FACULTY OF ECONOMICS

Macroeconomics I. – Supplementary Materials

Fiscal Policy, Public Finance and Budget Balances

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Content

Basic Concepts

Part I

Fiscal Policy – Basic Functions

- **Fiscal policy and government (public) budgets have always been and are one of the key areas of economic policy**
  - The economic and debt crisis of the Euro Area countries gave a new impulse for these types of analyses

- **Basic fiscal policy functions:**

1. **Redistribution (of pensions)**
   - Important for social policy, maintaining social peace and preventing poverty

2. **Allocation of resources (through taxes and subsidies)**
   - Government can change relative prices and costs to influence the structure of production and consumption

Fiscal Policy – Basic Functions

- **Basic fiscal policy functions (continued):**
  2. **Allocation of resources (continued)**
     - Provision of public goods and services, including (and above all) those areas that are not fully subject to market allocation – solve externalities, market failures – for example: health, education, culture, sport, …
     - Long-term investment
       - Financially very demanding projects, problematic returns on investment
         - E.g. transport infrastructure, environmental investments, …

Fiscal Policy – Basic Functions

- **Basic fiscal policy functions (continued):**

3. **Stabilisation**
   - Achieve long-term economic growth at a stabilized level of external and internal imbalances
   - Influence macroeconomic stability of an economy in a broader sense
     – Keynesian approach to economic policy

4. **Regulation**
   - Broad concept including the previous ones
   - Sometimes mentioned separately

Fiscal Policy as Economic Policy

— **Governments use fiscal policy to influence the level of aggregate demand in the economy, so that certain economic goals can be achieved:**

1. **Price stability**
2. **Full employment**
   — The level of employment at which there is no cyclical or deficient-demand unemployment (full employment is not 100% employment!)
3. **Economic growth**

Fiscal Policy as Economic Policy

- **Stimulation of aggregate demand (Keynesian view):**
  - Increasing government spending, decreasing tax rates
  - -> stimulating economic growth and adding inflationary pressures
    (and vice versa for restrictive policies)

- Keynesians argue that expansionary fiscal policy should be used in times of recession or low economic activity
  - The resulting deficits should be paid for by a consequent economic expansion effects that would follow – this is nowadays not the case

Fiscal Policy Stance(s)

Neutral fiscal policy

— Should be undertaken when an economy is in neither a strong recession nor a strong expansion

— The amount of deficit spending is small or roughly the same as it has been on average over time, so no changes to it are occurring that would have an effect on the level of economic activity

Expansionary fiscal policy

— Should be undertaken when an economy is in recession (the idea of smoothing the business cycle)

— Situation when the government spending is higher than its usual level

Fiscal Policy Stance(s)

Contractionary fiscal policy

- Should be undertaken when an economy is running “too hot” – unstable growth or significant inflationary pressures
- Situation when the government spending is lower than its usual level

Fiscal Policy – Effects

- **Two-way causality between fiscal policy and economic development**
- **Fiscal policy affects both aggregate supply and aggregate demand**

- **Aggregate supply effects**
  - Taxation rules play a great role in decisions about investment, labour supply, and choice between consumption and saving
  - Government spending on education, health, and infrastructure can greatly affect the labour productivity

- Fiscal policy affects aggregate demand in the short term
  - C + I directly, NX indirectly
  - Theoretically: smoothing of business cycles; **main objective: counter-cyclical fiscal policy**

Fiscal Policy – Effects

- Fiscal policy also affects an economy within a medium and long term
  - **The main objective of medium term fiscal policy is fiscal sustainability**
  - Negative effects of accumulated debt on GDP growth
  - **Note: usually only medium term is mentioned – election cycles (around 4 years)**

Fiscal Policy – Problems

- **Character of fiscal policy:**
  - Automatic stabilizers
  - Discretionary policy
- **Time lags:** data, recognition, legislative, implementation, effectiveness lag
- **Problems of governance**
  - **Government failures:** (Public choice theory):
    - Principal-agent problem
    - Regulatory capture, corruption
    - Snowball effects
    - Crowding-out
    - **Deficit bias, pro-cyclical behaviour**

Fiscal Policy – Problems

- **Pro-cyclical behavior of fiscal policy has become a major problem**
  - An explanation for this can be found due to variety of reasons:

I. **Electoral cycle and fiscal illusions of voters (myopic behaviour)**
   - **The voter usually sees the short-term favourable effects of fiscal measures, but the long-term effects may remain hidden –** leading to populist policies at the time of the election and unpopular measures immediately after the elections, but also to intertemporal redistribution policies (taxes, subsidies)
   - A complementary phenomenon is the fiscal policies of opportunist **politicians seeking to be re-elected**, with fiscal expansion in times of economic downturn, while in the period of growth there is no desirable consolidation

Fiscal Policy – Problems

- **Reasons for pro-cyclical behaviour of fiscal policy (continued):**

  II. Short-term strategic behaviour of political parties

  - Depending on the likelihood of re-election, politicians apply budget programs
  - The lower the likelihood of re-election, the greater the effort to implement inconsistent programs and the more likely it is that **white elephants (inefficient, populistic projects)** will remain after the government, resulting in the determination of fiscal policies of future governments

Fiscal Policy – Problems

- **Reasons for pro-cyclical behaviour of fiscal policy (continued):**

III. Partial governments and the problem of association

- More ruling parties: political compromises must be made
- If there is no strong position of the Minister of Finance (delegation approach) or an agreement (contractual approach) on fiscal policy, there may be a **focus on meeting partial needs and not on the promotion of a sustainable fiscal policy**

IV. “Technical” reasons

- Information asymmetry, excessive optimism of politicians, time inconsistencies, etc.

Basic Indicators and Divisions

Part II

Accumulated Debt

Risks of high debt

- **As debt increases, debt service increases -> need larger fiscal surpluses to service it**
  - Higher debt service requires higher taxes
  - Higher taxes hinder economic growth
  - As debt service increases, space for anti-cyclical policies is falling
  - In the case of debt held by foreign entities, there is an outflow of funds from the country
- **Exacerbates vulnerability to shocks**
- **Exposure to a higher risk of a rollover crisis**
- **May be detrimental to economic growth**

State vs Government Budget

- **Different countries use different definitions – depending on the country's structure**
- **Definition of the term "state" is usually narrower than the definition of "government"**
  - The adjective "state" signifies that given indicators are related to the state budget (e.g. central budgetary institutions)
  - For example: state budget is only a part of government budget
- **General government is a broader concept, consisting of more institutions**
  - Units managing compulsory payments
    (i.e. taxes, fees, and contributions to the compulsory social and health insurance)

State vs Government Budget

- Units engaged in the distribution of subsidies or providing services to other government units
- Units managing government assets or units which are involved in the privatisation process and also other (non-market) entities according to quantitative or qualitative criteria mentioned below

- **Therefore, state debt is a sum of state financial liabilities consisting of state liabilities, which arose from state-received foreign loans, loans from banks and issued government bonds and other state liabilities (other state securities)**
  - It therefore does not include any debt obligations of extrabudgetary funds, the health insurance system and local budgets, nor state guarantees or any other contingent liabilities of the government sector

State vs Government Budget

- **Maastricht debt takes into account general government debt, not only state debt**
  - Debts of state funds, semi-budgetary organizations, public universities and other central government institutions, municipalities and regions, health insurance companies managing public health insurance, etc.
  - Maastricht debt further includes called guarantees or imputed debt resulting from financial leasing, e.g. renting of military equipment on leasing

Subsectors of General Government

- **Government institutions are split into subsectors according to the scale of their competence and specific functions**

- **In the Czech Republic, there are three sub-sectors of the general government sector:**

  a) **Central government**
    - Organisational units of the state
    - For example: ministries, central offices, other units managed by central administration, public universities, public research institutions, courts, …

Subsectors of General Government

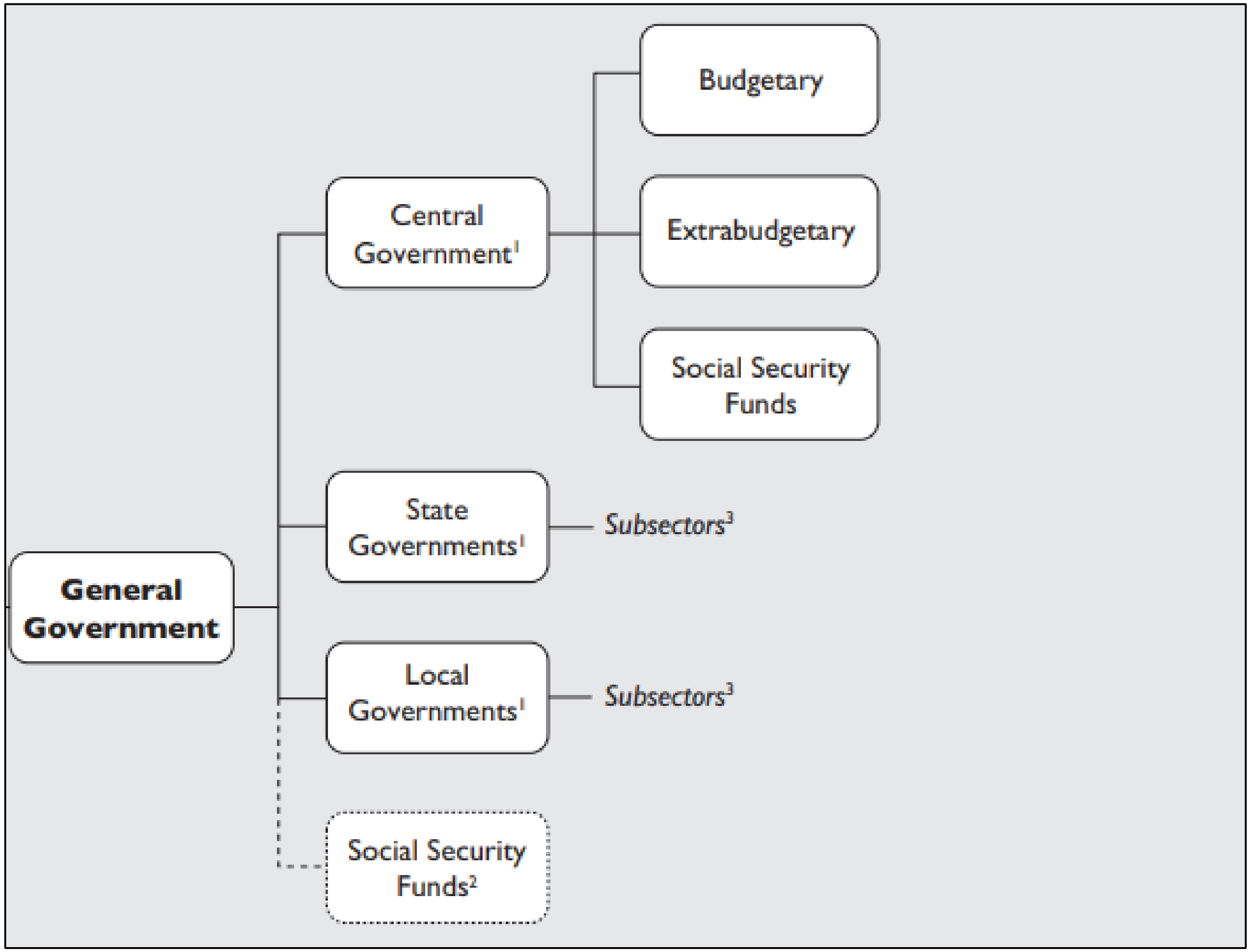
b) Local government

- Territorial self-governing units
- For example: public hospitals, nursery schools, elementary schools, secondary schools, retirement homes, sports facilities, orphanages, …

c) Social security funds

- 7 health insurance companies (HIC) managing general (compulsory) health insurance
- 3 associations of health insurance companies
- Centre for International Reimbursement (CIR) within Health Insurance Bureau

Structure of General Government



Source: IMF, Government Finance Statistics Manual (2014) – https://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf

General Government vs Public Sector

- **Public sector is a broader concept than general government sector**
  - **It includes government-controlled or public organisations/corporations**, which can work on the profit principle – financial and non-financial corporations
    - The control assessment In does not cover only quantitative criteria (majority of shares) but also qualitative criteria which are focused on other institutional influences as, for example, ability to approve or to dismiss key personnel, etc.
- **Public sector is defined within the borders of the economy; shares in non-resident units are not taken into account**

General Government vs Public Sector

- **The attention of analyses has been increasingly focused on public sector**
  - **The main reason is that indicators of public sphere can give an idea on potential threats for government finances**
    - Institutional arrangement between government and public institution can give rise to requirements for recapitalisation, debt assumption or called guarantees which can negatively affect government indicators
  - Czech Statistical Office regularly publishes Public sector accounts (PSA) – satellite account within the SNA framework

Public Sector vs Private Sector

Figure 2.2 The Public Sector and Its Relation to Other Institutional Sectors of the Economy

General Government Sector	Nonfinancial Corporations Sector	Financial Corporations Sector	Households Sector	Nonprofit Institutions Serving House-holds Sector
Central government State governments Local governments	Public corporations	Public corporations	Private	Private
	Private corporations	Private corporations		

Public sector

Source: IMF, Government Finance Statistics Manual (2014) – https://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf

Public Sector vs Private Sector

Table 1 Delimitation of public and general government sector in the national accounts, the relation to the government deficit and debt (2012)

PUBLIC SECTOR (Sector of public institutional units)		
Sub-sector of public non-financial corporations	**Sub-sector of public financial corporations**	**General government sector**
Market producers: state companies, some central and local semibudgetary institutions, joint-stock companies (e.g. České dráhy, ČEZ, ČSA, DP hl.m.Prahy, etc.) and other limited company	ČNB, ČMZRB, IMOB Company, Galileo Real, EGAP, Insurance Company of General HIC,HIC – Vitalitas, public holding companies, etc.	Central and local budgetary and semi-budgetary organizations, SGAFF, RIA, Prisko, public universities and public research institutions, some public nonfinancial corporations classified as non-market, non-profit institutions and health insurance companies, etc.
		Government deficit/surplus and government debt (Maastricht) for EDP purposes

Source: CZSO

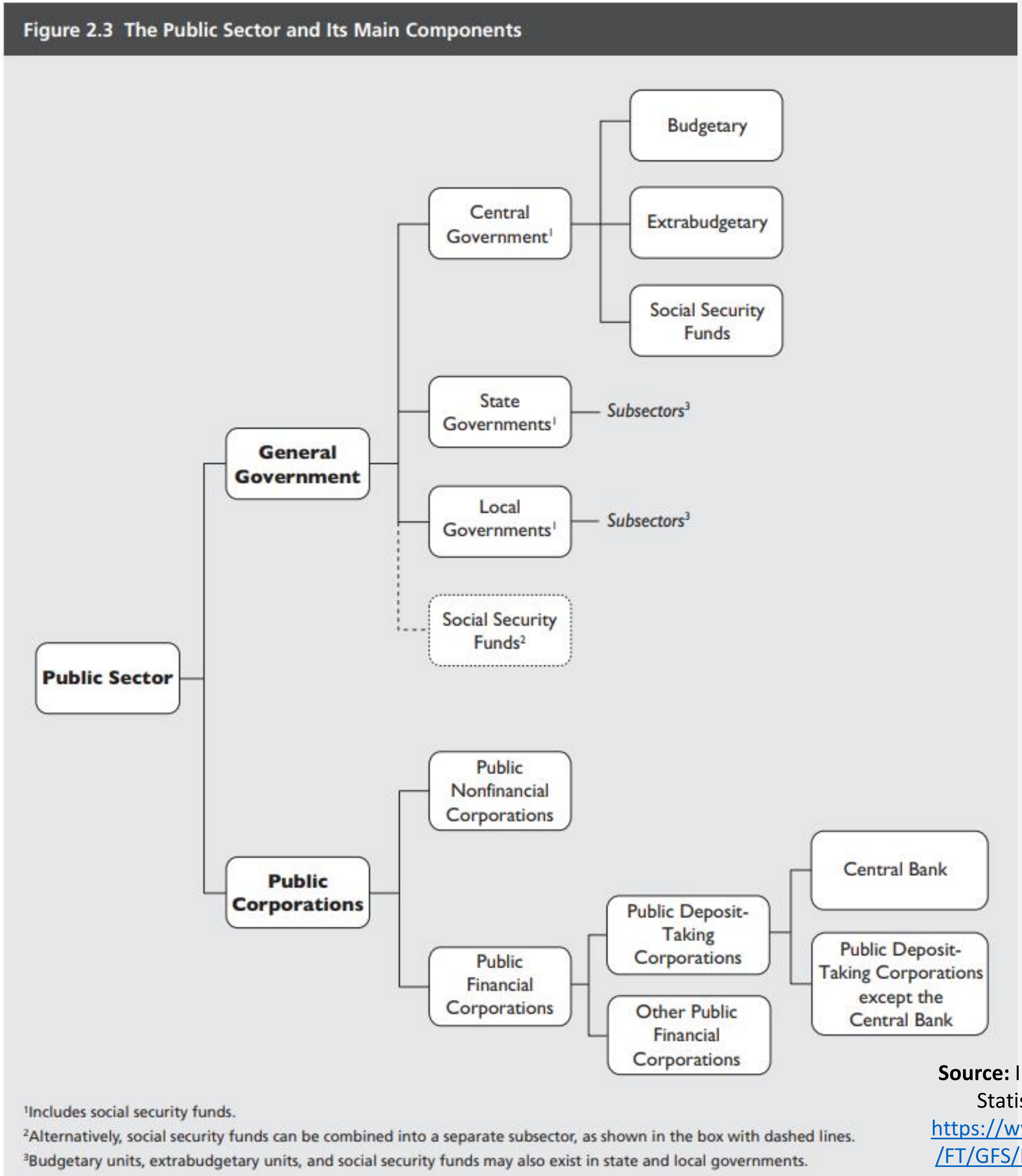
Source: Vebrová, Rybáček (2014) – https://www.czso.cz/documents/10180/25609548/32019714q3032.pdf/fac30b6b-238f-4d77-8149-9b1f614abedd?version=1.0

General Government/Public Sector Debt

IV.3 CLOSING BALANCE SHEET	
AN	Non-financial assets
AN.1	Produced non-financial assets
AN.2	Non-produced non-financial assets
AF	Financial assets / liabilities
AF.1	Monetary gold and SDRs
AF.2	Currency and deposits
AF.3	Debt securities
AF.4	Loans
AF.5	Equity and investment fund shares/units
AF.6	Insurance pension and standardised guarantee schemes
AF.7	Financial derivatives and employee stock options
AF.8	Other accounts receivable/payable
B.90	Net worth

Source: Eurostat, ESA 2010 (2013) – https://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334

Definition of government debt for the EDP purposes does not include all instruments being classified as liabilities in the government sector accounts



Source: IMF, Government Finance Statistics Manual (2014) – https://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf

Budget Balances

Part III

Budget Structure

- The system of government budgets redistributes funds obtained by the government in the relevant economy
- **Government budget revenues are classified as:**
  - **Collected taxes** (including other levies not referred to as taxes but which are essentially tax-related - such as health and social insurance) **and tariffs/customs duties**
  - **Received interest, rental income, loan repayments, property sales**
  - **Received subsidies and contributions** (including supranational institutions)

Budget Structure

- **Government budget expenditures are classified as:**
  - **Transfers to households (pensions, unemployment benefits, social benefits)**
  - **Transfers to businesses – both public and private (subsidies to agriculture, transport, export subsidies, etc.)**
  - **Financing of public goods (defence, health, education, public administration)**
  - **Payments of interest on debt, payments and contributions to supranational institutions**

Budget Balance vs. Total Debt

- **The difference between government revenue and expenditure in the year (including interest payments) represents the budgetary outturn – the general government balance**
  - May be positive (surplus), negative (deficit) or zero (balanced)
- **The negative budget balance is financed by borrowing in the form of bonds (government or municipal)**
  - These bonds are purchased by domestic or foreign entities
- **The government budget deficit (flow variable within a period, usually a year) is directly linked to the growth in government debt (stock variable at a certain point in time, e.g. the end of a quarter)**
  - Conversely, the government budget surplus leads to a reduction in government debt

Basic Types of Fiscal Policy

- **The definitions of fiscal policy stances can be misleading because of cyclical fluctuations in both revenues and expenditures due to economic cycle**
  - These are not considered to be policy changes
- **-> other measures were developed, taking into account these types of effects**
  - Cyclical adjustment
  - A government budget that is balanced over the course of the business cycle is considered to represent a neutral and effective fiscal policy stance
  - **Overall budget balance -> cyclically adjusted budget balance -> structural budget balance**

Note: The EU Regulations

- **Supranational fiscal regulations are subject to political compromises**
- **Not efficient, poor enforceability**

- **Maastricht criteria**
  - The Maastricht government finance sustainability criterion has two components
    - **General government gross debt to GDP: 60%**
    - **(Overall) General government budget deficit to GDP: 3%**

- **Stability and Growth Pact (SGP),**
  Treaty on Stability, Coordination and Governance (Fiscal Compact)

Note: The EU Regulations

- **Excessive Deficit Procedure (EDP):**
  - The EDP procedure works with the ESA public budgets balance, but further adjusts this balance by sub-items (financial derivatives used for interest payments) and is therefore not entirely identical

Fiscal Sustainability and Related Analyses

Part IV

Fiscal Sustainability – The Idea

- **Fiscal policy inconsistencies** are adressed by an application of a (fiscal) rule limiting discretionary (ad hoc) changes resulting from political decision-making
  - Because of many problems:
    - **Politicians prefer short-term gains** vs long-term national interests
    - Fiscal policy specifics (time horizon, decision-making mechanism, credibility, accountability, etc.)
- **Consequences:** higher debt service (fewer resource available), loss of policy flexibility
  - It also may drive up interest rates, discourage private investment, and destabilise the economy

Fiscal Sustainability – The Idea

- It is usually refering to **long or medium-term sustainability of government finances**

- **The fiscal policy rule (constraint) can generally be understood as a limit to be met**
  - For example, in the form of a balance between revenues and expenditures

  - **Two major fiscal policy constraints:**
    1. For a given (fiscal) year
    2. For a longer horizon (intertemporal perspective)

Fiscal Sustainability – The Definition

A situation in which a government is expected to be able to continue servicing its debt without unrealistically large adjustment to its balance of revenues and expenditure, without debt restructuring or default.

Note: This is a definition used by the International Monetary Fund.

Problem of Endogeneity

- **Although this approach is used in both theoretical literature and empirical applications, it is a static view** (based on the principle of partial equilibrium)
  - The mutual relationships between the individual variables are not considered

- **Fiscal policy (public budgets) affects the economic environment**, whose two main parameters (interest rate and output growth) are part of the computational relationship
  - Sustainability, as defined by the equation is also a forward-looking concept, and therefore past values give us little information about future developments

Problem of Endogeneity

- **In general, the deficit is endogenous and the amount of debt exogenous**
  - This reasoning leads to a consideration of the need to set the optimal level of the target (= deficits and thus also the debt), which has no clear answer
  - The target can also serve as an **anchor for creating the expectations** of the subjects and should therefore exist

Fiscal Analyses

- **See various international publications**
  - **European Commission: Fiscal Sustainability Report**
  - **IMF: Fiscal Monitor**
  - **OECD, World Bank, etc.**

- **Debt Sustainability Analysis (DSA)**
  - Pioneered by the IMF and the World Bank
  - Type of a standardised analysis; stochastic, probabilistic approach
    - Identifying risks, random shocks, various scenarios
  - Used for both public and external debt separately

Future Fiscal Policy Challenges

- **Already accumulated debts**
  - **Solution?**
- **Demographic trends – population ageing**
  - **Decreasing working-age population ratio (= 15-64 pop. / total pop.)**
  - **Decrease in revenues**
    - The need to significantly raise tax rates or accumulate more debt -> decrease in economic activity – very problematic
      - That is why we deal with debt sustainability
  - **Increase in expenditures**
    - Pensions, health expenditures, other social expenditures

Fiscal Multipliers and Efficiency

Part V

Fiscal Multipliers

- An additional important question is how strongly is the fiscal policy likely to affect the output?
- If fiscal policy does not affect output at all, then obviously it cannot be counter-cyclical or neutral – it is useless
- Fiscal multiplier concept:
  - Various types of multipliers
  - How much output changes following a discretionary change in government spending or revenue

Fiscal Multipliers

General features, size of multipliers

- **Change is unnecessary one-to-one**
  - GDP = C + I + NX…. These identities use static analysis!
    - If all the variables did not respond to fiscal policy, then the relationship would be one to one – impossible, very unlikely to happen
    - So the overall effect on output is unclear
- **Private and government saving may offset each other**
- **In reality can be much larger than 1 or negative**
- **Highly dependent on circumstances**

Fiscal Multipliers

Different types of fiscal multipliers

- That fiscal policy can affect output with lag, often over several years, especially when we have some infrastructure project
- **-> we can also define separate multipliers for different years or define a cumulative multiplier** (increase of output over all years together)
- **-> or define multiplier by type (revenues x spending multiplier)**

Note: Ricardian Equivalence

- **If households are perfectly rational and they can perfectly foresee the future, they should understand that if government increases deficit today, in the future they will have to raise taxes to pay off the debt**
  - Note: rationality does not mean they do not make mistakes, it means that they do not make systematic mistakes

- **So the ultimate decision for rational household is to save money today when the government is more generous and then have more resources in the future to pay off higher taxes**

Note: Ricardian Equivalence

- **In this situation, fiscal multiplier should be close to zero**
  - In reality, though, people may not be always fully rational or they do not have perfect information about the future (so there is a large role of expectations and confidence)
  - G can boost AS (infrastructure, education, health, …)
  - The existence of business cycles
  - **High debt, inefficient spending, flexible exchange rate, high labour, capital, and trade openness = smaller multipliers** (some of it is the case of the CR)

- **-> The reality is more complicated**

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