
1 The Main Functions of the Public Sector

Public finance normally considers four main functions of the public sector. The first two deal with microeconomic aspects of public finance, while the other two deal with macroeconomic aspects of public finance. It is useful to consult basic textbooks on public finance such as Rosen (2014) and Stiglitz (2015) although these textbooks mainly deal with microeconomic issues of public finance.

The first part of this chapter explains the main functions of government and the basic concepts and techniques that are useful to know when studying public finance. The second part of this chapter explains the public sector and the budgetary process in Japan.

1.1 Resource Allocation

Why does a government impose taxes and provide public spending such as public consumption and public investment? Why does it also conduct many transfers? According to the fundamental theorem of microeconomics, as long as the private market is perfect, the price mechanism automatically adjusts demand and supply so that demand and supply are equalized and resources are efficiently allocated. In this regard, the private market provides any goods that people want. See Sect. 2.2 for a simple explanation of the optimality propositions of the market mechanism.

If people always consume private goods that can be provided efficiently in the private market, private firms take the lead. Intervention by the government is unnecessary. The provision by the government of the same goods as those of the private sector is not the government's role. When the market is perfect and private agents maximize their own interests, the private sector works more effectively than the government. In such a scenario, when and why would government intervention become desirable? This is the fundamental question in public finance.

In reality, the private market often fails because of several reasons such as externality, asymmetric information, and imperfect competition. In particular, the private market cannot provide some goods and services efficiently. These are called public goods and services. Public goods and public services have different properties compared with private goods and private services in the private market.

In this context, let us define public goods in accordance with two properties. As explained in Chap. 11, firstly it is impossible to exclude an agent from consuming goods, a situation that we call non-excludability. All agents living in a community can equally consume such goods. Further, the consumption of one agent does not reduce the consumption opportunity of another agent. We call this non-rivalness.

Consequently, non-excludability and non-rivalness are two main properties of public goods. If these two properties remain perfectly consistent, this situation is called the pure public good. Defense spending, diplomacy, the basic legal system, and measures against national disasters are examples of pure public goods.

These public goods are not well provided in the private sector. Because the benefit of public goods has positive externalities, such goods are provided too infrequently in the market. If agents voluntarily provide these goods, others can consume the benefit without paying for the burden. This is the free rider problem. Thus, the government is required to provide public goods as appropriate (see Chap. 11).

Since the market is inefficient with respect to the provision of public goods, the government should provide public goods as appropriate. This is the standard function of the public sector. Public finance investigates how and when the government should intervene in resource allocation in the market. In this regard, some argue that the government should only provide microeconomic measures such as the provision of public goods and improvements in the event of market failure. These measures are considered the main role of small government. Such an approach is also called cheap government or small nation, names that emphasize the efficiency criterion.

In order to provide public goods, the government needs to collect tax revenues. Imposing taxes in the private sector produces a burden on private agents, thereby harming economic activities. This is called the distortionary effect of taxation. With regard to the revenue side, public finance investigates how the government should collect taxes in order to minimize the distortionary effect of such taxes. This is an important topic of optimal taxation and tax reform. See Chaps. 8 and 9.

1.2 Redistribution

An important function of the public sector in addition to resource allocation is income redistribution. As explained in any standard textbook of microeconomics, even if the market is perfect and resources are efficiently allocated among economic agents, the outcome is not necessarily ideal. We could observe a large degree of income inequality *ex post*. The economic situation of agents depends on the initial state of asset holdings and/or good or bad luck, in addition to their efforts regarding

economic activities. The initial state of assets and human capital holdings among agents is predetermined before economic activities. Good or bad luck affects the economic performances of agents differently. Even if the market is perfect, ex post inequality of income and assets among agents is unavoidable to some extent.

Different arguments consider how we should intervene with regard to ex post inequality. One side may argue that strong intervention is desirable so as to realize equitable outcomes ex post. Another may argue that minimum intervention is desirable so as to enhance economic activities. However, if ex ante opportunity is unequal, many feel a degree of unfairness. Moreover, ex ante equality of opportunity does not necessarily mean ex post equality of outcome.

Thus, it is desirable to some extent for the government to tax income and the assets of the rich and transfer these to the poor. Progressive income tax, inheritance tax, social welfare programs, and public pension and medical insurance are imposed for redistribution measures. In order to discuss the normative role of income redistribution, it is necessary to specify a social judgment on equity. Chapter 12 explains two alternative judgments, the Bentham (or utilitarian) judgment and the Rawls (or maximin) judgment. It is also important to consider the economic impact and constraint of income redistribution. Perfect equality of income ex post is not desirable if the disincentive effect of progressive tax is incorporated.

Recently, the size of national economies has become larger and inequality of income and wealth among agents has also grown. In such a situation, in order to maintain social safety and promote economic activities, a larger degree of redistribution has become one of the main objectives for most developed countries. This is referred to as the idea of the welfare state.

In Keynesian economics, unemployment is regarded as non-voluntary; thus, the government has a duty to attain full employment by the use of fiscal measures. This argument criticizes the self-duty principle of one's own effort and provides the theoretical reason why a government should pursue the idea of a welfare state.

Hence, the second objective of public finance is to investigate the economic effects of public intervention from the viewpoint of equity and the government's desired role of redistribution to pursue the idea of a welfare state.

1.3 Stabilization

The third function of the public sector is to stabilize the macroeconomy. Because of exogenous negative shocks such as financial crises, private economic activity may remain in a recession for a long while. Even if the market mechanism is perfect in the long run, unemployment and idle capital equipment are situations that can occur in the short run. Moreover, in reality, price rigidity and pessimism cause the market mechanism to work badly, thereby encouraging a serious recession in the long run.

It is then desirable for the government to intervene in the private economy and alleviate the unwanted outcomes of negative shocks. In particular, according to Keynesian economics, the government should stimulate aggregate demand by

raising government spending and reducing taxes when the macroeconomy experiences underemployment and lacks aggregate demand. Further, a lack of effective demand cannot easily be cleared by the price mechanism. Thus, public finance should incorporate a stabilization policy for macroeconomic activities.

For example, expansionary fiscal policy is useful to stimulate aggregate demand in a recession. In addition, employment insurance is effective for alleviating the detrimental outcomes of unemployment. On the other hand, monetary restriction and public spending cuts are effective for reducing inflation and over-utilization of labor and capital in a boom. Public finance investigates how the government can avoid macroeconomic instability and stabilize the fluctuation of the business cycle by the use of fiscal measures.

However, Keynesian fiscal policy does not always work well. Neoclassical macroeconomics is rather skeptical about the efficacy of Keynesian measures. This is an important issue of macroeconomic public finance, as explained in Chaps. 2 and 3.

In a political economy, it is easy to conduct expansionary fiscal policy in a recession but it is difficult to conduct restrictive fiscal policy in a boom. Thus, the government deficit tends to increase and public debt accumulates over time. The sustainability of fiscal policy becomes uncertain with Keynesian fiscal policy. Chapter 4 examines the economic role of public debt and Chap. 6 investigates positive and normative issues on fiscal management and sustainability.

1.4 Dynamic Optimization

The attainment of optimal economic growth is also an important objective of government. The market economy does not necessarily achieve optimal growth. This is because private decisions on consumption, saving, and investment do not consider the interest of future generations appropriately. If the current generation only considers its own interest, optimal growth is not realized from the viewpoint of generational equity. Thus, it becomes the government's responsibility to consider the interest of future generations. The dynamic optimization problem of fiscal policy encompasses fiscal deficits, the burden of debt, and the productivity of public investment.

Further, a high level of economic growth is not always desirable. We have to consider the effect on the environment, among others. Public finance investigates how we should grow the economy in a way that is consistent with environmental quality as well as the interest of future generations.

We also investigate the effect of fiscal policy on growth. Public investment enhances economic growth. However, if the government raises taxes to finance various kinds of public spending, it may depress capital accumulation and economic growth. Similarly, an increase in government deficits and public pensions would crowd out private capital accumulation, thereby harming economic growth. The dynamic effect of fiscal variables is an important topic of macroeconomic public finance. Thus, Chap. 5 investigates the effect of fiscal policy on economic

growth. In addition, Chap. 7 examines the effect of public pensions on economic growth in an aging economy such as Japan's.

1.5 The Failure of Government

Although these four functions are important, the government may not behave efficiently. Because the market sometimes fails, the government could fail too. Since public economic activities are complicated, even an idealistic government cannot attain the best solution. Moreover, because of bureaucratic problems and so on, the government does not necessarily maximize social welfare in a political economy. Thus, we cannot assume an idealistic government in reality. Chapter 12 examines the outcome of fiscal policy in a political economy. Chapter 13 investigates the role of local governments in causing the failure of government and the policy implications of intergovernmental finance to correct such failure.

2 A Review of Basic Analytical Concepts

This section provides a brief review of basic concepts and techniques used in the following chapters. For more detailed arguments, see any basic textbooks on microeconomics, including Varian (2014).

2.1 Constrained Maximization

Consider the following constrained maximization problem:

$$\begin{aligned} & \text{Maximize } u(x_1, x_2) \\ & \text{subject to } g(x_1, x_2) = 0 \end{aligned} \quad (1.1)$$

where x_1 and x_2 are choice variables. $u(\cdot)$ is the objective function and $g(\cdot) = 0$ is the constraint.

The corresponding Lagrange function is given as

$$L = u(x_1, x_2) - \lambda g(x_1, x_2) \quad (1.2)$$

where the variable λ is called a Lagrange multiplier.

Differentiating the Lagrangian with respect to each of its arguments, the first order conditions lead to

$$\frac{\partial L}{\partial x_1} = \frac{\partial u}{\partial x_1} - \lambda \frac{\partial g}{\partial x_1} = 0, \quad (1.3.1)$$

$$\frac{\partial L}{\partial x_2} = \frac{\partial u}{\partial x_2} - \lambda \frac{\partial g}{\partial x_2} = 0, \text{ and} \quad (1.3.2)$$

$$\frac{\partial L}{\partial \lambda} = -g(x_1, x_2) = 0. \quad (1.3.3)$$

These three equations determine three unknown variables, x_1 , x_2 , and λ . The Lagrange multiplier at the solution measures the sensitivity of the optimal value of the objective function.

2.2 Pareto Optimality

The standard approach to welfare economics is based on the concept of “Pareto optimality,” a necessary condition for an economic optimum. A Pareto optimum is a situation in which no feasible reallocation of outputs and/or inputs in the economy could increase the level of utility of one or more individuals without lowering the level of utility of other individuals. An efficient social state is often called Pareto-optimal.

For example, suppose that there are fixed amounts X , Y of two goods (x, y) and that there are only two agents A and B . For simplicity, also assume that each agent’s utility u_i is given respectively as a quasi-linear function. Thus,

$$u_A = u_A(x_A) + y_A \text{ and} \quad (1.4)$$

$$u_B = u_B(x_B) + y_B \quad (1.5)$$

where x_i is agent i ’s consumption of good x and y_i is agent i ’s consumption of good y . $i = A, B$. A Pareto optimal allocation under this circumstance is one that maximizes the utility of agent A , while holding agent B ’s utility fixed at some given level of \bar{u} . Thus,

$$\begin{aligned} & \text{Maximize } u_A(x_A) + y_A \\ & \text{subject to } u_B(X - x_A) + Y - y_A = \bar{u}. \end{aligned} \quad (1.6)$$

Substituting the constraint into the objective function, we have the unconstrained maximization problem,

$$\text{Maximize } u_A(x_A) + u_B(X - x_A) + Y - \bar{u}. \quad (1.6')$$

The optimality condition is given as

$$\frac{du_A}{dx_A} = \frac{du_B}{dx_B}. \quad (1.7)$$

Now, we consider the relationship between the optimality condition (1.7) and competitive equilibrium. At an equilibrium price p^* , each consumer adjusts her or his consumption of good x to have

$$\frac{du_A}{dx_A} = \frac{du_B}{dx_B} = p^*. \quad (1.8)$$

This equation means that the necessary condition for Pareto optimality is satisfied; market equilibrium can produce a Pareto-optimal allocation of resources. This proposition is usually referred to as the first optimality theorem of welfare economics.

First Optimality Theorem Resource allocation is Pareto-optimal if there is perfect competition and no market failure.

The first basic theorem of welfare economics states that a competitive equilibrium is a Pareto optimum; namely, the equilibrium is one for which no utility level can be increased without decreasing some other utility level.

Further, any allocation that is Pareto-optimal must satisfy (1.7), which determines p^* . This implies that such a Pareto-optimal allocation would be generated by a competitive equilibrium. Thus, we have the second theorem of welfare economics.

Second Optimality Theorem Any specified Pareto-optimal resource allocation that is technically feasible can be established by a free market and an appropriate pattern of factor ownership.

The second basic theorem of welfare economics states that any Pareto optimum can be realized as a particular competitive equilibrium; namely, for each Pareto optimum there is an associated price system and a system of resource ownership that would attain, as a competitive equilibrium, this solution with differing distributions of utility. The theorem says that every Pareto-efficient allocation can be attained by means of a decentralized market mechanism.

2.3 A Dual Approach

Consider a standard utility maximization problem of a consumer:

$$\begin{aligned} & \text{Maximize } u(x_1, x_2) \\ & \text{subject to } p_1x_1 + p_2x_2 = M \end{aligned} \quad (1.9)$$

where x_i is her or his consumption of good i , p_i is a consumer price of good i , and M is her or his income ($i = 1, 2$). Then, the maximum utility u is a function of M and the price vector $\mathbf{p} = (p_1, p_2)$.

The indirect utility function indicates the maximum utility attainable at given prices and income:

$$u = U(\mathbf{p}, M). \quad (1.10)$$

From this equation, we may derive the expenditure function:

$$M = E(\mathbf{p}, u) \quad (1.11)$$

where $E(\cdot)$ indicates the minimum money cost at which it is possible to achieve a given utility at given prices.

The expenditure function summarizes the consumer's optimizing behavior and has the following properties.

- (i) $E(\mathbf{p}, u)$ is non-decreasing in \mathbf{p} .
- (ii) $E(\mathbf{p}, u)$ is homogeneous of degree one in \mathbf{p} .
- (iii) $E(\mathbf{p}, u)$ is concave in \mathbf{p} .
- (iv) $E(\mathbf{p}, u)$ is continuous in \mathbf{p} .
- (v) The compensated demand curve is $x_1(p_1, p_2^0, u^0) = \frac{\partial E(p_1, p_2^0, u^0)}{\partial p_1}$.

3 The Public Sector in Japan

3.1 The Role of Central Government

Let us explain the public sector of Japan in order to understand the government's role in Japan's national economy (see Doi and Ihori (2009) for more detailed explanations). The general government consists of the central government, local governments, and social security funds. If we add public enterprise to these, we have the public sector.

First, let us explain the context of central government in the public sector. The central government has a Cabinet Office and 11 ministries. At present, only one administrative organ is classified as an Office above the Ministerial Level. This is the Cabinet Office.

Cabinet Office

Ministry of Internal Affairs and Communications

Ministry of Justice

Ministry of Foreign Affairs

Ministry of Finance

Ministry of Education, Culture, Sports, Science, and Technology

Ministry of Health, Labor, and Welfare

Ministry of Agriculture, Forestry, and Fisheries

Ministry of Economy, Trade, and Industry

Ministry of Land, Infrastructure, and Transport
Ministry of the Environment
Ministry of Defense

The central government budget consists of the general account, special accounts, and government-affiliated agency budgets. The general account budget is the representative budget of the central government.

The central government collects tax revenues from direct taxes and indirect taxes, and engages in government expenditure such as the provision of public services. In addition, central government allocates tax to local governments and transfers subsidies to the social security fund. The latter supports public pensions and public medical insurance. Central government also provides loans to public enterprises; namely, public funds financed from the financial market through public debt are given to the special account, local governments, and some public agents.

3.2 Intergovernmental Finance

Local finance has a close relationship with national finance with regard to the following points.

- (i) In order to secure the independence of local finance, local governments have their own taxes that are collected as local taxes. At the same time, the allocation of the tax base between central government and local governments is appropriately determined.
- (ii) In order to correct any inequality of fiscal resources among local governments, central government provides a local allocation tax and a local given tax to local governments as a fiscal adjustment system.
- (iii) In order to maintain the standard of public service across all local governments, central government provides necessary subsidies.
- (iv) Local public debt can be issued by local governments in accordance with regulations and monitoring by central government.
- (v) With regard to direct public works of central government, local governments are required to pay some of the costs.

As shown in Fig. 1.1, the amount of local finance is almost the same as the amount of national finance if we adjust overlapping finance among local governments. The expenditure by central government includes subsidies to local governments such as the local allocation tax and other subsidies. However, expenditure by local governments includes contributions to central government's direct public works. When we adjust overlapping expenditure between local governments and central government, the amount of local finance is twice that of national finance. Chapter 13 discusses theoretically the economics of intergovernmental finance and then some topical issues in Japan.

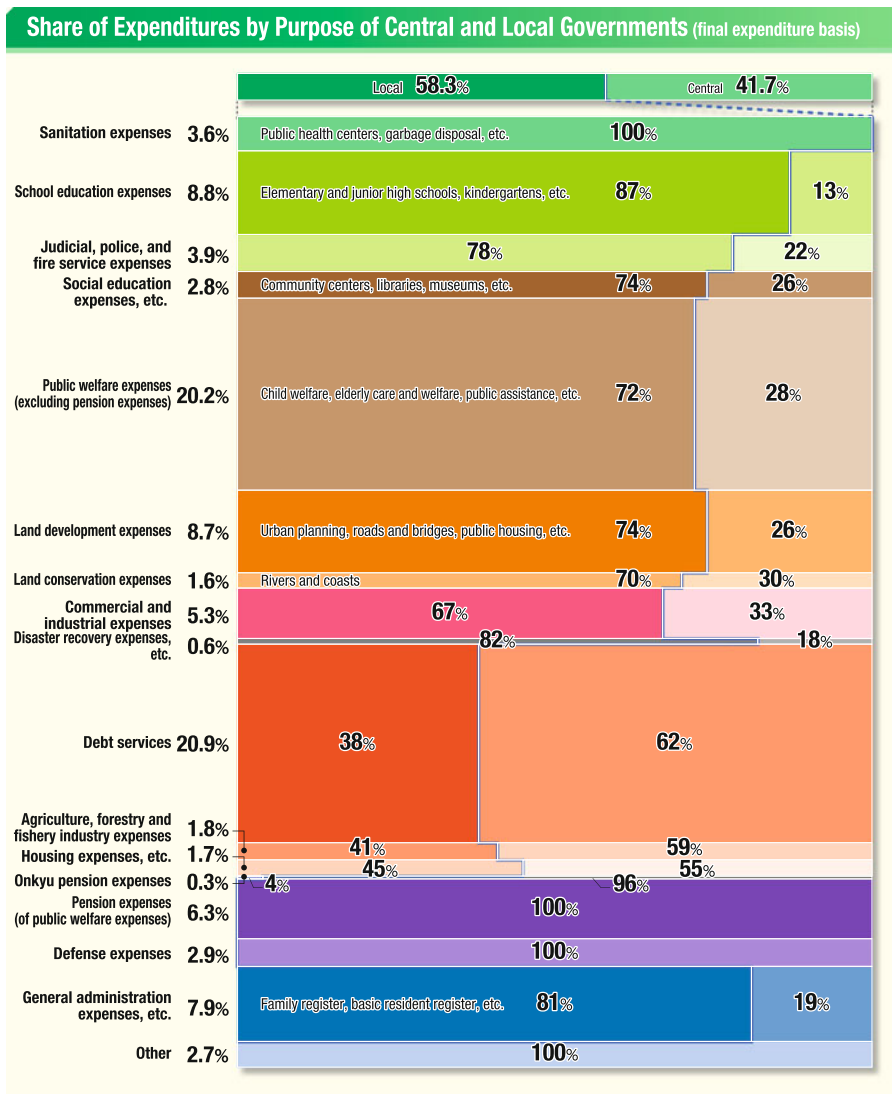


Fig. 1.1 Share of expenditure in the system of Japanese government (Source: FY2013 Settlement. White Paper on Local Public Finance, 2015—Illustrated. Ministry of Internal Affairs and Communications. http://www.soumu.go.jp/iken/zaisei/27data/chihouzaisei_2015_en.pdf)

3.3 The Budgetary System

3.3.1 The Budgetary Formula in Japan

The government budget summarizes the economic activities of the government and explains many features of the public sector. The budgetary system is determined by the constitution and laws. Figure 1.2 explains Japan’s budgetary system. Central

government's budgetary process is essentially prescribed by the country's Constitution and Public Finance Law enacted in 1947.

In order to manage revenue and expenditure efficiently, it is necessary to plan for a certain period. This accounting period is normally 1 year. In Japan, the accounting year begins on April 1 and ends on March 31. A budget must be compiled for each fiscal year.

The regular annual budget (initial budget) usually has to be approved by the National Diet, Japan's bicameral legislature, before the fiscal year begins. This process is referred to as the principle of preparing the budget on an annual basis. In addition, as a general rule, expenditure for each fiscal year must be covered by revenue from that fiscal year. This is called the fiscal-year-independence principle, or the 1-year-budget principle.

The budgetary formula to be presented at the Diet consists of the following five items.

- (i) General budget summary: This document summarizes the general principle of the budget and identifies the limit of debt issuance.
- (ii) Budget of revenue and expenditure: This is the main content of the budget and shows every item of revenue and expenditure, following the given criteria. Revenue is simply projected but expenditure sets the upper limit that the government may spend.
- (iii) Continuous expenditure: If the completion of expenditure takes more than 1 year, the budget declares expenditure according to each year and the total amount of expenditure.
- (iv) Carry-over allowance: If expenditure is expected to continue over the next year, the budget allows for this continuance in advance.
- (v) Burden of future debt: If a contract is made within the current year but actual spending is postponed to the following year, the budget allows an ex ante contract. When the expenditure occurs in the future, the budget must show this expenditure again.

3.3.2 The Budgetary Process

Let us explain the budgetary process in Japan. Each year, the cabinet submits a budget bill to the Diet. In countries such as Japan with a parliamentary system of government, the ruling party is normally the majority party; hence, a budget developed by the cabinet is easily approved by the Diet. Consequently, the way in which the budget is developed in the cabinet is important.

In May, each ministry begins to make proposals for next year's budget. By the end of August, each ministry must submit its budget proposals to the Ministry of Finance (MOF). Then, the MOF investigates these proposals and formulates the final budget by the end of December after negotiating with the corresponding ministries.

An examination by the Budget Bureau and negotiations between each ministry and the MOF continue for several months. The budget-making process is busy from September onward. At the same time, the government makes a projection of macroeconomic activities for the next fiscal year. Then, it determines the total

ceiling for issues such as expenditure, tax reforms, and the limit of public debt issuance.

The projection of macroeconomic variables is important because this in effect determines the tax revenue estimate for the next fiscal year. If economic growth is projected to be high, the government estimates a large increase in tax revenue, resulting in a larger budget. Recently, the projection for the following year's gross domestic product (GDP) has been too optimistic. It seems that political pressure to seek large spending results in such optimistic projections in order to make the initial budget consistent with fiscal consolidation targets. When the size of the budget is determined, money is allocated among each ministry.

In early December, the cabinet adopts the "Basic Principles of Budget Formulation." This articulates the basic principles of the upcoming budget. In accordance with the principles, the "Proposal of the Budget Bill by the MOF" is presented, usually in mid-December. Final negotiations between each ministry and the MOF are then held based on the MOF's proposal. In response to the final negotiations, the final budget bill is approved by the cabinet, usually at the end of December.

The cabinet submits the bill to the Diet, usually in the latter half of January. The House of Representatives (the Lower House) must discuss the bill before the House of Councilors (the Upper House), in accordance with the Constitution. If the two Houses decide on different versions of the budget, a joint committee of the two Houses is convened. If the House of Councilors cannot make a decision on the budget within 30 days of receiving the bill from the Lower House, the bill passed in the House of Representatives becomes the decision taken by the Diet. This is called the automatic enactment of the budget.

If the initial budget bill is not approved by the beginning of April, the cabinet proposes a provisional budget. This bill includes the minimum administration costs, such as salaries for civil servants. The provisional budget is absorbed into the initial budget after the initial budget bill has been approved. The cabinet can modify the initial budget during the fiscal year.

If the budget is approved but some additional expenditure then becomes necessary because of an unexpected natural disaster or negative macroeconomic shock, for example, the government creates a supplementary budget to add new expenditure and/or revise the budget's content to cope with the unexpected detrimental event. Any supplementary budget proposed by the cabinet has to be approved in the Diet.

3.3.3 The Execution of the Budget and the Settlement of the Account

If the budget is approved by the Diet, the cabinet allocates money to each ministry and the budget is executed. With regard to the revenue side, taxes are collected according to laws and contracts. Since the projection of a macroeconomy is imperfect in reality, the actual tax revenue is not the same as the projected amount. If the economy is more active than the projection, actual revenue is higher than anticipated. This is called a natural increase in taxes. In contrast, if the economy is less active than the projection, actual revenue is lower than anticipated. In such a situation, the government has to make a supplementary budget to issue more public bonds. Otherwise, it has to reduce expenditure to avoid a supplementary budget.

However, with regard to the expenditure side, the purpose and amount of spending are constrained by the budget. The government cannot overspend or spend outside the initial content.

When the fiscal year ends and budget execution is complete, the budget account is settled. The settlement is checked by the Board of Audit of Japan. In December, the Board submits the final report of the settlement to the Diet. Then, the settlement committee reviews it. This procedure does not need official approval but can put political pressure on the government for the efficient execution of the budget.

3.4 The Content of the General Account in Japan

3.4.1 The Category of Budget

The general account budget is the representative account of central government. Most national tax revenue, which is general taxes, comes into the general account. Proceeds from newly issued national government bonds also go into the general account. The main expenditure for policies of the central government is supposed to be reported in the general account. However, the amount of the general account budget is less than the (net) total amount of the special account budgets. Moreover, approximately half of expenditure in the general account is transferred into special accounts.

Special accounts are established by law in order to separate the costs of specific projects and specific revenue sources from the general account. Special accounts cover some public works, public pensions, fiscal transfers to local governments, and repayments of government debt. In some special accounts, designated national taxes can be collected directly. In addition, when the government initiates special items or manages special funds, special accounts are used. Such accounts are useful for clarifying their content and making administration efficient.

3.4.2 Government Expenditure

Let us review the size of government spending per GDP in terms of the central government's general account for the past 50 years. In the high growth era of the 1960s, the spending/GDP ratio was stable at about 10%. Then, in the late 1970s, it began to rise, and in the 1980s its size was about 17%. From 1990, it began to rise again. The expenditure content includes public works, education, and defense. Among other areas, social welfare spending has increased because of the effect of an aging population since the 1970s.

Let us now compare the size of public spending in Japan with other developed countries. In order to make a reliable comparison, we consider central government and local governments because intergovernmental finance differs among countries. Figure 1.3 shows general government public spending per GDP among developed countries. Japan's figure is almost the same as that of the US and smaller than most EU countries. In Japan, government consumption has been relatively small and government investment has been relatively large.

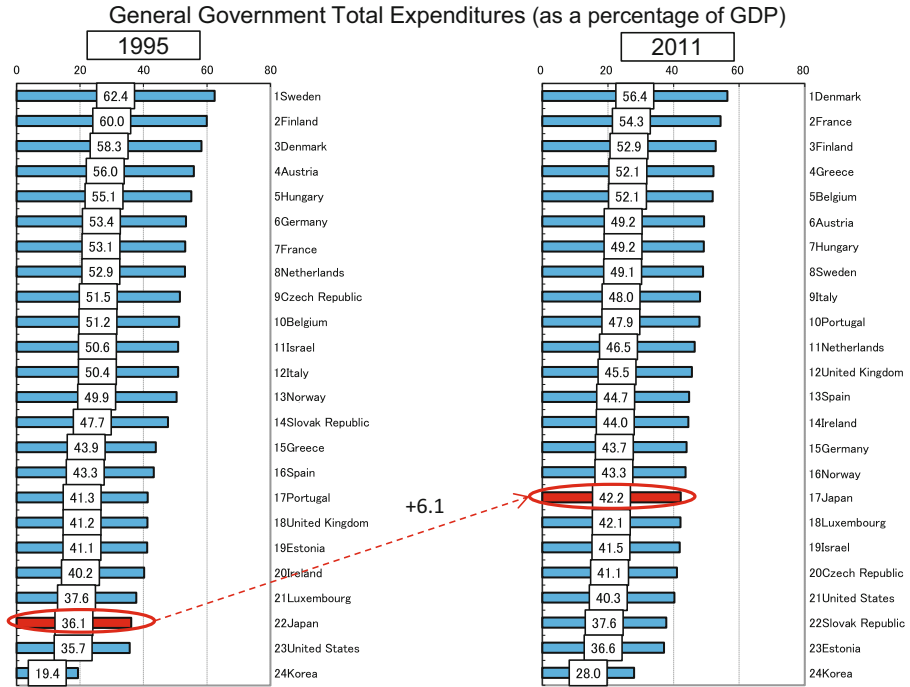


Fig. 1.3 General government public spending in developed countries (Source: Japanese public finance fact sheet. 2016 Ministry of Finance. <http://www.mof.go.jp/english/budget/budget/fy2016/03.pdf>)

If the size of spending in EU countries, particularly northern European countries, is considered desirable, then Japan’s expenditure is still too small. The role of social welfare spending is partly shared by the private sector in Japan. Relatives and family members have played a large role in social welfare programs. However, since family structure has changed rapidly in Japan, we should not expect to rely on the private sector any more. Thus, we may argue that the size of public spending on social welfare is too small and hence should be increased.

In contrast, if the size of spending in the era of high economic growth before the 1970s is considered desirable, the recent increase in the size of public spending is already too much. An increase in public spending could crowd out private spending and depress private economic activities. In order to stimulate economic growth, we could argue that it may be necessary to restrain the increasing trend of public spending.

3.4.3 Tax Revenue

The national burden ratio is an indicator of tax burden, which is the tax revenue including social security contributions per national income. The national burden ratio of national and local taxes in Japan was about 30 % until the 1980s. It then

began to rise. Recently, it has been about 40%. If we make a comparison with other developed countries, Japan's figure is larger than that of the US but smaller than that of the EU. In terms of an international comparison, Japan and the US are mainly dependent on direct tax, while the EU is mainly dependent on indirect tax.

3.4.4 Public Debt

In accordance with Japan's public finance law, public debt issuance is allowed only for financing public works, loans, and funds. This is because the redemption of public debt has moved to future generations and hence the burden of public debt has moved to future generations; thus, public debt is desirable only for expenditure that benefits future generations. The construction bond based on this principle was first issued in the budget of 1966, and since then has been issued every year.

It should be stressed that public works are not always productive. As explained in the Case Study of Chap. 2, the productivity of public investment in Japan has been declining. If the construction and maintenance cost of public capital is larger than the benefit of use of public capital, future generations do not benefit from public capital accumulation. In such a situation, we have to be careful about issuing the construction bond again.

Moreover, since 1975, a special law has been imposed so as to issue a deficit bond that is used for ordinary expenditure. This means that from 1975, the gap between public expenditure and tax revenue has become larger than the period following the issuance of the construction bond.

Owing to fiscal consolidation measures in the 1980s, the 1990 budget did not issue the deficit bond. However, from 1991, tax revenue was not as large as anticipated; hence, the deficit bond was issued again from 1994 (see Fig. 1.4).

4 Organization of the Book

4.1 Part One

In Part One, we cover the macroeconomic aspects of public finance. In Chap. 2, we discuss the macroeconomic effects of fiscal policy based on Keynesian models. This is a standard and conventional fiscal policy in a recession. In Chap. 3, we discuss the macroeconomic effects of fiscal policy based on neoclassical models. If the private agent is rational and forward-looking, the efficacy of fiscal policy depends on how the future fiscal situation is affected by current fiscal variables. The fiscal multiplier could be negative in the neoclassical framework. In Chap. 4, we consider the economic effect of public debt. In particular, we explain the burden of public debt on future generations and examine the plausibility of the debt-neutrality hypothesis, which argues in favor of the equivalence between tax finance and debt finance.

In Chap. 5, we investigate the long-run effects of fiscal policy on economic growth using several theoretical growth models. An increase in taxes normally depresses economic growth, although it could stimulate growth if public investment

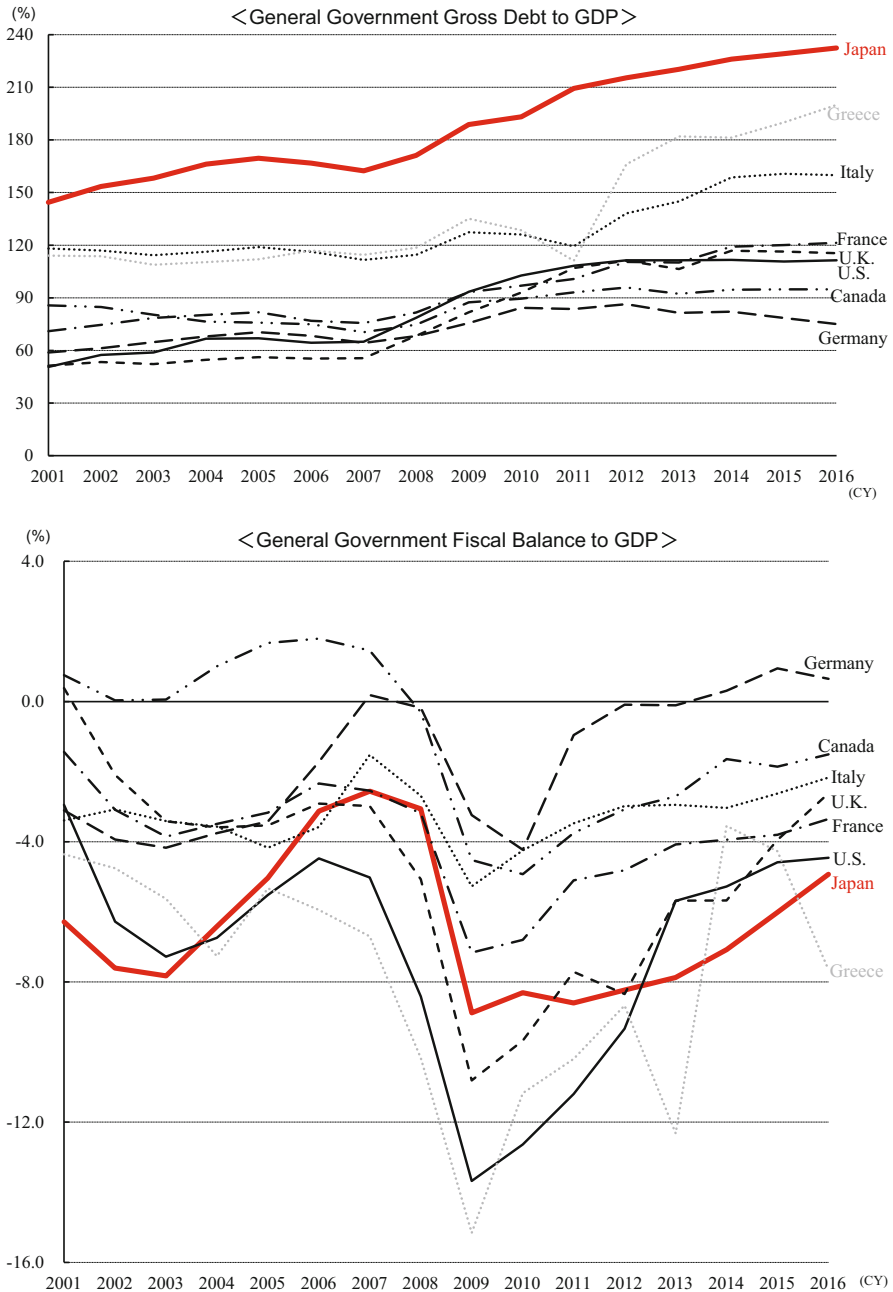


Fig. 1.4 General government fiscal balances and gross debt, 1990–2014 (Source: Japanese public finance fact sheet. 2016 Ministry of Finance)

is particularly productive. In Chap. 6, we examine desirable fiscal policy management and discuss the outcome of the accumulation of public debt. We also discuss plausible sustainability conditions and investigate how to attain fiscal consolidation. Finally, Chap. 7 considers the role of public pensions in an economy with an aging population such as that of Japan.

4.2 Part Two

In Part Two, we cover the microeconomic aspects of public finance, which many standard textbooks on public finance deal with. In Chap. 8, we examine the microeconomic effect of taxes on labor supply, saving, investment, and consumption. Income and substitution effects are key factors for investigating the impact of taxation. We also explain the excess burden of taxation. The notion of excess burden is a crucial concept from the viewpoint of efficiency, and the substitution effect is an important factor for identifying the size of the excess burden. In Chap. 9, we first compare labor income tax and interest income tax from the viewpoint of efficiency. We then investigate optimal taxation based on the Ramsey rule. We then discuss tax reforms by using the standard optimal-tax framework. In Chap. 10, we discuss an important policy issue of income redistribution by means of progressive income taxes based on plausible equity judgments. Progressive income tax is necessary in order to redistribute income; however, the degree of progressivity is constrained by efficiency considerations.

In Chap. 11, we explain the notion of public goods and investigate the outcomes of the public and private provision of public goods, based on the Samuelson rule. It is important to manage free rider incentives because public goods are non-excludable. In Chap. 12, we consider the political aspect of public finance using a voting model with heterogeneous agents. We also examine the impact of the behavior of politicians and political parties on fiscal policy. Finally, in Chap. 13 we discuss the economics of local public finance theoretically and highlight some interesting features of Japan's situation.

4.3 Appendix

We provide relevant appendixes to the chapters. The appendixes include advanced studies on the related topics of the main content and case studies with regard to Japan's public finance. The advanced studies contain some technical materials and mathematical models, which should be suitable for graduate students with advanced academic skills. The case studies are useful for students who are more interested in Japan's public sector.

Appendix: Japan's Fiscal Management

Let us explain Japan's fiscal management since 1950 following Doi and Ihori (2009). Figures 1.A1, 1.A2, and 1.A3 summarize trends in general account tax revenues, total expenditure, and government bond issues. Trends in the debt dependency ratio and major expenditure items are also shown.

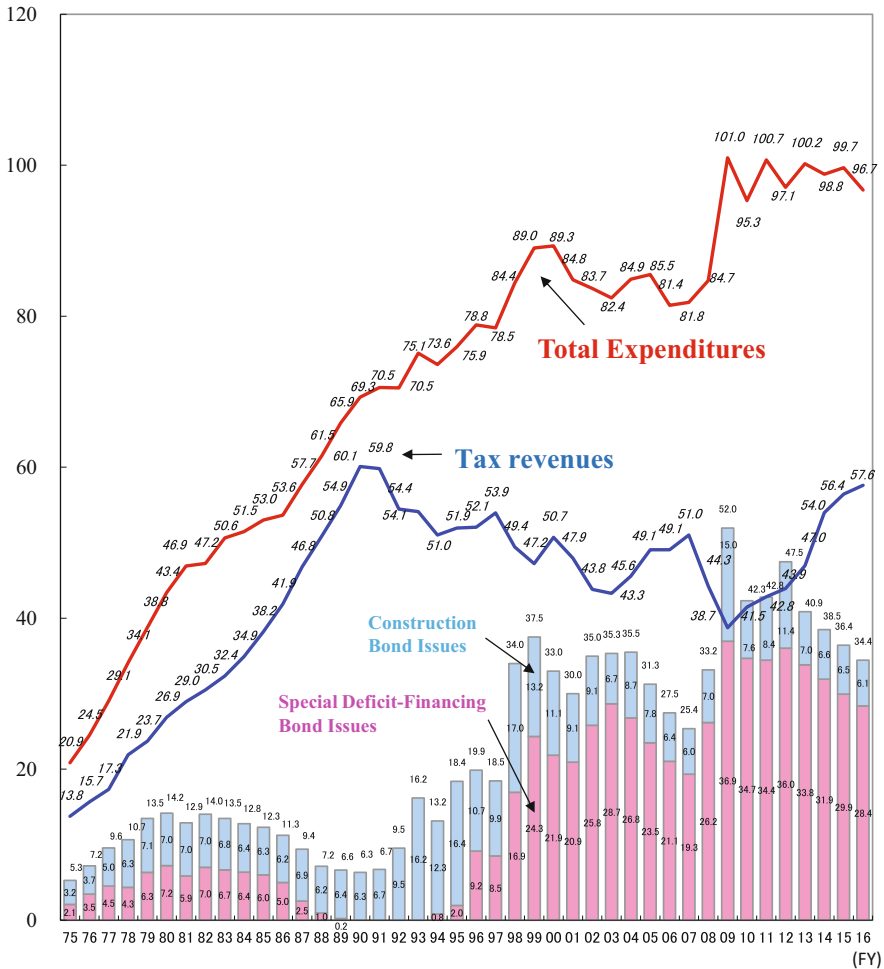


Fig. 1.A1 Trends in general account tax, revenues, total expenditures and government bond issues (Source: Japanese Public Finance Fact Sheet. 2016 Ministry of Finance. <http://www.mof.go.jp/english/budget/budget/fy2016/03.pdf>)

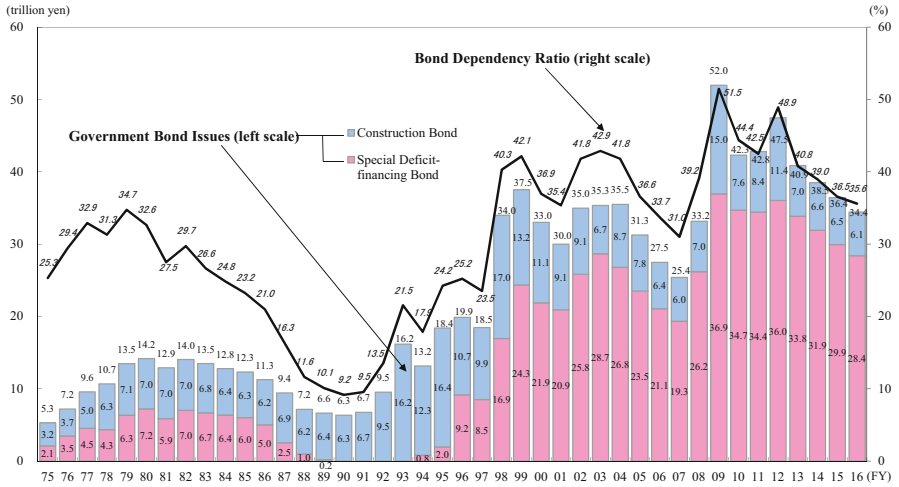


Fig. 1.A2 Government bond issues and the bond dependency ratio (Source: Japan’s fiscal condition (FY2016 draft budget). December 2015 Ministry of Finance. <http://www.mof.go.jp/english/budget/budget/fy2016/02.pdf>)

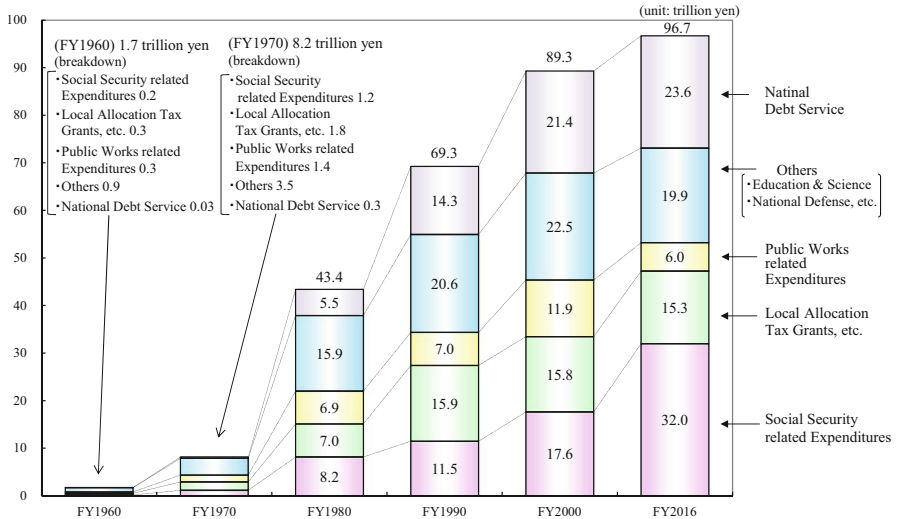


Fig. 1.A3 Transition of major expenditure items in the general account (Source: Japan’s Fiscal Condition (FY2016 draft budget). December 2015 Ministry of Finance. <http://www.mof.go.jp/english/budget/budget/fy2016/02.pdf>)

A1 The 1950s

The features of fiscal management in the 1950s can be summarized as follows. First, the fiscal investment and loan program was established to promote economic growth. Second, under the balanced budget principle, tax was not raised and an increase in tax revenue caused by economic growth was transferred to the private sector as a tax reduction; thus, the size of government was small in terms of public expenditure. As a result, the private sector had many resources for the accumulation of capital. Third, the fiscal built-in stabilizer mechanism was not used a great deal.

In a country with small government, business fluctuations in the 1950s were affected by the balance of payments under the fixed exchange rate system. When the economy was prospering, imports increased, thereby raising trade deficits. In order to maintain the fixed exchange rate, the monetary authority raised the rate of interest to reduce aggregate demand. However, when the economy was in a recession, a trade surplus occurred because of a decline of imports. Thus, the monetary authority reduced the rate of interest in order to stimulate aggregate demand. The stabilization policy was mainly conducted through monetary policy.

A2 The 1960s

In the 1960s, the balanced budget principle was maintained as in the 1950s. However, in the recession of 1965, the government first issued the deficit bond to finance a shortage of revenue. In 1966, the construction bond was issued and an excessive fiscal policy was temporarily employed to stimulate aggregate demand. However, restrictive fiscal management was then employed again to reduce the debt dependency ratio.

The fiscal management approach of the 1960s pursued the principle of small government as in the 1950s; thus, the government distributed resources to the private sector to promote private capital accumulation by reducing taxes and spending. However, at the same time, public capital, which was complemented with private capital, was accumulated for items such as roads and ports since public capital was too little and its productivity was large. Overall, public investment increased from the early 1960s.

The Japanese economy experienced high growth. The average real growth rate in the 1960s was about 10 %, producing a large increase in tax revenue. Then, in the late 1960s, the government gave subsidies to the agricultural sector, small-size firms, and less developed rural areas that had not benefited from high economic growth.

These measures involved a redistribution policy that used fiscal variables. Since economic growth led by private investment did not improve the living environment a great deal, the government provided money to improve amenities in urban areas. This expenditure was financed by the fiscal investment and loan program together with central government's general account.

A3 The 1970s

In the 1970s, the macroeconomy in Japan experienced serious fluctuations because of negative shocks caused by oil price increases. Thus, fiscal policy was required to stabilize the economy by the use of discretionary Keynesian measures. Fiscal management became the main political concern and stabilized the Japanese economy significantly. Following the first oil crisis in 1973, high economic growth ended. However, the budgetary structure still assumed high economic growth under the optimistic expectation that GDP and hence tax revenue would recover soon.

Actually, the macroeconomy was slow and the fiscal deficit increased. At the same time, in 1973, when medical services for elderly people became free in the first year of the welfare state, and pension benefits were raised, welfare spending began to increase rapidly. An increase in welfare spending together with the economic slowdown resulted in the fiscal deficit accumulating significantly. Figure 1.A1 illustrates trends in general account tax, revenues, total expenditure, and government bond issues.

A4 The 1980s

In 1980, the government had two objectives: fiscal consolidation and the structural reform of the administrative and fiscal systems. Because the Japanese economy faced a world recession due to the second oil crisis, there was a trade-off between the mid- and long-term objectives of fiscal consolidation and structural reforms, and the short-term stabilization policy to attain full employment. In the early 1980s, the government took restrictive measures to reduce the fiscal deficit but did not adopt discretionary stabilization measures to realize full employment.

In the late 1980s, the US economy recovered; hence, exports from Japan to the US increased, helping the recovery of the Japanese economy. As a result, the excessive fiscal policy of the US made it possible for Japan to conduct restrictive fiscal management during a boom. Then, Japan had a significant balance of payments surplus and serious trade conflicts.

During the 1980s, the fiscal balance improved. Based on structural reforms, fiscal management was rather restrictive but monetary policy was rather expansionary. Moreover, the bubble economy of the rapid increase in asset prices in the late 1980s raised tax revenue more than projected. Finally, the government could avoid issuing the deficit bond. This meant that the official target of fiscal consolidation was attained.

A5 The 1990s

After the bubble economy burst in the early 1990s, the economy was in recession for a long time, resulting in a decrease in tax revenue. Fiscal management again

became a serious matter. From 1994, the deficit bond was issued. Politically, Japan experienced a coalition government and the fiscal deficit accumulated rapidly.

In 1996, fiscal consolidation attempts were pursued and the Fiscal Structural Reform Act was implemented. However, in late 1997, the financial crisis experienced by Asian economies made Japan's macroeconomic situation worse. From April 1998, the government changed its fiscal management approach from fiscal consolidation to an excessive fiscal policy.

Thus, in May 1998, a supplementary budget was imposed to reduce income taxes and raise public works. The Fiscal Structural Reform Act was also revised in order to conduct more elastic fiscal management. Then, in July 1998, the Obuchi government employed more excessive fiscal measures. The Fiscal Structural Reform Act was abandoned.

In 1999, more excessive fiscal measures such as income tax cuts and subsidies to local governments were employed using several supplementary budgets. At this time, Japan's prime minister, Obuchi, became the worst offender for issuing public debt.

The purpose of these counter-cyclical fiscal measures was to stimulate aggregate demand by any means. The Japanese government justified this policy by arguing that if we could not attain economic recovery and fiscal consolidation at the same time, we could not attain either. However, although the fiscal deficit increased rapidly, the economy did not recover well.

The Obuchi administration's aggressive public spending policy was continued by Yoshihiro Mori, who became prime minister in April 2000. The free-spending measures were intended to encourage demand in any way possible in order to brighten the economic environment. The reasoning was that a policy of "chasing two rabbits at once"—meaning economic recovery and fiscal consolidation—fails to achieve either objective, and that the first priority should be recovery.

However, the "do everything possible" policy, intended to yield quick results, led to a runaway expansion of the deficit, raising concerns about the sustainability of the fiscal balance. As one non-essential public facility after another was built across the country, the cost of maintaining them increased massively. The expansionary economic policy pursued by the Obuchi and Mori administrations through more spending on public works and tax cuts raised questions about the macroeconomic impact of fiscal policy. Figure 1.A2 presents government bond issues and the bond dependency ratio.

A6 The 2000s

The Koizumi administration was in office from 2001 to 2006. The prime minister was very popular and the Council on Economic and Fiscal Policy played a key role in the conduct of a clear and reliable fiscal policy. The fundamental principle of budget making, together with spending and revenue decisions, were discussed and determined. Because the Council set the basic guidelines by the summer of each

year, the bargaining power of the MOF and other ministries, as well as politicians, was weakened.

The objective of the Koizumi administration for fiscal management was to limit new debt issuance in the general account to less than 30 trillion yen. In the initial budget of 2002, this target was realized, but the supplementary budget issued an additional debt of 5 trillion yen. Then, in 2003, the initial budget issued public debt of more than 40 trillion yen. Finally, in 2006, the target was attained, mainly because of the recovery of the macroeconomy.

In 2006, the government determined a mid-term guideline for fiscal consolidation known as the basic guideline of 2006. According to this guideline, the primary balance was to be in surplus by 2011. In order to achieve this, the main target was to reduce public spending by 11.4–14.3 trillion yen. However, in 2007 the global financial crisis occurred and this objective was abandoned. The government again took excessive fiscal measures to stimulate the aggregate economy. The fiscal deficit increased rapidly.

In 2007, the administration of Shinzo Abe aimed to stop debt accumulation by the early 2010s, a policy that has been continued by Shinzo Abe's successor, Yasuo Fukuda. The revised target was to restore the primary balance by 2011. However, the planned consolidation was not achieved because wasteful public spending was not eliminated following the successful lobbying activities of interest groups.

A7 The 2010s

In the 2009 general election, Japan underwent a change in government. The Democratic Party (DP) took over from the Liberal Democratic Party (LDP) for the first time by obtaining a large majority in the Lower House. Voters at the 2009 election supported the DP's proposal that significant wasteful spending exists in the government budget; thus, fiscal consolidation could easily be achieved by cutting such wasteful spending without raising consumption taxes. However, it transpired that the DP government could not identify large sources of wasteful spending. Consequently, although the new government intended to conduct macroeconomic and microeconomic fiscal reforms, it could not attain its objectives.

The DP government was finally forced to decide to raise the consumption tax rate from 5 to 10 % by 2015. This development helped to reduce the informational asymmetry between the Japanese government and the general voters with respect to the fiscal situation.

The LDP's Shinzo Abe, Japan's prime minister since 2012, now employs the so-called third arrow of Abenomics, which is a plan to pull the country out of its long economic slump. Since his concern is mainly the current macroeconomic situation, he has adopted conventional Keynesian fiscal policy to stimulate aggregate demand through public works in addition to nontraditional expansionary monetary policy. As a result, fiscal consolidation is still not handled well.

The Abe administration seems reluctant to raise consumption tax rate as scheduled, although it did raise it to 8 %, effective from April 2014. The Abe

administration postponed a further increase in the consumption tax rate to 10 % from October 2015 to April 2017. Then, in June 2016, it again postponed an increase in the consumption tax rate to 10 %, this time to October 2019. However, a commitment to fiscal consolidation is unclear unless the consumption tax rate is increased in the near future. Figure 1.A3 shows the transition of major expenditure items in the general account.

Questions

- 1.1 Justify the following government activities using four main functions of the public sector.
 - (a) Public education.
 - (b) The construction of highways.
 - (c) Garbage collection.
- 1.2 Explain the difference between two optimality theorems of the market mechanism and justify a redistribution policy even if the private market is perfect.
- 1.3 Compare the Japanese budgetary process with the counterpart in your country.

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