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Public Stimulus Plans Rarely Work: The Evidence since the Early 90's

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Introduction

Fiscal and monetary stimulus has become the new normal since early 90's. Governments and central banks implement significant deficit spending and monetary stimulus plans even in periods of growth. The purpose of this paper is to examine the effectiveness of those policies, regarding short, medium, and large term effects.

To do it, I think it is useful to take into account not only macroeconomic and microeconomic figures, but also the effects of the plans over debt and productivity. Any policy must be considered in the context of a cost-benefit analysis that includes not only the current impact but also the structural changes that can appear in the economy.

Unfortunately, that is not the case with stimulus plans. Most of them are rarely analysed and the cost-benefit analysis is ignored in favour of a view that blames the poor effectiveness of some plans on the alleged lack of scale and magnitude of the stimulus. However, the evidence shows that the diminishing returns of stimulus plans are very clear due to the misallocation of capital, the need to spend money rapidly on almost anything and the high proportion of non-productive and current spending included in these plans. Artificially boosting GDP with large government spending and monetized debt generates a short-term impact that fades rapidly.

It is useful to start by considering the 2020 plan for the United States. A $20 trillion fiscal and monetary boost is expected to deliver just a $4 trillion real GDP recovery followed by a rapid return to the historical trend of GDP growth. This will likely lead to new record levels of debt, weaker productivity growth and slower job recovery. The pace of global recoveries since 1975, according to the OECD, shows a weakening trend.

What we can derive in this paper is if that is the case for the majority of stimulus plans.

The Effects of Stimulus Plans before Covid19

Stimulus plans have become the new normal since the Great Financial Crisis of 1929. First, we saw large fiscal plans with little monetary policy support. However, since the beginning of the 2000's, those plans are being complemented by extraordinary monetary policies consisting of historically low interest rates and, since 2008, monetary base expansion implemented through Quantitative Spending.

All those plans tend to follow the blueprint of the New Deal in the United States after World War II, based on the idea that it worked. However, is this true?

When Franklin D. Roosevelt launched the New Deal, the size of government, public spending, and debt were nowhere close to today's elevated levels. At the height of the New Deal, federal spending never went above the 1934 level of 10.7 percent. Even considering the extraordinary cost of the Second World War period, public sending went from a maximum of 43.6 percent down to 11.6 percent by 1948.

Not just that. The public sector had very little debt, a maximum of 45 percent of GDP. Compare that with an already unsustainable annual deficit that does not fall below half a trillion dollars and debt to GDP of close to 100 percent in 2021.

The study titled "New Deal Policies and the Persistence of the Great Depression: A General Equilibrium Analysis" determined that the anti-competition and labor rigidity policies of the New Deal harmed the possibilities for economic recovery. The study concluded that, if these policies had not been enacted, the depression would have ended in 1936 instead of [1].

In the 1930s, the unemployment rate never fell below 15 percent. Five years after starting his "New Deal," Roosevelt's economic policies had caused one in five active Americans to be without a job. In 1937, there were 6 million unemployed and, by 1938, that figure was 10 million people. The US truly emerged from the depression when, at the end of the war, it abruptly cut taxes by one-third and reduced spending and began paying off the debt. What evidence shows is that, although the global economy experienced the largest period of fiscal and monetary stimulus, growth was already weak before the Covid19 pandemic and labor productivity was falling.

As Mitchell et al show at "More government spending equals weaker economic performance", there is a negative correlation between the size of Government and economic performance in most countries around the world, including Russia, United States, Germany, Japan, developing countries and OECD countries.

In fact, there are some studies published by the OECD that demonstrate the need for reducing public spending. For example, Fournier, J.M. and Johansson found that "a reduction in the size of the government could increase long-term GDP by about 10%, with much larger effects in some countries [3]." The evidence of a "saturation of stimulus" is clear all over the world. Global debt soared to 325 percent of world GDP in 2016 led by increases in public debt precisely from those countries that implemented large stimulus plans and no kind of austerity program [2]. Public debt, in particular, doubled in the U.S. and China between 2006 and 2016, rose 50 percent in Japan to 250 percent of GDP, with a similar 50 percent increase in the Eurozone, to 90 percent of GDP.

European Union

Probably the best example of stimulus plans failure during the last years is in the European Union.

In 2008 the European Union started a "growth and employment plan" [3]. It clearly overpromised and underdelivered. The so-called "Juncker Plan" or "Investment Plan for Europe" hailed as the "solution" to the European Union's lack of growth was the same. It mobilized 420 billion euros.

The Eurozone has been a continuous government stimulus plan since inception:

- A stimulus in 2008 in the "Growth and Employment Plan." A stimulus of 1.5 percent of GDP to create "millions of jobs in infrastructure, civil works, interconnections, and strategic sectors." Four and one half million jobs were destroyed, and public deficits nearly doubled. That's after the crisis because, between 2001 and 2008, money supply in the Eurozone also doubled.
- Two massive sovereign bonds repurchase programs with Jean-Claude Trichet as ECB President, and interest rates down from 4.25 percent to 1 percent since 2008. The ECB bought more than 115 billion euros in sovereign bonds.
- An additional massive stimulus from the ECB of €2 trillion with the ECB balance sheet at 40 percent of the Eurozone GDP, in addition to three targeted longer-term refinancing operations (TLTRO) liquidity programs, which took sovereign bonds to the lowest yields in history and purchased up to 20 percent of the total debt of major states.
- The 2014 "Investment Plan for Europe", of which more than 424 billion euro has been mobilized and 77 billion approved [4]. It was going to "increase the GDP of the European Union by 1.3 percent until 2020." The GDP of the European Union finally was revised down to half of the growth estimated by the ECB.

The average impact of those programs has been extremely low. The empirical evidence from the last fifteen years shows a range that, when positive, moves between 0.5 and 1 at most… And in most of the peripheral countries, they have been negative.

According to the European Union's own estimates, the Juncker Plan generated between 2014 and 2019 a total impact +0.9% in GDP and added 1.1 million jobs from 439 billion euros invested. The return on invested capital of this massive plan was exceedingly poor. And we should remember that the Juncker Plan was used entirely for investment projects with expected real economic return and without the amount of current spending and political intervention of the 2021 Recovery Plan.

Can we really believe in the expected impact of 4% on GDP in three years from these European funds, as the average consensus estimates, when the Juncker Plan generated – if we believe it – 0.9% in five years?

According to the Bank of International Settlements and Merrill Lynch, Europe had more zombie companies in 2018 than before the crisis, with 9 percent of large listed non-financial corporations considered "walking dead" That is, generating operating profits that do not cover their financial costs, in spite of all-time low interest rates and an unprecedented monetary stimulus [5].

Moreover, average government spending reached almost 46 percent of GDP, and deficit spending is being supported by a European Central Bank whose balance sheet is expected to exceed 75 percent the Eurozone GDP at the end of 2021. That is why talking about austerity in Europe is simply incorrect. During the worst years of the last crisis, all we have seen is a very modest budget control.

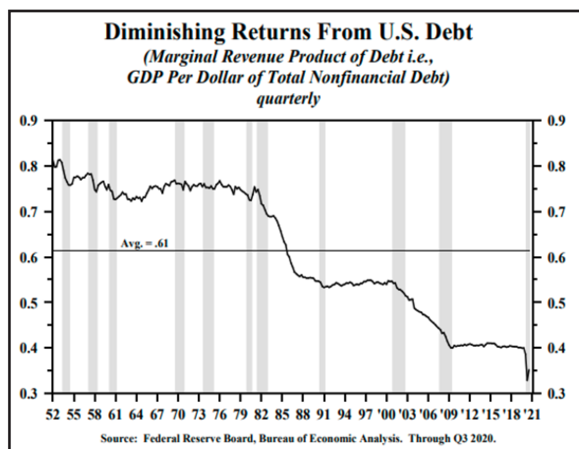
What really happened is that Eurozone growth estimates were slashed, productivity growth stalled, and industrial production in 2019 was at five-year low levels.

The Eurozone's massive "green" policy plan has made the European Union countries suffer electricity and natural gas bills for households that are more than double those of the US, and unemployment is still twice that of the United States, while growth stagnated.

United States

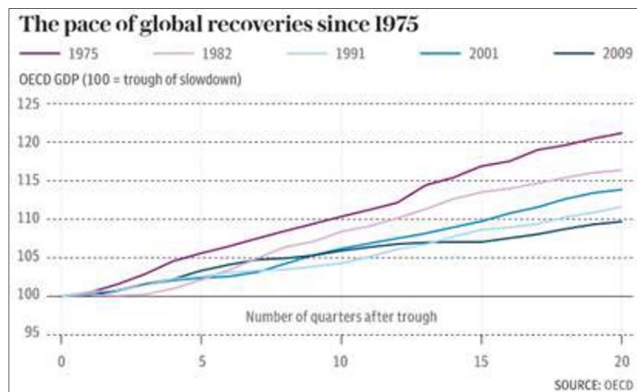
The stimulus plan made in the U.S. in 2009 to "tackle the crisis" was the largest seen in economic history. The White House predicted an average growth in the economy of 4 to 4.5 percent, a drop in unemployment to 5 percent, and the budget deficit would shrink to 3.5 percent of GDP.

Since then, three Federal Reserve stimulus plans (QEs, quantitative easing) were launched until the Covid19 pandemic, and ultra-low rates. Economic growth was an annual average of 1.4 percent—2.1 percent if we exclude 2009. This compares to an average 3.5 percent under Reagan, 3.9 percent under Clinton, and 2.1 percent under George W. Bush (President #43).



The US economy has grown far more slowly than it did in any of the previous 10 economic recoveries since World War II. That

means the recovery growth gap compared to other recoveries since 1960 has been set at $1.67 trillion -a weak recovery compared with recent history- as well as economic growth that has stalled at almost half of what had been projected.



All of this happened with a massive $4.7 trillion monetary stimulus and $10 trillion in new debt, and a fiscal deficit increase of $13 trillion at state, local and federal levels. Public debt ballooned from 48 percent to 75 percent of GDP. Average annual deficit was 5.2 percent; it was 3.2 percent in 2016.

Author Amadeo, K. explains the pros and cons of the Bush stimulus and its side-effects on the economy: "The Bush stimulus program totaled about 1 percent of GDP [13]. Advocates of the bill said that was large enough to impact the $14 trillion economy. Most economists agreed that tax rebates would immediately lift consumer spending. That's especially true if rebates are targeted at low-income families more likely to spend it than save it."

Hence, it is not a surprise that in the recovery of 2009-2016, the U.S. middle class saw wages stagnate, disposable income fall, and more obstacles to building wealth emerge. It was weakened by subsequent tax hikes while the "stimulus" perpetuated high government spending, doubled debt, and made productivity growth stall.

The figures show a job creation that was positive but weak, with 4.6 percent unemployment and 9.3 million jobs created. While good, employment figures were far from what is expected of the world´s leading economy after a $24.7 trillion fiscal and monetary stimulus. Under Reagan 12.6 million jobs were created: under Clinton, 21 million. Even with the massive crisis, George W. Bush. Saw 5.7 million jobs created. And, once more, the effects on public finances were also worrying: During the Obama administration the country's debt doubled despite the largest monetary stimulus in history.

China

We can take another case in the response of China to the 2008 crisis. According to Wong, C., the fiscal stimulus plan started by the Chinese Government totaled 4 trillion yuan (CNY) (USD 586.68 billion), comprising CNY 1.18 trillion in central government funding plus local government inputs and bank credit [4]. The package amounted to 12.5% of China's GDP in 2008, to be spent over 27 months.

In relative terms, this was the biggest stimulus package in the world, equal to three times the size of the United States effort.

The plan also contained accommodative monetary policies, including:

- A reduction of one-year lending rate from 7.47% to 5.58% (according to China Daily, 2008).
- In the period from September through December, interest rates were cut five times, with a cut of 108 basis points on 26 November 2008 (Areddy, 2008) [5].
- A package for financial reform that included new credit mechanisms for small to medium-sized enterprises (SMEs), a broader scope for issuing corporate bonds, and new regulations for the creation of real estate investment trust funds (REITs) and private equity (PE) funds. s (Li et al., 2008) [6].
- The State Council issued a document authorizing a loan allocation of an additional CNY 100 billion to banks. Commercial banks were urged to increase lending. The credit quota was abolished, and a call was issued to strive for increasing total lending by CNY 4 trillion in 2008.

In summary, China put in practice the largest stimulus plan of the history. Did it work? It is difficult to defend it. According to World Bank Statistics, medium GDP growth rate in China in the 2000-2007 period was 10.55%, while in 2009-2016 this number was down to 8.31%. Also, the industrial capacity utilization in China were down more than 10 percentage points, from values close to 90% to less than 80%, a figure that remains currently. As Billion Hu. Et al. explain: "The implementation of the huge stimulus package aimed at offsetting the impact of the global financial crisis in 2008-2009 encouraged local governments and enterprises to excessively increase production capacities [7]. Although the government's massive CNY4 trillion stimuli aimed to boost investment in infrastructure and social housing, it was also used to support so-called "strategic" industries including steel, automobile, and shipbuilding, contributing to excess capacity in these sectors. For instance, capacity in the steel sector increased by 52% in 2009 alone. Similarly, the newly added number of production lines in plate glass in 2009-2012 was 40% of the total number of production lines added in the past 30 years."Once more, the stimulus plan put in March by China led to significant misallocation of capital and weak effectiveness. Some authors, such as Wong M., think that China essentially did succeed in avoiding a recession, believing that this plan was "effective yet not considered efficient" [8]. However, avoiding a recession also implies eliminating the positive effects of creative destruction and reduction of slack in the economy. This, in turn, leaves higher debt and weaker subsequent growth.

The negative effects of this plan are not only seen in the current economic structure. It also affects medium and large term growth via public finances. Regarding only Government debt, the IMF reflects that it stands at 66.8% over GDP (2020), while in 2008 was 27.2%. During the first year of the plan the Government debt soared 7.4 percentage points, and it has been growing constantly since then. It is worth mentioning that this allegedly acceptable level of public debt should include the debt accumulated at state-owned companies.

But public debt is not the main problem for a sustainable economic model for China. The boost of state-owned companies' debt and white elephants because of this plan have accelerated an economic growth path based on debt to 335% of GDP, according to the Institute of International Finance (IIF). This organization also detailed that China's outstanding debt claims on the rest of the world increased from about US$1.6 trillion in 2006 to more than US$5.6 trillion as of mid-2020.

Also, Lee A. published in 2021 an article in South China Morning Post where explained that "China's domestic debt has been

growing at an average annual rate of around 20 per cent since 2008, faster than its gross domestic product (GDP) growth" [9].

Japan

Japan is probably the first country in the world that experimented aggregate demand-side policies, boosted by fiscal and monetary public stimulus. Also, it is the best example that shows they do not work. This country has applied huge fiscal stimulus programs since 1990. There is plenty of literature since then evaluating its impact and showing its disappointing results.

As Tuladhar et al reflect, the Japanese Government introduced fifteen spending programs between 1990 and 2008 that amounted 28 percent of its national GDP [10]. The main components of the programs were:

- Public works and social infrastructure related projects, including land acquisition: 14.2 percent of 2000 GDP;
- Credit guarantees and augmentation of credit lines to banks for loans to small and medium-sized enterprises and for the housing sector: 8.5 percent of GDP;
- Employment assistance and cash transfers: 2.1 percent of GDP; and
- Tax measures: 3.3 percent of GDP.

The fiscal multipliers found by these investigators were low: 0.28 for the impact multiplier effect of public investment on regional output and 0.67 as the cumulative effect on output of a persistent government spending shock.

What that means is that the return of a marginal public investment is lower than 1: Public investment has diminishing return and does not create growth.

In fact, the IMF found that investment multipliers have declined over time, with figures that come from 0.55 in 1975 to less than 0.3 at the end of the '90s.

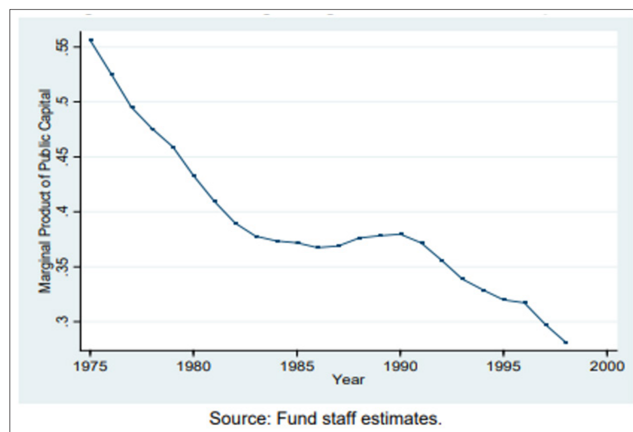


Figure 7: Declining Marginal Product of Capital

Finding reasons for these low multipliers, they talk about some of the reasons we already analyzed for Europe and China: "In trying to understand the cause of the low multipliers, we find some evidence for crowding-out effects. Aggregate supply side factors, namely, overinvestment and the relatively large preexisting public capital stock, have also diminished the marginal productivity of capital over time, which is manifest in the declining multipliers. "Other research studies, such as Wilson, B.A., obtained the same conclusion: The effects of stimulus plans since 1990 have been poor. Specifically: "since its initial slowdown, the Japanese economy neither recovered its earlier pace of growth nor achieved sustained positive inflation" [11]. In fact, what the Federal Reserve suggests is that "consumption appeared particularly responsive to tax measures". This idea is supported by Alesina et al. whose thesis of austerity based on reducing spending to create margin to cut tax shows this is more effective than increasing taxes during a crisis.

Similar results were obtained by Miyazaki, T. when analyzing stimulus programs carried out by the Japanese Government to tackle 2008 crisis [12]. Specifically, the work analyzed the impact of measures focused on environmental benefits.

The conclusion of this work is illustrative: "When evaluating the effects of Japanese discretionary fiscal policy following the financial crisis, it must thus be concluded that even a policy with a positive effect generates very limited benefits for the economy".

So, in essence, Japan was one of the most prosperous economy in the world during the '80s. The interventionist measures adopted in the early '90s led the country to a lost decade, that Shinzo Abe tried to solve by doubling down on similar policies. Since 2012 Japan has being involved in Abenomics, the most aggressive stimulus program regarding both fiscal and monetary expansion plans. As a result, Japan's growth was down from an average of 10% per year during the period 1955-1972 to 4% between 1975 and 1990 and 1% from 1990 to nowadays. Furthermore, weak growth is based on very poor productivity, which has been 20% below the OECD average since the bursting of the bubble and has edged down a 30% since the 2008 crisis.

The early evidences for the stimulus plans to tackle Covid19 crisis The Covid19 pandemic supposed the largest economic stimulus of the modern history. The world fiscal balance tripled from 3.1% of GDP in 2019 to 9.5% in 2020, according to consensus figures made public by Bloomberg in June 2021.

Also, the Institute of International Finance established in last February 2021 , that governments, companies, and households raised $24 trillion in 2020 to offset the pandemic's economic toll, bringing the global debt total to an all-time high of $281 trillion by the end of the year, or more than 355% of global GDP .

The IMF published a detailed dataset that shows the fiscal measures adopted by all the countries monitored by this organization. The magnitude of the stimulus is obvious: 9.930 USD trillion (9.2% of GDP) in additional spending or foregone revenues, while another 6.104 USD trillion (6.1% of GDP) were spent in liquidity support (equity injections, loans, asset purchase or debt assumptions, guarantees, etc.).

The largest stimulus program was seen in the advanced economies, led by the USA, which approved 25.5% over GDP on additional spending and 2.4% over GDP on liquidity support measures.

The Top-3 ranking among advanced economic was completed by:

- The United Kingdom, which spent an additional 16.2% of GDP and carried out 16.2% of GDP on liquidity support measures.
- Japan, whose stimulus plan reached 15.9% of GDP regarding additional spending or foregone revenues measures while liquidity support initiatives regarded 28.3% of domestic GDP.

Furthermore, we should consider monetary policy, which also has been a key supporter of stimulus plans, especially in advanced economies. Quantitative easing measures led to an unprecedented increasing of monetary base.

As Yardeni Research shows, the total assets held by major central banks amounted 20 trillion dollars at the beginning of 2020, while in June 2021 were up to 30.1 trillion dollars, with yearly percentage change that achieved double-digit grow, peaking at the beginning of 2021 with levels close to 50%. The latest figure reflected by this report was 19.6% in June 2021 [15].
The growth was similar across economies:

- The Bank of Japan already surpassed 100% of its GDP before this crisis. But, in the first quarter of 2021 its balance sheet was 130.8% of GDP.
- The European Central Bank has been one of the most aggressive monetary operators all over the world during the last years. Also, during Covid19 crisis. At the beginning of 2020 its balance sheet was close to 40% of the European GDP, but in Q1'21 is presence increased up to 60.6%.
- The Federal Reserve was already the central bank that maintained less presence in its economy before the pandemic (less than 20% of GDP in 2020), and the last figures increased it up to 33.9% in the first quarter of 2021.

The detailed of both fiscal and monetary measures can be consulted in my paper "Monetary and Fiscal Policies in the Covid-19 Crisis. Will They Work?"

The object of study of this work is a preliminary evaluation of the effectiveness of these measures. Although it is true that the period since their implementation is short, there are some conclusions that we can extract:

The first one is, again, their low multiplier. Bayer et al. found that the transfer multiplier in the short run can be as weak as 0.25 in the case for unconditional transfers. Overall, for the case of the United States economy, they found that "the transfers reduce the output loss due to the pandemic by up to 5 percentage points."

Moody's also reminds that "higher government spending can boost economic growth, but the impact on government debt/GDP ratios depends on how much extra growth the extra spending creates, which is known as the fiscal multiplier." "Our estimates show these multipliers are now typically below one, which means debt-funded fiscal stimulus beyond that already announced would probably raise debt/GDP ratios and the credit pressures on sovereign balance sheets."

It is useful to examine the main macroeconomic indicators to monitor the effectiveness of the measures:
According to the IMF WEO (April 2021), the global economy grew by -3.3% in 2020, and in 2021 it will do at a +6.0% year-on-year rate, while advanced economies grew at -4.7% in 2020 and the forecast of the IMF is +5.1% in 2021 [18]. How do the three countries with more fiscal stimulus performing? In the following table I reflect GDP growth for 2020 and 2021, and the difference between the country rate and the Global/advanced economies one:

	Growth rate		Difference with global economy		Difference with AE	
	2020	2021	2020	2021	2020	2021
United States	-3.5	6.3	-0.2	0.3	1.2	1.2
United Kingdom	-9.9	5.3	-6.3	-0.7	-4.2	0.2
Japan	-4.8	3.2	-1.5	-2.8	-0.1	-1.9

Source: IMF

The most important conclusions from this table are:

- The three economies with the largest stimulus plan perform worse than the global economy in 2020, and two of them also had a negative difference with the advanced economies.
- Although IMF estimates frequently are optimistic, only the United States has a better performance in 2021 than the average rate for the advanced economies. However, in the United States this comes with the largest deficit, debt increase and monetary stimulus of all developed economies. It has become clear that each package of stimulus has generated a short impact that lasts around one quarter.
- Can we conclude that the macro stimulus plan in the United States was successful? It is useful to look on the big picture to put macro figures in perspective: While Gross Domestic Product in the United States will grow 1.2 trillion between 2019 and 2021 (from US$ 21.4 trillion to US$ 22.6 trillion), general government net debt will increase by US$ 7.0 billion.

The United States will likely increase its debt by US$ 5.6 for each additional dollar of GDP created.
And the same is happening with the two countries analyzed here:

- The United Kingdom will increase its debt by 17.5 British Pounds for each additional marginal growth of GDP.
- But the worst case is Japan: National 2021 GDP at current prices in 2021, according to the IMF forecast, will be lower than in 2019. While, the government net debt will have a 14% increase, and it will achieve 172% over GDP in 2021.

Conclusion

The evidence demonstrates that stimulus plans rarely work as policymakers expect when they are launched. The reason is that fiscal multipliers are low -below 1-, and in some indebted countries, negative, the marginal capital productivity shows clear diminishing returns, and the impact over employment is ineligible. A case has been made saying that some economies would generate similar or higher levels of recovery and become less indebted without such large-scale programs. The examples of some Asian and developed economies like South Korea or Ireland and Luxembourg suggest so. However, this is impossible to corroborate. What we can certify is that the history of large public stimulus plans always shows a weaker economic growth than expected in the recovery and much higher debt.

Fiscal multipliers are often below one, and what figures show is an increase in public debt in a proportion larger than 1, a low trend in labour productivity and a lack of structural reforms in the economies where they are implemented.

These investment plans usually go to white elephants –huge public projects with low or no return that increase industrial production overcapacity –and an incentive to increase current public spending significantly above long-term revenue trend and debt above the economy's gross domestic product.

Also, the evidence shows that cutting expenses has proven to be a better form of fiscal consolidation than increasing taxes. An investment plan that amounts to a high proportion of GDP must be paid with current or future taxes, which negatively impacts the economy's growth path via domestic consumption and investment.

This conclusion does not mean that governments should do nothing in a crisis. There are measures that help the economy recover faster, but we must warn against the view that stimulus plans should be repeated with larger sums of funds every time. There has to be a clear analysis of cost and benefit instead of a constant demand for more spending at any cost.

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