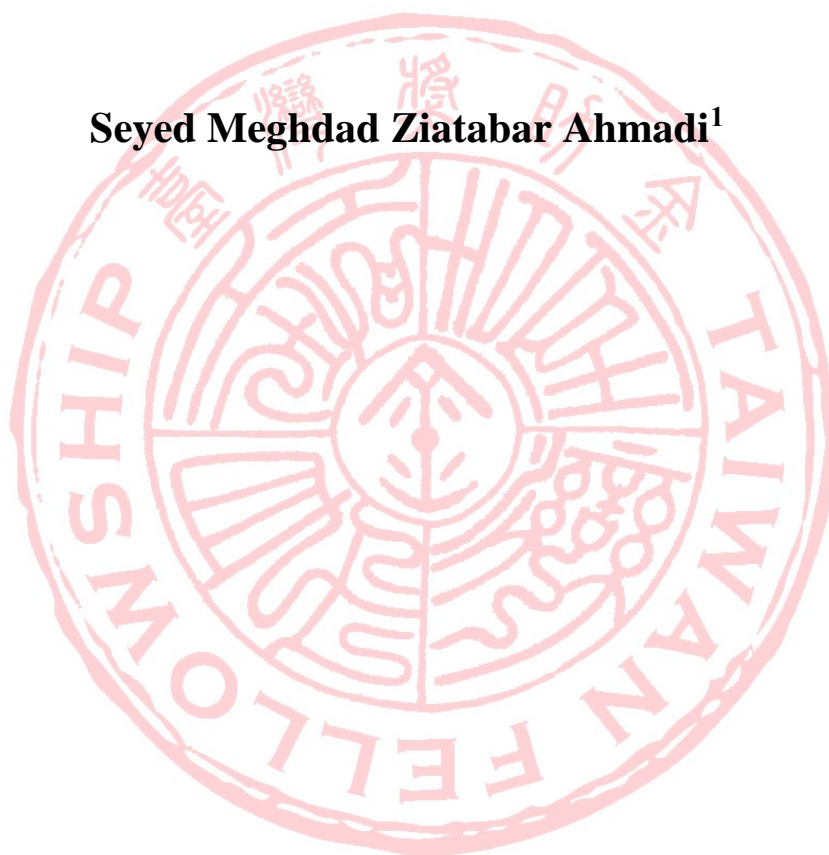


Government's Budget and Taiwan's Economic Development; Lessons for Iran

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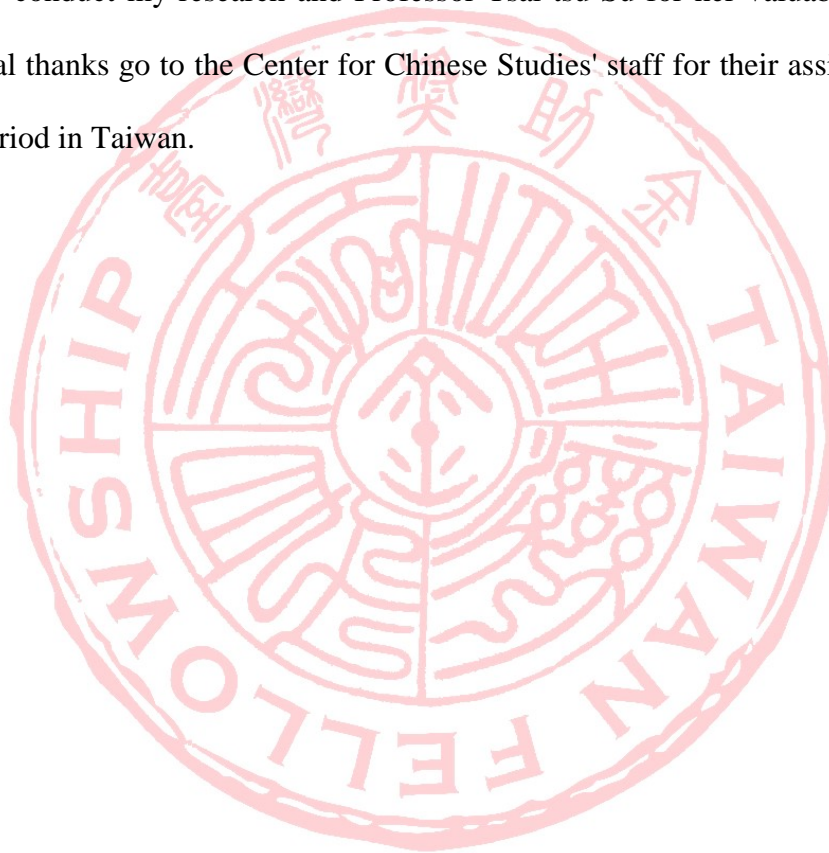
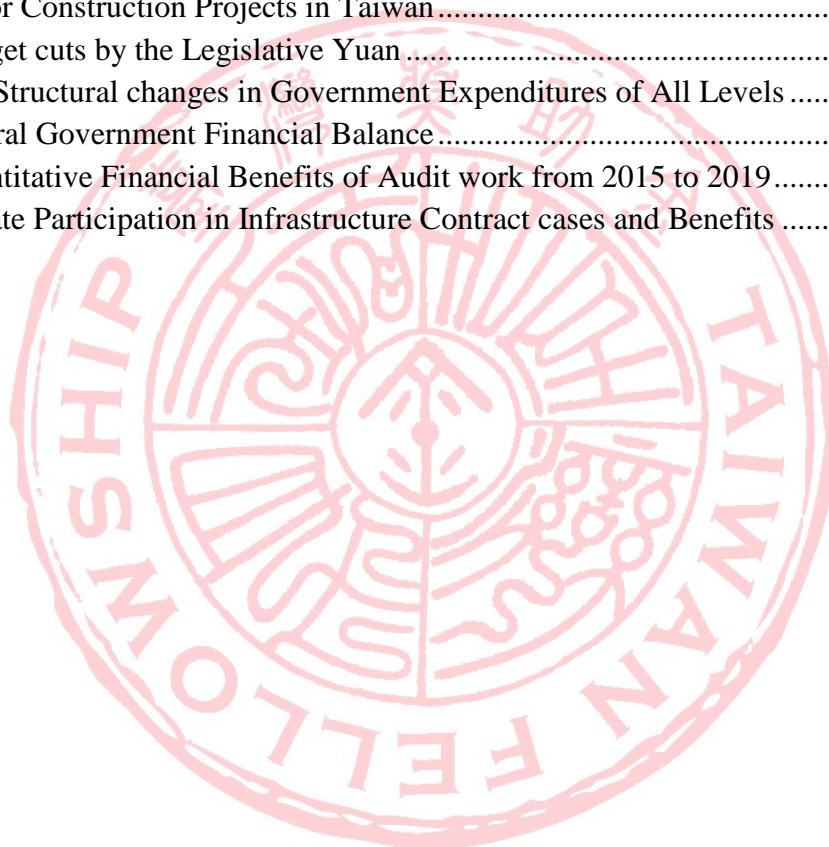


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1- Introduction

The story of Taiwan's development after the 1950s is well known. It embraces the passage through an import-substitution into export orientation and finally science and technology-oriented phase. Indeed, there is no sense in which its experience need to be described as a "miracle". Moreover, it is a misconception that the Taiwan miracle commenced with the export of labor-intensive manufacturing products and a reduction of government intervention in the economy. But as I discuss later, as a result of surrender of Japan at the end of the World War II, the island was placed under the governance of the Republic of China ruled by Kuomintang (1945) and started new era of its history. From 1945, the state has had vital role to lead the economy. Until the mid-1950s, economic conditions did not seem favorable, but years of economic prosperity were coming. Taiwan already enjoyed fast raising real gross domestic product (GDP) in the last 7 decades and also became one of the ICT¹ pioneers in the world.

From the start, agriculture was the dominant sector and sugar was the most important exporting product of the island. However, various important factors have contributed in shaping a successful transition from an agricultural economy to a country based on high tech industry. Undoubtedly, the role of the state was vital to fostering economic growth and leading the domestic economy to follow the objectives. To examine the relationship between government and economic development, this paper focuses on the development experience in Taiwan. For the past 7 decades, Taiwan has achieved one of the highest and most sustained growth rates, while performing very well in controlling inflation, maintaining low unemployment rate and a relatively equal income distribution (Liou, 2000). It is worth to note that the role of the state should study in two aspects. Indeed, the state can impact on economy directly (For example through launching development plan, providing infrastructure, upgrading strategic industries and public-private participation) and also shaping macroeconomic environment by policy making. Budget and budgetary system are included in both aspects. In fact, annual budget is key instrument which government affects on economic trend.

This paper investigates the major determinants of Taiwan's successful story regarding to role of the government and the impact of government intervention on the economy through budget and budgetary system. I will also emphasize the major developments on budgetary system, because it is worth to know how the government has tried to promote budget efficiency and its effectiveness. The paper is structured as follows. Part 2, after introduction, provides an overview of some important Socio-Economic indicators aims to shaping the current situation of the island. Part 3, studies the role of the state to promote economic growth and also has a brief review of the

¹ Information and Communication Technology

literature about government intervention in economy. In addition, I will discuss about some government policies (stabilization, motivation, etc.) and identify the role of the budget. Part 4, will focus on more detail of annual budget and the "Expenditure for Economic Development" which had the biggest share in annual budget during 1975-1995. Part 5, is allocated to the major developments in budgetary system and some factors that made it to be more efficient. Part 6, lists some useful lessons of Taiwan's experience that can be employed by Iran government to makes more efficient and effective budgetary system. Finally in the last part, conclusion is presented.

2- Taiwan's current situation at a glance

Two features of Taiwan's post-World War II history are striking. First, it is one of the few non socialist economies since Japan to rise from the grossest poverty and to enter the world of the "developed". Second, the state in Taiwan has played a leading role in the process of capital accumulation. It has positioned itself to prevail on key economic parameters such as the size of the surplus extracted from agriculture and the rate of profit in industry. To understand Taiwan's successful story, therefore, it is necessary to understand its potent state.

High-speed growth accompanied by quick industrialization began in the late-1950s. Taiwan became known for its cheap manufactured exports produced by small enterprises bound together by flexible sub-contracting networks. Taiwan's postwar industrialization is usually attributed to (1) the decline in land per capita, (2) changing in export markets and (3) government policy.

As for government policy, Taiwan went through a period of import substitution policy in the 1950s, followed by promotion of manufactured exports in the 1960s and 1970s. Since the late 1970s, Taiwan has been embarked on a development program designed to shift the economy. Government policy has been to use a variety of instruments to lay a foundation for the development of a series of new critical industries. Subsidies were available for certain manufactures under both regimes. During the import substitution regime, domestic manufactures were protected both by tariffs and multiple overvalued exchange rates. Under the later export promotion regime, export processing zones were set up in which privileges were extended to businesses which produced products which would not be sold domestically.

Before reviewing the key determinants of Taiwan's successful story, this part aims to indicate some Socio-Economic indices to shape better picture of Taiwan's current situation.

2-1 Economic indicators

During 1950s Import substitution was the main policy followed by Export promotion in 1960s and also in 1970s government emphasized on capital-intensive

industries. During recent decades government was always at the core of economic stimulation through policy making or direct intervention. The government has expanded infrastructures and implemented some Economic plans such as Four-Year Economic Plans, establishing export processing zones and major construction projects. The financial requirements of these plans, as I discuss later, were covered by government through annual budget.

Between 1952-2020, GDP Per capita increased by 136 times. From USD 154 in 1952 to 28383 in 2020. Furthermore, at the same time, according to table 1, average GDP and GDP Per capita growth rates were 11.58 and 8.4 respectively.

Table 1: GDP and GDP Per capita growth rate (1952-2020)

	GDP growth	GDP Per Capita growth rate
1952-60	20.3	2.7
1961-70	13.84	9.4
1971-80	20.93	19.9
1981-90	11.45	13.51
1991-00	8.75	6.3
2001-10	3.19	2.7
2011-20	3.47	4.04
Average Growth (1952-2020)	11.58	8.4

Source: National Statistics, Republic of China (Taiwan)

Table 2 indicates the structural change of the Taiwan economy during 1952-2020. Over the past seven decades, the economic center of gravity has shifted from agriculture to service and industry and, within industry, from labor-intensive light manufacturing to capital- and skill-intensive manufacturing (Kuo, 1999). The share of agriculture from one-third of GDP has fallen to 2 percent, also the share of industry has increased two times comparing with 1952.

Table 2: Changing Share of Agriculture, Industry and Services in GDP

(1952-2020)

	Agriculture	Industry	Services
1952	34	18	48
1960	30	26	44
1970	15	37	48
1980	7	46	47
1990	4	42	54
2000	2	31	67
2010	1.7	33.4	64.9
2020	1.64	37.2	61.14

Source: National Statistics, Republic of China (Taiwan)

In 2021, Taiwan is the 6th freest country in the world (The Heritage Foundation, 2021) and also has got the 12th rank in term of competitiveness index in 2019, the rank which is better than Korea Rep, Canada, Australia and Norway.

Table 3, illustrates the contribution share of economic sectors to economic growth. As it is clear, industry and service sectors have major role in economic growth. Particularly, in two last decades, industry had more contribution to economic growth.

Table 3: Contribution of economic sectors in economic growth

(1983-2020)

	Agriculture	Industry	Service
1983-90	0.13	3.48	5.21
1991-2000	-0.004	1.96	4.73
2000-10	0.006	2.20	2.06
2011-20	-0.001	1.47	1.44

Source: National Statistics, Republic of China (Taiwan)

During last decades, the agricultural island pushed itself to the industrialized world through government support. Government provided suitable infrastructure, enhancing investment, and established a stable economic environment to facilitate economic growth. Table 4 shows inflation, unemployment and exchange rate trends between 1960-2020 which refers a stable economic environment. From 1982 to present, Taiwan has experienced inflation rate less than 5 percent as well as unemployment rate¹ and low exchange rate fluctuation. Under certain conditions,

¹ Except 2002, 2009 and 2010.

economy can attract foreign assets, domestic economic agencies make their own business plan and finally economy will achieve its objectives. Taiwan, with stable and encouraging business environment, is attractive for investors.

Table 4: Inflation, Unemployment and Exchange Rate (1960-2020)

	Inflation	Unemployment	Exchange Rate
1960-77	7.1	-	39.4
1978-90	5	1.9	35
1991-2000	2.6	2.1	28.4
2001-10	0.9	4.6	32.9
2011-20	0.8	3.9	30.4

Source: National Statistics, Republic of China (Taiwan)

Foreign trade is another key indicator of an economy. Between 1971-2020 by import substitution which replaced with export promotion policy and also shifting to capital-intensive industries (since 1970s), exports and imports values increased by 167 and 155 times respectively (Table 5). Machinery and Electrical Equipment accounted 63 percent of Taiwan total exports value in 2020 and Base Metal with only 7.3 percent is the second. At the imports side, Machinery and Electrical Equipment accounted 47 percent of total imports value and the Mineral Product has the second rank with 11.7 percent. It implies the industry sector and high tech products still have key roles in Taiwan economy. According to Ministry of Finance, in 2019, Taiwan's exports and imports values ranked 17th in the world.

Table 5: Exports and Imports values, Balance of payment (1971-2020)

USD 1000

	Exports	Imports	Balance
1971	2061	1844	217
1980	19878	19760	117
1990	67424	54786	12638
2000	151949	140732	11217
2010	277352	255745	21606
2020	345210	285817	59393

Source: Ministry of Finance, Republic of China (Taiwan)

Despite fast economic growth in the last decades, Taiwan is relatively an equal country in terms of Gini Coefficient and Ratio of income share of higher 20% to lowest 20% (Table 6). More equal than Brazil (0.533), China (0.385), Spain (0.358),

United State (0.411) and United Kingdom (0.348) in terms of Gini Coefficient¹. Between 1952 and 2019 the overall Gini coefficient fell from about 0.56 to 0.33. This achievement being accompanied by a dramatic decline in the incidence of poverty.

Table 6: Gini Coefficient and ratio of income share of higher 20% to lowest 20% (1976-2019)

	Gini Coefficient	Ratio of income share of higher 20% to lowest 20%
1952	0.56	-
1976	0.28	4.18
1980	0.278	4.17
1990	0.312	5.18
2000	0.326	5.55
2010	0.342	6.19
2019	0.339	6.1




Source: The Directorate General of Budget, Accounting and Statistics (DGBAS), Executive Yuan, R.O.C. (Taiwan)

2-2 Social Indicators

It is worth to have a brief look on some social indicators. It can help us to have a better vision about Taiwan's society and its current situation. As a result of economic development, it has brought improvements in living standards. Below are the latest data of National Well-being Indicators.

¹ Based on 2018 World Bank Data

Table 7: National Well-being Indicators

Topics	Indicators	Units	Data Value	Year	Data Sources
Jobs and Earnings 	Satisfaction with jobs	%	70.3	2019	Ministry of Labor
Civic engagement and governance 	Voter turnout	%	75	2020	Central Election Commission
	Satisfaction with the freedom of speech	%	76.9	2016	RCHSS
	Satisfaction with democratic life	%	81.4	2016	RCHSS
Health status 	Life expectancy	Years	80.9	2019	MOI
	Health life expectancy	Years	72.3	2018	MOHW

Source: National Statistics, Republic of China (Taiwan)

Besides maintaining economic growth for a long time, Taiwanese people are enjoying a healthy and democratic life. In term of life expectancy, for example, Taiwanese people with 80.9 years life expectancy (compare with 58.6 years in 1952) are close to European Union countries with 81 years life expectancy.

3- The Role of the State in Economic Development

Discussions on Taiwan's economic development have been popular since the 1980s. These discussions has touched on the different disciplines of economics and political economy, mainly focused on explaining Taiwan's success by clarifying the key factors which contributed its rapid economic growth. The conventional view usually highlights the significant role of government in its development process; the differences lie in the levels and means discerned of the government's intervention. Two broad groups of writers may be identified on this basis: the neoclassical economists and the state-led development model of Robert Wade and Alice Amsden.

Despite Neoclassical arguments which refer to the state should restrict its functions and interventions based on the concept of " the invisible hand" of market

forces which can allocate resources efficiently and achieve maximum aggregate welfare for the overall society, the issue of government or state involvement in the process of economic development has been very popular in the literature on economic development and development administration (Liou, 2000). The interest in the role of government in the development process has to do with the past development experience of many developing countries and recently has emphasized on economic policy reforms (economic stabilization and structural adjustment) by international development organizations (e.g., the IMF¹, the World Bank). Nevertheless, state involvement in economic development is especially important in the study of the successful development experience in East Asia (South Korea, Taiwan, Hong Kong, and Singapore). Researchers argue that the success of economic development in these countries is based on and related to not only the operation of the free government but also the active role of government in directing public and private resources to change the structure of their economy (Liou, 2000). Chang (2011) argues that the state-led model of Wade and Amsden is the most used theoretical framework to explain why and how Taiwan enjoyed such rapid economic growth. He suggested that what the Taiwanese government had done for economic development was more than the small government principle which the neoclassical economists had described.

To achieve the goal of economic development, a government needs to successfully formulate and implement such public policies as: (1) economic growth to allocate economic resources and expand productive activities; (2) social equity to reduce various inequalities associated with economic growth; (3) international transactions to attract foreign investment and promote trade; and (4) public management to create and maintain an effective government structure and procedures to provide public services and implement policies (Liou, 2000).

Historical research into the Taiwanese miracle has focused on government policy and its effects, but statistical data for the first few post-war decades is poor and the overall effect of the various government policies is unclear. During the 1960s and 1970s, real GDP grew about 10% (14% per capita) each year. Most of this growth can be explained by increases in factors of production. Savings rates began rising after the currency was stabilized and reached almost 30% by 1970. Meanwhile, primary education, in which 70% of Taiwanese children had participated under the Japanese, became universal, and students in higher education increased many-fold. Although recent research has emphasized the importance of production factors growth in the Asian miracle economies, studies show that productivity also grew substantially in Taiwan.

Thorbecke and Wan (1999) argue that in transition to a more market-oriented economy, the government has intervened through a variety of measures that can be grouped into three broad categories, i.e. macroeconomic policies; public investment

¹ International Monetary Fund

and institutional changes. In the following sections, I will discuss the first two categories and the fifth part of the paper will focus on institutional changes especially from budgetary system point of view. The paper will emphasize those policies which are directly and indirectly related to the budget and budgetary system.

3-1 Macroeconomic Policies

In this section I will review two kinds of macroeconomic policies. First, I will explain stabilization policies that had implemented by Taiwanese officials to provide a smooth environment for economic agents. Note that, balanced budget has played a key role and was the main instrument to stabilize macroeconomic environment. Second, included motivation policies such as tax benefits and Public-Private Partnership (PPP) which were other important measures in line of accelerating economic growth and development objectives. Those policies, however, were indirectly related to the government budget. On one hand, the government reduced tax burden and restricted its revenue sources to stimulate domestic economy and also, through PPP reduced expenditures and increased revenue on the other hand (For more detail, see appendix 1). The latter could be explained from "Value for Money" point of view. It refers that government should maximize marginal benefit of each unit of money which were collected through taxation. For this purpose, some reforms have implemented in Taiwan budgetary system and part 5 will focus on them.

3-1-1 Stabilization Policies

In the immediate post-World War II period, Taiwan was confronted with hyperinflation (prices rose at an annual rate of 500% per annum in 1946-48 and 3000% in 1949). Hence, the urgently needed policies were those whom related to stabilization of macroeconomic environment. On the fiscal side, a great effort was made to achieve a balanced budget. The government budget, inclusive of transfer receipt, actually was in surplus every year even before 1961, which provided important source of funds for investment in infrastructures. Table 7 shows financial statues during two decades after hyperinflation.

During 1950s, US aid transfer and in 1960s, expenditure management implemented by government cause the government current surplus.

Maintenance of a sound government budget with other measures (i.e. monetary reform and interest rate policy) were effectively implemented and hyperinflation of the early 1950s was thus effectively cured.

Table 8: Foreign Transfer and Government Current Surplus* (1951-1971)

Period	Foreign Transfer to the Government Sector as percent of Government Expenditure	Government Current Surplus net of Foreign Transfers as percent of Government Expenditure	Government Current Surplus Inclusive of Foreign Transfer as percent of Government Expenditure	Government Expenditure as percent of GNP
1951-56	29.4	-5.8	23.6	18.6
1956-61	21.1	-7.0	14.1	20.8
1961-66	7.9	1.3	9.2	19.2
1966-71	0.2	16.2	16.4	18.7

Source: Kuo, 1999.

*: Government current surplus = Current revenue – Current expenditure

3-1-2 Motivation Policies

Taiwanese government has implemented some policies which are indirectly related to the government budget such as 19-point Financial and Economic Reform (1959) and Statute for Encouragement of Investment (1960). The latter, however, replaced with Statute for Upgrading Industries in 1991. Taiwan's government has provided many tax benefits to motivate export-oriented and high tech industries (see Box 1). Consequently, in case of Hsinchu Park, just 15 years after establishing, great achievement have been recorded by the Park. Total sales of Park enterprises exceeded US\$10.3 billion and the island became the world's third largest producer of information product in 1995 (Kuo, 1999). Furthermore, light taxation enabled industrial sector to retain a large part of its profit for further investment.

Box 1: Tax Benefits in Statute for Upgrading Industries

Tax benefits are one of the main instruments which Taiwan's government has employed to provide better environment to enterprises to seek their objectives. This policy, however, makes lower tax burden, reduces government revenue and restricts revenue side of annual budget.

Chapter II of Statute allocated to Tax Benefits (Article 5-20). Below is one example:

Article 6: To meet the requirement for industrial upgrading, a company may credit five to twenty percent of the amount of funds disbursed for any of the following purposes against the amount of profit-seeking enterprise income tax payable in each year within a period of five (5) years from the then current year:

1. The funds invested in equipment for automation of production or production technology;
2. The funds invested in equipment or technology used for reclamation of resources and/or pollution control;
3. The funds invested in equipment or technology used for employing new and clean energy, energy conservation, or recycling of water for industrial use;
4. The funds invested in equipment or technology used for the reduction of greenhouse gas emissions or the enhancement of energy efficiency; and
5. The funds invested in the hardware, software and/or technology that can promote an enterprise's digital information efficiency, such as the Internet and television functions, enterprise resource planning, communication and telecommunication products, electronics and/or audio visual equipment and digital

3-2 Public Investment

Taiwan's postwar experience shows us sound government fiscal policy was one of the main determinants of high rate of domestic saving. The rate of government saving was not cause by heavy taxation, but by suitable expenditure management and avoiding unnecessary spending.

High rate of saving by government accelerated investment in infrastructures and was the key determinant to Taiwan's rapid recovery in 1975¹. Furthermore, the Ten Major Construction Project started in 1974 and ended in 1979. They included six transportation projects, three heavy industry projects, and one nuclear power

¹ The oil price rose in 1974 and increased inflation rate in Jan and Feb.

generation project and were financed by the government. Table 8 shows the percentage of investment in the Ten Major Projects to total investment and rapid economic growth rate during in later years.

Table 9: Investment in the Ten Major projects and GNP Growth Rate

Year	Percentage of investment in the Ten Major Project in total investment	Growth Rate of GNP
1973	4.5	12.8
1974	4.5	1.1
1975	19.3	4.2
1976	19.6	13.5
1977	13.1	9.9
1978	8.1	13.9

Source: Kuo, 1999

It is worth to note that the Ten Major Projects were not designed to counter the business cycle, but rather to develop infrastructures and heavy industries to stimulate domestic economic activities and caused economic growth. Indeed, high rate of saving and budget surplus supported the government to implement these projects. According to Yu (1999) in the 1970s, the government used the accumulated surplus to fund 22 major development projects¹ without issuing bonds to the public. Table 9 shows the annual growth of government investment and compares with Private and Public enterprises contribution during 1952-2000.

Table 10: Annual Growth of Investment by Government, Public and Private Enterprises (1952-2000)

Year	Private Enterprises Investment	Public Enterprises Investment	Government Investment
1952-1960	31	23	25
1961-1970	18.7	15.9	16.7
1971-1980	26.2	29.3	27.1
1981-1990	10.5	5.4	14
1991-2000	12.9	0.24	8.2

Source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, National Income Statistics of Republic of China.

¹ Ten Major Projects plus Twelve Development Projects.

In Taiwan, the government is prohibited to issue public bonds for financing current expenditures; so public bonds can be issued only for public construction. By 1990, public construction was financed almost solely by government's current surplus, which constituted about 30 percent of the government budget.

Establishing industrial parks and special zones were the other Taiwanese government direct intervention to promote economic development process, including, establishment of the export-processing zones in the 1960s, Hsinchu Science-based Industrial Park in the 1980s, Southern Taiwan Science Park (including Tainan Science Park and Kaohsiung Science Park) and Central Taiwan Science Park (including Taichung Park, Huwei Park, Houli Park, Erlin Park and Chung Hsing Park). The government of Taiwan employed various types of policy measures particularly through annual budget to assist the development of export-oriented industries. For instance, the government provided better infrastructure and incentives to motivate private sector investment and attract foreign direct investment. As a result, the government policy measures have made great contribution to economic growth, full employment and poverty alleviation.

4- Taiwan's Budget Structure

Governments of developing countries usually adopt policies that aims to stimulate economic growth in their countries. Almost all of these policies are financing through the annual budget. For instance, in Taiwan, there are six main expenditure categories¹ which is the "Expenditure of Economic Development" had the biggest share to total expenditures between 1975 to 1995² (Figure1) rather than other categories. Economic Development expenditures have still a big share in annual budget. By studying Taiwan's economic development process we find out that Taiwanese government has always led the development process by initiating new big projects and focusing on "strategic industries" and "new industries"³ (Yang,1993).

¹ The six main categories are as follow: General Administration, National Defense, Education, Science & Culture, Economic Development, Social Welfare, Retirement & Condolence and Obligation.

² Exclude 1983 that the Economic Development Expenditures had the second rank.

³ The idea of strategic industries was adopted by the government in 1989 and the development of new industries was stated as a plan's target in the Six-Year National Development Plan for Taiwan in 1991.

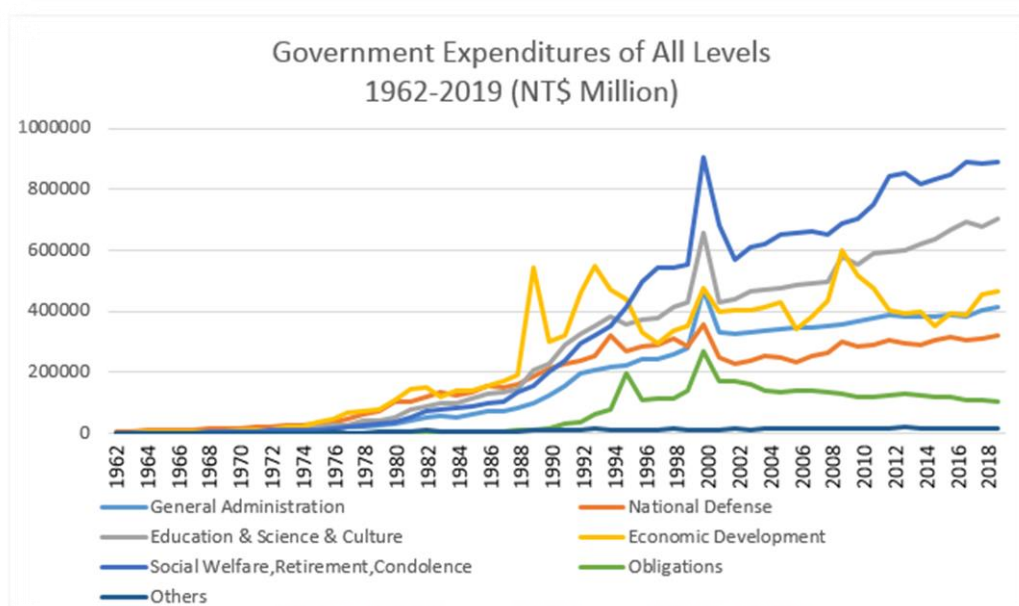


Figure1: Government Expenditures of All Levels, 1962-2019 (NT\$ Million)

Source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan.

Note: In 2000 the fiscal year has changed. FY 1999 was from 1999/7/1 to 2000/12/31. And then FY 2001 was from 2001/1/1 to 2001/12/31.

Generally, governments always want to stimulate economic growth by speeding up the development of some specific industries. On the other word, industrial promotion is one of the main policies of governments who are seeking economic development and this is what the Taiwanese government has done.

Liu (1998) argues that Governmental planning and participation were initiated during the 1950's and to be continued yet. The first Four-Year Plans began in 1953 and, successively, Ten, Twelve, and Fourteen National Projects were implemented in the 1970's and 1980's. The government tried to provide suitable infrastructures to promote investment. For instance, the government had assigned many land reserved for public facilities and 1989 was the last year that the government had to purchase lands, that's why expenditure for economic development has jumped at that year (Figure1). In 1989, 44.8% of total budget allocated to expenditure for economic development. Furthermore, according to Ministry of Finance, 91.6% of special budget was using on economic development at the same time. In 1991, a Six-Year National Development Plan was launched. Most of the national programs have included definitive objectives for targeted industrial development, as well as generic functional incentives. From 1992 to 1993, based on Six-year National Development Plan, central government has budgeted NT\$ 173 billion for "Special Budget for the First Phase of Major Transportation Construction".

Taiwanese government has always launched major projects in consistence of economic development objectives. Table 10 shows the timetable of some major projects which are launched in recent decades.

Table 11: Major Construction Projects in Taiwan (1974-2020)

Year	Macro Plan	Sub Projects
1974~79	Ten Major Construction Projects	6 Transportation projects 3 Industrial projects 1 Power-Plant Construction project
1980~85	Twelve Major Construction Projects	Finishes up some of the projects from Ten Major Projects Proceeds the development of China steel Factory into 1 st phase 2 nd stage Construction Taiwan's second and third nuclear power plants Develops Xinshi town Refines the water supply system to important agricultural fields Set up cultural center for every state and town Sets up the agricultural Mechanization of Fund, etc.
1984	Fourteen Major Construction projects	China Steel 3 rd phase development Construction of 4 th power plant Modernization of telecom services Extension of highways Extension of railways Anti-flood sewer plans, etc.
2003~08	New Ten Major Construction Projects	International arts and pop music center M-Taiwan plan Taiwan exhibition Commutation in Taipei More highway connection Underground sewer system , etc.
2008~16	i-Taiwan 12 projects	Building a convenient island-wide transportation network Building a new high-tech industrial cluster in central Taiwan Taoyuan international aviation park Modernizing farming villages Reforestation Intelligent Taiwan Setting up industrial innovation corridors, etc.
2020	Promotion Program of Six Core Strategic Industries	Information and digital industries Cyber security industry Precision health industry Green and renewable energy industry National defense and strategic industries Strategic stockpile industries

Source: Author's assessment

Westphal (1978) argues that government budget was one of the important sources of investment in 1970s which allocated to four major import-substituting and large projects. In 1974, the government began its Ten Major Development Project to establish infrastructure in transportation such as harbors, airports and freeways to eliminate transport bottlenecks, set up key industrial ventures in steel and petrochemicals to promote industry to a higher level, and provide employment (Haggard, 1990). In addition, the role of government was thus essential during the 1980s which we can call the seed and start-up stages of Taiwan's semi-conductor and computer industries whom they received budgetary support (Tun-jen 2001).

In 2008, the government has launched "i-Taiwan 12 Projects" which 70% of budget allocated by the government in an eight-year period aimed to create job opportunities for 120000 people each year and regenerate Taiwan's economic miracle.

The last program – The Promotion of Six Core Strategic Industries- was approved in December, 2020. The Program will be jointly promoted by the Ministry of Economic Affairs, Ministry of Science and Technology, Ministry of Transportation and Communications, Ministry of Health and Welfare, and the National Development Council. It will accelerate the upgrading and transformation of Taiwan's local industries, and transform this country into a critical force in the future global economy (National Development Council, 2020).

According to Chen (2014) big push of the 1990s in Taiwan was driven by the private sector whereas the big push of the 1970s was driven by the public sector (both public enterprises and general government). It is also important to note that big push in 1990s by private sector was based on public infrastructure investments by the government. In fact, government expenditures on public infrastructure (both government and public enterprises investment) has played a key role to push economic growth during last decades particularly during 1960s and 1970s.

All in all, Taiwanese government has always been the engine of economic growth. It has always initiated new projects and new plans for upgrading strategic industries or even establishing new industry. It is impossible to explain Taiwan's economic miracle regardless to the vital role of government. Additionally, the government not only initiated the various national development plans, but also it financed them through annual budget. As figure 1 illustrated, expenditures for economic development have been one of the main expenditure categories in the annual budget, particularly, at the early stages of economic development. It is worth to note that the "Expenditure for Education, Science and Culture" is another determinants of economic development in Taiwan. In other words, Taiwanese government recognized that Knowledge-based industries and technologies are the drivers of future economic growth and development, and therefore consciously invested and increased spending in these areas.

In 2019, 40% percent of annual budget allocated to the expenditures for education, science, culture and economic development. It implies the government still leads the economic development process through direct – mostly providing infrastructure for private sector – and indirect intervention by investing in education and science.

Amsden (1985) argues that Taiwan is not only a case which shows the state intervention to economic development, but also it is a case that demonstrates the reciprocal interaction between the structure of the state and the process of economic growth. On the other hand, the state had transformed Taiwan's economic structure and had been transformed by it. Hence, the next part is allocated to the major developments of budgetary reforms which refers institutional changes that I mentioned in the part 3.

5- Government Budget and its Developments

All governments face the challenge of scarce resources, requiring budgetary management processes and budgetary system reforms to enhance quality of governance and maximize the value of taxpayer's money. Such a budgetary and financial management processes need to routinely inform decision-making and protect the integrity of the way public resources are used—with some public accountability to indicate that their uses are properly authorized and reflect the policies of legitimate government. The processes ideally should also facilitate assessments of how well the resources have been used, and of whether and how efficiently expenditures have achieved the objectives of the policymakers. For this purpose, public budgeting systems have undergone several reforms in both budgeting process and assessment.

In case of Taiwan, the government has gone through various budgetary reforms in the past decades. Most notably the "Participatory Budgeting" and "Performance Auditing" are two major reforms.

5-1 Public Budgeting Reform

In the past few decades, the political, economic, social, and cultural aspects of Taiwanese society have undergone remarkable changes. One of the key factors behind these changes has been democratization. The process of democratization has started with the lifting of martial law in 1987. Since then, numerous reforms have been implemented such as public budgeting reform (Su, 2007). Taiwanese government has adopted an open attitude and has made great efforts to reform budgeting process. Su (2007) argues that this effort can be divided into two phases. First, is the "Democratization of Public Budgeting" that began in the mid-1970s and second, is the "Effectiveness of Public Spending" which started from mid-1990s. The latter is based on the ideology of the New Public Management (NPM) School, while the former aimed to encourage public participation into budgeting process.

Prior to democratization, the budgeting and budgetary decision-making process was a mysterious black box. The Legislative Yuan has a little role and just few people have access to information. Indeed, before democratization, legislative part of the budgeting process was a pure formality (Su, 2007). With the progress of democratization the traditional role of Legislative Yuan's budgetary decision-making process has changed. In 1999, a Budget Center of the Legislative Yuan was established to help legislators to play a more active role in the budgeting process. Table 11 displays the modification that was made to budget bills by the legislative Yuan in both democratic and nondemocratic era. It is worth to note that according to the Constitution, the Legislative Yuan could decrease the budget estimates and it doesn't have any right to propose any increase to the budget. This law itself can eliminate political incentives of legislator who are trying to impose inefficient expenditures to the budget.

Table 12: Budget cuts by the Legislative Yuan

Fiscal Year	Original Budget Estimates	Amount of Budget Cuts	Percentage of Budget Cuts (%)
1961-70	15159	20	0.13
1971-80	93149	7	0.01
1981-90	418977	4270	1.02
1991-2000	1152348	19968	1.73
2001-06	1569354	35022	2.23
1961-86 average Nondemocratic regime	119019	139	0.10
1987-2006 average Democratic regime	1166536	22455	1.93

Source: Su (2007).

Table 11 shows that, on average the total expenditure which has cut by Legislative Yuan were only by 0.1 percent during 1961-1986 (Nondemocratic regime) comparing to 1.93 percent during 1987-2006 (Democratic regime).

5-1-1 The Impact of Democratization on Budget Structure

Democratization provided new opportunities for Taiwanese people to lobby and influence budget decision-making process. On the other hand, by democratization, now people have more power to impact on the prioritization of budget allocations and impose their preferences into budgeting process. Table 12 shows the structural changes in annual budget from 1951 to 2019.

Table 13: The Structural changes in Government Expenditures of All Levels (1951-2019),
Unit: %

Fiscal Year	General Administration	National Defense	Education, Science & Culture	Economic Development	Social Welfare	Obligation	Others
1951-60	16.1	46.4	11.8	12.0	6.3	1.0	6.4
1961-70	14.0	42.7	14.7	16.4	7.7	2.1	2.3
1971-80	12.1	29.1	16.9	28.0	11.4	0.7	1.8
1981-90	10.6	23.1	19.5	29.2	15.6	0.9	1.0
1991-2000	12.8	15.1	20.6	21.7	23.5	5.6	0.7
2001-10	14.7	10.9	21.0	18.5	28.0	6.2	0.6
2010-19	14.2	11.2	23.5	15.1	31.0	4.3	0.6
1951-1986 (1)	13.5	37.0	15.3	20.3	9.6	1.2	3.1
1987-2019 (2)	13.5	13.2	21.6	19.8	26.3	5.0	0.6
(2) – (1)	0	-25.8	6.5	-0.5	16.9	3.8	-2.5

Source: Su (2007) & Ministry of Finance, Taiwan.

In summary, rising of people's participation in macro level decision-making (after democratization) together with political competition among political parties have jointly contributed to expansion of the developmental expenditures. For instance, the ratio of Social Welfare expenditure to total budget rose from 9.6 to 26.3 percent. In contrast, the ratio of National Defense expenditures to total budget has sharply declined from 37 to 13.2 percent. It indicates structural changes in budgetary priorities in Taiwan. In addition, Economic Development category always has had one of the biggest shares of annual budget.

5-1-2 Effectiveness of Public Spending

As it has noted, the second phase of reform began in the mid-1990s. This phase focused on efficient management of public spending, while the democratization has been emphasized in the first phase. Su (2007) argues that the first phase of reform can be nominated as an un-organized "bottom-up" reform rather than a well-planned "top-down" movement. In contrast, the second phase of budget reform can be characterized as a top-down plan which has implemented by central government.

The core reason that why Taiwanese government launched the second phase of reform were budget deficit and rising public debt. The average financial balance for the 1961-1986 period was a surplus of 0.1 percent of GDP, while the average of budget deficit was -2.0 percent for the 1987-2019 and government has made great effort to eliminate budget deficit and to avoid accumulate a huge amount of public debt.

Table14: General Government Financial Balance, 1961-2019 (As a Percentage of Nominal GDP)

Fiscal Year	Total Revenue	Total Expenditure	Surplus(+) or Deficit (-)
1961-70	21.0	20.5	0.5
1971-80	23.2	22.1	1.1
1981-90	23.6	24.7	-1.1
1991-2000	22.5	26.0	-3.5
2001-10	17.0	19.2	-2.2
2011-19	15.6	16.4	-0.8
1961-86 average	22.1	22	0.1
1987-2019 average	18.8	20.8	-2.0

Source: Su (2007) & Public Finance Statistics Database, Ministry of Finance, Taiwan

As we can see in Table 13 the government's financial status has shifted from surplus to deficit, however the trend is decreasing. On the other word, in last three decades the government has tried to eliminate budget deficit and reach to the balanced budget. Furthermore, public debt which was increasing till 2005, experienced a relatively smooth path from 2005 to 2020 (Figure 2).

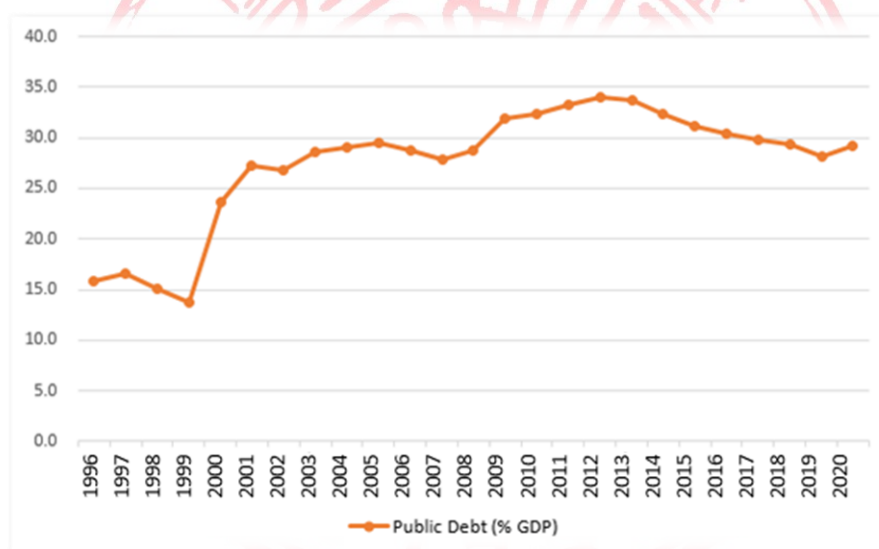


Figure 2: Public Debt trend in Taiwan from 1996-2020 (% GDP)

Source: National Treasury Administration, Ministry of Finance and DGBAS¹

Note: In 2000 the fiscal year has changed. FY 1999 was from 1999/7/1 to 2000/12/31. And then FY 2001 was from 2001/1/1 to 2001/12/31.

In 1995, the Taiwanese government in response to rapidly rising fiscal deficit, announced a top-down approach which is nominated "Public Expenditure Quota System" (PEQS). This was a new mechanism that imposed individual expenditure ceiling on all ministries at the first stage of annual budget formulation. Furthermore, in 1996 the Legislature body enacted the Public Debt Act which aimed government

¹ The data for 2018 and pervious years are final audit account; 2019 is final account and 2020 is budget account.

financial status back to the discipline. Article 5 of Public Debt Act refers the total outstanding public debt at all levels of government must not exceed 50 percent of the average nominal GDP of the previous three years and also, the loan cap set for the general budget and the special budget for a fiscal year may not exceed 15 percent of the sum of annual expenditures under the general budget and the special budget. During the early years, the Act worked very well, but using some special budget by cabinet, eroded its effectiveness. Finally, from 2012, public debt has declined from 34 to 29.2 percent of GDP in 2020.

In 2015, two new programs –Participatory Budgeting (PB) and Sub-borough Chief Forum (SBC) - have lunched by Taipei city government¹ that aim to decentralize the decision-making structures, strengthen the dialogue between civil society and government (Wan, 2018). On the other hand, the main objective is involving individuals to public expenditure decision-making. Note that it is too early to judge about effectiveness of these programs and to analyze their impact on annual budget and reviewing their developmental effects. Meanwhile, appendix 2 allocated to PB and SBC and discusses them in detail.

5-2 Performance Auditing

The roots of performance auditing can be traced back to 1972, when the Audit Act 1925 was amended to add two new chapters that required the National Audit Office (NAO) to evaluate the efficiency and effectiveness of government agencies' budget execution² and determine their financial accountabilities (Su, 2018). However, it was not until 2007, when the new Auditor-General (Ching-Long Lin) took his office. Since then promoting performance auditing became a priority in Taiwan. Lin (2012) argues that the Guideline for the NAO on Performance Audit was published in 2009 and it emphasized on performance auditing rather than traditional financial audits (For more details, see Box2). The transition from financial auditing to performance auditing, however, is not an easy task and the NAO has steadily moved forward and made some achievements.

¹ According to Wan (2018), Taipei is the only municipality that attempts to institutionalize PB on a city wide basis.

² The central government in Taiwan has five branches: the Executive Yuan, Legislative Yuan, Judiciary Yuan, Examination Yuan and Control Yuan. The Executive Yuan is responsible to prepare and executive the annual budget and the Legislative Yuan is responsible to approve annual budget (before implementing by Executive Yuan) and evaluating the performance based on NAO reports.

Box 2: National Audit Office

The NAO is an independent government agency in Taiwan. As a branch of the Control Yuan, the Office of the Auditor-General, the head of the NAO, shall complete audits and submit annual audit reports to the Legislative Yuan after receiving the annual financial statements of the central government from the Executive Yuan. Due to the constitutional requirement to audit the central government's financial statements, the focus of the auditing has traditionally been placed on financial audits to ensure government agencies spend public funds in accordance with applicable laws and regulations.

Source: Su, 2018

5-2-1 How does the NAO work?

According to Article 59 of the Constitution, the Executive Yuan shall, three months before the beginning of each fiscal year, present to the Legislative Yuan the budgetary bill for the following fiscal year (Financial Administration). Article 63 states that the Legislative Yuan shall have the power to pass the resolution upon budgetary bills (Financial Legislation). Article 60 of the Constitution states that the Executive Yuan shall, within four months after the end of each fiscal year, present final accounts of revenues and expenditures to the Control Yuan. Article 105 also regulates that the Auditor General shall, within three months after submission by the Executive Yuan of the final accounts of revenues and expenditures, complete the audit in accordance with the law, and submit an audit report to the Legislative Yuan (Financial Jurisdiction). As figure 3 demonstrates, the three parties perform their own duties and benefit from balance of powers (NAO, 2019).

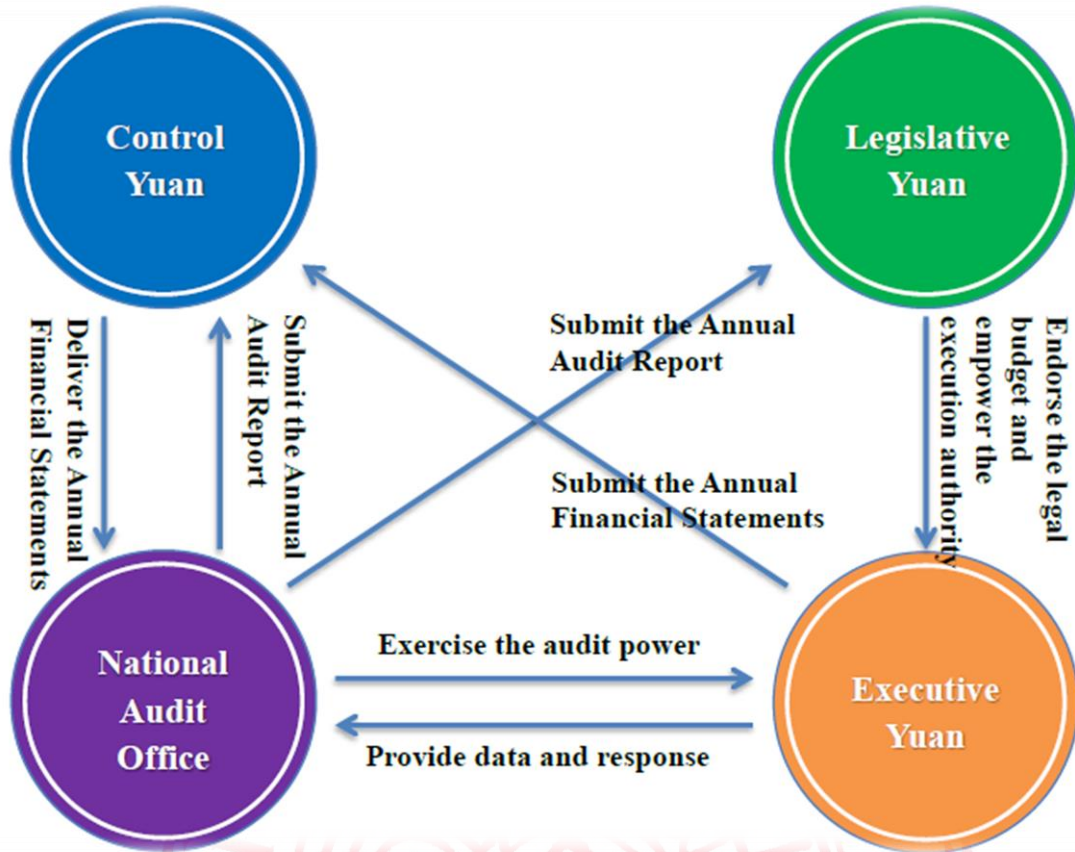


Figure 3: Government Accountability System

Source: NAO Performance Report, 2019

According to Article 4 of the Organizational Act of the Control Yuan, Article 2 of the Audit Act and Article 5 of the Organizational Act of the NAO, audit agencies are authorities in charge of government auditing, and the mandates of which include:

- 1- To supervise the implementation of budget
- 2- To certify receipt and payment orders
- 3- To examine financial activities and certify annual financial statements
- 4- To inspect irregularities and dereliction of duties concerning financial activities
- 5- To evaluate performance of financial activities
- 6- To judge financial responsibilities
- 7- To perform other audit work stipulated by other laws

These mandates cover both regulatory and performance auditing. As we can see, the NAO has designed to lead the budgetary system toward more efficiency through providing advisory support and auditing the performance of each public entity. According to NAO staff, the implementation of annual budget is 100% supervised by the NAO. In addition, the NAO has 6 audit divisions in municipalities, including Taipei, New Taipei, Taoyuan, Taichung, Tainan and Kaoshing and 15 audit offices

distributed across each county of Taiwan Province. It is worth to know that how did the audit work to improve budget efficiency and how can it maximize value of taxpayer's money. Table 14 shows the financial benefits of audit work from 2015 to 2019.

Table 15: Quantitative Financial Benefits of Audit work from 2015 to 2019 (NT\$ million)

Year Type	2015		2016		2017		2018		2019	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Total amount of financial benefits	18343	100	21870	100	18658	100	21973	100	18345	100
1.Amount of adjusting and notified returning expenditures to the Treasury	136	0.74	517	2.37	277	1.49	376	1.71	171	0.94
2.Amount of adjusting and notified returning revenues to the Treasury	773	4.22	326	1.49	428	2.29	1455	6.62	2831	15.4
3.Tax revenues increased after notifying tax authorities	1270	6.93	1104	5.05	780	4.19	1206	5.49	560	3.05
4.Saving expenditures by auditing government procurements	862	4.7	670	3.07	762	4.09	683	3.11	522	2.85
5.Saving expenditures and increasing revenues by improving auditees' operational or financial activities	6053	33	8507	38.9	12480	66.9	13638	62.1	10998	59.9
6.Saving expenditures by reviewing improper benefits or allowances	330	1.8	140	0.64	101	0.54	451	2.06	285	1.56
7.Other kind of saving expenditures and increasing revenues	8916	48.6	10603	48.5	3827	20.5	4161	18.9	2977	16.2

Source: NAO Performance Report, 2019.

As we can see, the NAO activities cause benefits not only to Taiwanese government in terms of reducing expenditures and increasing revenues but also for Taiwanese people due to reducing tax burden and maximizing the value of taxpayer's money.

The NAO and its subsidiaries conduct various audit works. Whenever auditors found out government agencies or their staff conceal, refuse, postpone, act improperly, violate laws, discard their duties, or lack effectiveness performances, audit agencies should report those conditions to the Control Yuan in accordance with the Audit Act. In 2019, the NAO reported 169 cases to Control Yuan. According to articles 13 and 14 of audit act, audit agencies may inspect, at any time, the receipts, disbursements and properties of the various government agencies. The agencies who are under audit shall not conceal, or refuse to produce what is to be audited. The NAO is able to audit various public entities such as public affairs, public enterprises, public properties (see Box 3). In recent years, the NAO has provided valuable services to enhance budget efficiency, particularly from 2007 which new Auditor-General took his office.

Box 3: Overview to Audit Act

The Audit Act has 7 chapters and permit the NAO to audit various public entities. These 7 chapters are listed below:

- General Provisions
- Audit of Public Affairs
- Audit of Public Enterprises
- Audit of Public Properties
- Evaluation of the efficiency of Financial Administration
- Decision on Financial Responsibility
- Attached Codes

According to article 68, during the auditing of the general final report of the Central government, the auditing agency shall pay attention to the following:

- 1- Whether or not the revenue and expenditure of government could coordinate with the budget; if not, what's the reason?
- 2- Whether or not the annual revenue could balance with the annual expenditure; if not, what's the reason?
- 3- Whether or not the revenue and expenditure are compatible with the national economy and economic growth;
- 4- Whether or not the revenues and expenditures dovetail with the national policy and the administrative program of the government;

5- Recommendations for the improvement on revenues and expenditures made by all interested parties.

The above points are applicable in auditing the general final reports of local governments. As a consequence, the NAO will enhance effectiveness of annual budget and will shape more efficient budget. For instance, According to Article 70 of the Audit Act, prior to the preparation of the annual budget estimates by the government, audit agencies shall provide recommendations concerning the audit result of the budget execution for preceding years to the Executive Yuan as a reference for determining the next year's administrative policies. Thus audit agencies indirectly facilitate the allocation of overall budget resources and make it more efficient. In addition, Audit agencies supervise the implementation of budget and timely urge the related authorities to improve when discovering cases with lower budget achieving rates.

In summary, Taiwanese government had made a big effort to shape an efficient budget and budgetary system because it was completely realized that the government should lead the economic development path and annual budget is the best way for the government for shaping this path. Hence, Taiwanese government by implementing some major developments on budgetary system tried to reach its objectives.

6- Lessons from Taiwan experience for Iran economy

In last decades, Iran government has tried to intervene in the economy to accelerate economic growth. For doing so, the government has increased its expenditures and involved in various activities mainly through annual budget, but the performance is far from the expected objectives. In addition, due to improper performance, the financial status of government is getting worse. On the other hand, public debt and annual budget deficit are increasing in recent years. According to Islamic Parliament Research Center of Iran (2021) the budget deficit of current financial year (from March 21st 2021 till March 20th 2022) – based on budget proposal – has reached to 50 percent. As a consequence, the budget can neither cause macroeconomic stability nor accelerate economic growth. In this situation, it is worth to study the other countries experiences to extract valuable lessons. Below are some lessons that Iranian government can learn from the experience of Taiwan budgetary developments.

Budget as an instrument of macroeconomic stabilization. Taiwan experience shows us that one of the most necessary functions of budget should be the stabilization origin of the budget or at least it should not cause instability in macroeconomic environment.

Budget as an instrument of signaling. Annual budget should illustrate that how government is willing to intervene in the economy and the other sources of impact such as off budget expenditures should be limited.

Budget as an instrument to finance infrastructure projects. Taiwan story of development refers that government always initiated new construction projects (such as rail way, free economic zone, science park, etc.) and the annual budget was one the most important sources for implementing the projects.

Budget as an instrument for establishing and supporting strategic industries. Taiwanese government depending on the stage of development and its competitive advantages, has established new industries or supported existing industries.

Imposing citizens' preferences to the budget formation process. In recent years, the government, by Participatory Budgeting, tried to respect the citizens' preferences and involve them into the decision-making process. Although, it seems making a budget process with citizens participation is Unattainable in short-term (because of political economy challenges), but it could considered as a long-term objective.

Limiting the impact of political incentives on budgetary decision-making process. Article 70 of Constitution of Republic of China (Taiwan) refers the Legislative Yuan shall not make proposals for an increase in the expenditures in the budgetary bill presented by the Executive Yuan. This article itself, can limit imposing political and opportunistic incentives to the resources allocation process.

Reforming the Auditing mechanism as a method of promoting the effectiveness of government expenditures. Continuous monitoring on public entities and their activities and financial statement and providing advisory services brought more efficiency for public expenditures and limited inefficiency.

7- Conclusion

Taiwan's successful story implies that government has played a key role in the economy. Despite Neoclassical approach which believes the government should not intervene in economy, Taiwan's experience shows that the government can be the driver of economic growth and development.

In last 7 decades, Taiwanese government has tried to create and support strategic industries to accelerate economic growth. For doing so, government budget, particularly, expenditure for economic development, had played a vital role between 1975 to 1995. During these two decades, economic development category had the biggest share of total budget expenditures. After 1995, the expenditure for economic development has kept its role as a most important tool for promoting economic growth. The government is still trying to initiate new development plans and cover some parts of their costs.

Furthermore, it is worth to consider the institutional developments of budgetary system. Developments such as Democratization, Performance Auditing and Participatory Budgeting have launched to improve resources allocation in Taiwan.

Government budget in Iran is suffering lack of effectiveness. Taiwan's experience is a good example of how the government can promote effectiveness and efficiency of

expenditures. There are two most important lessons. First, is trying to shape an efficient budget process; a kind of process which ensure maximum value of taxpayer's money. To achieve that, the budget act should limit political economy incentives related to budget process. In case of Taiwan, it has done by article 70 of Constitution of Taiwan. The next, is auditing process. A professional and independent audit office will ensure taxpayer's money will spend on the best way and in case of existing any deviation, it will guarantee a correction mechanism. The two above lessons are most important preconditions for having an efficient budget process which can ensure effectiveness of government expenditures, particularly when the government is seeking economic development via investing on big projects.



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Appendix 1:

Aiming to maintain budget balance and avoiding to increase public debt level, Taiwan government decided to cooperate with the private sector in case of public infrastructure projects. Between 2002 and 2019, 1742 contracts have implemented by Private sector participation. Total value has reached to NT\$ 1721 million. Table 14 shows more detail of Private Participation in infrastructures and its impact on government expenditure and revenue.

Table 14: Private Participation in Infrastructure Contract cases and Benefits (NT\$ Million; Person)

Year	Contract		Benefits		
	Number	Private Investment	Reduced Government Expenditure	Increase Government Revenue	Job Creation
2002	8	625	210	90	290
2003	36	62469	33443	4626	19928
2004	82	130652	268610	51429	15302
2005	152	62621	58026	23701	19130
2006	185	68309	77621	107261	14465
2007	123	37206	25536	84203	7864
2008	70	18002	19681	29829	8455
2009	79	53002	86223	59807	16850
2010	73	224066	84712	26028	5533
2011	78	40114	21799	13456	6828
2012	99	143680	30292	70198	14983
2013	103	77452	58238	27381	12395
2014	130	120067	375001	120432	23354
2015	138	113538	38854	85700	49615
2016	94	60596	291107	23927	11026
2017	114	97122	44025	21334	15853
2018	83	237344	106665	136189	21515
2019	95	174493	8301	103879	24909
Total	1742	1721357	1628343	989469	288295

Source: Promotion of Private Participation, Ministry of Finance.

Appendix 2:

1- Participatory Budgeting

By PB, it is expected that citizens monitor the quality of public services and put pressure on local government to respond public needs. Participatory Budgeting involves 4 stages (Su, 2019).

A) Public training: The Department of Civil Affairs (DCA) of Taipei City Government organizes PB training courses for city government employee and residents to increase public awareness of PB.

B) Proposal review and voting process: Proposal review involves 5 stages (Figure ...).

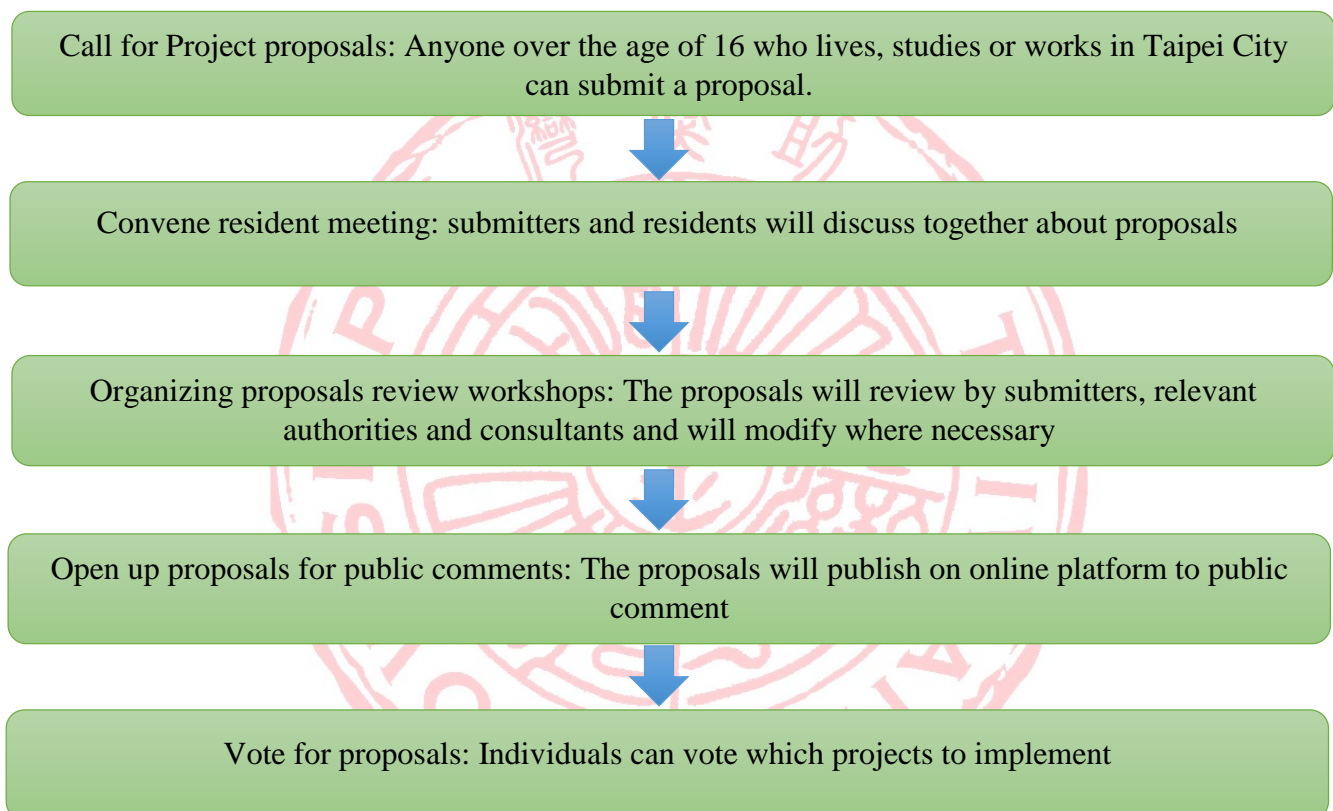


Figure 4: Proposal review and voting process

Source: Kue & et al (2020).

C) Budget formulation: The Taipei City Government Citizen Participation Committee (CPC) will review budget requirement of selected proposals. The proposals will implement if they can be cover by present year's budget, otherwise, the proposals will include in the next year's budget, which has to go through the City Council budget approval process.

D) City council approval: The proposals that do not receive budget in current year will send to City Council for review and approval to receive budget for the next year.

2- Sub-borough Chiefs Forum

Sub-borough Chiefs Forum refers a direct channel of communication between sub-borough chiefs and the mayor. The Forum involves 4 stages:

- A) DCA drafts the annual plan: The DCA drafts a plan for the year's Forums and heads of district offices determine that which groups of chiefs meet with the mayor.
- B) Collecting proposals and organizing pre-meeting by district offices: At this stage, district offices, after collecting proposals, held pre-meetings. The administrative bodies will determine feasibility or infeasibility of a proposals.
- C) Holding the Forums: Sub-borough chiefs will explain about their proposal and its details. The relevant authorities such as the Department of Legal Affairs and Research, Development and Evaluation Commission also attend to the Forum. At the end of discussion, the mayor makes decision about proposals.
- D) Monitoring by district offices: After publishing meeting record of the Forums, district offices follow up to monitor the work and progress of responsible authorities.

