemployment insurance benefits
  - Welfare benefits
  - School lunch programs
  - Other income-support programs
- Recessions → more spending
- Expansion → less spending

Measuring Fiscal Policy's Effects

- Effects are not limited to the initial value of the change in policy
- The eventual effects may be larger or smaller, depending on:
  - Multiplier effect
  - Crowding-out effect

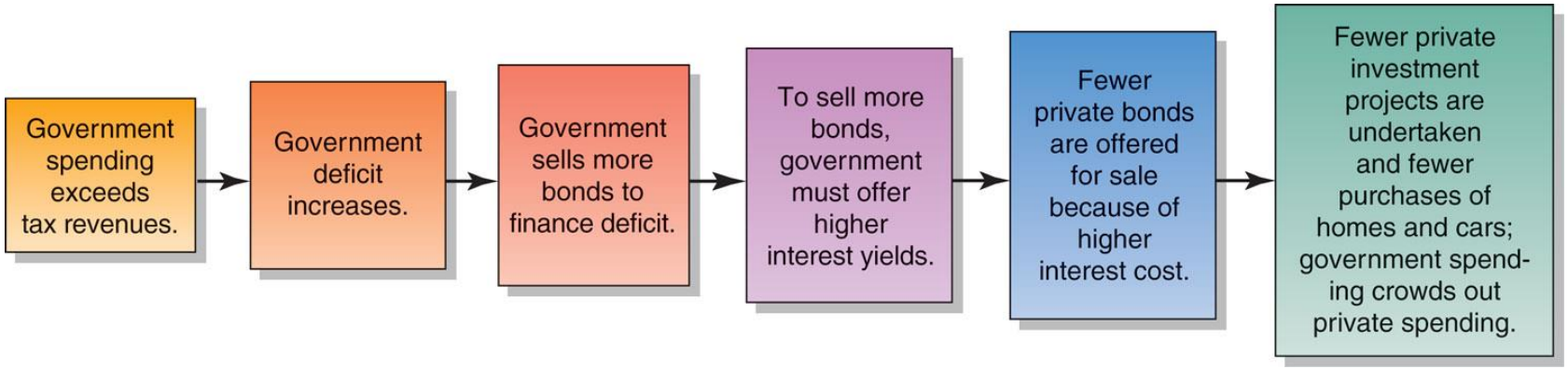
Multiplier Effect

- Determines the efficacy of fiscal policy.
- Spending and tax policies create a chain reaction in the economy as people spend new income (mpc)
- an initial incremental amount of spending can lead to increased income and hence increased consumption spending, increasing income further and hence further increasing consumption, etc., resulting in an overall increase in national income greater than the initial incremental amount of spending. (multiplier >1)
- Many factors complicate the multiplier
  - Taxes
  - Differing consumption patterns among various segments of the population (tax reductions, transfer payments and spending programs will multiply through the economy differently depending on the targeted group)

Crowding Out

- Investment or consumption spending that is lost because government borrowing drives up interest rates
  - The tendency of expansionary fiscal policy to cause a decrease in investment or consumption in the private sector; this decrease normally results from the rise of interest rates.
- Government is entering the same market for funds as investors

The Crowding-Out Effect, Step by Step



Instruments of fiscal policy

- **Budgetary surplus/ deficit**
  - ✓ Government expenditure
  - ✓ Taxation (direct/ indirect)
  - **Budget surplus:** the amount by which a government income exceeds its spending
  - **Budget deficit**: the amount by which a government spending exceeds its tax revenues
- **Public debt:** An accumulated deficit (flow) over several years is referred to as the government debts (stock)

Budget Lingo

Balanced budget

- Revenues = Expenditures

Budget deficit

- Revenues < Expenditures

Budget surplus

- Revenues > Expenditures

Government debt

- Sum of all deficits – Sum of all surpluses

Deficits and Debt

- Government must borrow money when it runs a budget deficit
- Government expenditure can be funded in several different ways:
  - ✓ Taxation
  - ✓ Borrowing: domestic and external
  - ✓ Sale of fixed assets
- Government borrows from
  - Individuals
  - Corporations
  - Financial institutions
  - Foreign entities or foreign governments

Public debts

It can be classified into:

- Internal borrowing
  - Borrowing from public by means of treasury billls or government bonds
  - Borrowing from the central bank (monetized deficit financing)
- External borrowing
  - International organizations eg. IMF, World Bank, ADB
  - Foreign investment

Problems with the National Debt

- Borrowing money creates a national debt
  - Debt is not the same as the deficit
- Problems arise with the national debt
  - Creates investment competition for private business
    - This is known as the crowding out effect
  - Servicing the debt
    - Paying off interest on the debt is an opportunity cost

Review

1. A balanced budget is
   (a) a budget in which expenditures equal revenues.
   (b) a budget in which expenditures do not equal revenues.
   (c) a budget in which the government spends money.
   (d) a budget in which revenues equal taxes.

2. Which of the following are problems associated with a national debt?
   (a) increased spending on defense and education
   (b) the crowding-out effect and interest payments on the debt
   (c) interest payments on the debt and too much individual investment
   (d) increased individual investment and decreased government spending

Challenges Related to Fiscal Policy

- Political factors
- Time lags
  - Time required to create and pass legislation
  - Time required to implement legislation
- Supply side impacts
- Forecasting difficulties
- Monetary policies may reinforce or offset fiscal policies

Review

1. Fiscal policy is
   (a) the federal government's use of taxing and spending to keep the economy stable.
   (b) the federal government's use of taxing and spending to make the economy unstable.
   (c) a plan by the government to spend its revenues.
   (d) a check by Congress over the President.

2. Two types of expansionary policies are
   (a) raising taxes and increasing government spending.
   (b) raising taxes and decreasing government spending.
   (c) cutting taxes and decreasing government spending.
   (d) cutting taxes and increasing government spending.

Review

1. What are the two main economic problems that Keynesian economics seeks to address?
   (a) business and personal taxes
   (b) military and other defense spending
   (c) periods of recession or depression and inflation
   (d) foreign aid and domestic spending

2. Government taxes or spending categories that change in response to changes in GDP or income are called
   (a) fiscal policy.
   (b) automatic stabilizers.
   (c) income equalizers.
   (d) expansionary aids.

Review

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Government expenditure

It includes:

- Payment on wages and salaries of government officials
- Government spending on the purchase of goods and services
- Transfer payments

Government Investment

It includes:

- Government consumption on fixed capital
  - Construction
  - Machinery and equipment

Budget

- A budget is a detailed plan of operations for some specific future period
- It can be divided into 2 categories:

1. Current budget (Government expenditure)
   - Government spending on the purchase of goods and services
   - Payment on wages and salaries of government officials
2. Capital budget (Government investment)
   - Government investment on public infrastructure/ fixed assets

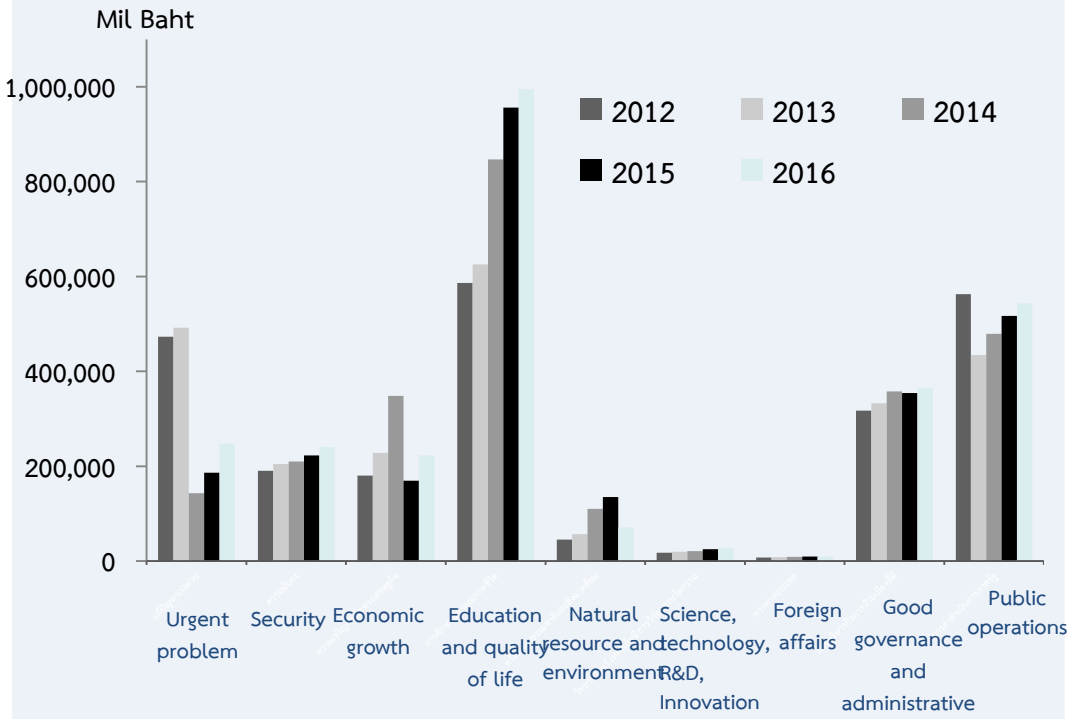
Taxation

It can be classified into:

- Direct tax: Corporate tax, personal income tax,
- Indirect tax: Sales tax (VAT), Customs, Excise tax

Annual government budget

Government budget for country development FY 2012-2016



Key budget programs in FY 2016

Education

15.6%

Healthcare

10.2%

Government official management

9.0%

Homeland security

7.5%

Debt management

7.4%

Decentralization to local government

5.6%

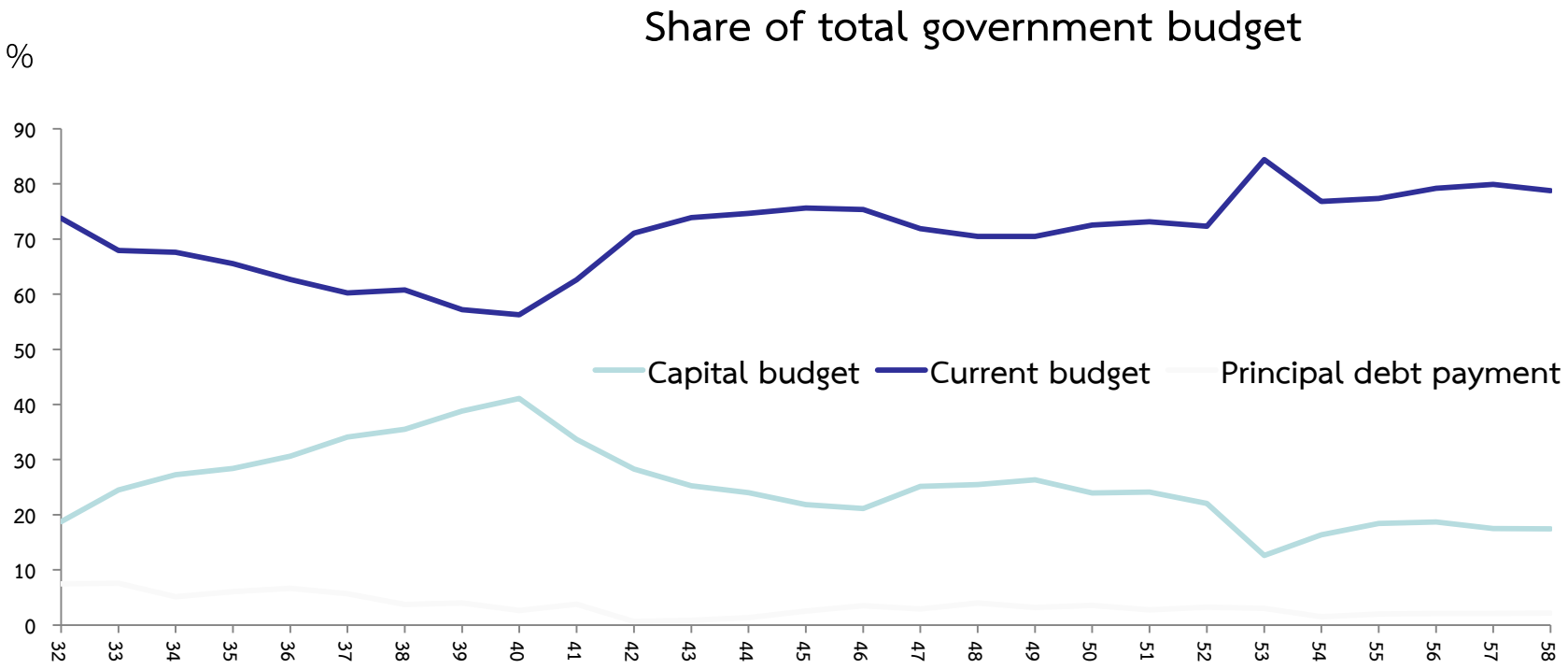
Infrastructure and logistics

5.3%

Law and justice

3.6%

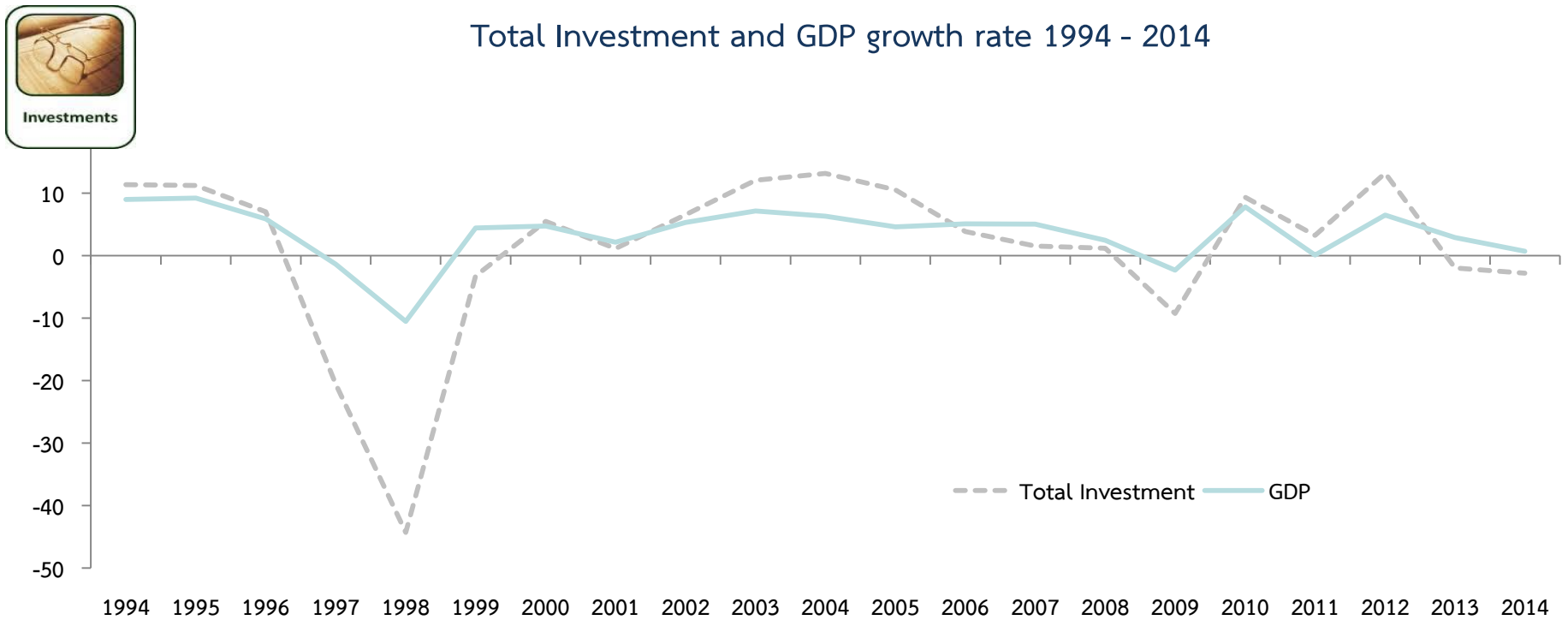
Annual government budget



Share of Current budget

Max	FY 2010 (87% of total budget)
Min	FY 1997 (56% of total budget)
Average 10 yrs	80% of total budget

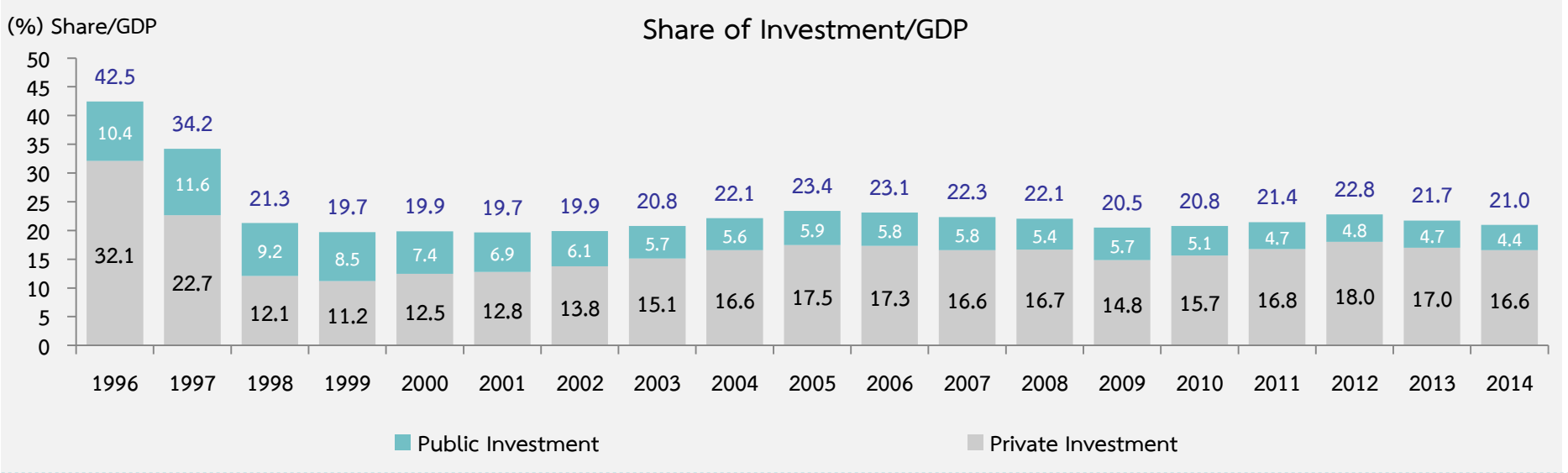
Investment plays key role to economic development.

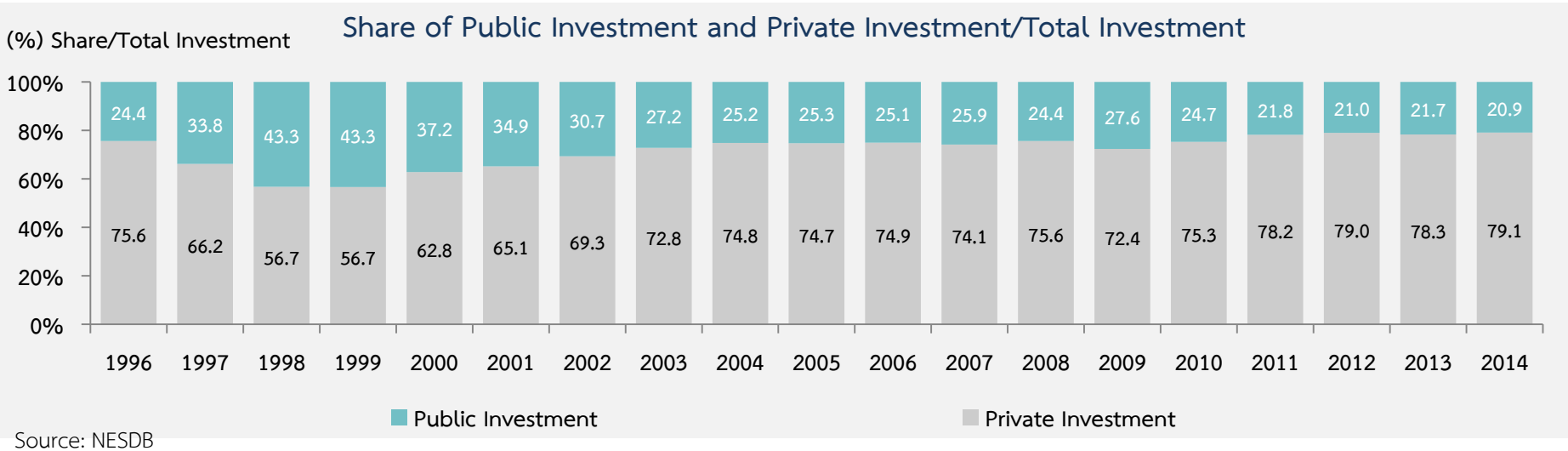


Source: NESDB

Growth (%)	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Investment	11.4	11.2	7.0	-20.5	-44.3	-3.2	5.5	1.1	6.5	12.1	13.2	10.5	3.9	1.5	1.2	-9.2	9.4	3.3	13.2	-2.0	-2.8
GDP	9.0	9.2	5.9	-1.4	-10.5	4.4	4.8	2.2	5.3	7.1	6.3	4.6	5.1	5.0	2.5	-2.3	7.8	0.1	6.5	2.9	0.7
Share of total Investment/GDP	41.3	42.0	42.5	34.2	21.3	19.7	19.9	19.7	19.9	20.8	22.1	23.4	23.1	22.3	22.1	20.5	20.8	21.5	22.8	21.7	21.0

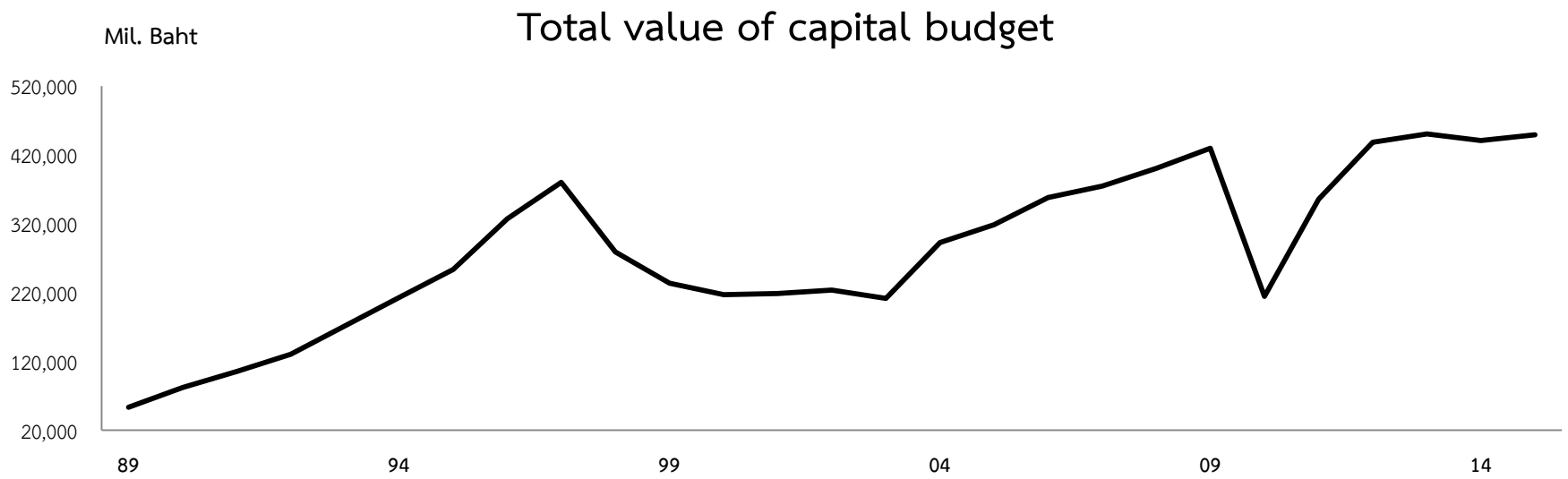
Public Investment and Private Investment





Source: NESDB

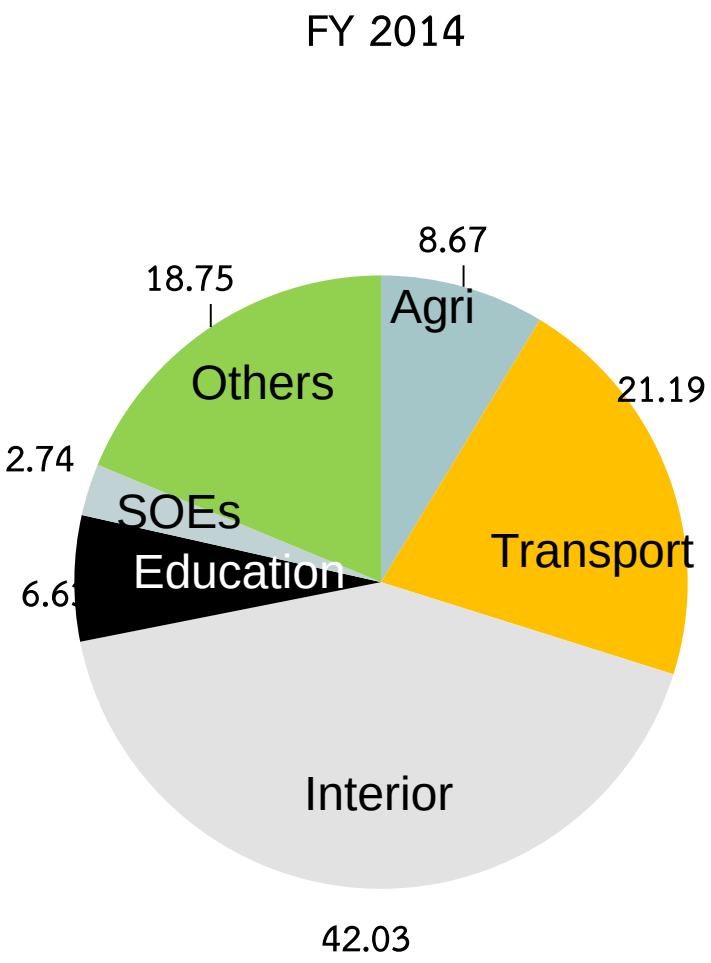
Capital budget disbursement of the government during 1989 - 2014

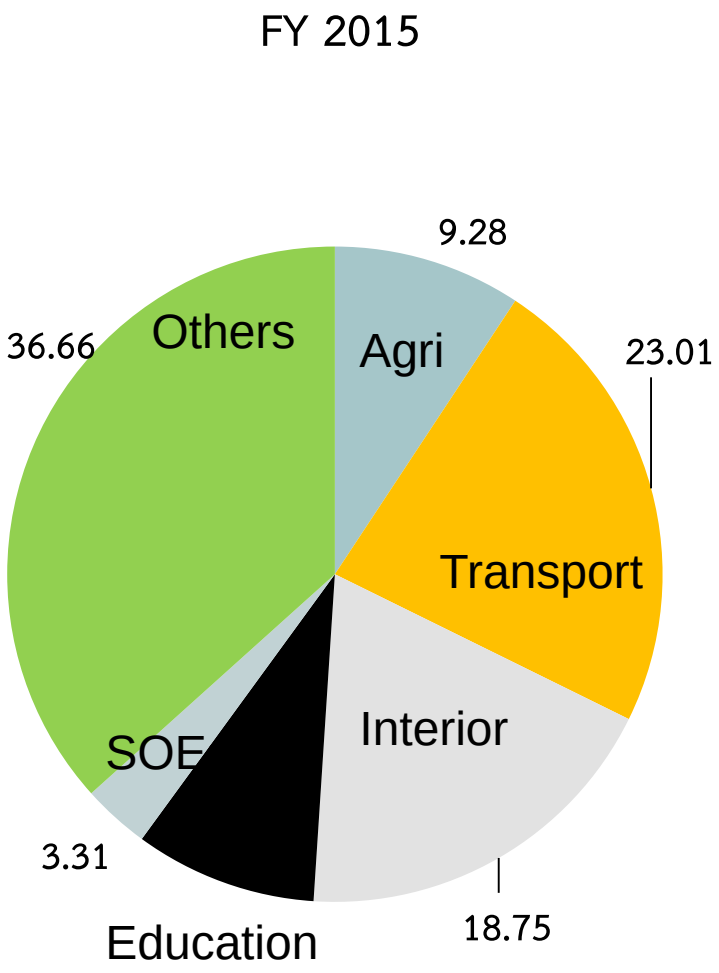


Capital budget

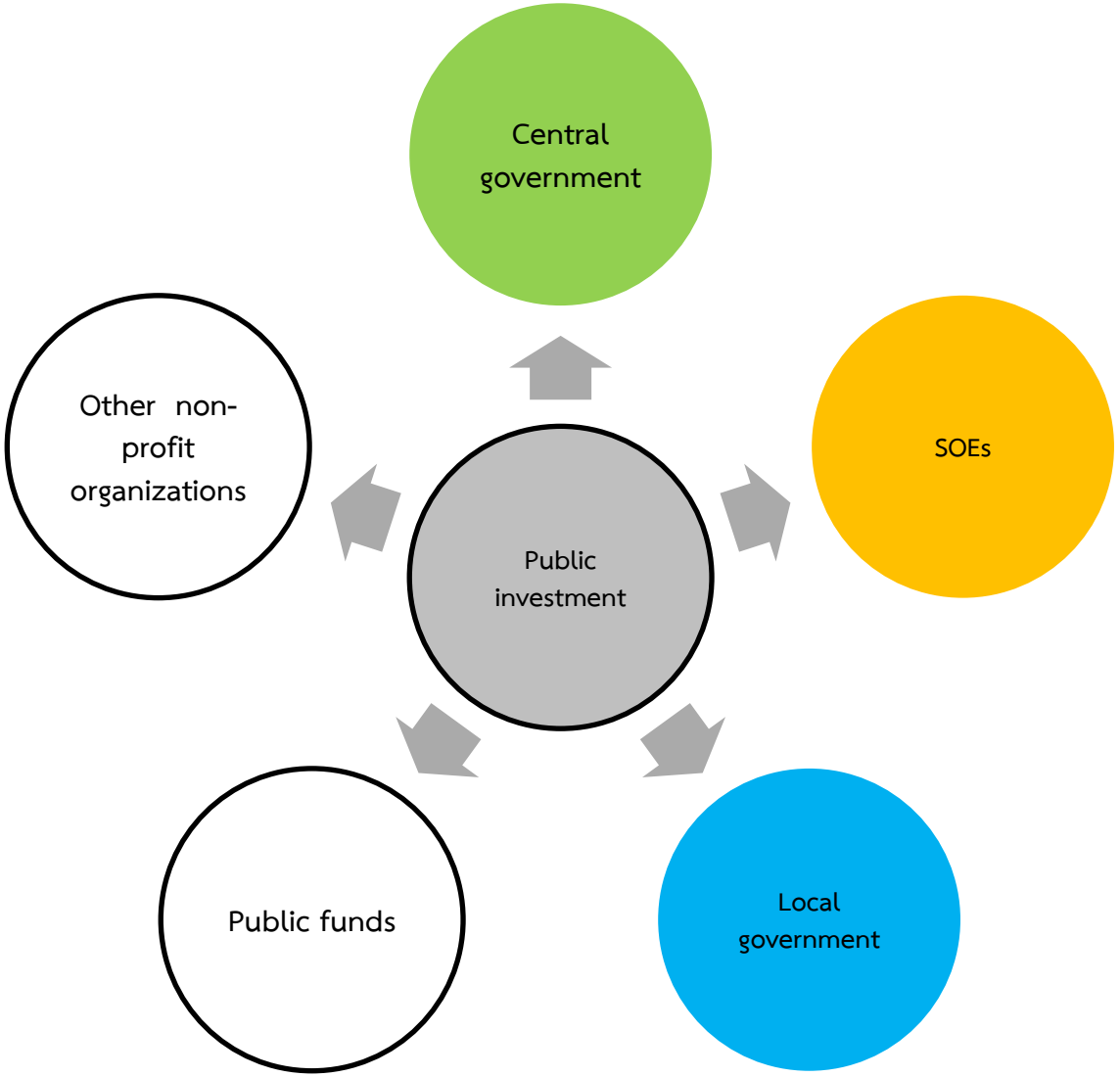
- In 2015 → 449,475.8 Mil. Baht
- Average of 10 years → Increased by 6.7%
- Average of 10 years → Equivalent to 3.8% of GDP

Allocation of capital budget classified by Ministries

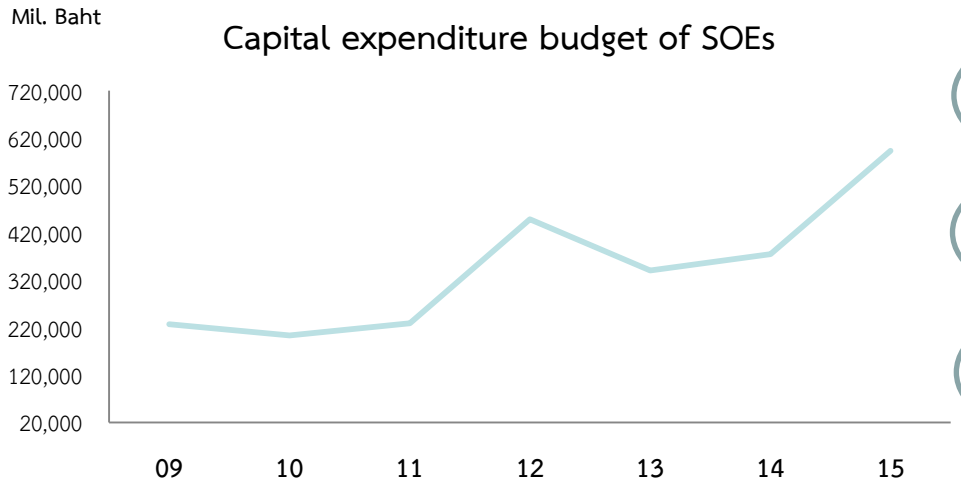




Capital budget



State-owned enterprises' capital expenditure budget



2015 → 597,901 Mil. Baht

2015 → Higher than capital expenditure budget by 33.0%

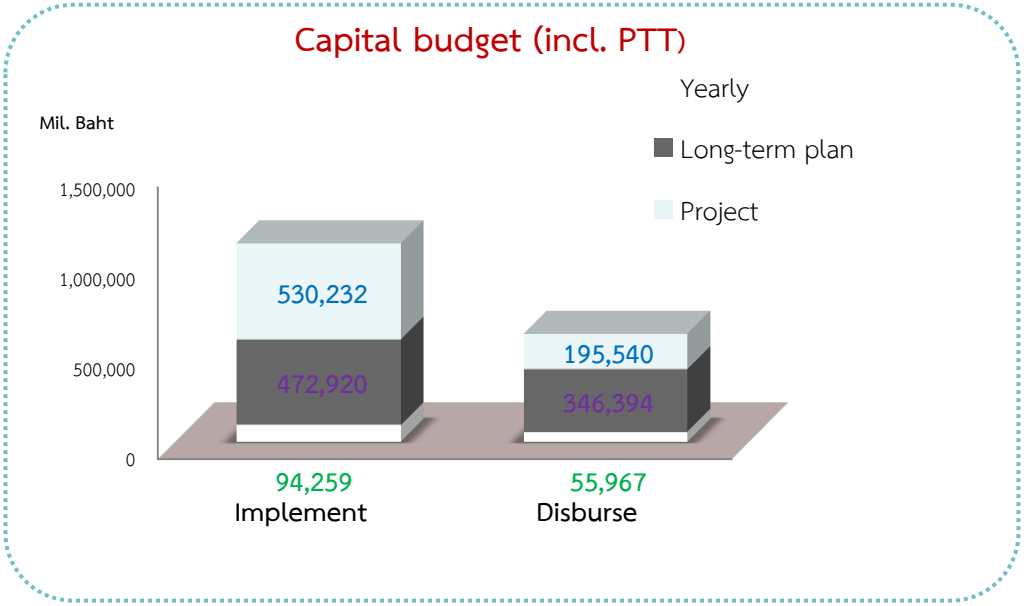
Average of 5 years → Increased by 30.5%

Investment by tasks	2015 (%)	% increase (decrease) compared with 2014
1. Enhancing the business potential	9.9	37.2
2. Infrastructure Development	84.8	13.7
3. Social services	4.0	28.4
3.1 Create human and social quality	2.6	74.1
3.2 Support careers /Environmental conservation	0.3	53.5
3.3 implement the special policies	1.1	-40.7
4. Enhancing knowledge	1.2	464.2
5. Funding sources	0.1	-51.7
Total	100.0	17.3

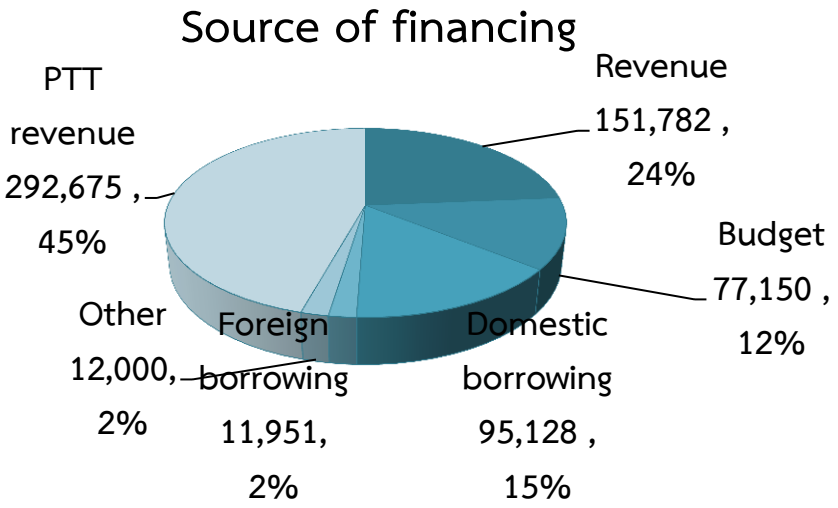
Source: NESDB

- **85% on infrastructure development** such as Investment for energy supply and electricity, rail transport development, Providing the communication systems and water supply etc.
- **10% on investment for enhancing the business potential and support the competitiveness of country** such as the investment for enhance capacity of air and water transport etc.

SOEs' capital expenditure budget in FY2015



Disburse = Actual expense



SOEs capital budget in FY2015 (by ministry)

Ministry	Capital budget (Disbursement) (Mil. Baht)	Share %
1. Ministry of Transport	152,179	25.45
2. Ministry of Social Development and Human Security	6,175	1.03
3. Ministry of Information and Communication Technology	28,186	4.71
4. Ministry of Energy	329,402	55.09
5. Ministry of Interior	61,069	10.21
6. Ministry of Finance	4,226	0.71
7. Ministry of Public Health	818	0.14
8. Office of the Prime Minister	970	0.16
9. Ministry of Tourism and Sport	2,612	0.44
10. Ministry of National Resources and Environment	3,380	0.57
11. Ministry of Agriculture and Cooperatives	1,211	0.20
12. Ministry of Science and Technology	5,837	0.98
13. Ministry of Industry	1,323	0.22
14. Ministry of commerce	454	0.08
15. Ministry of Defence	23	0.00
16. Royal Thai Police	36	0.01
Total	597,901	100.00

Source: NESDB

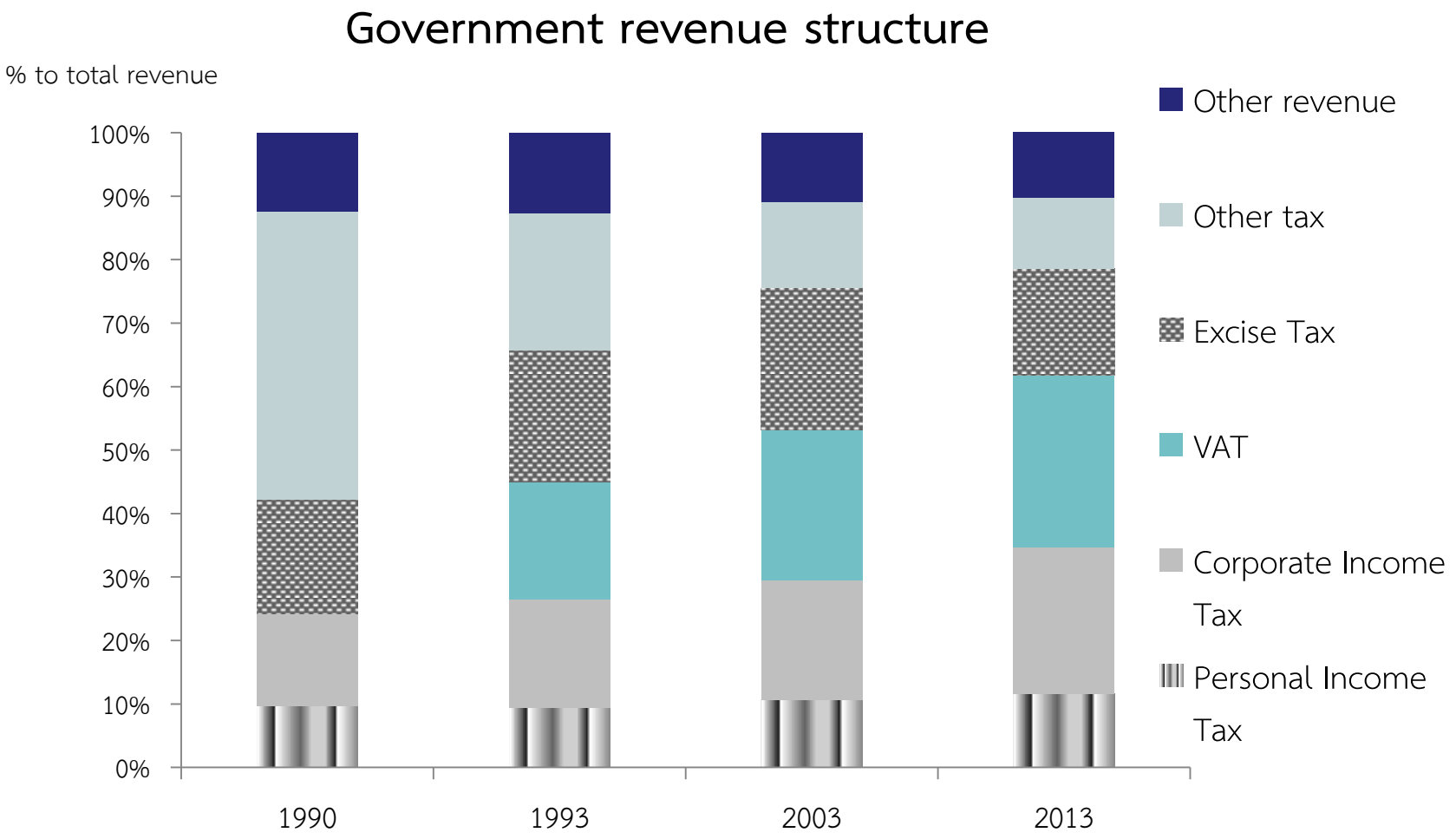
Government revenues

% to GDP	2000-2004	2005-2009
Japan	31.2	34.1
US	32.9	33.4
Korea	28.6	32.9
Vietnam	23.3	27.2
Singapore	24.2	22.9
Malaysia	21.0	22.1
Indonesia	16.8	18.1
Thailand	16.6	17.6
Philippines	15.0	16.0
Laos	12.4	13.4

ที่มา: ADB, OECD

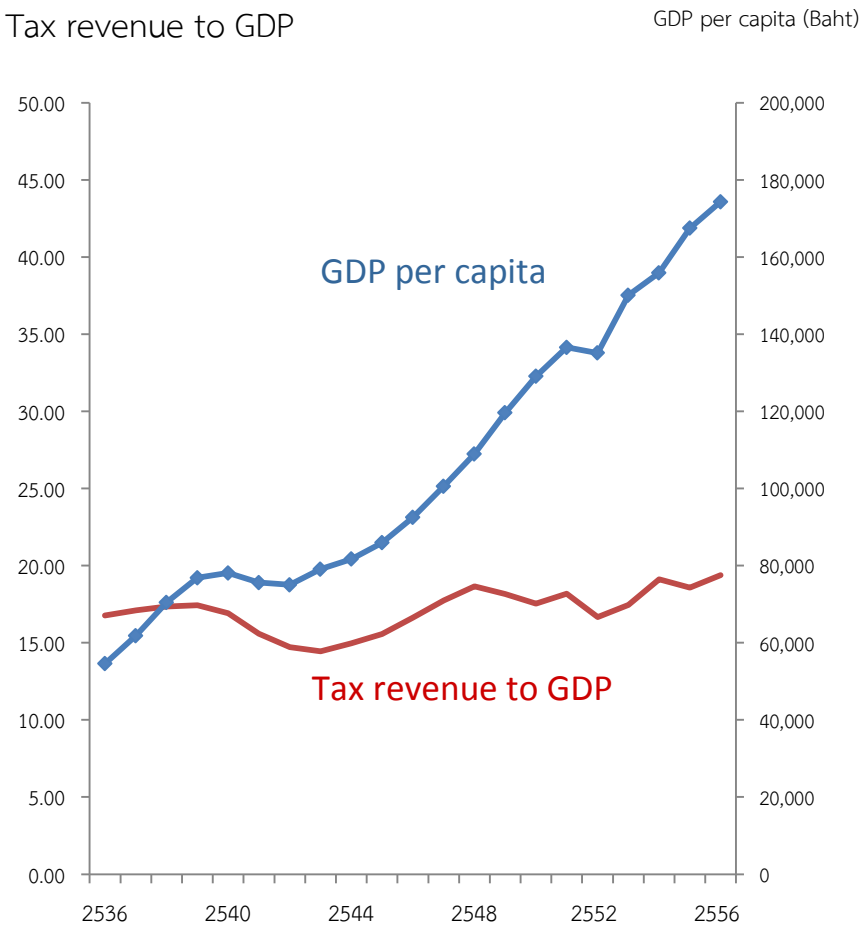
	US	Japan	Malaysia	Singapore	Korea	Phiilipinnes	Vietnam	Indonesia	Thailand
Total revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tax	61.1	53.1	75.2	65.6	67.3	88.0	86.4	68.7	82.5
Direct	56.28	24.84	47.57	29.82	29.81	39.71	33.13	30.84	32.94
Indirect	4.81	9.28	27.5	27.97	32.37	46.61	53.25	37.69	48.73
Others	0.0	0.0	0.2	7.8	4.8	1.7	0.0	0.2	0.8
Other revenue	38.9	46.9	24.8	34.4	32.7	12.0	13.6	31.3	17.5

Government revenues

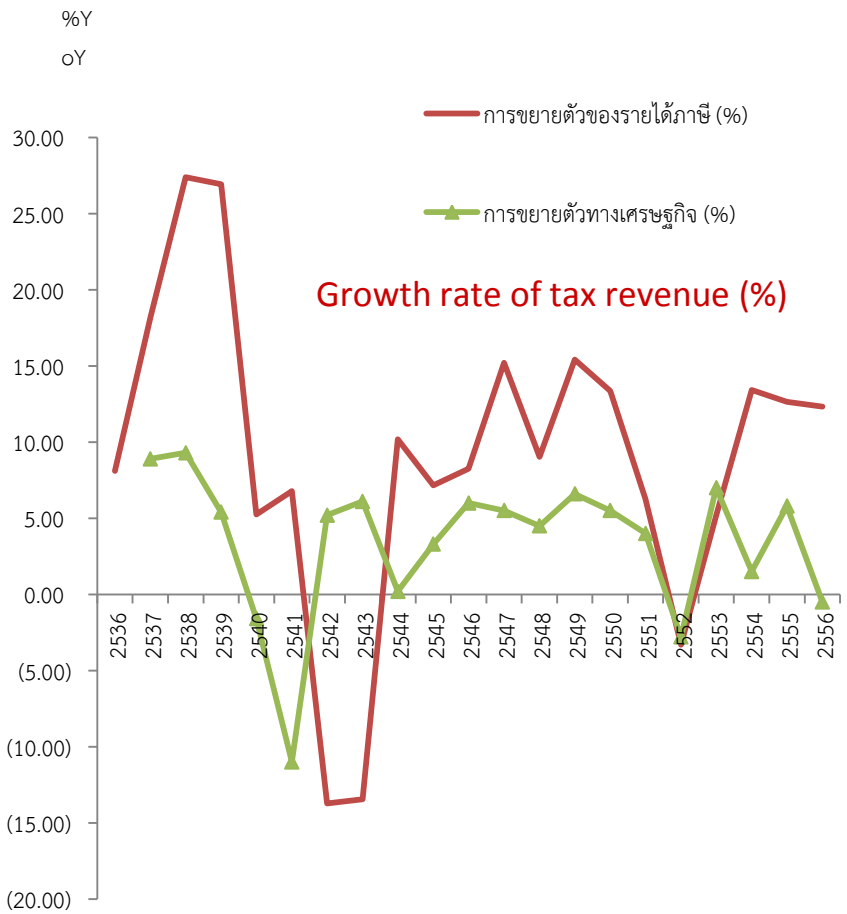


Tax revenues

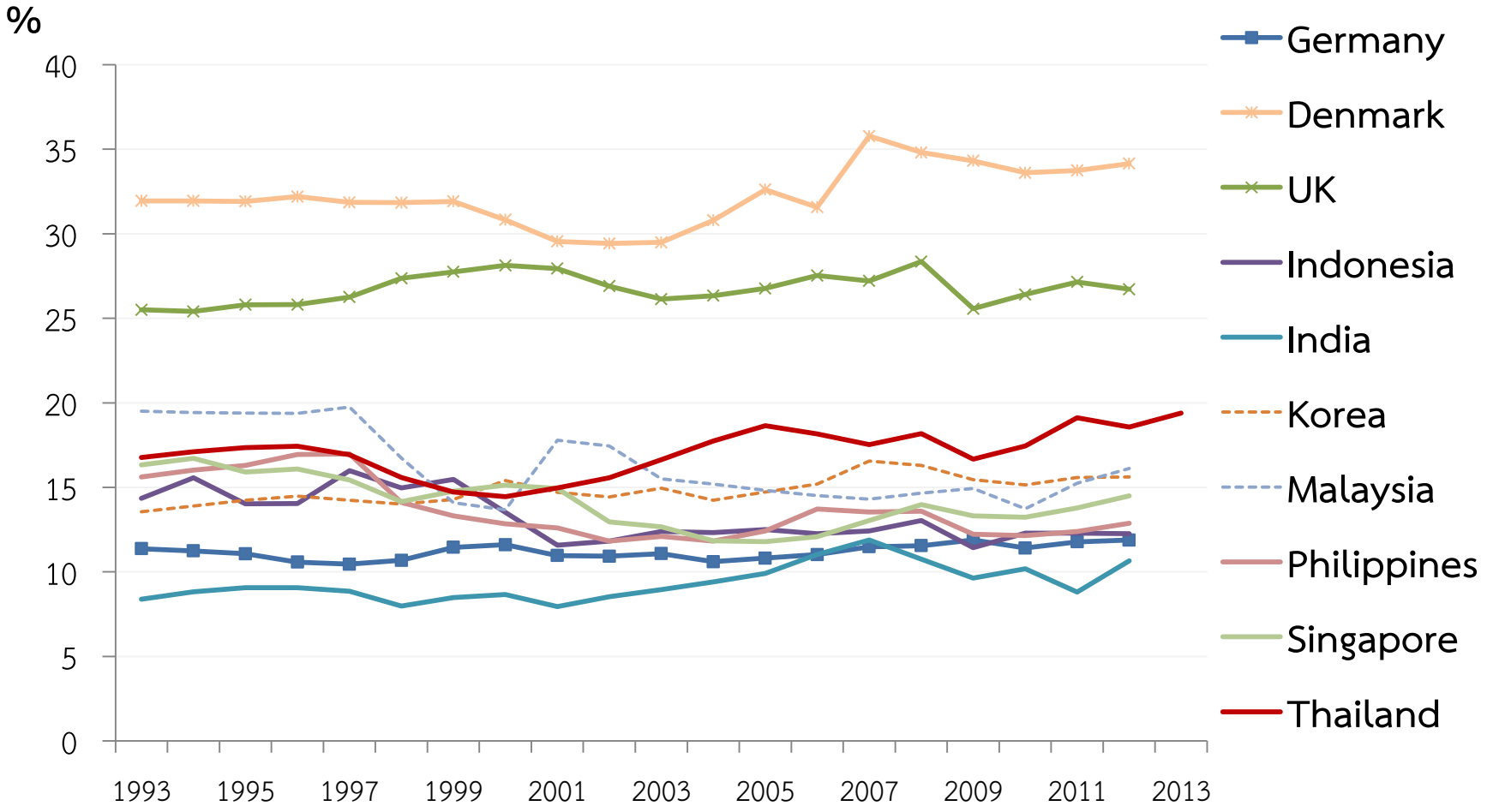
Tax revenue to GDP



Growth rate of tax revenue (%)



Tax revenues to GDP in other countries



Source: World Bank

Tax revenues structure

Government revenue to GDP (%)

	98 - 02	02 - 07	08 - 12	2013	2014
Total revenue	17.2	19.9	20.1	21.6	20.5
Tax revenue	15.1	17.8	18.0	19.4	18.3
-Revenue	9.9	12.5	13.6	14.8	14.2
-Excise	3.5	3.8	3.5	3.6	3.2
-Custom	1.7	1.5	1.0	1.0	0.9
Non-tax	2.08	2.11	2.07	2.19	2.25
SOEs	1.08	1.01	1.00	0.85	1.13
Others	0.99	0.87	1.03	1.28	1.08
Treasury	0.01	0.05	0.04	0.05	0.04
Tax revenue	15.1	17.7	18.0	19.4	18.3
Indirect	10.0	10.7	10.1	10.9	10.4
Direct	5.1	7.0	7.9	8.4	7.9
Non-tax revenue	2.1	2.2	2.1	2.2	2.3

Share to total revenue (%)

	98 - 02	02 - 07	08 - 12	2013	2014
Total revenue	100.0	100.0	100.0	100.0	100.0
Tax revenue	87.9	89.4	89.7	89.9	89.1
-Revenue	57.7	62.6	67.4	68.6	69.4
-Excise	20.5	19.4	17.4	16.8	15.3
-Custom	9.7	7.4	4.9	4.4	4.4
Non-tax	12.1	10.6	10.3	10.1	10.9
SOEs	6.3	5.1	5.0	3.9	5.5
Others	5.8	4.4	5.1	5.9	5.2
Treasury	0.1	0.2	0.2	0.3	0.2
Tax revenue	87.9	89.4	89.7	89.9	89.1
Indirect	66.1	60.6	56.3	56.5	57.0
Direct	33.9	39.4	43.7	43.5	43.0
Non-tax revenue	12.1	10.6	10.3	10.1	10.9

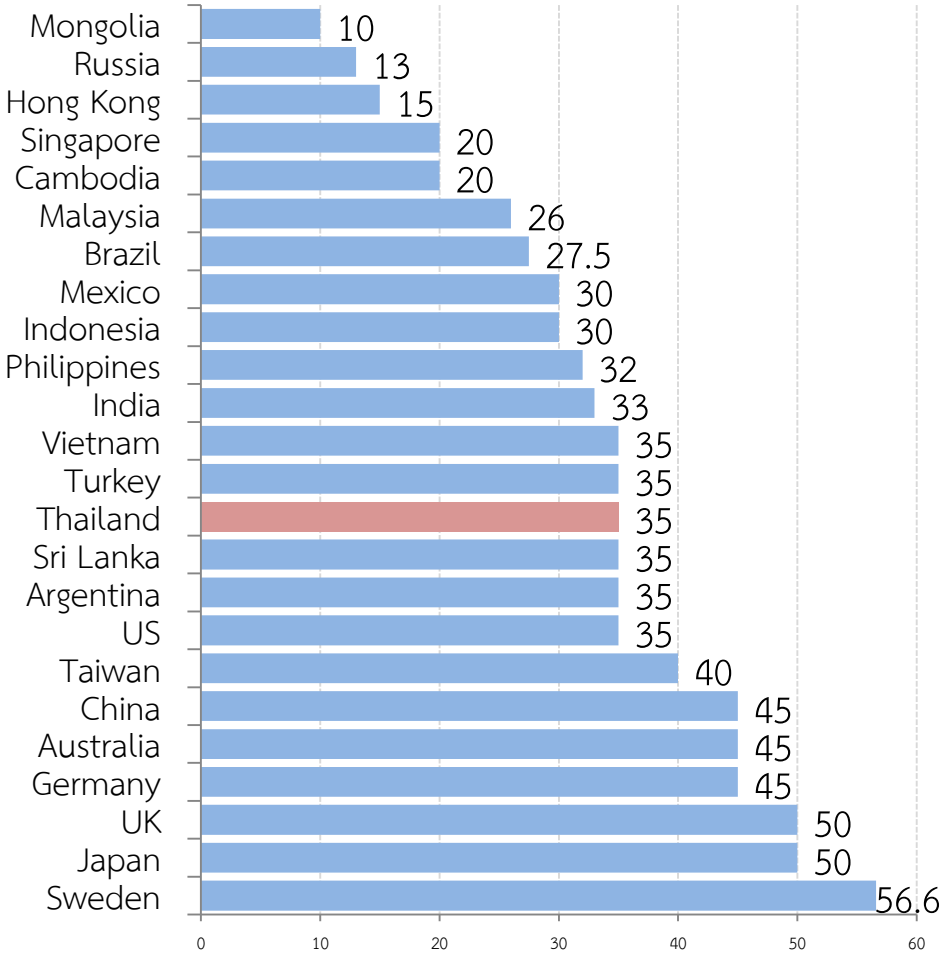
Tax revenue

Non-tax revenue

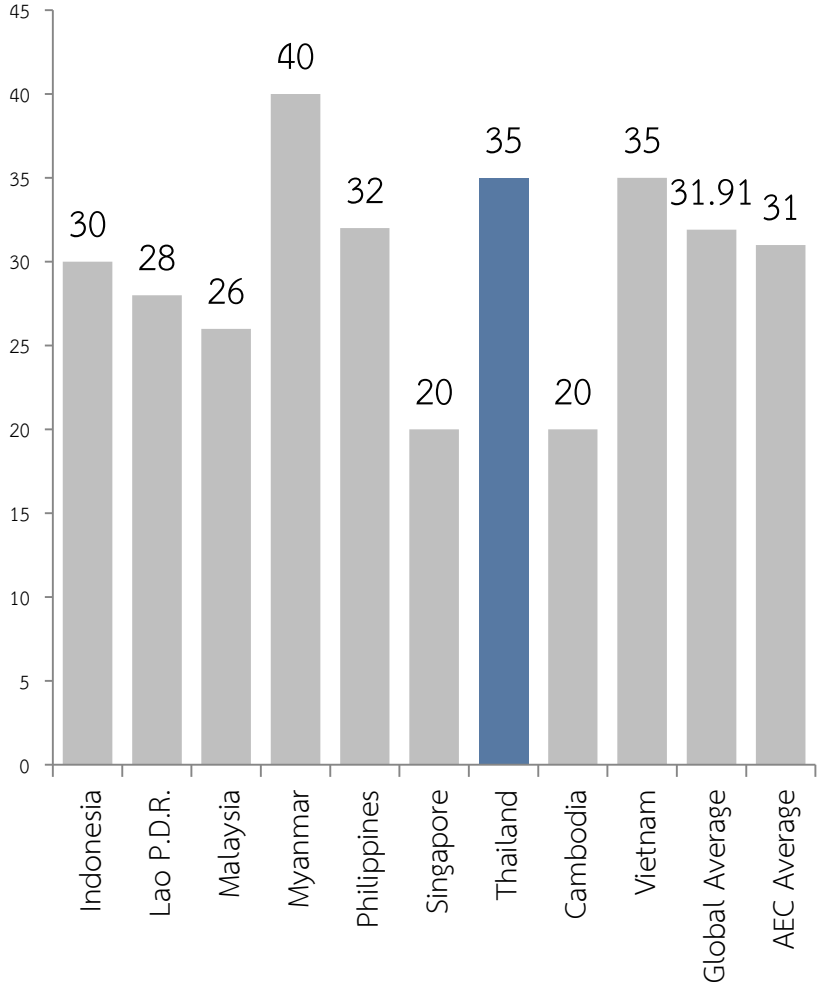
	Tax	PIT	CIT	VAT	Fuel	Car	Liquor	Tobacco	Import duty	Others	Non-tax	SOEs	Others
1998	88.4	17.0	13.8	32.2	9.1	1.2	2.8	4.0	9.3	10.6	11.6	52.2	47.8
1999	86.1	15.5	15.9	29.6	9.8	2.0	3.3	3.9	9.8	10.1	13.9	51.0	49.0
2000	87.0	12.9	20.5	27.1	9.1	3.8	1.2	4.0	12.0	9.6	13.0	41.5	58.5
2001	87.8	13.2	19.5	28.0	8.3	3.9	1.2	4.2	11.9	9.8	12.2	55.5	44.5
2002	88.4	12.8	20.1	26.9	8.1	4.9	2.6	3.7	11.4	9.5	11.6	52.1	47.9
2003	89.1	11.9	21.2	26.6	7.5	5.7	2.6	3.4	11.2	9.9	10.9	53.2	46.8
2004	89.3	11.7	22.7	27.5	6.7	5.6	2.3	3.2	9.0	11.3	10.7	38.0	62.0
2005	89.7	11.1	24.9	29.2	5.8	4.4	2.2	2.9	8.1	11.5	10.3	54.3	45.7
2006	90.1	11.9	26.3	29.3	5.0	4.2	2.0	2.5	6.6	12.2	9.9	49.2	50.8
2007	87.7	12.9	25.7	29.1	5.1	3.7	2.2	2.8	5.9	12.5	12.3	41.1	58.9
2008	89.9	12.4	27.9	30.5	4.1	3.5	2.2	2.5	5.9	11.0	10.1	54.4	45.6
2009	89.5	13.1	26.0	28.7	6.0	3.3	2.5	2.9	5.1	12.3	10.5	48.8	51.2
2010	88.0	11.8	25.8	28.5	8.7	4.4	2.4	3.0	5.3	10.2	12.0	38.2	61.8
2011	90.6	11.7	28.5	28.7	5.9	4.6	2.4	2.8	5.0	10.4	9.4	47.2	52.8
2012	89.7	12.6	25.8	31.2	2.9	5.5	2.5	2.8	5.5	11.1	10.3	50.6	49.4
2013	89.7	13.0	25.7	30.3	2.8	6.7	2.3	2.9	4.8	11.7	10.3	38.5	61.5
2014	88.9	12.7	25.7	32.1	2.9	4.2	2.9	2.8	4.8	12.0	11.1	49.4	50.6

Personal Income Tax rates

Highest PIT rates in 2012



PIT among ASEAN



Personal Income Tax rates

	GDP per capita (current USD)	Tax rate interval between each income base (%)	Minimum income for tax exemption (Baht/person/ year)
China	6,091	25.0	2,600
Singapore	52,052	8.5	520,000
Malaysia	10,432	7.0	25,000
Germany	42,597	23.97 – 42.0	370,000
UK	38,920	20.0	520,000
Thailand	5,480	5.0	150,000

Structure of Taxes

Regressive

- % of income paid in taxes ↓ as income ↑

Progressive

- % of income paid in taxes ↑ as income ↑

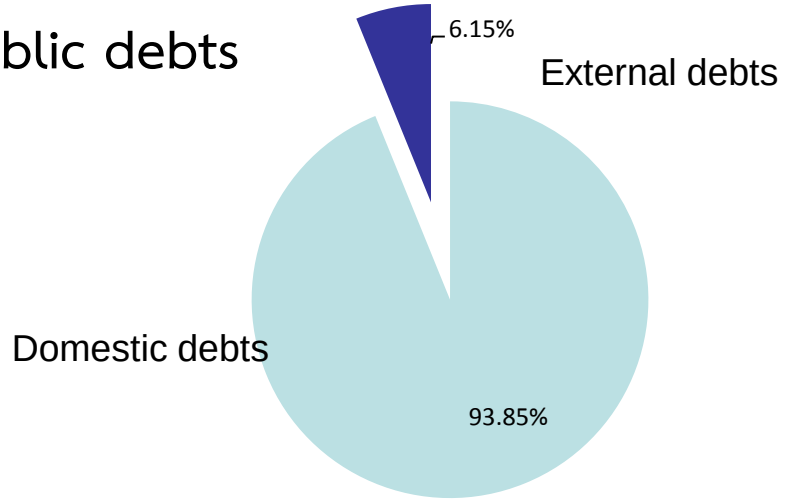
Proportional

- % of income paid in taxes is fixed as income changes

Public debts

At the end of FY (Bil Baht)	FY 2014				FY 2015			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Aug 15
Total public debts	**5,449.8**	**5,550.4**	**5,642.4**	**5,690.8**	**5,626.4**	**5,730.5**	**5,684.5**	**5,736.6**
Share to GDP (%) (QGDP_CVM2014)	**42.2**	**42.2**	**43.0**	**43.3**	**42.8**	**42.9**	**42.6**	**43.0**
Central Government	3,827.1	3,919.4	3,933.2	3,965.5	3,949.6	4,094.0	4,070.2	4,110.9
SOEs (non-financial institutions)	1,085.0	1,091.9	1,084.7	1,087.4	1,078.2	1,051.6	1,046.3	1,051.7
SOEs (Financial institutions)	536.9	532.2	620.9	626.5	589.7	576.8	562.0	551.2
Other government agencies	0.8	6.9	3.7	11.5	9.0	8.2	6.0	22.9

Structure of public debts



Problems measuring the deficit

1. Inflation
2. Capital assets
3. Uncounted liabilities
4. The business cycle

MEASUREMENT PROBLEM 1:
Inflation

- Suppose the real debt is constant, which implies a zero real deficit.
- In this case, the nominal debt D grows at the rate of inflation:

$$\Delta D/D = \pi \quad \text{or} \quad \Delta D = \pi D$$

- The reported deficit (nominal) is πD even though the real deficit is zero.
- Hence, should subtract πD from the reported deficit to correct for inflation.

MEASUREMENT PROBLEM 1:
Inflation

- Correcting the deficit for inflation can make a huge difference, especially when inflation is high.
- Example: In 1979,

  nominal deficit = \$28 billion

  inflation = 8.6%

  debt = \$495 billion

  $\pi D = 0.086 \times \$495b = \$43b$

  real deficit = \$28b – \$43b = \$15b surplus

MEASUREMENT PROBLEM 2:
Capital Assets

- Currently, deficit = change in debt
- Better, **capital budgeting:**
  deficit = (change in debt) – (change in assets)
- EX: Suppose govt sells an office building and uses the proceeds to pay down the debt.
  - under current system, deficit would fall
  - under capital budgeting, deficit unchanged, because fall in debt is offset by a fall in assets.
- Problem w/ cap budgeting: Determining which govt expenditures count as capital expenditures.

MEASUREMENT PROBLEM 3:
Uncounted liabilities

- Current measure of deficit omits important liabilities of the government:
  - future pension payments owed to current govt workers
  - future Social Security payments
  - contingent liabilities, *e.g.*, covering federally insured deposits when banks fail

MEASUREMENT PROBLEM 4:
The business cycle

- The deficit varies over the business cycle due to automatic stabilizers (unemployment insurance, the income tax system).
- These are not measurement errors but do make it harder to judge fiscal policy stance.
  - *E.g.*, is an observed increase in deficit due to a downturn or an expansionary shift in fiscal policy?

The bottom line

We must exercise care
when interpreting
the reported deficit figures.

Is the govt debt really a problem?

Consider a tax cut with corresponding increase in the government debt.

Two viewpoints:

1. Traditional view
2. Ricardian view

The traditional view

- Short run: $\uparrow Y$, $\downarrow u$
- Long run:
  - closed economy: $\uparrow r$, $\downarrow I$
  - open economy: $\uparrow \varepsilon$, $\downarrow NX$
    (or higher trade deficit)
  - Y and u back at their natural rates
- Very long run:
  - slower growth until economy reaches new steady state with lower income per capita

The Ricardian view

- due to David Ricardo (1820),
  advanced more recently by Robert Barro
- According to **Ricardian equivalence**,
  a debt-financed tax cut has no effect on consumption, national saving, the real interest rate, investment, net exports, or real GDP, even in the short run.

The logic of Ricardian Equivalence

- Consumers are forward-looking,
  know that a debt-financed tax cut today
  implies an increase in future taxes
  that is equal – in present value – to the tax cut.
- The tax cut does not make consumers better off,
  so they do not increase consumption spending.

  Instead, they save the full tax cut in order to repay the future tax liability.
- Result: Private saving rises by the amount public saving falls, leaving national saving unchanged.

Problems with Ricardian Equivalence

- **Myopia**: Not all consumers think so far ahead; some see the tax cut as a windfall.
- **Borrowing constraints**: Some consumers cannot borrow enough to achieve their optimal consumption, so they spend a tax cut.
- **Future generations**: If consumers expect that the burden of repaying a tax cut will fall on future generations, then a tax cut now makes them feel better off, so they increase spending.

OTHER PERSPECTIVES:
Debt and politics

"Fiscal policy is not made by angels…"

– N. Gregory Mankiw, p.563

- Some do not trust policymakers with deficit spending. They argue that:
  - policymakers do not worry about true costs of their spending, since burden falls on future taxpayers.
  - since future taxpayers cannot participate in the decision process, their interests may not be taken into account.
- This is another reason for the proposals for a balanced budget amendment.