



L1 – Macroeconomic and Financial Implications of Fiscal Policy

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Mangal Goswami
STI

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Introduction: what is fiscal policy?

Fiscal policy is the use of government spending and taxation to affect the economy (allocation of resources, production, distribution of income)

Objectives

Macroeconomic stability & growth

- Revenues
- Expenditures
- Financing

Income redistribution and social safety nets

Provision of public goods

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Introduction: macro stability & growth

Internal balance: adjust aggregate demand to supply:

- Fiscal contraction (spending cuts, tax increases) to slow inflation, reduce current account deficit
- Fiscal expansion (tax cuts, spending increases) to address recession, help restore demand and achieve potential GDP

External balance: promote sustainable saving / investment balance and borrow externally on a sustainable way

Economic growth: provide infrastructure, health, education, implement structural reforms

Achieving policy objectives requires coordinating FP with monetary, exchange rate, and structural policies

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Outline

1. Economic effects of fiscal policy
2. Fiscal effects of macroeconomic conditions
3. Optimal fiscal policy for output stabilization
4. Fiscal accounts and fiscal targets

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Part 1

Economic Effects of Fiscal Policy

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Fiscal policy and GDP

$$GDP = C + I + G + X - M$$

Fiscal policy affects GDP:

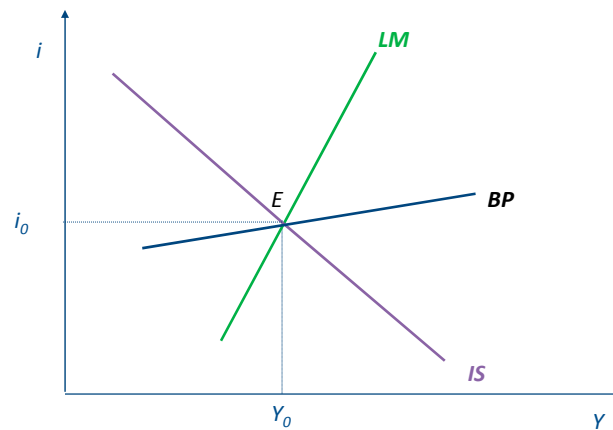
- Directly through G
- Indirectly through C (taxes, expectations), I (interest rates, confidence), X and M (demand for imported goods, the effect of fiscal policy on the exchange rate)

Fiscal policy affects C, I, X, and M. There are different theories on how fiscal policy affects GDP once all the effects on other variables are considered.

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Effects on GDP: the Keynesian view (I)

Since Keynes, fiscal policy has been recognized as a useful tool for affecting aggregate demand (ISLM-BP framework)



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Effects on GDP: the Keynesian view (II)

Under Keynesian view, fiscal policy for output stabilization/control is:

	Fixed EX rate	Flexible EX rate
High K mobility	Very effective	Less effective
Low k mobility	Less effective	Very effective

Effectiveness of FP also depends upon:

- Is the economy at full capacity
- Type of budgetary finance – debt or money
- How coordinated are fiscal and monetary policy?

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Effects on GDP: neo-classical view

The government faces an inter-temporal budget constraint:

$$G + \frac{G'}{1+r} = T + \frac{T'}{1+r}$$

an increase in spending today (G) requires that the government lower future spending (G'), or raise future taxes (T')

Ricardian equivalence proposition:

- rational agents anticipate that a tax cut today will be paid off in the future:
- rational agents smooth their consumption and saving now to pay off future taxes

Under what circumstances fiscal policy retains its effectiveness?

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Start with definition of Gross National Disposable Income (GNDI)

Recall that $GDP = C + I + X - M$

TR: net transfers (gifts)

YF: net factor income, labor and capital (receipts minus payments)

$$GNDI = GDP + \underbrace{\underbrace{YF}_{\text{Net Factor Income}} + \underbrace{TR}_{\text{Net Transfers}}}_{GNP \equiv GNI}$$

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Notice the following key macro relationship:

$$GNDI = C + I + X - M + YF + TRF$$

$$\text{or } GNDI = C + I + CAB$$

$$\begin{aligned}\text{or } CAB &= GNDI - C - I \\ &= S - I\end{aligned}$$

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Policy implications

$$\underbrace{GNDI}_{\text{Domestic Income}} < \underbrace{(C + I)}_{\text{Domestic Demand}} \Leftrightarrow CAB < 0$$

Policy Implications

- Domestic demand > income requires external financing and more external debt
- If imprudent it may be impossible to finance
- Reducing current account deficit may require fiscal tightening and possible exchange rate action

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Fiscal policy and the external sector (I)

Decompose GNDI, C and I into *private* and *government* components:

$$GNDI = Y_p + Y_g$$

$$CAB = \underbrace{[Y_p - C_p - I_p]}_{S_p} + \underbrace{[Y_g - C_g - I_g]}_{S_g}$$

$$CAB = \underbrace{[S_p - I_p]}_{\text{Private Sector Gap}} + \underbrace{[S_g - I_g]}_{\text{Public Sector Gap} = (\text{Revenue} - \text{Expenditure})}$$

Fiscal policy affects the current account through:

- Direct impact through demand
- Impact through the real exchange rate
- Impact on interest rates and country premia

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Fiscal policy and the external sector (II)

Expansionary fiscal policy may lead to increase in interest rates, capital inflows, and appreciation of currency

In general, a larger fiscal deficit corresponds to a worse savings—investment balance (weaker current account)

CAB identity is an ex-post identity, behavioral relationships must to be taken into account:

- reducing transfers that are fully saved leads to a one-to-one decrease in private savings: the CAB does not improve
- reducing spending on foreign goods causes lower output contraction than if reducing spending on domestic goods
- a fiscal expansion may crowd out I_p or increase savings if the private sector is Ricardian (little evidence of this)

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Financial consequences of fiscal policy (I)

The macroeconomic consequences of the deficit depends in part on the way it is financed. There are four forms of financing:

- Borrowing abroad
- Borrowing from the central bank (seignorage)
- Borrowing from the domestic commercial banks
- Borrowing from the domestic nonbank sector

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Financial consequences of fiscal policy (II)

Borrowing in foreign currency implies, for most developing and emerging countries, borrowing in foreign currency:

- changes in the exchange rate will affect the value of external debt in domestic currency
- can cause an initial exchange rate appreciation, reducing the competitiveness of the tradable sector
- for some countries, concerns about the sustainability of debt and/or lack of creditworthiness severely limit this source of financing

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Financial consequences of fiscal policy (III)

Borrowing from the Central Bank entails the sale of bonds to the Central Bank. Less frequently, the Central Bank allows the government to hold an overdraft account

- these loans are often at low interest rates
- it is equivalent to the creation of high powered money, fueling inflation
- the CB can try to limit credit to the government, but it will be successful only if it is fully independent

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Financial consequences of fiscal policy (IV)

Borrowing from domestic commercial banks: the government sells bonds of different maturities to the commercial banks at market interest rates

- It does not create high powered money, unless the CB accommodates the extra demand for credit from commercial banks by supplying them with additional reserves (indirect CB financing of deficit)
- Commercial banks may be forced to reduce credit to the private sector. This crowding out effect takes place through interest rate increases

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Financial consequences of fiscal policy (V)

Borrowing from the domestic non bank sector: The government sells bonds of different maturities to the private sector at market interest rates

- It does not create high powered money
- But it puts upward pressure on interest rates and thus crowds out the private sector
- It can also distort interest rates if the non-bank sector is required to hold government bonds

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Fiscal policy effects on the BOP

Fiscal contractions help reduce the effects of large capital flows on aggregate demand and the real exchange rate:

- By dampening aggregate demand, it allows lower interest rates and helps reduce incentives for inflows
- It alleviates the appreciating pressures on the exchange rate directly (public spending is biased toward non-traded goods)
- It may provide greater scope for a countercyclical fiscal response to cushion economic activity when the inflows stop

Typically, fiscal policy in emerging markets receiving capital inflows is pro-cyclical, because a fast-growing economy generates revenues that feed higher spending.

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Effects on inflation and the financial sector

Central bank borrowing: inflationary effects with implications for:

- Current account deficit
- Depending on fiscal repressions, nominal interest rates
- Real exchange rate

Commercial bank borrowing: crowds out private borrowing, raising interest rates (unless central bank accommodates)

Domestic non-bank borrowing: crowds out private borrowing that could be used to finance investment, less funding available for loans leads to higher interest rates

Foreign borrowing: raises foreign debt and may lead to BoP problems; exch. rt. risk; debt service needs may exert downward pressure on the exchange rate

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Financing from monetary sector

Note:

$$M = NFA + NDA$$

$$NDA = DC + OIN$$

$$DC = NCG + CRE \text{ (State Ent. \& Priv.)}$$

- Fiscal policy determines the government's demand for bank financing (NCG), which, in turn, affects total domestic credit (DC), net domestic assets (NDA), and broad money (M)
- Higher budget financing will require more money expansion unless credit to the private sector is less or NFA is lower (meaning a worse BOP).

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Part 2

Fiscal effects of macroeconomic conditions

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The impact of the macroeconomy on the fiscal sector

- Government budget reflects changes in the macroeconomic environment;
- Need to be aware of the current and changing macroeconomic environment and how it might affect fiscal outcome;
- May need to change fiscal stance, if so what should be the appropriate policy;

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Real GDP

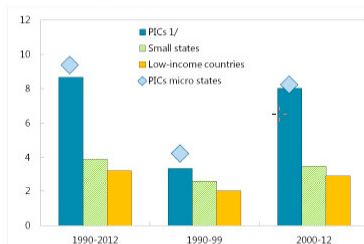
- Revenues rise during periods of economic expansion and typically tax/GDP ratio rises, while the opposite happens during a slowdown
- Higher revenues may *trigger higher discretionary* expenditures i.e. induce pro-cyclicality and allocation of expenditures may not be optimal
- Lower global GDP growth could hurt export growth – both volume and prices could affect revenues
- Weaker national GDP growth could lead to declining imports and import tax revenue

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Real GDP and the budget

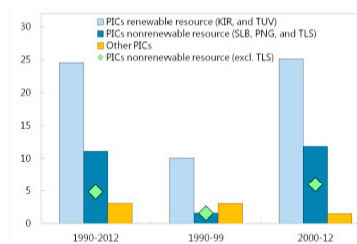
During an economic contraction revenues-to-GDP fall and expenditure-to-GDP increases

Small states: Volatility of Revenue
Excl. grants (In percent of GDP)



1/ Includes Timor-Leste.
Sources: IMF, WEO, IMF, APD-LISC, and IMF staff estimates.

PICs: Volatility of Revenues
Excl. grants (In percent of GDP)



Source: IMF staff estimates.

From: Patrizia Tumbarello, Unit Chief, Pacific Islands Unit, Asia and Pacific Department, IMF: "Fiscal Frameworks to Support Growth and Macro Stability", presentation for high-level Conference on Pacific Island Countries Lifting Potential Growth in the Pacific Islands

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Inflation

- High commodity prices
 - for an oil importer if domestic prices are not raised, subsidies would increase and/or tax revenues reduce
 - Domestic (or international) wheat prices up, subsidies may increase for consumers
- Higher inflation rate could lead to higher nominal interest rates
- Higher inflation rate would lead to appreciation of currency in real terms and loss of competitiveness
- Very high inflation could lead to uncertainty, decline in investments, and thus GDP and revenues

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Interest rates

- Lower interest rates mean lower interest expenditure for government
- Lower interest rates could spur investment and higher GDP growth; also corporate costs decline leading to higher corporate profits and tax collections
- Low foreign interest rates – search for yield could lead to capital inflows
- High capital inflows could lead to more liquidity supporting higher growth as well as lower interest rates (maybe higher inflation) and higher revenues

Beware of just the opposite! In all of the above cases!

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Exchange rate and external sector

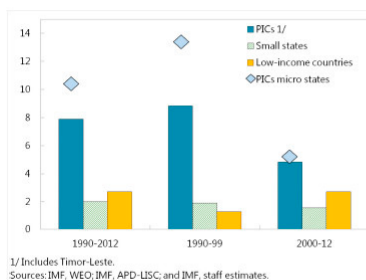
- If the Real Effective Exchange Rate (REER) appreciates, lose competitiveness lowering GDP:
 - Exports decline
 - Cheaper imports hurt domestic industry
- High external debt – if exchange rate depreciates or global interest rates rise, liability increases as do interest payments; if not rolled over could cause capital flight and lower growth and revenues
- Capital flows

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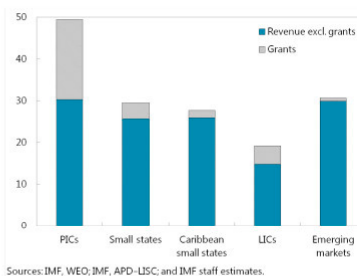
Grants

Grants are an important component of government's receipts

Volatility of Grants (excl. Grants)
(In percent of GDP)



Revenue and Grants
(In percent of GDP)



From: Patrizia Tumbarello, Unit Chief, Pacific Islands Unit, Asia and Pacific Department, IMF: "Fiscal Frameworks to Support Growth and Macro Stability", presentation for high-level Conference on Pacific Island Countries Lifting Potential Growth in the Pacific Islands

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Part 3

Optimal fiscal policy for output stabilization

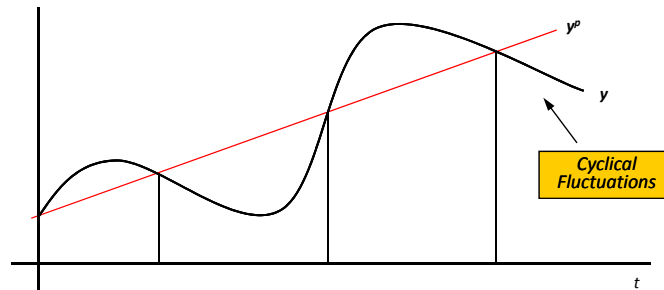
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General questions

- How should fiscal policy respond to fluctuations of output?
- Is fiscal policy effective in smoothing output fluctuations?
- In practice, how does fiscal policy respond to output?
- What level to target for fiscal balances?/ How much fiscal adjustment (up or down)?
- Shall fiscal rules be used?

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Countercyclical fiscal policy can be an effective tool for stabilizing the economy



In a recession, the government should stimulate the economy by increasing spending and/or lowering taxes

In an expansion, the government should avoid the economy overheating by reducing spending and/or increasing taxes

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Fiscal multipliers

The **fiscal multiplier** is the ratio of a change in output (ΔY) to an exogenous change in the fiscal deficit (ΔG or $-\Delta T$)

- The larger the fiscal multipliers, the more effective fiscal policy would be in stabilizing the economy

Fiscal multipliers would be larger, if

Few “leakages” through savings or imports;

The monetary conditions are accommodative (less crowding-out)

Country’s fiscal position after the stimulus is sustainable

Source: IMF SPN/09/11

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Effectiveness of fiscal policy (I)

Can fiscal policy help to stabilize short-run fluctuations in the economy? In theory,

- Yes if fiscal policy mainly has demand effects, i.e., shifts out aggregate demand during recessions (when individuals or firms are credit constrained)
- No if fiscal policy mainly has a negative wealth effect on labor supply and a crowding out effect on private investment

Automatic stabilizers and discretionary measures (fiscal stimulus) help implement counter-cyclical fiscal policies.

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Effectiveness of fiscal policy (II)

Automatic stabilizers are revenue or expenditure provisions that have counter-cyclical impact without need for policy intervention

Automatic stabilizers:

- Allow implementing counter-cyclical fiscal policies
- Dampen business cycles

Examples

- Unemployment insurance
- Price stabilization funds

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Effectiveness of fiscal policy (III)

Is the economy at full capacity (employment)?

- *FP affects supply and price responses*

Fixed or flexible exchange rate system?

- *Adjustments through reserves or through prices*

Is capital fully mobile?

- *Capital will respond to changes in interest rates*
- *Impact on the exchange rate*

Type of budgetary finance – debt or money

How will the private sector respond?

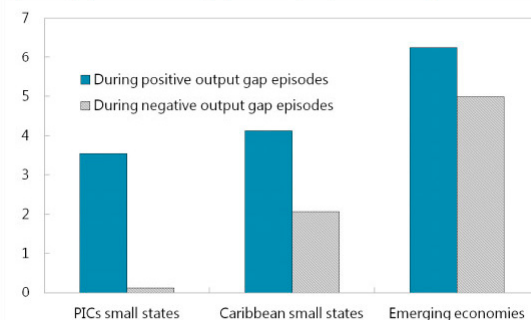
- *Crowding-out effect*

How coordinated are fiscal and monetary policy?

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Evidence on procyclical bias

Real Primary Government Expenditure^{1/}
(Average percent change year-to-year; 1990-2012)



Source: IMF staff estimates.

1/ Procyclical bias is measured by the difference between the bars within the group.

Possible explanations:

- Higher revenues allow higher spending: difficult to resist demands when times are good
- Lower revenues force lower spending when there are constraints on financing

From: Patrizia Tumbarello, Unit Chief, Pacific Islands Unit, Asia and Pacific Department, IMF: "Fiscal Frameworks to Support Growth and Macro Stability", presentation for high-level Conference on Pacific Island Countries Lifting Potential Growth in the Pacific Islands

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Policy implications of fiscal policy

- Sound fiscal policy is critical for macroeconomic management and needs to be coordinated with monetary and exchange rate policy for maximum impact
- Fiscal stimulus is usually expansionary, but it depends on circumstances
- Fiscal policy affects BOP, monetary policy
- Impact of fiscal policy depends on behavior of private participants – local and/or foreign
- Note institutional features that can limit impact of fiscal policy, including globalization

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Part 4

Fiscal accounts and fiscal targets

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Fiscal accounts

- Revenues
- Expenditures
- Financing

- Of the government

- during a *period* of time

- **Separate sources of funds that do not generate debt /decrease assets**
- Separate uses of funds not directed to repay debt

- Define government

- **Flow concept**
- **Cash in many cases**

- Gross vs. net accounting
- Consolidation of accounts

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Revenues and grants (II)

Revenues are non repayable receipts (i.e. receipts which do not give rise to an obligation of repayment):

Total Revenues and Grants
Tax revenues
Direct taxes
Taxes on income
Taxes on wealth
Indirect taxes
Taxes on goods and services (VAT, sales tax, turnover)
Taxes on imports
Other tax revenues
Nontax revenue
License, fees, etc.
Central Bank profits
Grants

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Expenditures (I)

Total Expenditures and Net Lending
Current expenditures
Noninterest expenditures
Wages and salaries
Goods and services
Transfers
Pensions
Subsidies
Other transfers
Interest payments
Other current expenditures
Capital expenditures
Net Lending

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Some Asian countries: Illustrative shares of General Government Expenditure to GDP

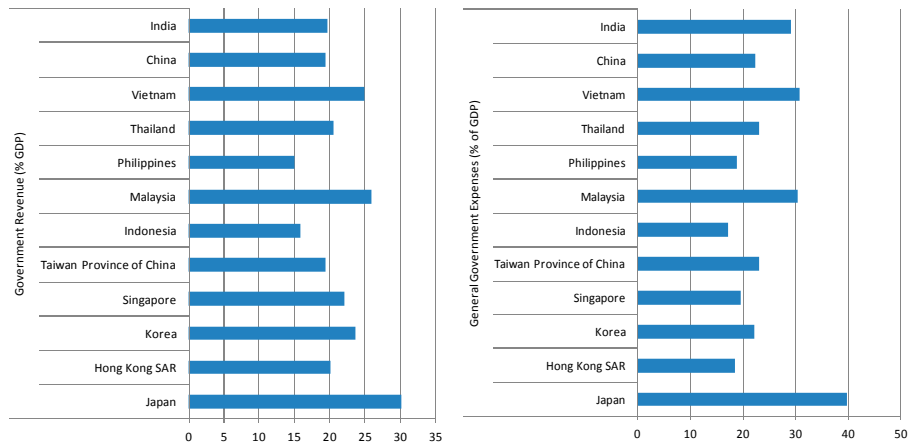
Korea	21.4
Australia	37.1
China	24.9
India	27.3
Indonesia	19.7
Malaysia	29.8
Pakistan	21.5
Philippines	18.8
Thailand	24.7
Laos	22.2
Vietnam	27.7

Source: IMF, October 9, 2013 *Fiscal Monitor*

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Some Asian countries: government revenues and expenditures

Government revenues and expenditure as a share of GDP, 2010



Source: FAD

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Expenditures (II)

Functional classification	Economic classification
Expenditures	Expenditures
Education	Current expenditures
Defense	o/w Wages and salaries
Justice	o/w Goods and services
...	Capital expenditures
	Net lending

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Financing

Non repayable receipts: taxes, profits, and grants

—

Expenditures

Net lending

=

OVERALL
BALANCE

=

FINANCING:
Domestic borrowing
- Central bank (monetization)
- Bank financing
- Non-bank financing
Foreign borrowing
Privatization receipts

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The overall balance

Total revenues and grants –
Total expenditures and net lending =
OVERALL BALANCE

It reflects the financing needs of the general government, and is sometimes called the net borrowing requirement

It also indicates the balance between positive contribution of spending vs negative effects of taxes to GDP

It is usually presented in percent of GDP

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Adjusted overall fiscal balance

$$\begin{array}{l} \text{Overall balance} - \\ \text{Selected items} = \\ \text{ADJUSTED OVERALL BALANCE} \end{array}$$

It excludes:

- grants
- revenues that are not predictable or out of the government control (e.g. the oil sector)
- expenditure items that are automatically financed (ex. Spending financing by grants or “project loans”)
- It allows to measure the balance on items over which the government has greater control.

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Targeting the overall balance

Overall balance or adjusted balance if main concern is containing aggregate demand (inflation and CAD)

Target decided based on broad macroeconomic objectives:

- Objectives for inflation, current account balance, and reserves
- Prospects for external financing, changes in money demand

Financial programming helps us solve for the budget balance consistent with targets on inflation, the current account and FX reserves, and credit to the private sector.

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Targeting financing

Financing requirement if main concern is liquidity crisis

Target decided based on :

- Expected liquidity needs (on a cash basis) both for current operations but also for debt servicing (including capital)
- Expected resources (including IMF lending)

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Primary balance

Total revenues and grants –
(Total expenditures and net lending
minus interest payments) =
PRIMARY BALANCE

Measures the effect of current discretionary budgetary policy or fiscal effort (current interest payments depends on the stock of debt, which depend on past deficits)

Shows how recent policies affect government debt.

The debt-stabilizing primary balance is the primary balance necessary to keep the debt-to-GDP constant

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Targeting the primary balance

Primary balance if main concern is debt sustainability

Target decided based on:

- Estimate of debt stabilizing primary balance
- Primary balance necessary to achieved targeted level of debt
- Fiscal space (the gap between actual debt and “safe” levels of government debt, which depend on the quality of institutions, revenue raising ability, the volatility of revenues, and risks which affect debt sustainability)

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Current balance

Current revenues –
Current expenditures =
CURRENT BALANCE

Used as measure of government savings.

Targeting the current balance can help safeguard investment in times of fiscal consolidation.

- It does not account that large public investment can lead to large current expenditures in the future (wages, increase in debt and interest payments,...).
- It does not compare the social return of investment projects to that of current expenditures (hiring teachers vs. building schools).

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Targeting the current balance

Current balance to preserve capital spending given available resources

Target decided based on:

- Available financing (excluding financing in support of capital spending –for example, capital grants)
- Macroeconomic considerations (similar to overall balance)

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Stock indicators

The most common stock indicators are:

Net financial worth = *financial* assets minus total liabilities

Net worth = *total* assets minus total liabilities

Total liabilities (including contingent) to GDP, or to revenues

Other indicators include:

Debt service to GDP, or to revenues

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Targeting debt-to-GDP

Debt-to-GDP if concern is to have fiscal space (buffers)

Target decided based on:

- Amount of expected fiscal expansion needed to stabilize the economy to shocks
- Sustainable level of debt

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Fiscal stance and fiscal impulse

What is the impact of fiscal policy on domestic demand and financial resources? How does this change over time?

The fiscal stance (expansionary or contractionary) quantifies the addition or withdrawal of domestic demand through fiscal policy

The cyclically adjusted or the structural balance are used to define the fiscal stance (deficit = expansionary fiscal policy)

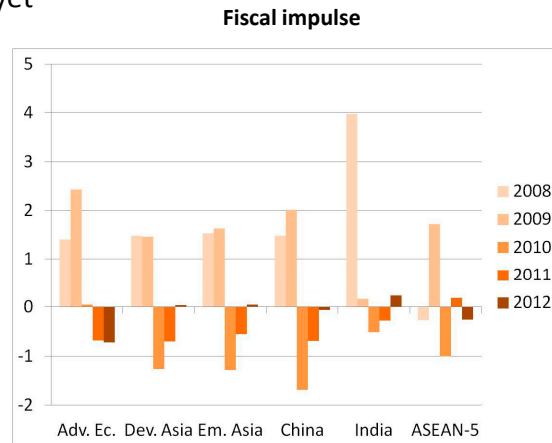
The fiscal impulse is the change in fiscal stance over time

Is fiscal policy becoming more or less expansionary (or more or less contractionary) over time?

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Fiscal impulse in selected countries

In most Asia the withdrawal of fiscal stimulus has not fully started yet



Source: IMF WEO October 2012

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Fiscal rules

Pros

- Reduce the deficit bias
- Reduce tax rate variability and force expenditure smoothing
- Support intergenerational equity
- Substitute for market discipline
- Build reputation for macro stability and credibility

Cons

- Lack flexibility
- Reduce the quality of fiscal policy and of policy goals
- Breed nontransparent accounting practices
- Lacking political commitment are unlikely to be sustained and may end up undermining policy credibility.

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Fiscal Challenges in Emerging and Developing Economies

- Small tax base;
- Tax administration system that is unable to fully collect taxes and other levies;
- Greater vulnerability to external shocks: especially for governments with sizeable foreign currency denominated debt;
- Fiscal dominance: high public debt and persistent deficits also accentuate the links between fiscal and monetary policy

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Successful fiscal reforms in emerging and developing economies

- Tax reforms and Expenditure control;
- Structural and expenditure reforms to boost growth;
- Reducing exposure to exchange rate and interest rate movements;
- Acknowledging contingent liabilities;
- Steps to improve the credibility of fiscal policy;

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Additional Slides:

OT14.51 - FAF

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Key structural reforms

- Price adjustment and liberalization
 - Wage policy, administered prices, etc.
- State enterprise reform, privatization, restructuring
- Policies to promote competition
- Tax, expenditure, and budgetary reforms
 - Example: rationalizing social safety nets
- Financial sector reforms
 - Developing broader capital markets, related legal reforms
- External sector reforms
 - Trade liberalization, capital account liberalization
- More transparency and better governance
 - Strengthening public institutions, legal system

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Poverty and social spending

Social spending in percent of GDP

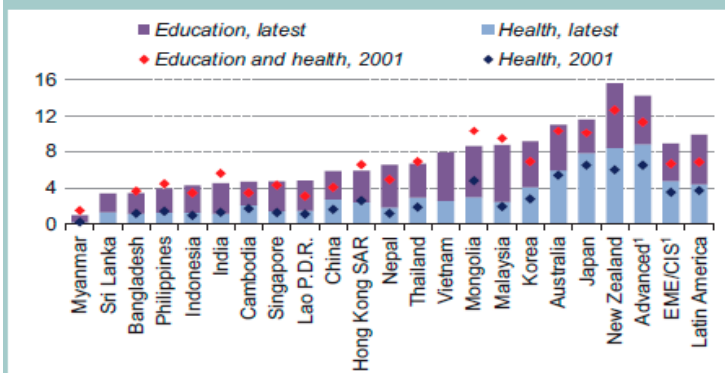
	Pension 2010 1/	Health 2010 1/	Education 2007 1/
ASEAN-5			
Indonesia	0.9	1.3	3.5
Malaysia	2.9	2.9	4.5
Philippines	1.1	1.4	2.6
Singapore	0.6	1.0	3.2
Thailand	0.8	1.6	4.9
Other Asian Economies			
China	2.2	2.2	1.9
India	1.7	0.9	3.2
Vietnam	1.6	1.5	5.3
Regional average			
ASEAN-5	1.3	1.6	3.7
Advanced	7.4	7.0	...
Emerging	4.2	2.7	...

Sources: IMF, OECD, and UNESCO.

- Avoid perverse incentives, make sure the money goes to the real poor
- Phase out generalized subsidies
- Make use of conditional cash transfers
- Review credit guarantee schemes to limit distortions

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Public Social Spending: Health and Education (In percent of GDP)



Sources: IMF, Government Finance Statistics database; World Economic Outlook database; World Bank, World Development Indicators database; and IMF staff calculations.

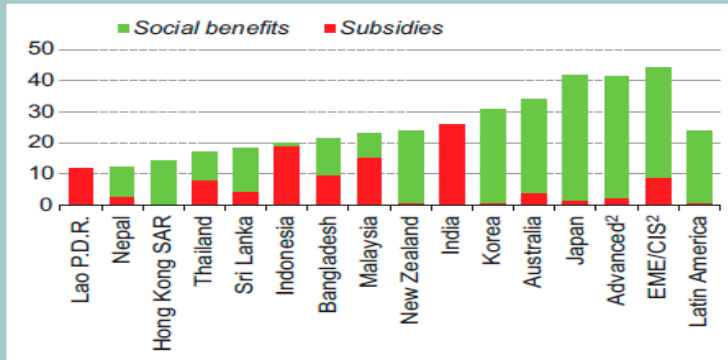
¹ Advanced economies excluding Asia. EME/CIS stands for Emerging Europe and Commonwealth of Independent States.

Source: IMF Asia REO, April 2013, pg. 44

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Subsidies and Social Benefits¹

(In percent of total expenditure, 2011 or latest available)



Sources: IMF, Government Finance Statistics database; and World Economic Outlook database.

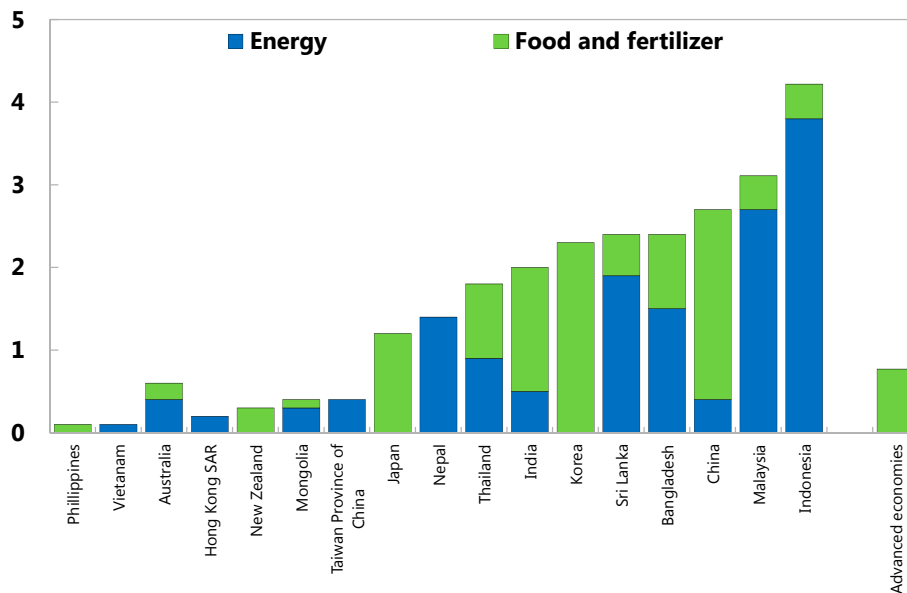
¹ Social benefits include current transfers such as sickness and invalidity benefits, family allowances, unemployment benefits. Subsidies are current transfers to enterprises.

² Advanced economies excluding Asia. EME/CIS stands for Emerging Europe and Commonwealth of Independent States.

Source: IMF Asia REO, April 2013, pg. 44

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Food and Energy Subsidies

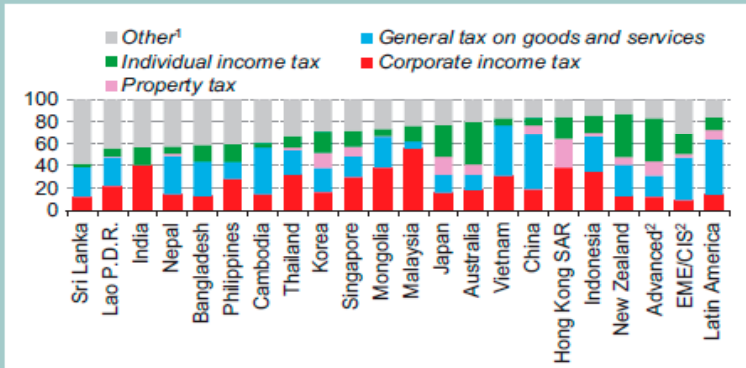


Source: IMF Asia REO, April 2013, pg. 44

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Selected Tax Revenues by Category

(In percent of total tax revenue, 2011 or latest available)



Sources: IMF, Government Finance Statistics database, and World Economic Outlook database; OECD; and IMF staff calculations.

¹ Includes excise tax, international trade and transactions tax, tax on profits of fiscal monopolies, unallocated taxes on profit/income, and other taxes.

² Advanced economies excluding Asia. EME/CIS stands for Emerging Europe and Commonwealth of Independent States.

Source: IMF Asia REO, April 2013, pg. 43

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