



# U.S. FISCAL POLICY RELATING TO ECONOMIC GROWTH AND FISCAL CONSOLIDATION

Takatsugu Haneo

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# LIST OF ABBREVIATIONS

| ACA             | Affordable Care Act                                   |  |  |  |
|-----------------|---|--|--|--|
| ARPA-E          | Advanced Research Projects Agency-Energy              |  |  |  |
| ARRA 2009       | American Recovery and Reinvestment Act of 2009        |  |  |  |
| ATRA 2012       | American Taxpayer Relief Act of 2012                  |  |  |  |
| BCA 2011        | Budget Control Act of 2011                            |  |  |  |
| СВО             | Congressional Budget Office                           |  |  |  |
| DARPA           | Defense Advanced Research Projects Agency             |  |  |  |
| DRA 2005        | Deficit Reduction Act of 2005                         |  |  |  |
| EGTRRA 2001     | Economic Growth Tax Relief Reconciliation Act of 2001 |  |  |  |
| EITC            | Earned Income Tax Credit                              |  |  |  |
| FRB             | Federal Reserve Board                                 |  |  |  |
| GDP             | Gross Domestic Product                                |  |  |  |
| ICT             | Information and Communication Technology              |  |  |  |
| JGTRRA 2003     | Jobs and Growth Tax Relief Reconciliation Act of 2003 |  |  |  |
| NIH             | National Institutes of Health                         |  |  |  |
| NII             | National Information Infrastructure                   |  |  |  |
| NSF             | National Science Foundation                           |  |  |  |
| OBRA 1990       | Omnibus Budget Reconciliation Act of 1990             |  |  |  |
| OBRA 1993       | Omnibus Budget Reconciliation Act of 1993             |  |  |  |
| PAYGO principle | Pay-as-You-Go Principle                               |  |  |  |
| R&D             | Research and Development                              |  |  |  |

| TCJA     | Tax Cuts and Jobs Act     |  |
|----------|---------------------------|--|
| TFP      | Total Factor Productivity |  |
| TRA 1993 | Tax Reform Act of 1993    |  |

#### Introduction

The U.S. economy and government fiscal situation are in good shape, which some people may be surprised by. The U.S. real Gross Domestic Product (GDP) average annual growth rate has gradually declined from 4.5% in the 1960s to 2.2% in the 2010s. Some have pointed out that the U.S. economy is in "secular stagnation."<sup>1</sup> In addition, the U.S. debt-to-GDP ratio, which was 54.4% in 1990, reached 100% in 2013 and is now above 120% after the COVID-19 pandemic. However, compared to Japan, where real GDP per capita and debt-to-GDP were at the same level as the U.S. until around 1990, the U.S. per capita real GDP is about 1.5 times that of Japan, and the U.S. debt-to-GDP is less than half that of Japan as of 2021 (Figures 1 and 2). Since 1990, the U.S. has been far ahead of Japan in the growth rate of real GDP. Taking the respective 1990 real GDP as 100, the U.S. real GDP has grown to about 1.6 times that of Japan as of 2019 (Figure 3). Considering these facts, the U.S. economy and government fiscal situation have been doing very well compared to Japan. Meanwhile, what role has U.S. fiscal management played in the U.S. economy and fiscal condition? This paper analyzes the U.S. federal government's fiscal policies over the past 30 years, focusing on efforts relating to economic growth and fiscal consolidation.

Fiscal policy is often viewed as a stabilizing measure for business cycle fluctuations. It is a policy tool that raises aggregate demand in a recession, and it is a better policy tool than monetary policy, especially when the economy is in a "liquidity trap," where monetary policy is less effective under low-interest rates. Some economists have estimated that the multiplier effect—which indicates how much an increase in government spending raises GDP—is larger

<sup>&</sup>lt;sup>1</sup> Gordon, Robert J. "Secular Stagnation: A Supply-Side View." *The American Economic Review*, vol. 105, no. 5, 2015, pp. 54–59; Summers, Lawrence H. "Have We Entered an Age of Secular Stagnation? IMF Fourteenth Annual Research Conference in Honor of Stanley Fischer, Washington, DC." *IMF Economic Review*, vol. 63, no. 1, 2015, pp. 277–80.

for fiscal spending in a recession than in a boom.<sup>2</sup> Hence, many governments have actively utilized fiscal policy in recessions; most recently, they have provided individuals and businesses with fiscal support to cope with the COVID-19 pandemic, including temporary benefits to citizens, compensation for unemployment, and assistance to struggling businesses. In short, fiscal policy is often identified as an important policy tool for economic recovery in recessions.

However, in considering fiscal policy, the government must utilize the perspectives of medium- to long-term economic growth and fiscal consolidation in addition to economic recovery. Fiscal policies that expand potential GDP by increasing labor productivity and supply and augmenting capital can foster economic growth. In other words, appropriate fiscal spending in areas such as research and development (R&D) and human resource development can lead to medium- to long-term economic growth. The first chapter of the 2022 Economic Report of the President is "The Public Sector's Role in Economic Growth,"<sup>3</sup> and there are several studies that have shown that forward-looking government spending has contributed significantly to U.S. economic growth.<sup>4</sup> During the COVID-19 pandemic, governments of many countries implemented policies aimed at post-COVID-19 economic growth such as support for infrastructure, Information and Communication Technology (ICT) and environmental investment, and education. On the other hand, fiscal spending is constrained if the fiscal

<sup>&</sup>lt;sup>2</sup> Auerbach, Alan J., and Yuriy Gorodnichenko. "Measuring the Output Responses to Fiscal Policy." *American Economic Journal. Economic Policy*, vol. 4, no. 2, 2012; Canzoneri, Matthew, et al. "Fiscal Multipliers in Recessions." *The Economic Journal (London)*, vol. 126, no. 590, 2016; Shen, Wenyi, and Shu-Chun S. Yang. "Downward Nominal Wage Rigidity and State-Dependent Government Spending Multipliers." *Journal of Monetary Economics*, vol. 98, 2018.

<sup>&</sup>lt;sup>3</sup> *Economic Report of the President*, Together with the Annual Report of the Council of Economic Advisers, Congressional Document, 2022.

<sup>&</sup>lt;sup>4</sup> Deleidi, Matteo, and Mariana Mazzucato. "Directed Innovation Policies and the Supermultiplier: An Empirical Assessment of Mission-Oriented Policies in the US Economy." *Research Policy*, vol. 50, no. 2, 2021; Gruber, Jonathan, and Simon Johnson. *Jump-Starting America: How Breakthrough Science Can Revive Economic Growth and the American Dream. First edition*, PublicAffairs, 2019; Mazzucato, Mariana, and Gregor Semieniuk. "Public Financing of Innovation: New Questions." *Oxford Review of Economic Policy*, vol. 33, no. 1, 2017, pp. 24–48.

consolidation perspective is considered. Although governments can conduct fiscal spending by issuing government bonds, they must avoid borrowing money to the point of causing fiscal collapse or hyperinflation. For this reason, many countries make efforts to follow certain rules on spending and borrowing when conducting fiscal policy.

Therefore, because fiscal policy is closely related to realizing economic growth and fiscal consolidation, this paper analyzes how U.S. fiscal management over the past 30 years has contributed to U.S. economic growth and fiscal consolidation. Individuals and businesses are the main players in economic growth, and trends in economic growth have a significant impact on government finances. Although the government is not entirely responsible for the state of the economy and public finances, any action by the government to increase or decrease fiscal spending will affect the economy and public finances in some way. In this context, this paper also analyzes what were the effective fiscal spending and fiscal rules for economic growth and fiscal consolidation during this 30-year period. This paper first discusses how fiscal management theoretically affects economic growth and fiscal consolidation and then analyzes what has happened in the U.S. over the past 30 years, divided into the 1990s, 2000s, and 2010s. Government efforts during each period are discussed from two perspectives: (1) economic growth and (2) fiscal consolidation. Many previous studies have analyzed the factors contributing to economic growth and fiscal consolidation over the past 30 years. However, few studies have addressed specifics such as what kind of fiscal policies led to economic growth and what kind of fiscal management was more effective in improving the fiscal condition. Moreover, few have been conducted over a long-term span of three decades. Therefore, each period is analyzed regarding fiscal management, expanding upon previous studies with specific numerical analysis. Then, comparisons with Japan's fiscal management are conducted, and lessons for

Japan are also identified. Finally, the conclusion demonstrates the cases of effective fiscal management for economic growth and fiscal consolidation in the U.S., and the implications this has for the future fiscal management of governments, including the U.S. and Japan.

#### **Government Fiscal Management from a Theoretical Perspective**

The following sections theoretically discuss fiscal management linked to economic growth and fiscal consolidation, based on economics texts such as Romer<sup>5</sup> and Stiglitz and Rosengard<sup>6</sup>. This is the basis for the analysis of actual fiscal management in the 1990s–2010s. It is shown that fiscal management that leads to economic growth concerns increases in government spending and tax cuts, while fiscal management that contributes to fiscal consolidation concerns revenue increases and expenditure reductions.

#### Fiscal Policy for Economic Growth

This section discusses how fiscal management—such as tax reform and increases or decreases in government spending—affects economic growth. Economic growth is often analyzed from the supply side (potential GDP), but in the short run, the economy does not grow if the demand does not keep up with the supply. Therefore, economic growth must be considered from both the demand and supply sides. For the former, GDP is composed of private consumption, private investment, government spending, and net exports. For the latter, GDP consists of total factor productivity (TFP), capital, and labor, or labor productivity and labor. Increased government spending and tax cuts positively contribute to these sources of GDP, but their effects are highly dependent on individual policies.

<sup>&</sup>lt;sup>5</sup> Romer, David. Advanced Macroeconomics. 4th ed., McGraw-Hill/Irwin, 2012.

<sup>&</sup>lt;sup>6</sup> Stiglitz, Joseph E., and Jay K. Rosengard. *Economics of the Public Sector*. 4th edition., Norton & Company, 2015.

Taking into account only the direct effects, increases in government spending and tax cuts have the effect of increasing each parameter in demand and supply, which in turn increases GDP. For example, if the government expands investment in infrastructure, government spending increases on the demand side, and capital increases on the supply side. Moreover, if the government expands investment in intangible assets, such as R&D and education, government investment leads to increased productivity on the supply side. Furthermore, when personal income taxes are reduced, individuals have more disposable income, which increases personal consumption. Thus, increases in government spending and tax cuts have the power to grow the economy on both the demand and supply sides when only the direct effects are taken into account.

However, paying attention to the extent to which government spending increases and tax cuts grow the economy, not only in terms of direct impact but spillover effects on the economy is essential. How much an increase in government spending or a tax cut directly increases consumption and investment depends on income and price elasticities, which are the extent to which individuals and firms increase consumption and investment when incomes rise or prices fall. Furthermore, it needs to take into account whom the policy targets among individuals and businesses, such as high- or low-income households and large or small businesses. Regarding the spillover effect on the economy as a whole, on the positive side, the economic stimulus from government spending increases wages, which in turn increases consumer spending and GDP (called the "Multiplier Effect"). On the other hand, negative effects also exist in terms of spillovers to the economy; for example, increased government spending may not increase consumption if it is collected from consumers through taxes. In addition, even if the tax is not raised immediately, consumers may reduce their current consumption if they expect a future tax

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increase (called the "Ricard's Equivalence Theorem"). Furthermore, a rise in market interest rates through increased government spending may lead to a decrease in private investment (called the "Crowding-out Effect"). Conversely, government investment may stimulate private investment, which is called the "Crowding-in Effect."<sup>7</sup> Hence, the extent to which increased government spending and tax cuts grow the economy varies when direct effects and overall spillovers are taken into account.

Moreover, considering whether increased government spending and tax cuts lead to sustained economic growth, rather than a temporary stimulus to the economy, is important. Permanent increases in government spending and tax cuts could raise the GDP level because they would elevate government spending, consumption, and investment. On the other hand, although temporary spending is an effective measure against recession because it temporarily boosts the economy, it is not appropriate for long-term economic growth if the effects gradually diminish. Moreover, the economy might not respond to temporary spending; for example, temporary benefits to consumers do not permanently increase their income and may end up mostly in their savings and not lead to much increase in consumption, which is known as the "Permanent Income Hypothesis." However, if such temporary spending leads to an increase in supply-side items, such as productivity growth or capital augmentation, the effect would not be temporary. For example, government investment in infrastructure and intangibles—even if temporary—could lead to sustained GDP growth by raising the level of supply capacity. Therefore, whether the effects of increases in government spending and tax cuts are temporary or long-lasting also affects whether they lead to sustained economic growth.

<sup>&</sup>lt;sup>7</sup> Argimon, Isabel, et al. "Evidence of Public Spending Crowding-Out from a Panel of OECD Countries." *Applied Economics*, vol. 29, no. 8, 1997, pp. 1001–10; Aschauer, David Alan. "Does Public Capital Crowd Out Private Capital?" *Journal of Monetary Economics*, vol. 24, no. 2, 1989, pp. 171–88.

For these reasons, while increased government spending and tax cuts are methods of fiscal management that can lead to economic growth, their effects are complex and need to be analyzed to determine the extent to which they affect each parameter and for how long.

#### Fiscal Management that Contributes to Fiscal Consolidation

In this paper, fiscal consolidation means reducing the debt-to-GDP ratio. To reduce the debt-to-GDP ratio, either the denominator (GDP) must be increased, or the numerator (amount of debt) must be reduced. Then, to reduce the outstanding debt, it is necessary to improve the fiscal balance by increasing revenue and decreasing expenditures.

Fiscal management to increase revenue concerns raising taxes. When discussing desirable tax reform, ensuring fairness and efficiency is also an important issue. However, since this paper discusses fiscal consolidation, it focuses on increasing tax revenues. Tax increases through higher tax rates or an expanded tax base generally lead to higher tax revenues. However, if, for example, a tax increase reduces people's willingness to work, leading to a reduction in the labor force, the result could be a decrease in income tax revenues (called the "Laffer Curve"). Therefore, whether a tax increase elevates tax revenues or not must be analyzed.

Fiscal management that leads to economic growth, as mentioned above, also indirectly leads to higher revenue. If personal income and corporate earnings increase due to economic growth, tax revenues from personal and corporate income tax will increase. Moreover, fiscal management that leads to economic growth is also an important part of achieving fiscal consolidation.

To decrease spending, discretionary and mandatory spending must be reduced or their growth must be restrained. Discretionary spending is determined annually by Congress and, in

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the case of the U.S., is generally divided into defense and non-defense spending. The latter includes infrastructure investments and assistance to individuals and businesses. Mandatory spending is automatically determined each year unless the law is changed and consists mainly of spending on social security and healthcare. When considering spending cuts, examining where and how these expenditures should be reduced is necessary.

Moreover, fiscal management also significantly relates to the political climate. As citizens have difficulty perceiving future tax increases, politicians tend to expand spending and cut taxes to win elections. In addition, if a change to a different partisan administration is anticipated, the debt may be strategically increased to bind the fiscal management of the incoming administration. Furthermore, in the case of the U.S., the Democratic Party is oriented toward big government and the Republican Party toward small government, and different parties have different views on fiscal management. Therefore, when considering fiscal management, the political situation—including the election schedule and the number of seats held by each party—must also be taken into account.

For these reasons, when analyzing fiscal management, it is necessary to consider the movements in each of the expenditure and revenue categories, as well as the political situation. Fiscal consolidation requires an increase in revenue and a decrease in expenditures. However, tax increases and spending cuts are opposite moves to economic growth. For example, increases in personal or corporate income taxes could reduce consumer spending and business investment. Therefore, when analyzing fiscal management that balances economic growth and fiscal consolidation, the impact on both must be considered.

#### **Fiscal Management in the 1990s**

The following discussion analyzes how U.S. fiscal management over the past 30 years has affected economic growth and fiscal consolidation per decade in the 1990s, 2000s, and 2010s.

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First, the following section analyzes fiscal management in the 1990s.

### The Role of Fiscal Policy in Creating the "New Economy"

In the 1990s, the U.S. economy continued to grow for a long time under the Bill Clinton administration, which began in 1993. Although the recession that began in July 1990<sup>8</sup> resulted in a real GDP growth rate of -0.1% in 1991, the economy continued to expand, with an average annual real GDP growth rate of 3.8% from 1992 to 2000. The factors behind this growth can be divided into supply-side and demand-side factors. For the former, the increase in productivity through ICT and the growth of the labor force contributed significantly to economic growth (Table 1). For the latter, consumer spending and private investment in ICT and R&D expanded (Figures 3 and 4); if the 1990 level in Japan and the U.S. is set to 100, the U.S. private consumption and private investment grew to about 1.7 times and 2.9 times that of Japan, respectively, as of 2019 (Figures 6 and 7). The continuation of such economic growth through the rapid expansion of ICT led the U.S. economy in the 1990s to be called the "New Economy." In achieving this, fiscal policy played a significant role in three ways: raising productivity, increasing the labor force, and expanding private consumption.

Regarding the increase in productivity, as a fiscal policy, the outcome of government R&D investments implemented in the 1960s–1980s was realized in the 1990s. As specific fiscal policies behind the New Economy in the 1990s, the U.S. government refers to policies such as the following: increased spending on the National Science Foundation (NSF) and the National Institutes of Health (NIH), support for computer installation in K–12 schools (E-rate Program)

<sup>&</sup>lt;sup>8</sup> National Bureau of Economic Research. US Business Cycle Expansions and Contractions, <u>https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions</u>. Accessed 28 Jan 2023.

since 1997, and tax credits for higher education tuition (Hope Credit) since 1998.<sup>9</sup> Although such spending on R&D and human resource development is an important fiscal policy that contributes to productivity growth, such investments in young people and R&D take time to generate outcomes. Therefore, the contribution of fiscal policy to productivity growth in the 1990s is considered to be limited. Rather, the opening to the private sector in the early 1990s of research findings on the development of ICT, which had been conducted by the government's Defense Advanced Research Projects Agency (DARPA) from the 1960s to the 1980s, increased productivity through the spread of ICT. Defense-related R&D expenditures comprised about 6% of government expenditures in the 1960s and about 3% in the 1970s and 1980s, a higher level than today. In other words, the productivity growth in the 1990s was the outcome of the U.S. government's allocation of budgets for R&D with a medium- to long-term perspective.

While fiscal policies such as subsidies and tax cuts are generally used to increase investment in certain areas, such policies were not used much to promote ICT investments in the U.S. during the 1990s. In 1993, the Bill Clinton administration enacted the National Information Infrastructure (NII) agenda, which aimed to improve people's lives and grow the economy through ICT. However, the agenda encouraged private investment without concrete fiscal policies.<sup>10</sup>

Second, relating to labor force growth, the expansion of the Earned Income Tax Credit (EITC) encouraged low-income people who were unemployed to enter the job market. The EITC is designed to increase the earned income credit for households below a certain income level as their income increases, thus encouraging low-income people to work. The Omnibus Budget

 <sup>&</sup>lt;sup>9</sup> Economic Report of the President, Together with the Annual Report of the Council of Economic Advisers, 2001.
<sup>10</sup> Samuelson, Pamela., and Varian, Hal R. The "new economy" and information technology policy. American Economic Policy in the 1990s. MIT Press, 2002, pp. 361–412.

Reconciliation Act of 1993 (OBRA 1993) greatly expanded the EITC, which allowed people to earn more by working than receiving welfare, raising the number of employed low-income people.<sup>11</sup> In addition, the service industry and part-time labor force increased. These increases in the labor force were much larger than that of Japan (Figure 8).

Third, regarding the expansion of consumption, fiscal policy was partly responsible for the increase in consumption. The increase in wages and stock prices under the booming economy led to the expansion of consumption in large part. In addition, however, the reduction of the maximum capital gains tax rate from 28% to 20% during rising stock prices could have contributed to a further increase in consumption. The aforementioned increase in the labor force is also likely to have contributed to higher consumption, especially among lower-income households.

Hence, the contributions of fiscal policy to economic growth in the 1990s increased productivity from pre-1990s government R&D investment, grew the labor force through the expansion of the EITC, and expanded consumption through tax cuts. Given that economic growth in the 1990s would not have occurred without the spread of ICT, the most significant contribution was R&D investments before the 1990s.

In Japan, on the other hand, the 1990s were plagued by two recessions and insufficiently effective fiscal policies, which made it difficult to set the economy on a growth trajectory. From 1991 to 1993, Japan experienced a recession known as the "First Heisei Recession" due to the bursting of the bubble economy over stock and land prices, which caused the real GDP growth rate to fall to -0.8% in 1993. Although the economy then recovered, with real GDP growth rates of +3.2% in 1995 and +2.9% in 1996 (which were as high as that of the U.S.), Japan fell into the

<sup>&</sup>lt;sup>11</sup> Scholz, John Karl. "In-Work Benefits in the United States: The Earned Income Tax Credit." *The Economic Journal (London)*, vol. 106, no. 434, 1996, pp. 156–69.

"Second Heisei Recession" in 1997 due to its domestic financial crisis and the Asian currency crisis. This resulted in negative real GDP growth rates in 1997 and 1998. During this period, as fiscal policies for economic recovery, the Japanese government expanded public investment and cut personal and corporate income taxes. While these fiscal policies may have played a certain role in supporting the economy, they lacked the perspective of productivity growth, which played an important role in the U.S.'s economic growth. In particular, the lack of investment in ICT has slowed Japan's economic growth over the years.<sup>12</sup> The stock of ICT capital grew 2.0 times in 2000, 3.7 times in 2010, and 7.1 times in 2020, taking the 1995 levels in Japan and the U.S. as 100, respectively (Figure 9). Ideally, the private sector should have actively invested in ICT to improve productivity without government support, as did the U.S. However, the recession made such investment difficult. As a result, Japan's productivity fell far below that of the U.S. (Figure 10), adversely affecting economic growth not only in the 1990s but also from 2000 onward. Therefore, Japan's fiscal management in the 1990s was inadequate in terms of productivity growth.

#### Achievement of Fiscal Surplus

In the early 1990s, the budget deficit was widening due to the economic recession, but the fiscal balance improved later significantly, and a surplus was achieved in 1998. This was the first time since 1969 that a budget surplus had been achieved. The fiscal balance was -\$290 billion in 1992, then \$69 billion in 1998, and \$236 billion in 2000 (Figure 11). This fiscal surplus lasted until 2001, after which another fiscal surplus has not yet been achieved. Therefore, the achievement of fiscal consolidation in the 1990s can serve as an important historical lesson. This

<sup>&</sup>lt;sup>12</sup> Itō, Takatoshi, and Takeo Hoshi. The Japanese Economy. 2nd edition., The MIT Press, 2020.

section analyzes the factors that contributed to the achievement of the fiscal surpluses by dividing them into revenue and expenditure aspects and examines what kind of fiscal management was effective.

The fiscal surplus in the 1990s was achieved by revenue growth that exceeded the increase in expenditures. Revenue nearly doubled from \$1,091 billion to \$2,025 billion between 1992 and 2000 (Figure 11). Revenue statistics show that personal and corporate income taxes nearly doubled, and social insurance contributions increased by about 1.5 times (Figure 12). Expenditures increased from \$1,381 billion to \$1,789 billion between 1992 and 2000 (Figure 11). According to the statistics of expenditure, defense spending decreased slightly, non-defense discretionary spending increased by about 1.4 times, and mandatory spending increased by about 1.5 times (Figure 13). The substantial increase in revenues was larger than the number of expenditures, resulting in a budget surplus of \$23.6 billion in 2000.

Policies that led to revenue increases were reforms of the personal and corporate income tax. The Tax Reform Act of 1993 (TRA 1993) law raised the top individual income tax rate from 31.0% to 39.6% (Figure 14) and increased the marginal corporate income tax rate. Although an increase in personal income tax rates generally can have a negative impact on the economy, since only a limited number of high-income individuals were affected by the increase in the highest tax rate, the negative impact on GDP was very small.<sup>13</sup> However, the increase in tax revenues from the individual and corporate income tax reforms was also limited, <sup>14</sup> and economic growth contributed to revenue growth more significantly. Still, it is notable that the government could increase tax rates with a history of reductions in both personal and corporate income taxes before

<sup>&</sup>lt;sup>13</sup> Hungerford, Thomas L. "Taxes and the Economy: An Economic Analysis of the Top Tax Rates Since 1945 (updated)." *Congressional Research Service (CRS) Reports and Issue Briefs*, 2012.

<sup>&</sup>lt;sup>14</sup> Stiglitz, Joseph E., and Jay K. Rosengard. *Economics of the Public Sector*. 4th edition, Norton & Company, 2015.

1993, and that there was no movement to reduce tax rates in response to the booming economy. If personal income and corporate taxes had been reduced even in the 1990s, such an increase in revenues would not have occurred.

The key policies that kept spending increases contained were the caps on discretionary spending and the pay-as-you-go (PAYGO) principle for mandatory spending that were included in the Omnibus Budget Reconciliation Act of 1990 (OBRA 1990). The cap system controls the increase in discretionary spending by setting spending caps on discretionary spending that must be legislated each year. The cap set by OBRA 1990 was not achieved due to the increase in spending caused by the recession, but since the cap was reestablished by OBRA 1993, discretionary spending has remained below the cap. Some economists have pointed out that the cap system has never fully worked because the cap is raised when it is about to be exceeded.<sup>15</sup> However, while defense spending was constrained after the collapse of the Soviet Union, the cap system did not lead to large increases in other discretionary spending. The PAYGO principle requires that any new spending or tax cuts in mandatory expenses must be funded by either an increase in tax revenues or a reduction in other mandatory spending. The PAYGO principle is valuable in that it prevented new spending and suppressed requests for tax cuts as revenues increased in the 1990s.<sup>16</sup> Thus, the cap on discretionary spending and the PAYGO principle on mandatory spending contributed to fiscal consolidation in the 1990s significantly.

Furthermore, the political situation in the 1990s was also a factor contributing to fiscal management. Politicians tend to dislike fiscal consolidation efforts because they require tax increases or spending cuts, which are disliked by voters. In addition, Democrats generally favor "big government," which tends to increase government spending. Nevertheless, fiscal

<sup>&</sup>lt;sup>15</sup> Schick, Allen. *The Federal Budget: Politics, Policy, Process.* 3rd edition, Brookings Institution Press, 2007.

<sup>&</sup>lt;sup>16</sup> Schick, Allen. The Federal Budget: Politics, Policy, Process. 3rd edition, Brookings Institution Press, 2007.

consolidation efforts advanced in the 1990s largely because of the influence of Ross Perot, a candidate who ran as a third-party candidate other than a Republican or Democrat in the 1992 presidential election.<sup>17</sup> With fiscal consolidation as his primary issue, he received many votes, and Clinton, who won, managed the government budget based on that perspective. This contributed to fiscal consolidation under the Democratic president. On the other hand, since the Republicans held the majority in Congress from 1995 to 2000, economists point out that the "deadlock" between the president and Congress made new spending difficult.<sup>18</sup> Nonetheless, if these political conditions had not been in place, the government might not have been able to achieve a fiscal surplus even as tax revenues increased due to economic growth.

In summary, fiscal consolidation in the 1990s was the result of successful efforts to increase revenues through reforms of personal and corporate income taxes and to control expenditure increases by capping discretionary spending and through the PAYGO principle for mandatory spending. While Japan was moving backward toward fiscal consolidation, the U.S. was continuing its efforts toward fiscal consolidation (Figure 15). However, considering that economic growth was the main driver of fiscal consolidation in the 1990s, it is essential for fiscal consolidation. In addition, the fiscal consolidation framework created in the 1990s continued in part in the 2000s and 2010s. Therefore, the fiscal consolidation efforts in the 1990s should be evaluated for future applications.

In Japan, on the other hand, the budget balance (which had been in a surplus from 1988 to 1992) turned into a huge budget deficit due to the expansion of public investment and the

<sup>&</sup>lt;sup>17</sup> Blinder, Alan S. *A Monetary and Fiscal History of the United States, 1961-2021*. Princeton University Press, 2022; Gale, William G. *Fiscal Therapy: Curing America's Debt Addiction and Investing in the Future*. Oxford University Press, 2019.

<sup>&</sup>lt;sup>18</sup> Auerbach, Alan J. "Federal Budget Rules: The US Experience." *NBER Working Paper Series*, vol. 15, no. 1, 2008, pp. 14288–88.

reduction of tax revenues following two recessions and cuts in personal and corporate income tax. In 1998, the budget deficit was 10.0% of the GDP (Figure 15), which is comparable in size to the budget deficit in Japan during the Great Recession of the late 2000s and the COVID-19 pandemic. The Japanese government did not abandon fiscal consolidation. In 1997, the Fiscal Structural Reform Act was passed, establishing rules for fiscal consolidation like those of the U.S. Moreover, in 1997, the consumption tax rate—which accounts for about one-third of the tax revenues in Japan—was raised. However, the subsequent "second Heisei recession" led to the removal of the fiscal consolidation rule, and the economic situation remained severe for public finances.

#### **Fiscal Management in the 2000s**

#### Fiscal Policy after the Dot-com Bubble Burst

In the 2000s, the U.S. economy was sluggish in the beginning due to the bursting of the dot-com bubble and a major financial crisis at the end of the decade. However, in the middle part of the decade, the economy was growing strongly, just as it did in the late 1990s. After 1996, the growth rate was about 4%, but due to the interest rate hike by the Federal Reserve Board (FRB) and other factors, ICT investment declined sharply in 2000 as the so-called dot-com bubble burst, and the growth rate dropped to 1.0% in 2001. Under the Bush administration, which came into power in 2001, the economy gradually recovered and became strong again, with the growth rate being 3.9% in 2004 and 3.5% in 2005. On the supply side, productivity continued to increase (Table 1), and on the demand side, consumer spending and housing investment expanded (Figures 4 and 16), which significantly contributed to economic growth. Moreover, the Bush administration's fiscal policies also played a major role in this increase in productivity, consumer spending, and housing investment.

First, the fiscal policy contributed in part to the increase in productivity growth, as tax cuts on capital gains and dividends underpinned corporate ICT investment. The bursting of the dot-com bubble resulted in weak ICT investment in 2001 and 2002 (Figure 16). Under these circumstances, when the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA 2003) introduced tax cuts for capital gains and dividends, corporate investment increased through greater financial investment by individuals<sup>19</sup> and ICT investment recovered (Figure 16). Although the amount of ICT investment in the mid-2000s did not reach the level of the late 1990s, the accumulation of ICT knowledge and the emergence of many venture companies combined to produce higher labor productivity growth from 2000 to 2005 compared to 1995 to 2000 (Table 1). Google, Apple, Facebook, and Amazon (GAFA) began to emerge in the 2000s when the benefits of ICT investments were highly visible. The increase in U.S. labor productivity in the 2010s shows how large it was compared to Japan (Figure 17). In short, as a fiscal policy, tax cuts on capital gains and dividends contributed in part to an increase in productivity, and thus to economic growth.

Furthermore, fiscal policy contributed to the expansion of private consumption and residential investment. Even after the recession of the early 2000s, consumer spending continued to grow steadily until 2007 (Figure 16). In addition, the expansion of residential investment (known as the housing bubble) continued until the mid-2000s (Figure 16). The enactment of the Economic Growth Tax Relief Reconciliation Act of 2001 (EGTRRA 2001) and the JGTRRA 2003 brought about the expansion of consumer spending and residential investment. These laws reduced the maximum personal income tax rate from 39.6% to 35.0% and the minimum rate

<sup>&</sup>lt;sup>19</sup> Economic Report of the President, Together with the Annual Report of the Council of Economic Advisers, 2007.

from 15% to 10% (Figure 14), which led to an increase in consumer spending<sup>20</sup> and residential investment. Moreover, the expansion of the dependency exemption for children and tax cuts on capital gains and dividends also contributed to the expansion of consumer spending and residential investment through higher disposal incomes. If these tax cuts are temporary or if individuals expect future tax increases, their effectiveness in growing the economy wanes. However, these tax cuts continued to be implemented throughout the 2000s, and since there was no move to raise taxes under the Bush administration, they led to an increase in consumer spending and residential investment.

Hence, the Bush administration's fiscal policies contributed to economic growth in two ways: increasing productivity and expanding consumer spending and residential investment. However, in 2008, a severe financial crisis plunged the country into a recession, and the economic growth movement changed drastically. In addition, the Bush and Obama administration allocated a lot of government investment to the innovation strategy. This is also a policy that spanned the 2010s, and it continued to contribute to economic growth after the 2010s.

In Japan, on the other hand, the 2000s initially was affected by the "second Heisei recession" of the late 1990s, but reforms by the Koizumi administration (which came to office in 2001) were successful, and from 2003 to 2007 the economy achieved a certain degree of growth, although not to the same extent as the U.S. The Koizumi administration undertook structural reforms to revitalize the Japanese economy based on three basic principles: "No growth without reform," "What the private sector can do, the private sector can do," and "What the regions can do, the regions can do."<sup>21</sup> In this context, the Koizumi administration's fiscal policy included an

<sup>&</sup>lt;sup>20</sup> Mertens, Karel, and Morten O. Ravn. "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States." *The American Economic Review*, vol. 103, no. 4, 2013, pp. 1212–47.

<sup>&</sup>lt;sup>21</sup> Council on Economic and Fiscal Policy, Basic Policies for Economic and Fiscal Management and Structural Reform, 2003.

expansion of science and technology-related budgets, tax breaks for corporate R&D and ICT investments, and tax breaks for capital gains and dividends. However, the fiscal scale and effects were not as effective as the U.S., and Japan's real GDP growth rate averaged only a modest 1.7% from 2003 to 2007.

#### Retreat from Fiscal Consolidation Efforts

The fiscal balance in the 2000s was a complete reversal from the good situation in the late 1990s. In 2002, the country had its first budget deficit in five years, and in 2004, the budget deficit widened to \$413 billion (Figure 11). The budget deficit then declined to \$161 billion in 2007 but widened significantly to \$1,413 billion in 2009 following a major recession (Figure 11). Despite the fiscal surpluses achieved in the late 1990s, why did budget deficits emerge in the 2000s and continue to grow? Because revenues fell or grew little while expenditures increased substantially.

Revenue increased by about 1.3 times from \$2,025 billion to \$2,568 billion between 2000 and 2007, which is lower than the increase of almost 2 times in the 1990s (Figure 11). Furthermore, in 2009, when the economy was in recession, revenue was \$2,105 billion, which is almost the same amount of revenue as in 2000 (Figure 11). Revenue statistics show that personal and corporate income tax revenues were mixed, as they fell in 2003, rose in 2007, and then fell again in 2009 (Figure 12). These changes in tax revenues—along with changes in the economy—were the reason for the decline in personal income tax revenues, as EGTRRA 2001 and JGTRRA 2003 lowered personal income taxes, expanded the child-related dependency exemption, and reduced taxes on capital gains and dividends. The Congressional Budget Office (CBO) estimates that the tax reductions from EGTRRA 2001 and JGTRRA 2003 amounted to

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\$243 billion for the year 2004.<sup>22</sup> As a result of these factors, while GDP grew by 3.9% in 2004, income tax revenues increased only slightly compared to the previous year. With tax revenues falling as a result of these tax cuts, the increase in revenue from economic growth could not offset the decline in tax revenues, and the budget balance was still in deficit in 2007. Therefore, fiscal management prior to 2007 accounted for more than half of the fiscal deficits in the 2000s.<sup>23</sup> Furthermore, while the economic recession of the late 2000s caused a large drop in tax revenues, the Obama administration's American Recovery and Reinvestment Act of 2009 (ARRA 2009) included a \$64.8 billion tax cut for the year 2009.<sup>24</sup> As a result, revenues in 2009 were significantly lower, resulting in a large budget deficit.

Furthermore, expenditures increased from \$1,789 billion to \$2,729 billion between 2000 and 2007 and further increased to \$3,518 billion in 2009 (Figure 11). Expenditure statistics show that defense, other discretionary, and mandatory spending each doubled or more between 2000 and 2009 (Figure 13). The main reasons for the large increase in spending were the increase in war expenditures since 2001 and the implementation of several economic stimulus packages in response to the economic downturn. Defense spending increased by \$367 billion from 2000 to 2009 due to the wars in Afghanistan and Iraq. However, the ratio of defense spending to GDP during this period is below that of the 1980s during the Cold War. In addition, CBO estimates that economic packages such as EGTRRA 2001, JGTRRA 2003, and ARRA 2009 amounted to \$1,256 billion, \$288 billion, and \$787 billion in fiscal outlays over a 10-year period,

<sup>&</sup>lt;sup>22</sup> CBO. Budget and Economic Outlook and Updates, August 2001; CBO. Budget and Economic Outlook and Updates, August 2003.

<sup>&</sup>lt;sup>23</sup> Liebman, Jeffrey B. "The Deterioration in the US Fiscal Outlook, 2001–2010." *Tax Policy and the Economy*, vol. 27, no. 1, 2013, pp. 1–18.

<sup>&</sup>lt;sup>24</sup> CBO's document, February 2009, <u>https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/costestimate/hr1conference0.pdf</u>. Accessed 14 Dec 2022.

respectively.<sup>25</sup> Thus, in the 2000s, expenditures significantly increased beyond the amount of revenue to compensate for the increase.

Although budget deficits persisted beginning in 2002, there were also some actions toward fiscal consolidation. Although the PAYGO principle (which was in effect in the 1990s) had expired in 2002, the Bush administration set a goal of cutting the budget deficit in half by 2009 in its 2004 presidential campaign pledge. The Bush administration was not interested in raising taxes, but was committed to fiscal consolidation through spending cuts.<sup>26</sup> The Bush Administration worked to constrain spending on Medicaid and Medicare by enacting the Deficit Reduction Act of 2005 (DRA 2005). As a result, the budget deficit fell from \$413 billion in 2004 to \$161 billion in 2007. According to CBO estimates, as of 2007, a fiscal surplus was expected to be achieved in 2012.<sup>27</sup> Although the Bush administration's fiscal management has often been seen as a move backward toward fiscal consolidation, it could have achieved fiscal surpluses if not for the recession that began in 2008. However, in terms of the political climate, the Republicans were defeated in the 2006 midterm elections, and the Democrats were the majority party in Congress in 2007. Therefore, there was a movement in Congress not to approve the Bush administration's proposed cuts in discretionary spending,<sup>28</sup> and efforts to reduce spending did not proceed effectively.

In Japan, the 2000s produced large budget deficits due to the recession and tax cuts until 2003, after which the fiscal balance improved with economic growth until the Great Recession in

<sup>&</sup>lt;sup>25</sup> CBO. Budget and Economic Outlook and Updates, August 2001; CBO. Budget and Economic Outlook and Updates, August 2003; CBO's document, February 2009, <u>https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/costestimate/hr1conference0.pdf</u>. Accessed 14 Dec 2022.

<sup>&</sup>lt;sup>26</sup> Ippolito, Dennis S., and Taylor & Francis. *Deficit Politics in the USA: Taxes, Spending and Fiscal Disconnect.* First edition, Routledge, 2022.

<sup>&</sup>lt;sup>27</sup> CBO. Budget and Economic Outlook and Updates. August 2007.

<sup>&</sup>lt;sup>28</sup> Ippolito, Dennis S., and Taylor & Francis. *Deficit Politics in the USA: Taxes, Spending and Fiscal Disconnect.* First edition, Routledge, 2022.

the late 2000s. As a result, Japan's fiscal balance-to-GDP ratio was better than that of the U.S. after 2004 (Figure 15). The fiscal consolidation rule established in 2002—which set a fiscal consolidation target of achieving a primary budget surplus in the early 2010s—played a certain role in improving Japan's fiscal balance. The U.S. in the 1980s also had a goal for fiscal balance, but economic and international conditions made it ineffective, and in the 1990s, the rule was replaced by a direct limit on spending. Nevertheless, Japan was able to improve its finances under the rule of the fiscal balance because of its recovered economy. In the 2000s, Japan's public finances were steadily improving, but, like the U.S., the Great Recession once again led to large budget deficits.

#### **Fiscal Management in the 2010s**

#### Fiscal Policy After the Housing Bubble Burst

After the bursting of the housing bubble spurred the financial crisis, the U.S. economy fell sharply in the second half of the 2000s, but continued to grow (although moderately) during the 2010s. In the 2010s, the economy continued to expand consistently—the longest since 1854—and is the period covered by an economic assessment by the National Bureau of Economic Research.<sup>29</sup> The real GDP growth rate was -2.6% in 2009, which was the first negative growth rate since 1991 and the largest negative growth rate since 1946. Although the real GDP growth averaged 2.24% in the 2010s, it did not reach the 3% and 4% real GDP growth rates experienced in the 1990s and 2000s. For this reason, the "secular stagnation theory" was widely discussed in the 2010s. However, compared to Japan, where the average growth rate in the 2010s was 1.04%, the U.S. growth rate in the 2010s was large and therefore should be studied for global applications. Therefore, what were the major drivers of U.S. economic growth in the

<sup>&</sup>lt;sup>29</sup> National Bureau of Economic Research. US Business Cycle Expansions and Contractions, <u>https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions</u>. Accessed 28 Jan 2023.

2010s? As the following paragraphs explain, the supply-side factors include the increase in productivity and labor force (Table 1), and the demand-side factors include the expansion of consumer spending, housing investment, and oil-related net exports (Figures 4 and 18). Fiscal policy in the 2010s also played a major role in these growth factors.

First, in addition to active ICT investment by firms in the 1990s and 2000s, fiscal spending to strengthen international competitiveness (which has been implemented since the late 2000s) increased productivity. As ICT investments were implemented not only in the U.S. but around the world, threatening U.S. international competitiveness, the U.S. federal government tried to restore it. The America COMPETES Act passed in 2007 and ARRA 2009 expanded investment in R&D for energy and healthcare and in education. For example, in the energy sector, the government established the Advanced Research Projects Agency-Energy (ARPA-E) to accelerate R&D on fossil fuels and renewable energy. Some economists have pointed out that the large investments through ARRA 2009 in green energy and electronic health records had long-term effects.<sup>30</sup> Although the productivity increase obtained in this way was lower than that of the past, it played a role in economic growth.

The increase in the labor force and oil-related net export growth was driven by the shale revolution, which led to the production of shale gas and oil in the U.S. For example, the shale revolution transformed the U.S. into a net exporter of natural gas (Figure 19) and raised its economic growth rate by 0.29 percentage points in 2014.<sup>31</sup> Shale gas and oil exist deep underground between rocks and require advanced technology to be extracted. The shale revolution was achieved due to deregulation under the Energy Policy Act of 2005, as well as

<sup>&</sup>lt;sup>30</sup> Krugman, Paul R. *Arguing with Zombies : Economics, Politics, and the Figureht for a Better Future*. First Edition., W. W. Norton & Company, 2020.

<sup>&</sup>lt;sup>31</sup> *Economic Report of the President*, Together with the Annual Report of the Council of Economic Advisers. Congressional Document. 2015.

technological innovations that started 30 years ago to promote the domestic production of energy.<sup>32</sup> Moreover, fiscal policy has also played a certain role in this technological revolution, with spending on R&D for shale development beginning in 1982, which was almost 30 years ago. Therefore, the shale revolution, as well as ICT, is the result of a long span of government efforts. Although the development of shale gas and oil was originally intended to establish energy security in the U.S., it has also made certain contributions to economic growth.

Regarding personal consumption and residential investment, the tax cuts for individuals were effective as the economy continued to recover from the post-financial crisis. The individual income tax rate cuts on a broad range of incomes, implemented during the Bush administration in EGTRRA 2001 and JGTRRA 2003, were set to expire at the end of 2010. The Obama administration decided to extend the Bush tax cuts for two years until the end of 2012 to not impede economic recovery. Toward the deadline at the end of 2012, discussions emerged that if the Bush tax cuts expired, a large recession was predicted with a real GDP of -0.5% for 2013,<sup>33</sup> and this phenomenon was called the "fiscal cliff." The American Taxpayer Relief Act of 2012 (ATRA 2012), which was eventually passed, returned the top individual income tax rate to its original 39.6% (Figure 14). However, it maintained tax cuts for middle- and low-income taxpayers, thus avoiding a sharp economic downturn. In addition, the Tax Cuts and Jobs Act (TCJA) enacted in 2017 under the Trump administration reduced individual income taxes by about 2–3% in each bracket, including the highest rate (Figure 14). While these efforts did not

<sup>&</sup>lt;sup>32</sup> Stevens, Paul. "The 'Shale Gas Revolution': Developments and Changes." *Policy File*, The Royal Institute of International Affairs, 2012.

<sup>&</sup>lt;sup>33</sup> CBO, Fiscal Tightening in 2013 and Its Economic Consequences, 2012.

significantly change the growth of past consumption,<sup>34</sup> they led to an increase in consumer spending and housing investment.

Therefore, fiscal policy in the 2010s contributed to economic growth in three ways: increased productivity, the labor force and net exports, and private consumption and residential investment. However, all of these growth rates were lower than those of the previous 30 years. As a result, economists discussed "secular stagnation," and measures for economic growth were sought. In this environment, the economic situation drastically changed with the outbreak of the COVID-19 pandemic in 2020.

On the other hand, Japan, like the U.S., recovered from the Great Recession and experienced moderate economic growth in the 2010s. However, Japan's average real GDP growth rate in the 2010s was more than 1% lower than the U.S. Through "Abenomics" promoted by the Abe administration from 2012 onward, the economy expanded for about six years. Nonetheless, economic growth was not strong; one reason was that both demand- and supplyside indicators showed little growth. As for fiscal policy, Japan was the forerunner in the U.S. in lowering the corporate income tax rate, which played a major role in improving corporate performance, but like in the U.S., it did not lead to much expansion of domestic private investment. While the ratio of the science and technology budget to GDP has been decreasing in the U.S. since the beginning of the 2010s, Japan has managed to maintain it, most recently exceeding 1% in 2019 and increasing to 1.7% in 2020 (Figure 20). Whether such spending will lead to future economic growth depends on the Japanese government having a clear vision and investing in science and technology (like the U.S.) as well as on whether such investment will lead to the improvement of technological capabilities and their utilization by companies.

<sup>&</sup>lt;sup>34</sup> Congressional Research Service, *The Economic Effects of the 2017 Tax Revision: Preliminary Observations*, June 2019.

Notably, education will be important in this regard. However, Japan's education-related expenditure-to-GDP ratio is low compared to that of the U.S., which is a challenge (Figure 21). Although the Japanese economy grew only moderately in the 2010s, the increasing science and technology budget-to-GDP ratio may provide hope for economic growth in the 2020s.

#### Improvement and Deterioration of the Fiscal Balance

Although the fiscal balance in the 2010s recovered from the huge budget deficit experienced from 2009 until 2015, the budget deficit began to expand in 2016. The budget deficit was \$1,413.3 billion in 2009 and \$1,294.4 billion in 2010 but shrank to \$442.0 billion in 2015 (Figure 11). However, under the Trump administration, the budget deficit expanded again, reaching a deficit of \$983.6 billion in 2019 (Figure 11). The improvement and deterioration of the fiscal balance in the 2010s were caused by a large increase in revenue in the first half of the decade. Overall expenditure did not increase that much due to a decrease in expenditure following the economic recovery and a large increase in expenditure due to an increase in social security spending, while revenue did not increase much due to tax cuts in the second half of the decade.

Furthermore, revenue increased about 1.6 times from \$2,162.7 billion to \$3,463.4 billion between 2010 and 2019, which was larger than the increase between 2000 and 2007 (Figure 11). Revenue statistics show that personal income tax revenues continued to increase, while corporate income tax revenues increased until 2015 but declined after 2016 (Figure 12). The main reason personal income tax revenues continued to increase was sustained economic growth. Although the TCJA 2017 reduced personal income taxes by about 2–3% in each bracket (Figure 14), tax personal income tax revenues continued to increase due to economic growth that exceeded the

impact of the revenue reduction. Similar to the individual income tax, corporate income tax revenues also continued to increase due to economic growth. However, the Consolidated Appropriations Act enacted in 2015 allowed immediate depreciation deductions for capital investments up to half of taxable income, which caused corporate income tax revenues to decrease slightly in 2016 and 2017.<sup>36</sup> In addition, the TCJA 2017 significantly reduced the corporate income tax rate from 35% to 21%. Thus, in 2018, corporate tax revenues fell significantly by \$9.2 billion, despite real GDP growing at 2.9%—the largest growth rate in the 2010s. It would have been better if economic growth had been achieved to compensate for the decrease in corporate tax revenues. However, the tax cuts did not lead to much economic growth, as companies used the money to buy back their own stock instead of spending it on wages and capital investment.<sup>36</sup> Therefore, while revenue growth in the 2010s was large overall, it was not as large as economic growth because of the tax cuts.

Expenditures reached \$3,517.6 billion in 2009 (which was the largest ever at that time) and decreased to \$3,457.1 billion in 2010, but then continued to increase, reaching \$4,447.0 billion in 2019 (Figure 11). According to spending statistics, defense spending continued to decline from 2010 onward under the Obama administration, staying at \$580–590 billion from 2015 to 2017 (Figure 13). However, the Trump administration's commitment to rebuilding the military led to a sharp increase in defense spending beginning in 2018, reaching \$676.4 billion in 2019 (Figure 13). In addition, non-defense discretionary spending, which continued to decline after 2010, began to rise in 2013 and increased further in 2018 and 2019 under the Trump administration (Figure 13). The enactment of the Budget Control Act of 2011 (BCA 2011)

<sup>&</sup>lt;sup>35</sup> CBO. Budget and Economic Outlook and Updates, January 2017.

<sup>&</sup>lt;sup>36</sup> Krugman, Paul R. *Arguing with Zombies: Economics, Politics, and the Figureht for a Better Future.* First Edition., W. W. Norton & Company, 2020.

capped the amount of defense and non-defense discretionary spending but did not show significant effects.<sup>37</sup> Mandatory expenditures, such as social security, increased about 1.4 times from \$1,913.7 billion in 2010 to \$2,734.1 billion in 2019 (Figure 13). The ratio of mandatory expenditures to GDP was stable at around 10% in the 1990s and 2000s but increased to around 13% in the 2010s (Figure 22). This is primarily due to the rapid growth of the aging population as the Baby Boomer generation born after World War II reached the age of 65 and older. Moreover, another factor contributing to the increase in mandatory spending was the Affordable Care Act (ACA), or "Obamacare," which increased subsidies to local governments for Medicaid. Thus, spending in the 2010s was significantly higher than in the 2000s.

Therefore, the 2010s became a period of increased budget deficits as expenditure rose faster than revenue. A significant factor in the expansion of the budget deficit was the reduction of corporate and personal income taxes, even as spending increased due to population aging and other factors. The Trump administration argued that tax cuts would create economic growth and thereby increase tax revenues, but failed to produce results, at least in the short term. In the 2010s, Japan progressed toward fiscal consolidation more than the U.S. (Figure 15). As the COVID-19 pandemic occurred in 2020, the huge financial support to cope with it caused a rapid deterioration of the U.S. fiscal balance.

In Japan, fiscal balances recovered in the 2010s as well as they had in the mid-2000s when the country recovered from the Great Recession. As a result, fiscal deficits were lower in Japan than in the U.S., except in 2013 and 2014, because of the moderate economic growth and the resetting of fiscal consolidation targets, and increasing the consumption tax rate two times. In response to the great recession in the late 2000s, the fiscal consolidation target was revised in

<sup>&</sup>lt;sup>37</sup> Ippolito, Dennis S., and Taylor & Francis. *Deficit Politics in the USA: Taxes, Spending and Fiscal Disconnect.* First edition., Routledge, 2022.

2010 to achieve a primary balance surplus in FY2020. Subsequently, in 2018, the target year was postponed to FY2025 because it became difficult to achieve the FY2020 goal, but the fiscal balance was still steadily moving toward a surplus in the 2010s. In addition, the consumption tax rate rose significantly from 5% to 10% due to two tax hikes in 2014 and 2019, which nearly doubled tax revenues from the consumption tax from 10.8 trillion yen (2.0% of GDP) in FY 2013 to 21.0 trillion yen (3.9% of GDP) in FY 2020. As a result of these efforts, Japan's fiscal balance in the 2010s was better than that of the U.S.

Nevertheless, there are critics of Japan's efforts to promote fiscal consolidation in the 2010s. While many countries have discussed "long-term stagnation" in response to low growth, some economists argue that under low-interest rates such as Japan's, bold fiscal spending should be undertaken to promote economic growth.<sup>38</sup> Therefore, it is unclear whether Japan's progress in fiscal consolidation in the 2010s was desirable from the perspective of economic growth. Conclusion

This paper analyzed how U.S. fiscal management over the past 30 years has contributed to U.S. economic growth and fiscal consolidation compared to Japan as the U.S. economy and public finances are in better shape than in Japan.

First, regarding economic growth, fiscal policies played a certain role on the supply side in increasing productivity and expanding the labor force, and on the demand side in expanding consumption, housing investment, and oil-related net exports. This is also the reason why the U.S. outpaced Japan in terms of economic growth. The increase in productivity and oil-related net exports is the result of decades of ICT and energy-related R&D that the U.S. government continued to conduct for the future. Therefore, it is important for the government to have a

<sup>&</sup>lt;sup>38</sup> Blanchard, Olivier, and Takeshi Tashiro. "Fiscal Policy Options for Japan." *Policy File*, Peterson Institute for International Economics, 2019.

national vision and to spend money on R&D. In addition, tax cuts and various deductions for the personal income of middle- and low-income individuals played a role in expanding the labor force, consumption, and residential investment. To provide incentives for people to work and consume, appropriately designing taxes for personal income is important.

On the other hand, while corporate tax cuts lead to increases in corporate profits, they have not been linked to much domestic investment or economic growth. This indicates that the high or low corporate tax rate is not the sole factor in a company's decision to invest domestically, as it depends on whether the company has new strategies and ideas, as well as the potential of overseas markets. The same is true for Japan.

As for fiscal consolidation, fiscal management contributed to the increase in revenue through tax increases and the reduction in expenditures through fiscal discipline. Increasing maximum personal income and corporate tax rates generated revenue without having much negative impact on the economy. However, the effect of raising revenue through tax increases has been limited, so economic growth is essential for an increase in revenue. Economic stagnation is also the reason why Japan—which has increased revenue by raising the consumption tax rate—has not been able to achieve fiscal consolidation. In addition, U.S. fiscal disciplines, such as caps on discretionary spending and the PAYGO principle on mandatory spending, worked well in the 1990s but were either not used or had little effect in the 2000s and 2010s. Ultimately, whether there is a system of fiscal discipline, the state of the economy and the willingness of politicians to work toward fiscal consolidation have a significant impact on whether spending reduction can be achieved. This is also true for Japan.

The major fiscal management issues for the U.S. government in the future are whether it can overcome the "secular stagnation" and grow stronger, and how to control the increase in

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mandatory spending in the face of an aging population. In addition, interest rates are rising to cope with inflation, and aggressive fiscal spending among low-interest rates may become more difficult. Therefore, more improvement in fiscal spending, such as through scrutiny of expenditures, is required. In addition, a major recession like the one that hit in 2008 will inevitably worsen the fiscal balance, so addressing the fiscal consolidation of normal times is necessary. These are common challenges for all countries, including Japan. Each country should learn from the past 30 years of U.S. fiscal management and promote policies for economic growth and fiscal consolidation.

Finally, this paper notes two limitations. One is that this paper does not take into account the impact of state and local fiscal management on the economic growth and fiscal consolidation of the U.S. as a whole. The amount of state and local fiscal spending is about 35% (2019) of the total U.S. government's spending and should have a significant impact on the economic growth and fiscal consolidation of the U.S. For example, the state's own taxation system and subsidies affect business activity and state finances. In addition, spending money on mandatory education, for which local governments are responsible, is fundamental for economic growth. The other limitation is that the study does not include a comparison of the EU, especially Germany, with the U.S. and Japan. The EU is in a special situation because of its single currency, requiring its member countries to follow the rules for fiscal consolidation. In this situation, Germany maintained a fiscal surplus, although its real GDP growth rate averaged only 1.4% from 2012 to 2019. Therefore, an analysis of Germany's efforts—especially regarding fiscal consolidation— would be beneficial for the U.S. and Japan and other countries. These points will be the subject of my future research.

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#### **TABLES**

## Table 1 Contributions to Economic Growth in the U.S.<sup>39</sup>

|  | <tfp></tfp>   | <capital></capital>   | <labor></labor>                                       |
|--|---|---|---|
| Jorgenson et al. (2016)                    | 1995-2000: 1.08<br>2000-2005: 1.05<br>2005-2010: -0.13  | 1995-2000: 2.20 (IT capital 1.00)<br>2000-2005: 1.56 (IT capital 0.51)<br>2005-2010: 1.09 (IT capital 0.38) | 1995-2000: 1.28<br>2000-2005: 0.17<br>2005-2010: 0.00 |
| Congressional Budget<br>Office (2020)      | 1991-2001: 1.5<br>2002-2007: 1.7<br>2008-2019: 0.7  | 1991-2001: 1.2<br>2002-2007: 0.9<br>2008-2019: 0.7  | 1991-2001: 0.8  |
|  | <labor productivity=""><br/>1991-2001: 2.4<br/>2002-2007: 2.5<br/>2008-2019: 1.3</labor>                      |   | 2002-2007: 0.3<br>2008-2019: 0.4                      |
| Oliner (2007)                              | <<br>1995-2<br>2000-2   | -   |   |
| Economic Report of<br>the President (2007) | <labor productivity=""><br/>1990-1995: 1.5<br/>1995-2000: 2.7<br/>2000-2005: 3.4</labor>                      |   | -   |
| Corrado and Hulten<br>(2010)               | <labor productivity=""><br/>1995-2007: 2.76<br/>(ICT equipment: 0.36, Computerized information: 0.15)</labor> |   | -   |

<sup>&</sup>lt;sup>39</sup> Jorgenson, Dale W., et al. "The Impact of Information Technology on Postwar US Economic Growth." Telecommunications Policy, vol. 40, no. 5, 2016, pp. 398–411; CBO. Budget and Economic Outlook and Updates, January 2020; Oliner, Stephen, et al. "Explaining a Productive Decade." Brookings Papers on Economic Activity, vol. 2007, no. 1, 2007, pp. 81–137; Economic Report of the President, Together with the Annual Report of the Council of Economic Advisers,2007; Corrado, Carol A., and Charles R. Hulten. "How Do You Measure a "Technological Revolution?" *The American Economic Review*, vol. 100, no. 2, 2010, pp. 99–104.

## **FIGURES**



## Figure. 1 Real GDP Per Capita in the U.S. and Japan

Figure. 2 Debt to GDP Ratio in the U.S. and Japan







Figure. 4 Details of Real GDP





# Figure. 5 Contributions to Percent Change in Real GDP, 1990–2000

Figure. 6 Real Consumption in the U.S. and Japan (1990 = 100)





## Figure. 7 Real Private Investment in the U.S. and Japan (1990 = 100)

Figure. 8 Changes in Hours Worked Per Population in the U.S. and Japan





# Figure. 9 ICT Capital Stock in the U.S. and Japan

Figure. 10 TFP Average Growth in the U.S. and Japan





## Figure. 11 Fiscal Receipts, Outlays, and Surpluses or Deficits (-)

Figure. 12 Details of Fiscal Receipts



Figure. 13 Details of Fiscal Outlays



Figure. 14 Individual Income Tax Rates (each bracket)





# Figure. 15 Fiscal Surpluses or Deficits of GDP in the U.S. and Japan

Figure. 16 Contributions to Percent Change in Real GDP, 2000–2010





# Figure. 17 Percent Change in Labor Productivity in the U.S. and Japan

Figure. 18 Contributions to Percent Change in Real GDP, 2010–2019







Figure. 20 Government Science and Technology Budget of GDP in the U.S. and Japan





Figure. 21 Government Education Expenditure of GDP in the U.S. and Japan

Figure. 22 Details of Fiscal Outlays of GDP



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