



IMF INSTITUTE 
FOR CAPACITY DEVELOPMENT



Elements of Expenditure Policy and Expenditure Forecasting

Fiscal Analysis and Forecasting Workshop
Bangkok, Thailand
June 16 – 27, 2014

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IMF-TAOLAM training activities are supported by funding of the Government of Japan

Expenditure Policy

- Public expenditure policy is a continuous political/bureaucratic process through which governments decide: (i) which activities should be undertaken by the government; and (ii) what is the most efficient way of producing those public sector outputs
- Public expenditure accounts for a large share of aggregate demand
- Differently from revenue, government spending is tightly intertwined with policy decisions
- This has an impact for expenditure forecasting, which is also highly affected by the availability of resources (i.e. revenue forecasting)
- It has macroeconomic implications for output, prices, employment and external balances
- Public investment in physical or human capital may also have an important impact on aggregate supply

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Outline

Elements of expenditure policy:

- The role of the government
- Macroeconomic implications of spending
- Challenges of government spending

Items of government spending:

- Functional classification
- Economic classification

Quasi-fiscal activities & Contingent liabilities

Forecasting expenditure:

- Forecasting discretionary spending
- Forecasting interest payments

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Elements of expenditure policy:

The role of the government

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The role of the government

Theory claims that voluntary exchange yields an optimal allocation of resources and output, given consumer preferences and the initial allocation of assets, under:

- *perfect information*
- *perfect competition (no natural monopolies)*
- *no externality*
- *acceptability of asset and income distribution*

What happens when these conditions are violated?

Imperfect information: markets operate inefficiently or fail to exist

Monopolies: distort resource allocation, reduce supply, or markets fail to exist

Externalities: goods are produced in excess or insufficient amounts relative to the optimal

Unacceptable distribution of income/endowment: poverty, dispersion of income

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The role of the government: examples of market failures

Type of goods	Issue	Examples	Problem of private provision
Risk pooling	Moral hazard (insurance leads to riskier behavior) and adverse selection (the riskier behavior seeks insurance)	Unemployment insurance or health care insurance	Market may fail to exist
Public goods	Benefits can be enjoyed by many people simultaneously at zero marginal cost (non-rivalry)	National defense, police, environment protection	Underprovided (“free riding” – individuals have no incentive to pay for sharing)
Good with externalities	Direct benefits from personal use and indirect benefits from use by others	Education, immunization programs	Underprovided (difference between cost, private benefit, and social benefit)
Natural monopolies	Large upfront fixed costs determine decreasing avg. cost of production	Water provision, electricity, mass transportation	One firm dominates the industry or no production

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The role of the government

Under market failures, government may be able to provide the good at a level and price close to optimum:

- Police, national defense, environment protection, education, health, utilities...

Key consideration about government provision of goods:

- It does not necessarily require direct production: agencies, contracting out, leasing/concessions (for example: highways, airports)
- It should be assessed in terms of efficiency and comparison between private and social costs and benefits (public provision may not be the best option)

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The role of the government

Public expenditures can shape income distribution by:

- affecting the development of human capital (education and health)
- transferring income (post-tax distribution of income)

Government can also provide:

- social safety nets:
 - income support for poor, disabled, elderly
 - unemployment insurance
- social insurance:
 - public pension programs
 - government-provided health insurance

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Elements of expenditure policy:

Macroeconomic implications of spending

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Macroeconomic implications of spending

Public expenditures are a large share of aggregate demand

This has macroeconomic implications for:

- **output:** larger demand stimulates production
- **prices and wages:** larger demand puts upward price pressure on markets for goods and factors of production
- **employment:** larger demand leads to higher labor demand
- **external balances:** larger demand might imply more imports
- **growth and aggregate supply:** public investment in infrastructures or human capital affect productivity

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Macroeconomic implications of spending

The composition of expenditures affects **growth orientation** through resource allocation (e.g., tradable vs. non-tradable sectors).

The government must finance its expenditures with taxes / borrowing, so the level of expenditures can lead to **crowding out** of private sector through:

- supply of labor: taxes can change incentives to work
- interest rate: larger public borrowing increases interest rates
- exchange rate: larger external borrowing affects the flow of foreign currency and can lead to depreciation

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Elements of expenditure policy:

Challenges of government spending

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Challenges of government spending

Expenditure policy should consider short term trade-offs and constraints...

Trade-off between macroeconomic objectives:

- If **inflation** is high, lower spending will help reduce inflation at the cost of lower growth in the short run
- increasing capital spending to boost growth might require imports and deteriorate the **current account** balance

Constraints to different forms of financing:

- if debt or taxes are too high, larger spending to support growth might not be possible

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Challenges of government spending

... as well as long-term challenges:

- macroeconomic situation:
a macroeconomic adjustment might be necessary to prevent the occurrence of an unsustainable fiscal position (high debt)
- demographic changes:
an ageing population or booming young population might put pressure on the budget

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Items of government expenditure

Functional classification

Government expenditures can be classified by the type of service that they provide:

- Education
- Health
- Social Security, Social Insurance and Assistance
- Defense
- Foreign Affairs
- Others: Energy & Natural Resources; Transportation; Agriculture; Commerce & Housing
- Interests

Economic classification

Government expenditure can also be classified by type of factor paid, or economic use of output:

- Current expenditure
 - Wages and Salaries*
 - Goods and Services*
 - Subsidies and Transfers*
 - Interest payments*
- Capital expenditure
- Net Lending

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Wages and salaries

Wages and salaries:

payment in cash (not in kind) to employees in return for services, before deduction of taxes and employees' contributions to social security and pension funds;

Government wages and salaries are important because:

- the wage bill is often the largest share of total expenditures, competing with other productive investment for financing
- the government is often the largest single employer:
 - ✓ its employment policy affects the labor market
 - ✓ its wage policy affects wages in the private sector despite:
 - a) different incentives than in the private sector (ease of financing)
 - b) different rigidity than in the private sector (most likely more unionized)

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Goods and Services: Operations and Maintenance

Operations and maintenance (goods and services) include all goods and services bought on the market, except for fixed capital assets and goods and services to be used in the production of fixed capital assets.

Operation expenditures are required to deliver a recurrent level of services that enhance the utilization of existing assets:

- blackboards in schools
- bandages in hospitals

Maintenance expenditures aim at maintaining an existing infrastructure in acceptable working condition:

- eliminating potholes in streets
- checking the functioning of trains

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Subsidies and transfers

Subsidies and transfers include all unrequited, nonrepayable government payments for current purposes, and excludes transfers for capital purposes

Subsidies include all unrequited, nonrepayable payments on current account to private industries and public enterprises

Transfers include all payments to other levels of national government (for current purposes), to nonprofit institutions, to households (adding to their disposable income). Also transfers abroad are included.

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Subsidies

Subsidies may be designed to influence:

- levels of production
- the prices at which outputs are sold
- the remuneration of enterprises

Subsidies can be payable on specific products or on production in general, and they are calculated as:

- specific amount of money per unit of a good or service
- percentage of price per unit (ad valorem)
- difference between a specified target price and the market price

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Types of subsidies

Subsidies on production are received by enterprises for producing, and they are not related to specific products:

- subsidies on payroll or workforce
- subsidies to reduce pollution
- payments of interest on behalf of corporations

Subsidies to compensate for losses are received to compensate for charging a price that is lower than the average cost of production:

- the price is determined by the government as part of a deliberate economic and social policy (fuel and energy)
- compensation is generally based on a formula, and does not necessarily reflect the actual average cost of a specific firm

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Interest payments

Interest payment is the payment for the use of borrowed money;

Features of interest payments:

- Non-discretionary
- Must be paid to avoid default and maintain confidence
- Predictable (they are defined by the loan contract / agreement)
- They contribute to the deficit, require financing, and originate payments in the future
- On external and domestic debt

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Capital expenditure

Capital expenditure includes payments for the acquisition of fixed capital assets, strategic or emergency stocks, land, or intangible assets, or unrequited payments for the purpose of permitting the recipients to acquire such assets, compensating the recipients for damage or destruction of capital assets.

It contributes to overall national investment and stock of physical assets of the economy, and it is important for growth.

Economic analysis should be used to assess the efficiency of public investment:

- cost-benefit analysis
- internal rate of return
- payback period

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Net Lending

Net lending covers government payments giving rise to financial claims upon others or to government equity participation in the ownership of enterprises, minus government receipts reducing or extinguishing such claims or equity holdings, undertaken for public policy purposes.

It includes loans made and equities purchased by government minus government receipts from loans repaid, equities sold, or equity capital returned to government.

Examples of net lending are:

- student loans
- consumer loans to public employees
- emergency credits to public companies

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Hidden expenditures and tax expenditures

Explicit / implicit expenditures may originate from:

Non-expenditure budgets:

- Social security (typically in a separate agency) and quasi-fiscal operations (exchange rate subsidies, subsidized lending, government loan guarantees, contingent liabilities).

The tax code:

- Tax breaks equivalent to “income-conditioned” expenditures (financial assistance to families can be provided either by paying a cash benefit, allowances, or tax credits).

Regulations:

- Regulations may distort measures of public expenditures (example, exchange rate controls).

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Detailed classification of expenditures

Current expenditures	}	Discretionary: Depend heavily on the government policies and often reflect macroeconomic developments:		
Wages				
Goods and services				
Pensions				
Subsidies				
Other transfers				
Capital expenditures	}	• wages and salaries (wages, unemployment...)		
Acquisition of fixed assets			• purchase of goods and services (prices, exchange rate)	
Net lending				• subsidies and transfers (demand for subsidies services, price of subsidies goods...)
New loans				
Repayments				
Interest payments	Non-discretionary: Do not depend on policies (almost) and depend heavily on macroeconomic conditions			

Usual tradeoff between forecasts at aggregated vs. disaggregated level

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Quasi-Fiscal Activities & Contingent Liabilities

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Definition of QFAs

Quasi-fiscal activities refer to operations that result in a net transfer of public resources to the private sector **through non-budget channels**.

These are activities conducted by central banks and other public financial and nonfinancial institutions and which give rise to financial transactions, which are not reflected in the budget.

They are mostly used to achieve specific budgetary or fiscal objectives **outside the budget** (and often in a non-transparent way).

Measurement is often difficult, particularly when commercial and non-commercial activities are intermingled.

Examples include: public utility companies that provide services at prices below cost-recovery levels; public enterprises that purchase more resources than needed or at prices above market ones; financial institutions that give out housing loans at rates below those prevailing in the market.

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QFAs in SOEs

QFAs often take the form of the provision of services at low prices through publicly owned enterprises.

This entails **a loss for the enterprise**, which may or may not be covered by the enterprise's other operations.

When losses are not covered by the SOEs, the government has created **a contingent liability**; namely, a liability that may arise for the general government, which implicitly provides guarantees for the losses.

The losses will not show up in the government's books until the enterprise experiences financial distress and the state is forced to intervene and bail it out.

The longer the enterprise manages to continue, the smaller will be the government deficit compared to its true size, and the bigger the bailout is likely to turn out to be.

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Implications of QFAs

QFAs **distort** the picture regarding the government's **true fiscal position** as well as its size and can have significant macroeconomic implications.

QFAs are often used by the governments to carry out specific budgetary or fiscal objectives outside the budget, and often in ways that are **not transparent**.

They can:

- generate **contingent liabilities** for the government
- have undesirable allocation or redistribution effects as taxes and subsidies that result from QFAs can be **highly distortionary**
- when losses of the central bank and PFIs stemming from QFAs are elevated, they can lead to **financial instability**

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Contingent Liabilities

The government's contingent liabilities are **potential claims** on the government that may or may not be incurred depending on macroeconomic conditions and other events.

Unlike direct liabilities, such as pension obligations, which are predictable and will arise in the future with certainty, contingent liabilities are obligations triggered by discrete but uncertain events.

By nature, contingent liabilities are **difficult to measure**. While information is usually available on debt formally guaranteed by the central government, debt not explicitly guaranteed has often been an important contributor to public debt build-up.

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Contingent Liabilities

Explicit liabilities are those recognized by a law or contract, such as government guarantees for non-sovereign borrowing and obligations issued by sub-national governments and public or private sector entities or trade and exchange rate guarantees.

Implicit liabilities are obligations that may be assumed by government due to public and interest-group pressures, such as financial sector bailouts, or bailouts of non-guaranteed social insurance funds.

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Contingent Liabilities

Examples of contingent liabilities include:

- contingent liabilities in the **banking system** (deposit insurance payments or recapitalization because of bank failures)
- **loans** to other parts of the public sector (state-owned enterprises or sub-national governments)
- the government's interactions with private sector agents (e.g., **PPPs**)

Contingent liabilities, especially those arising from the need to rescue banks, were responsible for large jumps in the public debt to GDP ratio in several countries affected by past financial crises.

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Forecasting expenditure

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Forecasting Expenditures

- Two main categories of expenditures:
 - Discretionary
 - Depend on government policies
 - Despite the title, many discretionary expenditures reflect macroeconomic developments: wages and salaries, purchases of goods and services, subsidies and transfers
 - Can be changed in the short term
 - Where data are not available, a first approximation may involve maintaining past ratios to GDP
 - Non-discretionary
 - Outside the control of the government
 - Main example: interest payments, social security payments, unemployment benefits, and pensions.

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Forecasting Expenditures

Similar to process followed for revenue except:
Trying to capture implied government objectives & policies while
considering financing constraints

$$\text{Expenditures} = \text{Quantity} * \text{Price}$$

$$\begin{aligned} E_{t+1} &= Q_{t+1} P_{t+1} \\ E_{t+1} &= Q_t(1 + g_Q) P_t(1 + g_P) \\ E_{t+1} &= E_t (1 + g_Q) (1 + g_P) \end{aligned}$$

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Forecasting discretionary expenditures

Wages and salaries = number of employees * wage

Number of employees reflect program structure, institutional reforms
in government sector (information about new hires should be
available), and can also take into account population growth

Wage rates can be forecast using CPI inflation (be careful at
feedback effect in case of indexation of wages) but a good
knowledge of the wage system in public sector is fundamental

Pension & other retirement benefits can be forecast with
demographics and CPI

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Forecasting discretionary expenditures

Goods and services :

- Volume (quantity) may vary with real GDP or depend on policies
- Prices: choose deflator carefully (CPI, GDP deflator, depends on service content)

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Forecasting discretionary expenditures

Subsidies and transfers

- Consumer subsidies, forecast number of beneficiaries and avg. payment; if not available, consider ratio to GDP
- Producer subsidies, forecast demand for product and avg. subsidies per unit or per value
- If subsidies depend on automatic mechanism (ex. fuel, energy, food subsidies) use the formula and price projections (oil prices)
- If pensions are indexed to the cost of living, condition projections on CPI

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Forecasting discretionary expenditures

Capital expenditures

- Consider ongoing projects, inflation, execution rate etc.

Net lending

- Consider policies, repayment rate, relation to GDP, etc.

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Forecasting Interest Payments

Forecasting Interest payments involves a completely different process as it applies projected **interest rates** to projected **debt stock** figures:

- Review trend in **effective nominal** interest rates, for domestic debt and for key categories of external debt (e.g. “concessional” and “market”), by dividing in each case the interest payments by the corresponding debt stock
- Use this effective nominal interest rate as a possible rate for projections
- Turn to examine debt stock figures
- Debt stock at time “t” is net accumulation of all previous deficits and surpluses up to time “t”:
Debt stock at the end of FY2011 is equal to debt stock at end of FY2010 + budgetary balance during FY2011

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Forecasting interest payments

Interest payments refer to both existing and new debt, and to domestic and foreign debt:

Existing debt (outstanding at end of last period for which historical data are available) use the average interest rate:

- Be careful at share of debt with variable interest rate
- If you know the debt conditions, use them

New debt (contracted in all of the projection periods) use avg. rate or forecast of interest rates

Foreign debt (old and new) compute first in foreign currency and convert in national currency (account for exchange rate)

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Forecasting interest payments

Ideally, one should forecast interest payment on old, future, domestic, and external debt separately.

In general, assume that new borrowing is incurred at mid-year:

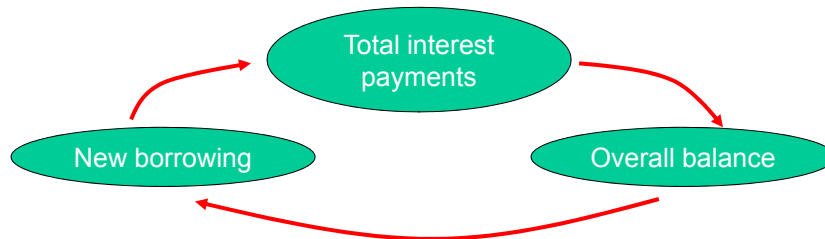
$$I_t = i_t^{old} D_{t-1} + i_t^{new} \frac{\text{new borrowing}}{2}$$

If $i_t^{old} \approx i_t^{new}$ compute the “average” interest rate so that:

$$I_t = i_t^* \left[D_{t-1} + \frac{D_t - D_{t-1}}{2} \right] = i_t^* \left[\frac{D_t + D_{t-1}}{2} \right]$$

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Forecasting interest payments



Simultaneity problem: solve with iterative process:

1. Make an initial estimate of interest payments
2. Compute overall balance and new borrowing requirements
3. Recalculate interest payments and start again

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Forecasting expenditures: summary

Category	ΔQ	ΔP
Wages	Policy...	CPI or policy
Goods and services	GDP or policy	GDP deflator or CPI
Pensions	Demographics	CPI or policies
Subsidies and transfers	GDP or policy	CPI, prices, or policies
Capital expenditures	Current projects and commitment, external financing	CPI, GDP deflator, or import deflator
Net lending	GDP, policies, repayment rates	...
Interest payments	Stock of debt outstanding, current financing needs	Interest rates (domestic and foreign, inclusive of exchange rate changes)
Acquisition of assets	Policy	Market value

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