

Fiscal policy responses for sustainable post-COVID-19 recovery: Taiwan's experience

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Abstract

Purpose – This study examined Taiwan's fiscal policy responses for sustainable post-COVID-19 recovery. The costs and benefits, aligned with Sustainable Development Goals (SDGs), of fiscal policy responses were identified and valued. Although it may be too early to conclude whether the benefits outweigh the costs, the performance and outcome of fiscal measures were evaluated.

Design/methodology/approach – The study relied on secondary data, including governmental official data, legislative reviews, audit reports and public opinion polls to understand objective and subjective benefits and costs in economic, social and environmental dimensions. However, while the costs were measured in monetary terms, some of the benefits (i.e. satisfaction) could not be monetized; therefore, this study focused on identifying and valuing benefits from fiscal measures but set aside the issues of monetizing and discounting.

Findings – With respect to the costs, a special budget of NT\$840 billion was approved, of which 66.83% was allocated for economic development, 33.12% for social welfare and 0.05% for environmental protection. In terms of the benefits, the economic growth rate was forecasted to be 5.88% in 2021 and 3.69% in 2022, while the average economic growth rate was 2.77% during the period from 2012 to 2019. Social equity was emphasized as various and customized bailout packages were provided to impacted individuals and industries. Moreover, most citizens were confident in the government's efforts to combat the pandemic and stimulate recovery in Taiwan.

Originality/value – This paper comprehensively details Taiwan's experience of fiscal policy responses for sustainable post-COVID-19 recovery. The cost-benefit approach was conceptually adopted. Bearing the value of "build back better" and "rebuild better," the benefits of fiscal measures are promising, although there are indebted costs of the special budget.

Keywords Fiscal response, COVID-19, Taiwan, Cost-benefit approach

Paper type Case study

1. Introduction

When the COVID-19 pandemic appeared in late 2019, Taiwan established the Central Epidemic Command Center (CECC) on January 20, 2020, to coordinate disease prevention, industrial relief and economic stimulus at the national level (Executive Yuan, 2021). Disease prevention referred to strict border controls as well as local prevention and mitigation strategies. Industrial relief programs and economic stimulus were implemented to offer bailout programs, distribute benefits equally, achieve immediate relief and strengthen industrial foundations.

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The COVID-19 pandemic exposed social and economic vulnerabilities in national and international systems, making “Sustainable Development Goals (SDGs) even more relevant as they aim to transform the systemic conditions that perpetuate the vulnerabilities of our societies and economies” (OECD, 2020). Post-pandemic development by governments follows the call to “rebuild better,” “build back better,” or “rebuild, reinvent, redesign” (Brik & Pal, 2021). Sustainable recovery requires the management of unavoidable tradeoffs between economic, social and environmental policy goals (OECD, 2020). As Weible *et al.* (2020) stated, “While we know base values and other orientations drive policy success and failure, questions remain about how to deal with the tradeoffs between them.” Aligned with the SDGs, the current study examined Taiwan’s recovery, which seeks to rebuild Taiwan better in economic, social and environmental dimensions through the allocation and outcome of special budgets.

2. Fiscal response to COVID-19 and Taiwan’s experience

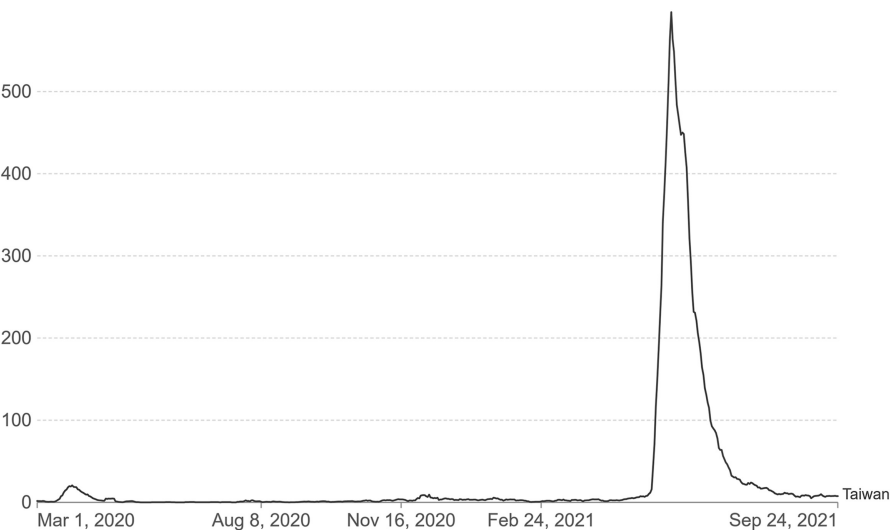
In response to the impacts of COVID-19, governments at every level all over the world have undertaken a variety of fiscal responses, including taxation and spending, loans and guarantees, monetary instruments or foreign exchange operations (IMF, 2021). These responses differ upon the nature of the shock and country-specific conditions. All euro area countries had similar fiscal responses. For example, fiscal emergency packages were offered to firms and workers in the affected industries to prevent economic depression. Besides, tax deferrals and State guarantees were introduced to assist firms to avoid liquidity shortages (Haroutunian, Osterloh, & Stawińska, 2021).

Chen, Shi, Zhang, and Ding (2021) indicated that “a majority of countries have adopted fiscal policies to support the health sector for the purpose of containing and mitigating the spread of the virus (92%), ensuring businesses’ survival and recovery (91%), and supporting individuals and households (88%).” Interestingly, the more democratic the countries are, the substantially larger the fiscal policy packages (in % GDP) they have applied (Elgin, Yalaman, & Yasar, 2021). However, fiscal consolidation rather than further fiscal “stimulus” will be needed to address the perilous fiscal legacy of the crisis (Makin & Layton, 2021).

In terms of fiscal policy tools, Chen *et al.* (2021) categorized them into seven types, including (1) direct government spending, (2) direct government cash payments (to households only), (3) debt contract and relief, (4) tax benefits, cuts and exemptions, (5) tax deferral and social security contribution delay, (6) government credit assistance (loans and loan guarantees) and (7) government subsidies to businesses. The popular fiscal tools include direct government spending (96%), direct government cash payments (84%), tax policies (70%), debt contract and relief (70%), government credit assistance (62%) and government subsidies to businesses (59%).

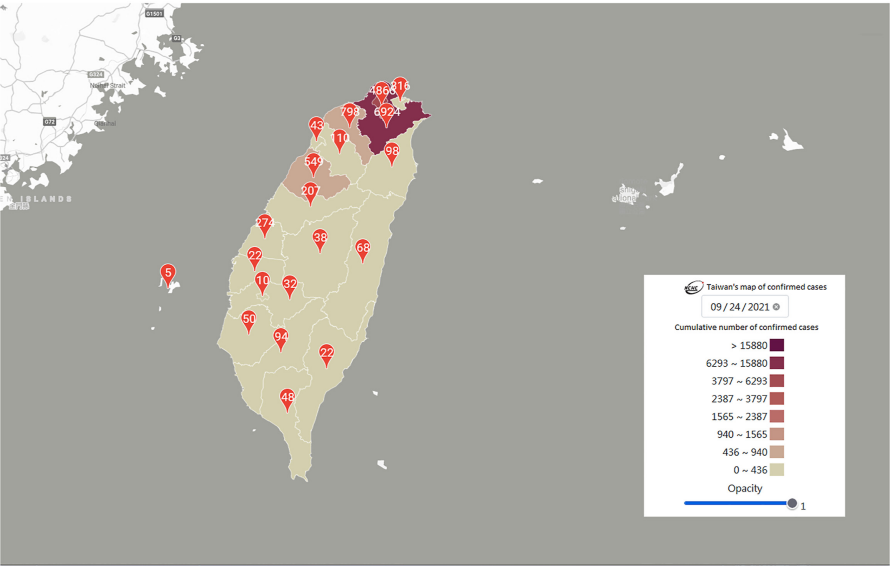
Given the impact of the severe acute respiratory syndrome (SARS) in 2003 [1], Taiwan carefully monitored the spread of COVID-19 and took precautionary measures. As shown in Figure 1, Taiwan combated COVID-19 effectively during 2020 but experienced an outbreak in mid-May 2021. With a population of 23.5 million, Taiwan had 16,347 confirmed cases (vs 241,144,565 cases globally) and 846 deaths as of October 20, 2021 (Ministry of Health and Welfare, 2021). Compared with other countries, Taiwan has had a much smaller number of confirmed cases. Taiwan did not undertake comprehensive testing but instead limited testing for those who had contact with possibly infected individuals or those confirmed to be infected. Besides, those entering Taiwan from other countries were quarantined for two weeks and had to test negative for COVID-19 before being allowed to move about freely. Therefore, the number of confirmed cases might have been underestimated. Taiwan has a higher mortality rate than the global death rate of 2.1% because a very high percentage of COVID-19 patients are elderly with pre-existing medical conditions. Figure 2 indicates that

Figure 1.
Daily new confirmed
COVID-19 cases (by
Sep 24, 2021)



Source(s): Our World in Data (2021)

Figure 2.
The distribution of
Taiwan confirmed
cases (by Sep 24, 2021)



Source(s): Biobank Taiwan (2021)

most confirmed cases were located in northern Taiwan. Due to a global shortage of vaccines, Taiwan has made every effort to buy vaccines and to develop vaccines locally. As of October 20, 2021, first-dose vaccination coverage in Taiwan was 64.29% of the whole population (23.5 million), whereas second-dose coverage was 23.38%. As a sufficient number of vaccine doses

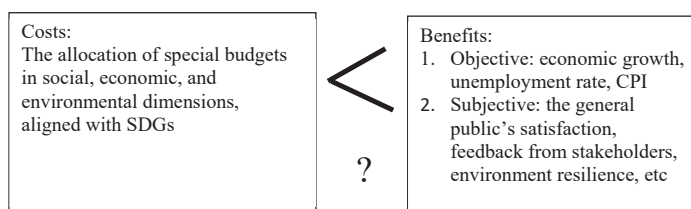
are currently available [2], the Taiwanese approach is aimed at basic protection, especially for the elderly, via the administration of the first dose for a much larger share of the population.

On February 25, 2020, the Legislative Yuan approved special budgets under the Special Act for COVID-19 Prevention, Relief and Revitalization. Covering COVID-19 treatments, bailouts and economic stimulus, the special budgets increased four times along the chronic influence of the pandemic. The Triple Stimulus Vouchers, as economic stimulus, were issued in 2020, with qualified individuals paying NT\$1,000 to receive vouchers equivalent to NT\$3,000. In addition to stimulating consumption, free Triple Stimulus Vouchers were offered to low-income individuals for social equity. To make effective use of limited resources, the most affected industries and individuals were identified and provided with adequate bailout plans. For example, most airport fees were waived; subsidies to hotels and travel agencies were provided; corporate income tax and property tax were deducted for affected businesses, and low-interest government-guaranteed loans were offered to small- and medium-sized businesses.

Taiwan's recovery covered everyone from individuals, families and disadvantaged groups with individual tax breaks and household subsidies, to companies and industries with relief, stimulus and tax cuts. Epidemic control, prevention and treatment and the purchase and development of vaccines were all emphasized (Executive Yuan, 2021). "The pandemic has renewed attention to the importance of, and how little we know about, learning under stress and urgency" (Weible *et al.*, 2020). This study explored Taiwan's experience as a mutual and global learning process to complement research on and practice in post-pandemic recovery. Moreover, in addition to economic revitalization, Taiwan's social and environmental concerns were also examined.

3. Methodology and data

The study relied on secondary data, including official data from Taiwanese governments at all levels, legislative reviews, audit reports and public opinion polls, to evaluate whether the benefits of fiscal policies outweigh their costs in economic, social and environmental dimensions. Figure 3 shows the research method, which assumed causal relationships between special fiscal measures and macroeconomic performance and social satisfaction. Theoretically, cost-benefit analysis must identify and value benefits and costs, monetize impacts, discount benefits and costs in future periods and deal with uncertainty (Boardman, Greenberg, Vining, & Weimer, 2018). However, in this study, there were two limitations: first, the cost-benefit approach is usually applied for a particular project; for the whole economy, it is not easy to evaluate macroeconomic performance by depending on fiscal measures alone. Especially, the economic benefits might be hard to disentangle from the additional (marginal) benefits brought about by special fiscal measures. Second, the costs were measured in monetary terms, but some of the benefits (i.e. satisfaction) could not be monetized. Therefore, this study focused on identifying and valuing benefits from fiscal measures but set aside the



Source(s): Author's work

Figure 3.
Research method

issues of monetizing and discounting. As the fiscal policy responses produced tangible and intangible benefits, identifying them with the objective and subjective measures still had importance to manifesting a real outcome.

Special budgets represent government costs. The allocation of special budgets and possible benefits in social, economic and environmental dimensions were identified.

First, in the economic dimension, bailout packages were announced, such as guarantees in financing, interest subsidies, loan repayment extensions, loans to stimulus-driven capital expenditures for affected small and mid-size enterprises (SMEs) and high-risk manufacturers. Overall, the bailout measures are aimed at boosting the economy and rebuilding Taiwan better, and the economic benefits are examined with the performance in GDP, economic growth rate and economic indicators.

Second, in the social dimension, subsidies to furloughed or short-time workers and unemployment payments to those who lose jobs during the pandemic are available. Moreover, as indicated above, low-income citizens receive Triple Stimulus Vouchers for free. Social equity, as an intangible benefit, is concerned in this dimension.

Finally, in the environmental dimension, the general public's satisfaction to the government's efforts and policies on combating COVID-19 and maintaining a safe and healthy environment is evaluated.

The benefits of pandemic-related fiscal policy responses were evaluated in objective and subjective terms. Objective measures are indicators like the economic growth rate and the unemployment rate. Subjective measures include the general public's satisfaction, feedback from stakeholders and environmental resilience in terms of pandemic control.

Although the primary goal was to understand whether the benefits of fiscal policy responses outweigh the costs, it was first necessary to concentrate on identifying these benefits to gauge the progress of Taiwan's recovery, as aligned with SDGs.

4. Findings and discussions

"While much of our focus has been on the use of scientific and technical expertise in supporting policy decisions, we have not focused enough on the role of emotions and their effects on legitimizing decisions and achieving desirable outcomes" (Weible *et al.*, 2020). With this in mind, the current study reviewed Taiwan's fiscal policy responses to post-COVID-19 recovery and evaluated their benefits and costs in terms of objective and subjective measures.

4.1 Costs

As mentioned above, Taiwan promulgated the Special Act for Prevention, Relief and Revitalization Measures for severe pneumonia with novel pathogens on February 25, 2020, approving a special budget of NT\$60 billion, which then was expanded by NT\$150 billion on April 21, 2020. As the pandemic worsened and global economic growth continued to weaken, Taiwan increased the budget again by an additional NT\$209.947 billion in October 2020, an additional NT\$259.499 billion in June 2021 and a proposed additional NT\$160 billion in September 2021 (Executive Yuan, 2021). In total, therefore, the amount of the special budget was NT\$839.446 billion (US\$30.22 billion). NT\$30 billion of which was funded from previous years' surplus, while the remaining NT\$809.446 billion was from government borrowing, about 4.095% of the nation's GDP. Of this special budget, 66.83% was allocated for economic development, 33.12% for social welfare and 0.05% for environmental protection. Table 1 displays the revenue and the expenditure of the special budget.

Because special budgets were mostly funded through the issuance of debt, they bear some intangible costs, like intergenerational fiscal burden and fiscal unsustainability in the long run (Liao, Kuo, & Chuang, 2021). Schemes for intergenerational equity and debt management

Unit: NT\$ in billion						
Item	Original budget	1st increase	2nd increase	3rd increase	4th increase	Total
<i>Revenue</i>	60	150	209.947	259.499	160.00	839.446 ^a
Borrowing	30	150	209.947	259.499	160.00	809.446
Previous years' surplus	30	—	—	—	—	30.000
<i>Expenditure</i>	60	150	209.95	259.499	160.00	839.446
<i>Economic development</i>	40.35	98.04	166.37	125.75	130.44	560.96
1. Agriculture	3.48	1.99	19.12	19.58	1.56	45.73
2. Other	36.87	96.05	147.25	106.17	128.88	515.23
<i>Social welfare</i>	19.65	51.96	43.58	133.28	29.56	278.02
1. Social subsidy	0.08	4.44	0.53	15.93	10.65	31.62
2. Welfare service	—	31.03	4.71	44.88	—	80.62
3. Medical health	19.57	16.49	38.34	72.47	18.91	165.78
<i>Environmental protection</i>	—	—	—	0.46	—	0.46

Note(s): ^aThe total special budget is 4.095% of GDP, which is well above that of emerging countries but below that of advanced countries

Source(s): Taiwan Directorate General of Budget, Accounting and Statistics (2021)

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Table 1.
Taiwan's Special Act for Prevention, Relief and Revitalization measures for severe pneumonia with novel pathogens

must therefore be emphasized (Fochmann, Sachs, Sadrieh, & Weimann, 2018). However, since the interest rate is likely to remain low for many years, interest payments from COVID-19-related government debts in Taiwan will remain low.

4.2 Benefits

Although it is too early to evaluate the benefits of special budgets and related measures, the present study summarized the initial findings from secondary data.

4.2.1 Economic benefits. First, in terms of economic benefits, as shown in Figure 4, the economic growth rate was 9.27% (YoY) for the first quarter of 2021 and 7.43% for the second quarter, and they were the highest over the decade, representing prosperous economic performance. The economic growth rate was 2.96% in 2019 and 3.12% in 2020 and is forecasted to be 5.88% in 2021 and 3.69% in 2022. Thus, overall, post-COVID-19 economic development is showing promise.

The average economic growth rate was 2.77% from 2012 to 2019. In 2020, the economic growth rate was 3.12% and is forecasted to be 5.88% in 2021 and 3.69% in 2022. Compared to the average growth rate of 2.77%, there was a 0.35% increase in 2020, a 3.11% expected increase in 2021 and a 0.92% expected increase in 2022. Multiplied by NT\$19,766,240 (GDP in 2020), the incremental GDP is NT\$69.18 billion in 2020, NT\$614.73 billion in 2021 and NT\$181.85 billion in 2022. As mentioned above, the special budget is NT\$839.466 billion (implemented in 2020–2022), and the increase in GDP could somewhat compensate for the special budgetary cost, noted that the economic growth rate in 2021 and 2022 are forecasted numbers.

Figure 5 indicates that the unemployment rate was 3.85% in 2020, consistent with the pre-COVID-19 unemployment rate, but it should be noted that the unemployment rate rose to 4.11% in May 2021 and 4.80% in June 2021. Individual bailouts were provided to unemployed workers with unemployment benefits up to 60% of their monthly salaries for six to nine months and to low-income self-employed workers with one-time subsidies ranging from NT\$10,000 to NT\$30,000 (Liao, Kuo, & Chuang, 2021).

The inflation rate, shown in Figure 6, was 0.56% in 2019 and −0.23% in 2020 but increased to 2.47% in May 2021. Although the trend has not been clear so far, the inflation

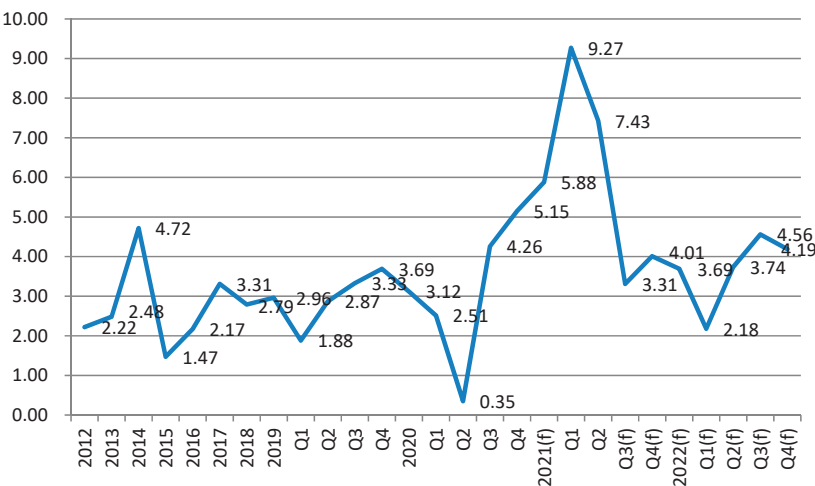


Figure 4.
Taiwan's economic
growth rate 2012–2022

Note(s): *The economic growth rates of 2021 and 2022, together with Q3 and Q4 in 2021, are forecasted numbers
Source(s): Taiwan Directorate General of Budget, Accounting and Statistics (2021)

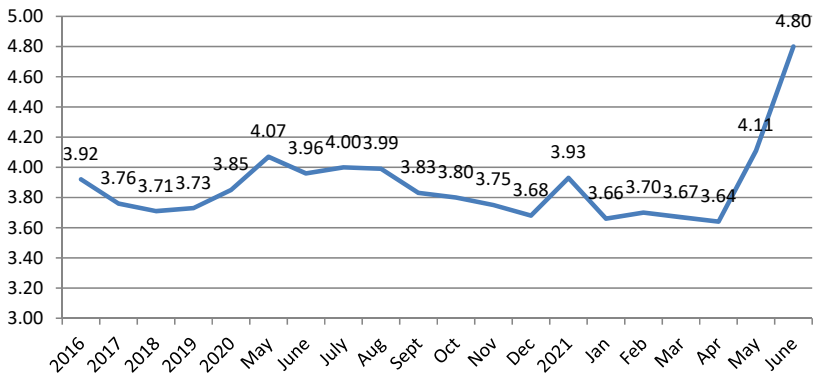
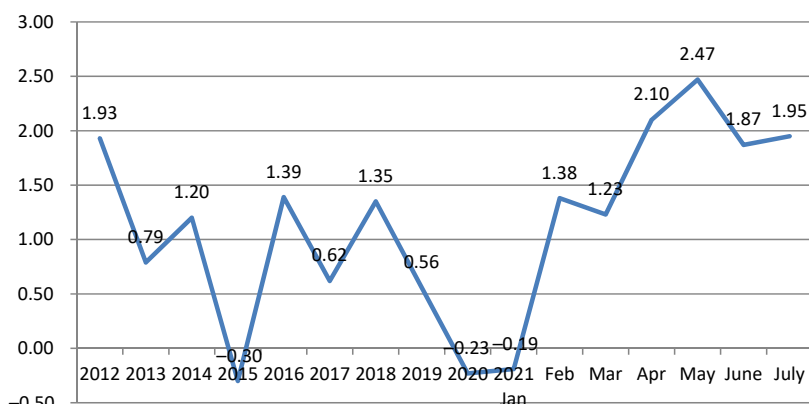


Figure 5.
Taiwan's
unemployment rate
2016–2021

Source(s): Taiwan Directorate General of Budget, Accounting and Statistics (2021)

rate was -0.23% in 2020 but gradually increased in 2021, which needs to be monitored as it rose from April to July 2021.

Due to the increase in videoconferencing and online activities as a consequence of work-from-home and social distancing guidelines, The Taiwan Semiconductor Manufacturing Company increased 42% of first-quarter revenue in 2020, compared with 2019 (Kuo, 2021). Retail sales in the restaurant and beverages sectors, benefited the most from the voucher program, set historic single-month highs in August 2020 (Taipei Times, 2021). The Ministry of Economic Affairs reported in October 2020 that the Triple Stimulus Vouchers help to increase business revenue and government tax income. Similarly, National Development Council stated that the Triple Stimulus Voucher program had contributed NT\$100 billion to Taiwan's GDP. Moreover, according to a satisfaction survey conducted by the New Power



Source(s): Taiwan Directorate General of Budget, Accounting and Statistics (2021)

Figure 6.
Taiwan's inflation rate
2012–2021

Party in July 2020, 70.4% of 1,095 sample respondents felt that the voucher program was convenient, though with 25.6% disagreeing (New Talk, 2020). However, Taiwan People's Party surveyed 1,072 respondents in July 2021, and 48.6% of them reported that they were unsatisfied with bailout programs, and 45.1% indicated that their income had decreased.

4.2.2 Social benefits. While economic stimulation is the primary concern for a post-COVID-19 recovery, the bailout programs for the disadvantaged demonstrated the importance of social equity. First, In July 2020, the bailout fund was allocated to the Ministry of Economic Affairs for business loans and Triple Stimulus Voucher-related subsidies. Low-income citizens receive Triple Stimulus Vouchers for free in 2020 (Taiwan News, 2020b).

Second, during the outbreak in May 2021, the government increased living subsidies to middle- and lower-income families by NT\$1,500 per household for three months. Emergency relief applicants were granted NT\$10,000 to NT\$30,000. Cash aid benefited farmers, fishermen, self-employed workers and travel industry employees (Taiwan News, 2021a). The relief grant for families without any insurance coverage ranged between NT\$10,000 and NT\$30,000. Additionally, the Central Bank put in place NT\$400 billion in loans to SMEs. Industries severely affected by the pandemic, including entertainment, recreation, tourism, exhibition, education and food service, were valid for employment wage subsidies of up to NT\$20,000 per employee in May and June 2021.

Third, two main categories of workers, about 600,000 laborers, benefit from the latest cash relief. The self-employed, including street peddlers and tourism workers, including tour operators, tour guides and tour bus drivers, could apply for a NT\$10,000 monthly payment for three months. The second category was workers without fixed employers, such as vendors and painters, with a salary of NT\$24,000 per month or more. Each of them received cash relief of no more than NT\$30,000 (Taiwan News, 2021b).

Fourth, international enterprises with Taiwanese subsidiaries in some industries whose turnover had been negatively impacted by over 50% in May, June, or July 2021 could apply for subsidies. The government subsidized these businesses with NT\$40,000 per employee as a one-off payment. In addition, if subsidiaries in these industries were forced to close because of COVID-19 restrictions and were unable to pay basic salaries to their employees, they could apply for a closed-down subsidy. The government would subsidize impacted businesses with NT\$10,000 per employee. For most enterprises impacted by the pandemic, the government provided bailout loans, with a maximum amount set at NT\$500,000,000 for turnover or

capital expenditures and covered operational costs up to a maximum of NT\$6,000,000 (Winklerpartners, 2021).

Finally, farmers and fishermen were entitled to a one-time payment of NT\$10,000; state-owned banks offered workers to take loans up to NT\$100,000 at a reduced interest rate (The News Lens, 2021; Taiwan News, 2021a).

4.2.3 Environmental benefits. Maintaining a healthy and safe environment has drawn substantial attention during post-COVID-19 recovery. As a consequence of the previous SARS experience, the general public is willing to practice hygienic habits like wearing masks and washing hands frequently. Moreover, an affordable and high-coverage national health insurance system is in place to assist in combating COVID-19 in terms of a “precision prevention” strategy comprising confirmed case monitoring and medical resource allocation (Kuo, 2021).

In a poll conducted by the Taiwanese Public Opinion Foundation (TPOF) on February 17 and February 18, 2020, with 1,079 Taiwanese citizens 20 years of age and older, 40% expressed optimism about the course of the pandemic, but 46% expressed pessimism. More than 86% of the respondents said that they had faith in the ability of President Tsai’s administration to control the pandemic in Taiwan (Taiwan News, 2020a). Moreover, survey data from National Chengchi University’s Taiwan Election and Democratization Study, conducted in September 2020 among a sample of 1,214 Taiwanese respondents, showed that, overall, 90.95% of respondents were satisfied or very satisfied with government performance regarding COVID-19 (Rich & Einhorn, 2021).

The cities of Taipei, New Taipei and Taoyuan have had more confirmed cases of COVID-19 than any other city or county in Taiwan. A survey by Global Views Monthly was conducted before the central government put Taiwan under a Level 3 COVID-19 alert from May 19 through July 26. New Taipei Mayor Hou Yu-ih, a member of Kuomintang (KMT), was rated the highest in terms of satisfaction (81.5%). Taoyuan Mayor, Cheng Wen-tsan (DPP) was rated the second, with a satisfaction rate of 79.6%. The lowest rating was for Taipei Mayor Ko Wen-je, at 44.4%, with 40.3% expressing dissatisfaction with his governance.

5. Conclusion

To combat COVID-19 and mitigate its impacts, Taiwan implemented special budgets as main fiscal policy responses to flexibly and quickly cope with the unprecedented pandemic. However, since special budgets are primarily funded through government borrowing, fiscal sustainability and intergenerational equity must be seriously considered (Liao, Kuo, & Chuang, 2021). Nonetheless, the special budgets yielded economic, social and environmental benefits, as summarized in Table 2.

The special budgets have been uniquely designed in Taiwan. Article 83 of the *Budget Act* states that the Executive Yuan may, outside the annual general budget, propose a special budget in any of the following circumstances: national defense emergency facilities or war, major national economic event, major calamities or a major political event that takes place irregularly or once every few years (Budget Act, 2021). Taiwan’s special budgets, as flexible and quick fiscal policy responses, were used to cope with the unprecedented pandemic beyond balanced-budget requirements and debt limits. However, since special budgets were mostly funded through the issuance of debt, debt burden, although with a low-interest rate, intergenerational fiscal inequity and long-term fiscal sustainability need to be monitored.

Moreover, a cost-benefit analysis was adopted to understand the performance of Taiwan’s fiscal responses to COVID-19. The special budgets were viewed as tangible costs, and tangible benefits, such as the GDP or the economic growth rate, can be co-measured. The special budgets were allocated for economic development, social welfare and environmental protection to produce economic, social and environmental benefits, which are all aligned with

Costs	Benefits Economic	Social	Environmental
– The special budgets of NT\$839.446 billion – 66.83% of the special budgets were allocated for economic development, 33.12% for social welfare and 0.05% for environmental protection – Fiscal sustainability and intergenerational equity must be considered	– The economic growth rate is forecasted to be 5.88% in 2021 and 3.69% in 2022, which shows that the economy is still promising – The unemployment rate was 4.8% in June 2021, which was higher than pre-COVID-19 – The inflation rate was 1.95% in July 2021, which was higher than pre-COVID-19 – Triple stimulus voucher program has contributed NT\$100 billion to Taiwan's GDP	– Low-income citizens receive triple stimulus vouchers for free – Living subsidies to middle- and lower-income families – The self-employed can apply for monthly payments for three months	– More than 86% of respondents said that they had faith in the ability of president Tsai – administration's to control the pandemic in Taiwan – Most city and county mayors gained high satisfaction ratings in combating COVID-19

Source(s): Author's work

Table 2.
Costs and benefits of
Taiwan's fiscal policy
responses to COVID-19

SDGs. Nevertheless, at the same time, the intangible costs of fiscal burden and intangible benefits, namely the consideration of social equity and the general public's satisfaction with the government's efforts to combat the pandemic while maintaining a healthy and safe environment (environmental benefits), must be incorporated into the cost-benefit analysis.

Although it is too early to determine whether the benefits of fiscal policy responses outweigh their costs, government endeavors and measures to “build back better” and “rebuild better” have been confirmed.

Notes

1. With 346 confirmed cases and 73 deaths (Taiwan CDC, 2004).
2. In addition to government purchases, the Taiwan Semiconductor Manufacturing Company, the YongLin Charity Foundation, and the Tzu Chi Foundation donated vaccines to the Taiwan government. Moreover, Taiwan received vaccines from the Czech Republic, Japan, Lithuania, Poland, Slovakia and the US. It is expected that the first-dose vaccination coverage will be 70% in October 2021.

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