International Transport Forum

COVID-19 TRANSPORT BRIEF

Stimulating Post-Pandemic Recovery through Infrastructure Investment

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The Covid-19 crisis has significantly suppressed global economic activity. In 2020 alone, eurozone GDP dropped by 7.5%, while average global GDP showed a 4.5% contraction (OECD, 2020). Many governments have stepped in to cushion the impact on households and business. Much of the spending has been to ensure businesses are still viable once authorities can safely remove the restrictions imposed on social and economic activity to limit the spread of the virus. This will enable activity to bounce back but full economic recovery will require additional stimulus. Infrastructure investment is one path to achieve this and is widely regarded as an effective way to spur economic activity. It raises two important policy questions: how to prioritise projects and what method of project financing to adopt?

Tried and tested: Reviving the economy through infrastructure investment

Experts agree that investment in infrastructure can provide a boost to economic activity. This was one of Keynes' main policy measures for recovery from the depression of the 1930s and was adopted as one of the cornerstones of the "New Deal" in the US. Following the experience of this century's global financial crisis, there is also now widespread consensus that austerity measures in the aftermath of a crisis are counterproductive. If a country can borrow on the financial markets to re-start the economy with public investment, it should do so. These were key messages from the annual World Bank and International Monetary Fund (IMF) meeting in October 2020 (Giles, 2020).

Takeaways from this Brief

- Infrastructure investment is a tried and tested way to successfully stimulate economic activity following a crisis.
- Policy makers should prioritise projects that can deliver jobs and growth in the short- and medium-term.
- The focus should be on projects already in the pipeline, with cleared planning and environmental approvals.
- Interventions should be Timely, Targeted, and Temporary: the IMF's TTT principle.
- Governments must properly estimate and budget the life-cycle consequences of investments.
- Stimulus packages should aim to advance decarbonisation, social equity and resilience.
- PPPs are unlikely to be suited to recovery needs: authorities should look to publicly-funded projects.

The immediate economic boost from infrastructure investment comes through spending on construction activity; every dollar spent generates additional economic activity. In its recent report, the Global Infrastructure Hub (GIH, 2020) showed that the short-term fiscal multiplier on average reached 0.80 within one year, and 1.53 within 2-5 years. This result was calculated from a sample of over 3 000 estimates from past studies in developed and developing countries. The results reported by the GIH (Table 1) also showed that the multiplier effect from public investment is typically significantly higher than spending for other purposes, such as social transfers, where the 2-5 year multiplier was estimated at 0.84. The multipliers are higher for investments made in periods of contraction in the business cycle, when labour markets are not tight, and in an environment of low interest rates.

Table 1. **Multiplier Estimates by Fiscal Measure**

Fiscal measure	Cumulative Multiplier (within 2 to 5 years)
Public Spending (all forms of spending)	0.98
Public Investment	**1.53**
Public Consumption	1.12
Transfers	0.84
Tax Interventions	0.49

Note: The 'Public Spending' category is used where there is insufficient information to determine the type of public spending. It is not an average of other items in the table and does not include multipliers for Tax and Transfers as these were able to be isolated and analysed separately in the literature.

Source: Global Infrastructure Hub and Cambridge Economic Policy Associates (GIH, 2020).

Infrastructure investment also has a long-term impact on productivity growth and can therefore increase growth in GDP in the long term, though those impacts are smaller and their magnitude is uncertain. The GIH report estimates the average elasticity of private GDP to public capital stock at around 0.19, which implies that a 1% increase in the total value of public capital stock is expected to increase output by approximately 0.19% every year. This long-term impact is difficult to measure. Not all public capital is infrastructure, some infrastructure is private, and at these elasticities the additional infrastructure would pay for itself in about one year,

which is unrealistic, i.e. the elasticities are severely overestimated. Once the methodological issues are resolved, more robust estimates will likely be much lower (Straub, 2008).

The short- and medium-term impact of public infrastructure investment on jobs and economic growth is what matters for recovery from the effects of the Covid-19 pandemic, as the economy needs a stimulus that will work quickly. The Covid-19 crisis is different from the financial and economic crisis of 2008 as it was caused by intervention to suppress activity and not by collapse of a financial bubble or fiscal imbalances. A rapid bounceback of activity is expected, as was seen when the first round of lockdowns ended. However, extended suppression of activity is creating fiscal imbalances and the risk of another financial crisis. The longer intervention continues, the deeper the scarring of the economy and the higher the risk of extensive unemployment. Large-scale stimulus will be needed to counter these effects.

Choosing infrastructure investments for maximum impact

Maximising the benefits of increased infrastructure spending in a world recovering from the Covid-19 pandemic requires a conceptual framework that will help policy makers define what types of investments to pursue and where. Based on the lessons from past stimulus packages, the IMF has distilled three key principles: interventions should be Timely, Targeted, and Temporary (TTT). It also proposed decision criteria of efficiency, equity and effectiveness (Table 2). These criteria will sometimes be in conflict. For example, pursuing efficiency may lead to an increase in regional inequities. Decision makers need to acknowledge the importance of each criterion and will need to adopt conscious and considered trade-offs among them when choosing projects.

Table 2. **Objectives of public investment adjustments**

Criteria	Medium-term measures for recovery
Efficiency	Resources should be allocated to spending with higher benefits (economic and social) compared to costs.
Equity	The impact of investment projects on different groups and sectors should be consistent with established political priorities.
Effectiveness	Increased investment spending should contribute to an overall fiscal stimulus of the required magnitude and timing over the medium term.

Source: Eivind and Allen (2020).

There are several trade-offs between the TTT criteria that governments should keep in mind:

- **Speed vs efficiency.** Infrastructure planning, project selection, procurement processes and the acquisition of permits to start construction are detailed and time-consuming processes. Cutting corners in these areas is likely to lead to major problems during and after construction. For example, the New Zealand government has established a special advisory group[1] to create a short-list of projects, which could be subject to an accelerated delivery process. The "acceleration" includes omitting public consultation. It is not clear that such a move would bring many projects to a shovel-ready status at a significantly earlier time, since project gestation consists of many steps before procurement can begin. Conversely, omitting such a step could lead to serious complications (e.g. protests or legal action) during project construction itself, leading to delays and cost overruns. In the absence of strong transparency and accountability mechanisms, attempts to "accelerate" are also highly exposed to the risk of moral hazard.

- **Equity vs efficiency at the central government level.** The efficiency criterion implies that investments with the highest benefit-to-cost ratios should be preferred, while the equity objective requires that investments be broadly distributed and include investments to serve communities with lower incomes. The highest benefit-to-cost ratios are achieved when investment flows to places where there already is a significant economic mass, i.e. a high level of economic activity. However, those hit hardest by the crisis are most commonly people on low incomes who do not live in the places generating the highest levels of economic output. While some investments may serve both of these criteria, many of the potential projects that would significantly improve the lives of those less well off will not demonstrate the highest available benefit-to-cost ratios. The fiscal multiplier from construction activity would be the same, but the long-term impact on productivity would differ. This would mean less inequity, but in the long term also smaller growth in GDP. Decisions regarding these trade-offs are necessarily political in nature.

- **Equity vs efficiency and allocation between central and regional government levels.** Increasing the scale of the infrastructure stimulus package may also imply allocating a greater share of spending to regional governments. Capacities and capabilities of regional governments for delivering infrastructure projects, especially larger ones may be much more limited than those of central government, where a steady flow of infrastructure projects concentrates capacity to deliver (e.g. Baltrunaite et al., 2018). On the other hand, where local government has seen funding from central government for local investment progressively reduced, reversing the trend may be one of the quickest ways to deliver projects.

Combing the transport perspective with operational recommendations from the IMF, the GIH, the OECD and industry (e.g. Eivind and Allen, 2020; GIH, 2020; Castagnino et al., 2020; Agrawala, Dussaux and Monti, 2020), yields the following guidelines:

- Governments must properly estimate and budget for the life-cycle consequences of investments, i.e. the maintenance of infrastructure assets, even when spending is undertaken primarily to accelerate recovery from an economic crisis.

- Potential projects appraised prior to the crisis should have assumptions checked, particularly those likely to be affected by the crisis, in order to determine whether they remain viable (ITF, 2021). The current crisis may have profound long-term impacts, for example on travel demand for commuting around cities. It is conceivable that the prolonged lockdown experience has substantially increased the propensity of employers to subscribe to teleworking, which would change travel patterns. Cases where behavioural changes underway prior to the crisis resulted in transport models overestimating demand have been identified (e.g. Chatterjee in ITF, forthcoming) and the crisis may have accelerated change. At the same time, a return to previous travel patterns is also a credible scenario. Projects that hold up under both extremes will show the most robust returns and projects that improve chronically-deficient transport services are likely to be beneficial under all scenarios.

- Capacity issues can be expected to arise in executing large stimulus packages, both in government and in the private sector. Hence, the volume of public procurement in the transport sector should take account of these capacity constraints, and construction activity across all infrastructure sectors. This can be challenging due to opposing market forces in the current crisis. On the one hand, general construction activity typically declines in recession, providing the space for additional government activity (Castagnino et al., 2020). On the other hand, at least initially, limited movement of migrant workers may affect the overheating thresholds of construction markets[2].

- Many of the projects that would fit the TTT criteria best are likely to be infrastructure maintenance projects, since these can start relatively quickly. Maintenance backlogs are frequent in transport sectors funded by annual allocations from the general public budget. At the same time, where countries have been successful in establishing efficient transport infrastructure asset management regimes there will be less scope for identifying productive additional maintenance projects.

- Mega-projects that are not already in the process of delivery are unsuited to stimulus packages. The time taken to plan and deliver such projects exceeds the relevant recovery period and the resources required to develop mega-projects are likely to divert government and project management capacity from projects that can be initiated quickly.

- Stimulus packages have the potential to advance decarbonisation and improve social equity. Traffic reductions due to social distancing measures have provided a unique opportunity to accelerate the reallocation of road space to public and active modes of transport. These interventions are not necessarily capital-intensive but they do employ local labour. They may be much more difficult to implement if traffic is unmanaged and returns to pre-crisis levels. More generally, investments should be compatible with long-term decarbonisation policy objectives.

- To support the effectiveness and the legitimacy of investment allocation to satisfy the TTT criterion, mechanisms for project monitoring and accountability should be established, with procedures to resolve implementation issues. Transparency and public access to information will be an important part of such mechanisms.

Private finance cannot save the day

Private financing is frequently advocated as a solution to the fiscal constraints facing governments. However, the uncertainty of an economic downturn makes private finance in infrastructure more expensive, requiring additional risk to be reallocated to the public sector by project financers (Makovšek, 2018). The ITF finds that public-private partnerships (PPPs) only achieve value for money under very specific conditions, which were not met in the majority of privately-financed projects undertaken in the past (ITF, 2018)[3].

Why PPPs cannot truly extend the public borrowing constraint

As pointed out by the IMF (ITF, 2013) and some experts (Engel, Fischer and Galetovic, 2014), it is well-established that PPPs cannot actually extend the borrowing constraint of a government, i.e. enable additional investment. The misconception derives from the widespread use of non-transparent public debt accounting rules and a lack of awareness of available public sector mechanisms that could be used for the same purpose as PPPs (Makovšek, 2019; Moseley, 2020; Roumboutsos, 2020). Outdated public accounting standards that do not provide an appropriate treatment of the obligations associated with PPP contracts and consequently lack transparency, mask the implications of PPP contracts for public budgets. The obligations associated with a large proportion of PPPs have, as a result, been excluded from the public balance sheet.

The politics may favour asset financing mechanisms that reduce the apparent amount of public debt[4]. However, regardless of whether the PPP is funded under an "availability based" contract or through user charges (e.g. tolls), there is a long-term payment obligation associated with the PPP, which is conceptually equivalent to the repayment of government debt in the case of publicly- financed infrastructure. The government ultimately controls the rate of return on these assets through regulation of service standards or tariffs. Government (or user) ability to service these obligations is not affected by whether the initial borrowing is undertaken by the government or a PPP consortium. Recently developed accounting standards, such as IPSAS32, have recognised this equivalence, though they are yet to be widely adopted.

In sum, the use of PPPs to extend the public funding boundary exposes the public sector to poor value for money outcomes. The post-crisis stimulus context is one in which these risks are particularly acute due to the likely pressure to make rapid project selection and delivery decisions.

Conclusion

The projects that are most likely to deliver the required economic stimulus are those already in the pipeline, with cleared planning and environmental approvals, awaiting only funding. Maintenance backlogs in particular are suitable targets. Attempts to bypass consultation and approval processes for less advanced projects can be highly counterproductive, resulting in legal challenges and lengthy delays. New mega-projects cannot be expected to deliver anything in the timescale required. The necessary critical investment mass should be achieved by a large volume of smaller projects that can be initiated quickly, including maintenance projects. Distributing funds to local authorities for disbursement can enhance the speed of project delivery. The infrastructure stimulus should be publicly financed: making PPPs a major part of a stimulus package would be counterproductive. Finally, project selection should also take careful account of long-term policy priorities, especially addressing social equity, decarbonisation and the resilience of transport systems.

Notes

1 www2.deloitte.com/nz/en/pages/2020-government-budget/articles/infrastructure.html.

2 Governments might want to collect good information about the capacity of the construction and other sectors involved in the supply of transport infrastructure and maintenance services in order to establish best to meet the increase in demand on account of a stimulus package. Restrictions on economic activity due to Covid have had a very uneven impact on different sectors of the economy: while construction has remained fairly buoyant in the UK, skills and capacity in the most affected sectors such as retail and hospitality are not easily transferable to help increase the supply of transport services. Governments will need to consider retraining of domestic workers to offset this reduction in supply and in response to the stimulus to demand so as to prevent the costs of labour and other inputs from escalating. This points to a strategic plan which addresses the supply side of the stimulus. Also relevant to such a plan is the capacity of the responsible agents, whether the local authority, municipality, regional or national government to deliver their part of the stimulus in an environment in which their capabilities have been diverted to dealing with the pandemic.

3 ITF (2018) concluded that, outside of sea and airport projects, there is no evidence of PPPs delivering value for money. It was also determined that most PPPs in the transport sector and beyond cannot fulfil the theoretical conditions to deliver value for money and recorded that there is increasing empirical evidence to support that point. The use of PPPs was therefore recommended only in circumstances where the private party bears the demand risk and where the demand is strongly endogenous, i.e. dependent on the quality of the service (and not captive). Such circumstances can be present for example in the case of seaports, which compete for the same catchment area.

4 For user-funded entities and under the same accounting conventions as for PPPs, a state owned company can also be treated as being off the balance sheet. In Europe, many such state owned companies already exist, managing major individual assets or national networks of road infrastructure for example. If more advanced public debt accounting rules that allow greater transparency were put in place (answering to the question of who has the economic control over the assets), all PPPs (and equivalent state owned enterprises) would end up on the public balance sheet.