



FISCAL AFFAIRS

HOW TO

NOTES

How to Manage Public Investment during a Postcrisis Recovery

Fiscal Affairs Department

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Prepared by Eivind Tandberg and Richard Allen

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Cover Design: IMF Creative Services
Composition: The Grauel Group

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Names: Tandberg, E. | Allen, Richard, 1944 December 13- | International Monetary Fund. Fiscal Affairs Department, issuing body. | International Monetary Fund, publisher.
Title: How to manage public investment during a postcrisis recovery / prepared by Eivind Tandberg and Richard Allen.
Other titles: How to notes (International Monetary Fund)
Description: Washington, DC : International Monetary Fund, 2021. | Note 21/07. | July 2021. | Includes bibliographical references.
Identifiers: ISBN 9781513584416 (paper)
Subjects: LCSH: Public investments—Management. | Infrastructure (Economics). | COVID-19 Pandemic, 2020—Economic aspects.
Classification: LCC HC79.P83 T36 2021

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Abbreviations	v
Executive Summary	vii
1. Introduction	1
2. Challenges to Public Investment Management for Postcrisis Recovery	1
3. How to Prepare Public Investment Management Institutions for Recovery	2
Institutional Arrangements.....	3
Project Appraisal	5
Project Selection.....	6
Medium-Term Investment Budgeting	9
Maintenance Projects	9
Public Procurement.....	10
Project Management	11
Portfolio Monitoring and Oversight.....	12
4. Public Investment Management Must Be Consistent with Other Measures for Postcrisis Recovery	12
Avoiding Disruption of Ongoing Public Investment Projects.....	12
Coordinating Investments with Subnational Governments	13
Promoting Public Corporation Investment	13
Stimulating Private Sector Investment and Economic Development.....	14
References	15

ABBREVIATIONS

AE	Advanced Economy
B/C	Benefit/Cost
EME	Emerging Market Economy
GFC	Global Financial Crisis
LIDC	Low-Income Developing Country
MTBF	Medium-Term Budget Framework
OECD	Organisation for Economic Co-operation and Development
PIMA	Public Investment Management Assessment
PIP	Public Investment Plan
PPP	Public-Private Partnerships
SNG	Subnational Governments

Public investment is likely to be an important component of any postcrisis recovery program. As countries work to ensure a smart, green, fair recovery, investing in modern, resilient, and efficient infrastructure assets will be key. This How to Note discusses how countries should manage public investments to recover from the COVID-19 pandemic and similar crises. It provides countries with guidance on making efficient use of public investment to support economic recovery on three different capacity levels: basic, medium, and advanced. The main advice of the note is as follows:

- Countries should consolidate and accelerate existing project-planning and decision-making procedures.
- The public investment plan (PIP) should be revisited, and possible changes made to the prioritization and phasing of projects, accelerating some and deferring or canceling others.
- Project appraisals may need to be updated and supplemented with revised criteria.
- The government should define clear selection criteria based on the targets for the overall recovery program.
- The postcrisis investment program should be reflected in transparent medium-term budget decisions.
- Maintenance and capital repairs can be very productive and should play important roles in postcrisis recovery.
- Procurement processes may need accelerating but should be undertaken with necessary safeguards to support compliance and effective oversight.
- Strong project management is necessary to ensure that projects are implemented according to the planned timetable and within the budget, as well as to produce the expected benefits.
- Portfolio monitoring is essential for assessing progress and assuring the successful implementation of the overall project portfolio in the postcrisis recovery program.

Table 1 summarizes the approaches recommended in the note under defined basic, medium, and advanced capacities. The basic and medium practices reflect simplified approaches that can be applied quickly by countries with limited capacities, within existing legal and regulatory frameworks. This will contribute to long-term institutional improvement over time.

Table 1. Recommendations for Boosting Public Investment in Postcrisis Recovery

	Basic Practice	Medium Practice	Advanced Practice
Political Guidance and Institutional Arrangements	Ad hoc review of existing project pipeline.	Partial review of the PIP by a dedicated investment committee.	Full review of the PIP with endorsement by the cabinet and parliament.
Project Appraisal	Multicriteria analysis (simplified).	Cost effectiveness and multicriteria analysis.	Comprehensive B/C analysis.
Project Selection	Limited criteria set based on multicriteria analysis.	Selection based on cost-effectiveness and limited B/C analysis.	Selection based on B/C analysis and additional multicriteria analysis.
Maintenance Projects	General allocations to routine maintenance.	General allocations for routine maintenance; selective allocations for capital repairs.	Comprehensive program for maintenance and capital repairs based on documented needs.
Medium-Term Budgets	Political commitment to medium-term PIP.	Published medium-term budget framework incorporates medium-term PIP.	Medium-term appropriations to finance the PIP.
Public Procurement	Good documentation of procurement tenders and contracts.	Approval of procurement contracts within minimum time periods, high degree of transparency, and compliance with law.	Active pretender market engagement with advance procurement notices.
Project Management	All projects in the postcrisis PIP have identified responsible project managers and clear implementation plans.	Postcrisis public investment support unit supports project managers and helps address implementation challenges.	All investment projects in the recovery PIP are subject to advanced management arrangements.
Portfolio Oversight	Major projects for special scrutiny and reporting by each ministry are identified.	Central monitoring of all major projects, including public summary reports.	Consolidated public investment portfolio with automated monitoring and reporting.

Source: Authors.

Note: B/C = benefit/cost; PIP = public investment plan.

HOW TO MANAGE PUBLIC INVESTMENT DURING A POSTCRISIS RECOVERY

Introduction

Public investment can play an important role in economic recovery after crises and shocks, and the COVID-19 pandemic is no exception. The pandemic is the most recent and deepest shock the world economy has encountered in peacetime (IMF 2020d). It has revealed the lack of preparedness of many health care systems and an urgent need for health infrastructure upgrades. Countries will emerge from the pandemic with scarce fiscal space, elevated debt levels, and large financing needs, renewing the need to make every dollar count in order to ensure the efficiency of investment spending. A recent IMF book on infrastructure governance (Schwartz and others 2020) confirms that, on average, countries lose more than one-third of the resources spent on public investment due to inefficiency. It calls for strengthening infrastructure governance to reap the full economic and social benefits from public investment. The IMF (2020b) argues that governments must scale up public investment to ensure successful reopening, boost growth and employment, and green their economies.

Many countries, all at different levels of development, are planning their postcrisis recovery phases and have initiated specific policy measures. Several countries that had curtailed investment to finance immediate health and social expenditures during the crisis are now planning to increase investment.¹ Box 1 provides examples from the European Union and Nepal.²

Accelerating investments will require balancing speed, due process, and the accountability of decision makers. Countries will need effective institutions and considerable technical expertise to compare projects and provide realistic assessments of costs and eco-

nomical returns. Countries will face challenges in having projects vetted and approved expeditiously without interference from special interests who might benefit from political influence or engage in rent-seeking activities. At the same time, short-circuiting essential processes and ill-considered infrastructure investment might create longer-term costs, such as environmental damage and excessive maintenance requirements (Rogoff 2020).

This note focuses on the institutions, governance, and practical management arrangements of infrastructure investment in the recovery.³ Our analysis draws on the findings of the IMF's Public Investment Management Assessment (PIMA) framework that has been conducted in over 60 countries.⁴ It concentrates on a subset of PIMA institutions that are regarded, for reasons discussed in the following sections, as vital to public investment during postcrisis recovery. The note is organized as follows:

- The next section identifies key challenges to public investment management for postcrisis recovery.
- The following section discusses how to prepare different public investment management institutions for recovery.
- The final section emphasizes the need to ensure that public investment management measures are consistent with other postcrisis recovery measures.

Challenges to Public Investment Management for Postcrisis Recovery

One fundamental challenge is ensuring that policymakers select and implement the best combination of public investment projects during the recovery phase. This objective, in turn, can be decomposed into

Prepared by Eivind Tandberg and Richard Allen. This note benefited from research assistance by Khaled Eltokhy. The authors would like to thank Manal Fouad, Torben Hansen, Paolo Mauro, Carolina Renteria, and other IMF staff for their valuable comments.

¹Public investment management during the immediate crisis is discussed in Tandberg and Allen 2020.

²The IMF Fiscal Affairs Department Policy Tracker provides detailed information about various countries' different COVID-19 responses: <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>.

³Other IMF documents extensively discuss policy-related aspects of public investment, such as economic growth impact, availability of fiscal space for investment, and choices between different financing modalities (IMF 2020a; IMF 2020b). Investments in human capacity (health, education, labor markets) are essential for economic development, but are beyond the scope of this paper.

⁴The PIMA framework defines a set of good practices across all stages of the public investment cycle, namely, planning, allocation, and implementation.

Box 1. Sample Announcements of Recovery Plans

Across all income levels, countries have announced investment-led stimulus plans. Here are two examples.

The EU Approves Post-COVID Stimulus Programs

“NextGenerationEU is a €750 billion temporary recovery instrument to help repair the immediate economic and social damage brought about by the coronavirus pandemic. The centerpiece of NextGenerationEU is the Recovery and Resilience Facility: with €672.5 billion in loans and grants available to support reforms and investments undertaken by EU countries. The aim is to mitigate the economic and social impact of the coronavirus pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions. Member States are working on their recovery and resilience plans to access the funds under the Recovery and Resilience Facility.”

Source: EU Commission, July 2020.

Nepal Prepares Relief, Recovery, and Resilience Plan

“The Government of Nepal and its Development Partners agreed on a joint statement of support for Nepal’s Relief, Recovery and Resilience Plan. The plan includes up to \$840 million for immediate COVID-19 needs including direct health care and vaccine access, and support for livelihoods and vulnerable groups; and up to \$6.6 billion for supporting green recovery in the four areas of: Nature-based solutions for growth and job creation in agriculture, forestry and biodiversity and water management, and tackling the impacts of climate change in the Himalayas; Green and resilient infrastructure, urban development and pollution management, that together create jobs and protect human health; Increasing resilience to future shocks such as health, climate and earthquake risks, by strengthening health, social protection, education and disaster management systems; and stimulating private sector recovery, and increasing green investment and job creation in finance, tourism, clean energy, waste management, forestry and agriculture.”

Source: Government of Nepal, December 2020.

more detailed and specific processes around the public investment cycle, which will ensure efficient, effective public investment in a postcrisis recovery program, as highlighted in Table 2. The table also names PIMA institutions that are relevant to assessing countries’ capacities to deal with these issues, as well as the average PIMA effectiveness scores for different country groups for each institution.⁵

As shown in Table 2, addressing these challenges involves significant capacity constraints in many countries, particularly in low-income developing countries (LIDCs) and emerging market economies (EMEs). The last three columns show average scores for the relevant PIMA institutions. Average capacity levels are only slightly above the unmet levels in many LIDCs and EMEs (shown in red). There are also significant weaknesses in many advanced economies (yellow indicates partially met levels).

⁵The PIMA framework does not score institutional arrangements, so the first line in the table does not include specific scores.

How to Prepare Public Investment Management Institutions for Recovery

How can countries resolve the challenges highlighted above? This section discusses possible solutions. It draws on recognized international good practices as defined in the PIMA framework, but also suggests simplified interim approaches for countries with limited capacity. These countries may have to rely on less demanding approaches as they develop their recovery plans. However, the simplified solutions will also promote institutional development over time, bringing their practices closer to good international practices.

The following sections discuss each of the eight challenges identified in Table 2, and their potential solutions. For each issue, the discussion enumerates basic, medium, and advanced practices. Basic practice should be sufficient to help countries with limited capacity meet their program objectives. Basic and medium practices can be applied quickly by countries with limited capacities and will contribute to long-term institu-

Table 2. Main Issues and Challenges for Postcrisis Investment Programs

Issue	Challenges	PIMA Effectiveness Scores (Average of 64 PIMAs)		
		LIDC	EME	AE
Institutional Arrangements	Need to consolidate, strengthen, and accelerate project planning and decision-making for the postcrisis investment portfolio.			
Project Appraisal	Weak technical capacity for project appraisal undermines the ability to identify projects that best meet postcrisis objectives.	1.3	1.4	2.3
Project Selection	Lack of rigorous prioritization and an incremental selection process reduce the consistency and impact of the postcrisis program.	1.2	1.3	1.6
Budgeting	The lack of an effective MTBF undermines the credibility and impact of the postcrisis investment program.	1.5	1.4	2.1
Maintenance Projects	Persistent underfunding and the lack of a robust and comprehensive framework for maintenance spending reduces its potential impact on postcrisis recovery.	1.3	1.6	2.0
Procurement	Inefficient procurement practices lead to delays in implementing the postcrisis PIP.	1.6	1.7	2.6
Project Management	Weak implementation capacity causes delays and cost overruns, increasing fiscal risk and reducing the postcrisis program's net benefits.	1.6	1.5	2.2
Program Monitoring	Weak consolidated monitoring capacity limits the ability to measure portfolio performance and maximize the impact of postcrisis investment.	1.6	1.6	2.1

Sources: Authors; and PIMA database.

Note: A score of 1 indicates that the requirements for good practice have not been met in any institution, 2 means that they have been partially met, and 3 signifies that they have been fully met. AE = advanced economy; EME = emerging market economy; LIDC = low-income developing country; PIMA = Public Investment Management Assessment; PIP = public investment plan; MTBF = medium-term budget framework.

tional improvements over time. Medium and advanced practices provide additional assurances that objectives will be realized. Advanced practices are very similar to recognized good international practices for public investments in normal times.

Institutional Arrangements

Governments should set up high-level mechanisms for reviewing their existing PIPs and make changes that will support recovery. Such reviews should decide which projects might be terminated or postponed, and which new projects should be introduced. Pipeline projects may need to be reevaluated against the government's criteria for conducting feasibility studies and investment appraisals, supplemented, as necessary, with additional criteria (for example, environmentally friendly infrastructure). Some existing projects may fail these criteria if they do not meet the government's priorities for economic recovery, digitalization, the greening of investment, and/or other essential infrastructure and social needs. Politically motivated projects with negative net benefits (so-called white elephants) may also fail these tests. The costs of changing an existing PIP—for example, by canceling or postponing projects already under implementation—should be factored into the analysis. These costs can be considerable, particularly in countries with limited capacity. Table 3

outlines an illustrative decision matrix for reassessing four types of public investment projects.

To ensure that projects are well targeted, they should be selected as part of a consolidated investment program, and not based on incremental or ad hoc decisions. About 40 percent of countries have full or partial PIPs in place⁶ (Allen and others 2020). These could be natural starting points for reassessing project pipelines. The lead times between a project's endorsement or approval, when it receives budget funding, and its implementation may be significant. In the meantime, political priorities may have changed. To reflect these shifting priorities, policymakers may have to reverse previous project endorsement decisions or make new ones.

The timeframe for developing the postcrisis PIP will often be short. This means that it may be difficult to carry out a full reassessment of all projects in the PIP or pipeline, and a simplified process may have to suffice. Governments may wish to focus on a subset of projects that are larger, strategically important, or particularly well suited to the postcrisis recovery phase.

Good public investment planning requires a coordinated effort from the ministry of finance, the ministry responsible for economic development and national planning, and line ministries. In some countries, these

⁶A PIP refers to a rolling multiyear list of public investment projects that are included in a country's MTBF.

Table 3. Illustrative Decision Matrix for Project Reassessment

Issue for Decision	New Project	Existing Project, Selected but Implementation Not Yet Begun	Existing Project, at an Early Stage of Implementation	Existing Project, at an Advanced Stage of Implementation
Should project be (re)appraised?	Yes	Yes	Yes	No
Should project be confirmed/approved?	Yes, if project satisfies growth/green/other appraisal criteria	Yes, if project meets growth/green/other appraisal criteria	Yes, if project meets growth/green/other appraisal criteria	Yes
Should project be rejected?	Yes, if project fails growth/green/other appraisal criteria	Yes, if project fails growth/green/other appraisal criteria	Not relevant	Not relevant
Should project be terminated or implementation delayed?	Not relevant	Yes, if project fails growth/green/other appraisal criteria	Yes, if project fails growth/green/other appraisal criteria and benefits of cancellation exceed costs	No
Should project implementation be accelerated?	Not relevant	Yes, if project meets growth/green/other criteria	Yes, if project meets growth/green/other appraisal criteria and benefits of acceleration exceed costs	No

Source: Authors.

functions may be carried out by a single ministry, but in many nations they are divided (Allen and others 2020 provides an analysis of more than 200 countries).⁷ Some countries (for example, Australia, Ireland, New Zealand) have established institutions at the center of government (for example, in the president's/prime minister's office or a national independent infrastructure agency) to promote more coherent planning and monitoring of strategically important projects. Such arrangements may be more common in LIDCs.

The institutional framework and process for developing, monitoring, and periodically updating the postcrisis recovery program should be integrated into a country's overall recovery strategy and, at minimum, be endorsed at the cabinet level. The recovery program is likely to involve difficult prioritization decisions. It is important that the process be transparent, well understood, and supported by different stakeholders. Legislative endorsement could lend more weight to the process.

The government should determine a process that clearly sets out the PIP's objectives and targets and clarifies institutional responsibilities. This should include a clear timetable for developing, updating, and reviewing the program (for example, once a year). In a post-COVID context, the process must be tailored to each country's institutions and forms of government. Using an existing cabinet committee to handle

budgeting or infrastructure investment is one possible approach. Alternatively, countries might consider establishing dedicated high-level public investment committees or task forces⁸ comprising senior officials from finance and planning, public works, and other ministries. Past practices, however, have diverged widely across countries (Table 4 provides examples from the global financial crisis).

Administrative arrangements for reviewing and approving infrastructure projects should be consistent with the overall management of a country's recovery strategy. The process of providing technical advice on the analysis or ranking of projects should be separated from political decisions based on this advice. Providers of external project financing should be consulted (see following sections), as should stakeholders such as subnational governments and public corporations. In most jurisdictions, the parliament also plays an important role in approving modifications to the annual investment plan, authorizing the allocation of budgetary resources, and/or approving multiannual appropriations.

- **Basic practice** could include a government resolution that spells out the PIP's key objectives, as well as how the decision-making process will be organized, including a concrete timetable for analyzing and approving projects. Countries with limited capacity will usually have to establish high-level

⁷The paper also describes tools that countries can use to better integrate planning and budgeting processes, some of which may be useful in the recovery phase.

⁸The role of such a committee could be to (1) facilitate rapid decision-making, (2) streamline the collection and dissemination of essential information, and (3) ensure coordination and collaboration between key stakeholders for the recovery phase.

Table 4. Oversight of Post-GFC Public Investment Programs in Selected OECD Countries

Country	Institution or Mechanism	Responsibilities
Australia	Coordinator General	Chairs oversight group for stimulus investment program, develops project plans and monitoring mechanisms, and carries out monitoring
Canada	Department of Finance	Overall assessment and monitoring of fiscal stimulus program
France	Ministry responsible for recovery plan	Monitors recovery plan and coordinates with other government institutions
Germany	Lander governments	Allocates and monitors stimulus investment funds; reports to federal government
Korea	Emergency economic response meeting chaired by president; crisis response meeting chaired by the Minister of Finance	Oversees recovery programs
Spain	Ministry of Territorial Policy Controller General	Manages stimulus funds Monitors project implementation
Sweden	Interministerial State Secretary Group	Coordinates different institutions involved

Source: OECD 2011.

Note: GFC = global financial crisis; OECD = Organisation for Economic Co-operation and Development.

investment committees or task forces for this work, with representation as defined above.

- **Medium practice** also includes a government resolution defining the parameters for the postcrisis PIP. Part of the work may be done by the organizations currently handling public investment planning and programming but establishing a high-level committee or task force to coordinate and support this work will be helpful, especially in ensuring timely decision-making.
- **Advanced practice** would include political priorities suggested by the government, but also anchored in the legislature. If existing institutions for public investment planning are very strong, they can be tasked with developing the postcrisis investment program. Existing procedures can also be followed where applicable, but it may be necessary to accelerate or strengthen some of them to ensure timeliness.

Development partners may be important contributors to postcrisis PIPs, particularly in low-capacity countries. In addition to providing financial resources, development partners may contribute expertise and resources to defining, implementing, and monitoring the program, and to establishing institutional mechanisms for this purpose. Where appropriate, they could support and enable the discussions with the government's investment committee on the preparation of the recovery PIP, as could subnational governments (SNGs) that manage major infrastructure projects.

Project Appraisal

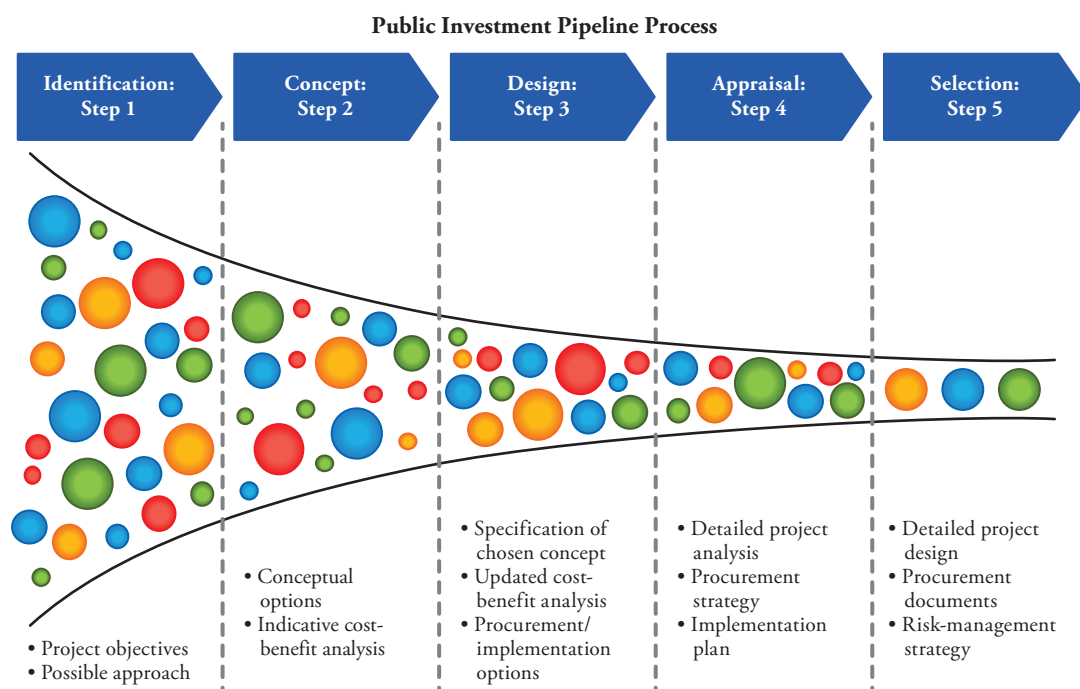
Effective project development and appraisal will usually be based on iterative processes, where projects

are reviewed, and some are rejected or returned for further analysis and development by the originating ministries or agencies. This also applies in a postcrisis situation, although lead times are short and the time intervals between different phases of the project cycle may be reduced to facilitate quick decisions. Only the most promising project proposals should reach the full appraisal stage, without wasting resources on the detailed preparation of several projects that will not be realized. Figure 1 illustrates this “funnel-and-gateway approach” to project development and appraisal.

Projects that are considered for the postcrisis PIP should be subject to robust and consistent appraisal. As discussed, this analysis should cover projects already scheduled for implementation, as well as any new projects deemed urgent, and that meet relevant economic and environmental criteria. To determine which projects are best suited for implementation during this phase, appraisals should be consistently applied so projects can be compared to each other in the subsequent selection phase. In addition, the government may want to amend the criteria and guidelines for investment appraisal. For example, the required rates of return on projects may have to be increased to meet the government's expectations of economic growth, and additional conditions on environmentally friendly investment may need to be imposed in light of the country's own policies and international obligations and treaties.

- **Basic practice** entails subjecting all relevant projects to financial analysis and simplified multicriteria analysis.⁹ Direct costs and revenues should be identified and estimated. In addition, the govern-

⁹For a detailed discussion of multicriteria analysis techniques, see Antov 2018.

Figure 1. Funnel-and-Gateway Approach to Developing Investment Projects

Source: Authors.

ment should assess the project's impact on other important criteria, such as growth, employment, and environmental and social conditions. This assessment can use a simplified scale (positive/negative and low/medium/high). Major project risks should be identified.

- In addition to the above, **medium practice** includes a simple cost-effectiveness assessment. Project documents should provide detailed estimates for investment costs and future operational costs, revenues, and major external factors for different project options. These documents should also demonstrate why the recommended option is the best one. Project risks and the possible impacts on costs, revenues, and other features should also be identified.
- **Advanced practice** comprises comprehensive benefit/cost analysis, with a quantification of the project's financial and economic impacts, including externalities that can be quantified. Impacts that cannot be quantified should be identified in a supplementary multicriteria analysis, including a multifactor weighting. There should be a comprehensive risk analysis identifying risk mitigation measures.

Table 5 provides more details on these various levels of practice. Again, a country must decide which level is possible within relevant capacity constraints, but the various appraisal elements should be consistent. Project appraisal comprises several methodologies and techniques. The UK's *Green Book* (HM Treasury 2020) gives a comprehensive overview of advanced project appraisal practices.

Project Selection

Projects to be included in the postcrisis PIP should be proposed to and approved by the government in a consolidated selection process, using the mechanisms discussed earlier. Project selection should be based on clear and transparent criteria. The project's quality, as assessed through the appraisal process, will be an important factor. The selection criteria should distinguish between weighted criteria (which help determine project prioritization) and threshold criteria (which must be met for a project to be selected), for instance a minimum threshold for environmental impact. In addition to these technical criteria, all project selection processes will also have political components, since all infrastructure-related decisions are ultimately political

Table 5. Project Appraisal Elements

	Basic Practice	Medium Practice	Advanced Practice
Project Rationale, Objectives, and Targets	Demonstrate consistency with relevant national and sector strategies; provide indicative project objectives.	Demonstrate consistency with relevant national and sector strategies; provide project objectives with indicative outcome targets.	Demonstrate consistency with relevant national and sector strategies; provide project objectives with quantified outcome and output targets.
Project Status and Timetable	Illustrate status of project development; provide estimated project timeline if available.	Illustrate status of project development; indicate time required to reach decision and implementation stages.	Illustrate status of project development; provide detailed project development plan and timetable.
Project Description	Present broad overview of main project elements.	Provide detailed description of main project elements.	Provide detailed project structure broken down into different components or work packages.
Cost Estimates	Provide broad estimates of investment costs and operational costs if available.	Provide detailed investment costs year by year, as well as future operational costs.	Provide full life cycle costs for project, including asset closure costs.
Revenue Estimates	Give broad indication of possible revenue flows from project.	Give detailed projection of future revenue flows directly related to the project.	Provide revenue projections for project life cycle, including possible asset disposal revenues.
Project Benefits and Impacts	Give qualitative description of known and expected benefits and impacts, including job creation, social development, and environmental impact.	Provide partial quantification of project benefits and impacts, as well as social and environmental impacts.	Provide comprehensive benefit/cost analysis, with quantification of most external effects, including social and environmental impacts.
Option Analysis	Give qualitative explanation of why the proposed project concept is the best approach to meeting project objectives.	Explain choice of selected concept/design based on cost-effectiveness analysis of alternative options.	Explain choice of selected concept/design based on comprehensive cost-benefit analysis of alternative options.
Risk Analysis	Identify key project risks, to the extent that information is available.	Provide identification of key project risks and partial quantification where possible.	Provide comprehensive risk quantification and analysis, with identification of risk-mitigation measures.
Implementation Plan	Identify key project milestones.	Provide broad implementation plan, including key milestones and potential bottlenecks.	Provide detailed project implementation plan, including risk-management and change-management plans.
Procurement Strategy and Plan	Describe broad procurement strategy.	Provide procurement strategy and indicative procurement plan.	Provide procurement strategy with options and recommended approach, along with detailed procurement plan, including timetable for specific procurements.
Financing Plan	Identify secured and requested project financing from different sources.	Provide recommended financing strategy, including cost recovery options (user fees).	Provide detailed financing strategy, including financing options, cost recovery options, and recommended approach.

Source: Authors.

in nature (Schwartz and others 2020). The objective should be to make the selection process as transparent as possible, and, ideally, the criteria (as well as information on individual project appraisals) should be published.

While project readiness is an important factor, it should not dominate the project's basic quality in terms of growth impact or benefit/cost ratio. The term "shovel ready" is sometimes used to describe the types of projects that should be implemented in a postcrisis recovery. However, in practice, very few projects are shovel ready, and are not necessarily the most beneficial ones. It is preferable to spend a few months finaliz-

ing project preparations than to risk implementing projects that fail to satisfy key selection criteria. A better-planned project poses less risk, and the likelihood of timely implementation is higher than for a hastily approved project.

- **Basic practice** for project selection involves a limited number of criteria based on the multicriteria analysis carried out during the appraisal stage. Table 6 provides an example of a simple project selection framework that can be applied in a country with limited capacity. The financial viability indicator reflects direct revenues and costs related to the projects. In low-capacity countries, the ability

Table 6. Example of Selection Criteria—Basic Practice

Factor	Indicator	Range	Selection
Financial Viability	Project revenue/costs (index)	0–3	Weight 25 percent
Strategic Priority	Index	0–3	Weight 50 percent
Job Creation	Number of jobs (index)	0–3	Weight 25 percent
Environmental Impact	Composite index	–3–3	Minimum +1
Social Impact	Composite index	–3–3	Minimum +1
Project Readiness	Time to start project	1 month	Maximum 3 months

Source: Authors.

Table 7. Example of Selection Criteria—Advanced Practice

Factor	Indicator	Range	Selection
Benefit-Cost Ratio	Project benefits/costs	0	Minimum 1.5 Weight 30 percent
Growth Impact	Growth multiplier	0	Minimum 1 Weight 10 percent
Job Creation	Number of person-years	0	Minimum 1000 Weight 10 percent
Environmental Impact	Composite index	–3–3	Minimum +1 Weight 10 percent
Social Impact	Composite index	–3–3	Minimum +1 Weight 10 percent
Project Readiness ¹	Time to start project after approval	1 month	Maximum 3 months Weight 10 percent
Risk Rating	Risk rating index after recommended mitigation actions	–3–3	Minimum +1 Weight 20 percent

Source: Authors.

¹In an advanced administrative environment, the project readiness index will be a composite, reflecting several different features, including land availability, technical approvals, and assurances. It can be expressed in different ways. When timeliness is a major consideration, it could be formulated based on the time required to start a project after funding approval. For this indicator, the minimum threshold is the more important parameter.

to quantify benefits will be limited, and it will be difficult to use benefit/cost (B/C) ratios as selection criteria. Strategic priority (consistency with national plan) is important in itself and can also be seen as a proxy for nonquantified projected benefits and costs. This factor will therefore tend to have more weight in low-capacity countries but will gradually be replaced with more objective criteria as capacity increases. Projects with high expected impact on economic growth will have top priority in the postcrisis phase.¹⁰

- **Medium practice** would be based on more comprehensive criteria, reflecting a more developed project appraisal capacity. The financial viability indicator would be replaced or supplemented with a cost-effectiveness indicator or basic benefit

¹⁰To simplify comparison, all indicators can be expressed as indexes. For instance, low job creation (less than 100 person-years) = 1; medium (100–1,000 person-years) = 2; high (more than 1,000 person-years) = 3. For environmental and social impact, the range is from very negative (–3) to very positive (3).

indicator. The political priority indicator could be supplemented with an indicator reflecting sector estimates of growth impacts associated with different investment types.

- **Advanced practice** would use the results of the B/C analysis, supplemented with additional criteria (Table 7). The B/C indicator would reflect some of the external impacts on job creation and environmental and social factors but would probably be unable to capture all of these factors. Additional indicators would still be needed, but the relative weight assigned to these could be lower. Political priority indicators could be replaced or supplemented with indicators for the assessed growth impacts (multipliers) of different project types. The selection criteria should also include risk ratings based on detailed risk assessments. A more complex selection matrix could include minimum thresholds and weights for projects that exceed the indicator thresholds.

The project selection process for postcrisis recovery should include considering the postponement or cancellation of previously endorsed projects. As discussed above, circumstances have changed, and priorities may be different than they had been in the recent past. Ideally, all projects should be assessed based on similar criteria.

Medium-Term Investment Budgeting

A credible postcrisis PIP provides different stakeholders with predictability and assurances regarding funding levels and which projects will be implemented over the next few years. By establishing a coherent, comprehensive postcrisis PIP, as opposed to making individual ad hoc investment decisions, the government provides important signals to the construction industry and other businesses about future activity levels. This should help these companies make decisions on whether to maintain or scale down future operations. Program credibility and impact will be much higher when anchored in a realistic medium-term budget process. A credible PIP should also factor in emerging priorities and new projects as they firm up.

- **Basic practice** implies that there is a strong, clearly expressed political commitment to the government's medium-term PIP and its funding over the coming years. Low-capacity countries often lack credible MTBFs, so some form of publicly announced political commitment can provide reasonable assurance regarding the medium-term predictability of PIP funding. This commitment can be reflected in governmental or parliamentary approval of the PIP. However, political priorities may change, so the level of certainty will be limited.
- **Medium practice** entails a published MTBF that clearly specifies allocations to key investment priorities in the medium-term PIP. If the country has a realistic and credible MTBF, this approach should create confidence in the overall arrangements for funding the PIP, as well as for individual projects in the program. Countries whose postcrisis recovery programs rely on external financing can similarly build the confidence of development partners.
- **Advanced practice** involves formal medium-term budget appropriations for the PIP and the transparent reporting of approved projects. More than half of Organisation for Economic Co-operation and Development countries have mechanisms for multiyear fund allocation, particularly for invest-

ment projects (OECD 2018). In several countries, a project's entire cost is allocated when the project is approved. This practice is rarer in EMEs and LIDCs, with the exception of the AE/CP mechanism applied in some francophone African countries.¹¹ Although budget appropriations can be amended by the legislature, multiyear appropriations will generally provide a high degree of credibility and certainty.

Maintenance Projects

Maintenance and repair of public assets can be crucial to a postcrisis PIP and often achieves the highest returns from infrastructure investment (IMF 2020b; Rogoff 2020). Maintenance projects are typically quite small and standardized and require limited preparation. This is particularly true for routine maintenance (current expenditure), but capital repair projects also tend to be smaller than other types of investments. The implementation of maintenance projects can often be delegated to ministries, agencies, and SNGs. Maintenance is underfunded in most countries, and the risk of overshooting actual maintenance needs is low. A maintenance program can be easily replicated and scaled up.

- **Basic practice** would involve general allocations to routine maintenance in government organizations, both at the central and subnational levels. In countries with limited capacity, specific methodologies for assessing maintenance needs are often lacking, and central governments have limited information about maintenance needs of agencies and SNGs. A general budget allocation scheme for maintenance would be a simple and transparent solution. It would be distributed to all ministries and agencies and allocate a certain amount for each square meter of buildings being managed by budget entities. Allocation to each entity would be fairly modest and could be covered by regular budgeting, accounting, and control procedures, making it unnecessary to establish special decision-making arrangements.
- **Medium practice** would augment the funding of routine maintenance through selective support to capital repairs and reinvestment projects. The projects would be identified as components of the

¹¹In francophone systems, the AE/CP system includes parliamentary approval of both multiyear commitments and annual budget allocations (AE = *autorisations d'engagement*, CP = *credits de paiement*).

PIP update process discussed previously. This might include retrofitting projects, where newer and more efficient technologies are incorporated into existing public assets (for instance, for energy production and distribution). Allocating funding for specific projects could be delegated to line ministries under a general allocation for maintenance spending.

- **Advanced practice** implies that there will already be well-developed mechanisms and methodologies for defining both current and capital maintenance needs. This could include regular surveys of all government assets, such as in the *Canadian Infrastructure Report Card* (2019), as well as comprehensive agency-level maintenance models. In this case, the postcrisis PIP could include increased allocations to projects that have been defined through these mechanisms and methodologies. Budgeting and reporting would follow established practices for capital spending, but maintenance expenditures should also be reflected in any special reporting on postcrisis spending.

Public Procurement

Public procurement is a key element in realizing public investment projects, and bottlenecks and delays at the procurement stage pose major risks to timely project implementation. Such problems are sometimes related to the quality of procurement legislation and regulations. However, problems are more commonly caused by inadequate project preparation and failure to apply existing procurement rules consistently.¹² Attempts to circumvent procurement rules are common in many countries and often lead to delays and even cancellations. Procurement processes may be improved significantly simply by applying the established legal framework.

Accelerated procurement procedures establish alternative measures designed to enhance flexibility, responsiveness, and accountability. There are two types of accelerated procurement: emergency procurement and nonemergency accelerated procurement (OECD 2007).

- Emergency procurement is used in contexts in which life, property, or equipment is immediately at risk or standards of public health, welfare, or safety

¹²PIMAs indicate that about half the countries assessed achieve a high score in institutional design for their procurement frameworks. However, only 10 percent of countries achieve a high score for effectiveness.

must be reestablished without delay. This method was applied in many countries during the early stages of the COVID-19 pandemic.

- Nonemergency accelerated procurement procedures are used in contexts in which unforeseen circumstances arise and require urgent responses from public organizations. Nonemergency accelerated procurement should only be used as an exception, and not the norm.

Countries should be cautious about using emergency procurement procedures for postcrisis PIPs, and ensure that any such procedures are well documented, transparent,¹³ and subject to audit.¹⁴ As mentioned previously, emergency procurement is generally used when life, property, and equipment is at immediate risk, which is not the case when designing a postcrisis recovery program. If it is necessary to accelerate non-emergency accelerated procedures, this should be clearly and transparently regulated. Procurement processes are subject to significant corruption and mismanagement risks, and strong safeguards are necessary to ensure accountability.

- **Basic practice** in the procurement area would focus on ensuring that procurement strategies are realistic and in line with legislation, project documents provide the necessary bases for efficient procurement, and all contracts on public infrastructure projects are published. Provision should be made for the multi-year procurement of major projects. If the procurement process is consistent with applicable legislation and regulations, it should be possible to follow the minimum timeframes given in law.
- **Medium practice** would include a requirement that public investment procurement documents be prepared prior to project approval, so that procurement contracts can be announced immediately. Countries may allow for prior announcement of project procurement contracts, subject to approval by the government and appropriation of the necessary funds by the legislature. This provision can only be used where refusal to provide funds is unlikely. Medium

¹³It is vital that public procurement offices publish information on all contracts concerning public infrastructure projects. Other information should also be disclosed (for example, on complaints received from suppliers regarding noncompliance with rules on open tendering).

¹⁴For example, the criteria are published and adhered to, regular reports are published, transactions are subject to ex post audit, and any irregularities are dealt with through a defined process.

practice also comprises a well-defined legal and regulatory framework for procurement, along with competitive and transparent procurement processes.

- **Advanced practice** implies that the country has a well-functioning e-procurement system, with extensive reporting and analysis, and a track record of timely and efficient procurement of major public investment projects. In these countries, procurement is not an important risk factor for postcrisis PIPs. The focus should be on active market engagement and provision of high-quality project-level information prior to tenders. This, combined with extensive use of advance procurement notices (where applicable), will ensure that prospective bidders are as well prepared as possible.

Some procurement options may not be viable for a postcrisis investment program. For instance, new projects procured through public-private partnership (PPP) arrangements are unlikely to be important to postcrisis recovery, at least in the early stages, unless they are already mature prior to the development of the postcrisis investment program. This is because PPPs are complex, require careful design and thorough analysis, and project negotiations usually require a good deal of time. This process would be difficult to complete within the limited timeframe planned for initiating the recovery program. However, PPP projects may be developed for longer-term implementation.

Project Management

Good project management is critical for effective implementation of a postcrisis PIP. Projects should be implemented according to the planned timetable and within budget. They should also guarantee that the project's expected benefits are realized. If projects are delayed, timeliness requirements will not be met. If projects go over budget or fail to realize the planned impacts, their targeting will be undermined. Some projects may also create a lasting drain on public resources. Significant unanticipated delays in implementing an approved project may require reconsidering its inclusion in the PIP, for example, if its goal was to provide short-term job support.

Project implementation plans with timetables for physical progress and expected financial outlays are essential to meaningful project management. Progress is typically recorded on a weekly or monthly basis to allow for early identification and resolution of poten-

tial implementation challenges. In the absence of baselines for actual progress comparison, it is not possible to ascertain whether or not the project is on track.

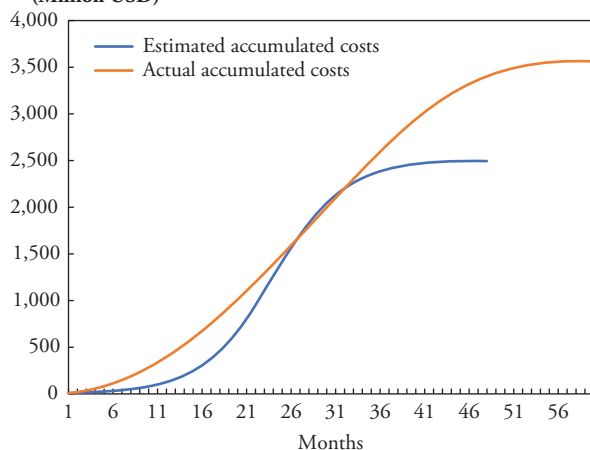
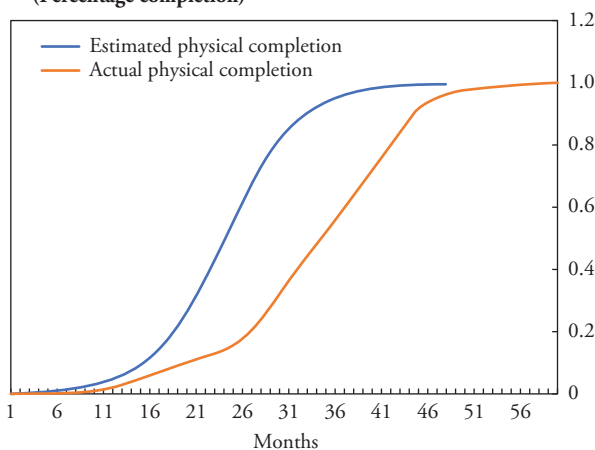
The S-curve is a common and effective tool for monitoring and managing investment projects. The name reflects the fact that project implementation and cost accumulation often follow S-shaped paths: slow initial progress as resources are mobilized and organized, followed by rapid acceleration of construction activities and a gradual phasing out of activity and spending towards project completion.

Figure 2 shows a project encountering cost overruns and delays. Actual project costs and physical project execution (orange lines) are plotted against planned costs and physical progress (blue lines). Comparing the two curves allows us to assess whether high cost accumulation is explained by rapid project implementation or is an indication of cost overruns at an early stage. Figure 2 illustrates how this monitoring would clearly identify the emerging difficulties during the first year of project implementation.

- **Basic practice** for project management implies that all projects in the postcrisis PIP are clearly identified within a line ministry's management framework. It also requires appointing project managers and preparing clear implementation plans for each project, with clear timetables and procurement schedules. These are the minimum requirements for facilitating any form of proactive project management. Low-capacity countries may need to rely on project implementation units established in connection with externally financed projects to ensure basic levels of achievement.
- **Medium practice** implies the existence of a public investment support unit at the center of government that provides support to project managers and helps address project implementation challenges. Some countries may seek assistance from external financial institutions in establishing these support units, while others may rely on private sector resources.
- **Advanced practice** is when all investment projects within the ministries are already subject to comprehensive, effective management arrangements, and postcrisis public investment is incorporated into this framework.

Portfolio Monitoring and Oversight

Portfolio monitoring is essential to ensuring that the overall PIP is implemented according to plan

Figure 2. Using the S-Curve for Project Management**1. Project X: Financial Execution
(Million USD)****2. Project X: Physical Execution
(Percentage completion)**

Source: Authors.

and produces the expected results. Project management, discussed previously, focuses on each individual project, while portfolio monitoring looks at all projects, including the synergies, complementarities, and similarities between them. Several countries have set up central monitoring systems and institutions to oversee all or part of their public investment portfolios. Figure 3 illustrates the United Kingdom's major project monitoring framework, where each project is assessed quarterly and given a color describing the delivery confidence assessment, that is, the likelihood that the project will be delivered according to budget, schedule, and specifications (green = a high level of confidence, red = a low level of confidence).

- **Basic practice** in this area implies that line ministries monitor all aspects of project implementation, including consistency with the timetable and key milestones, the budget, and expected results. If projects are not consistently monitored, the line ministries will have no control over project results.
- **Medium practice** means that a central government monitoring unit compiles progress reports on PIP projects. Projects at risk are identified, and steps taken to resolve implementation challenges. The monitoring units report to and coordinate with the Ministry of Finance unit responsible for fiscal risk management. These progress reports should be published.
- **Advanced practice** implies that countries have overall public investment portfolios that are sys-

tematically monitored, updated, and reported on. Postcrisis PIPs are identified within these portfolios. Projects that are high risk and/or off track may be subject to heightened scrutiny by cabinet or other high-level committees.

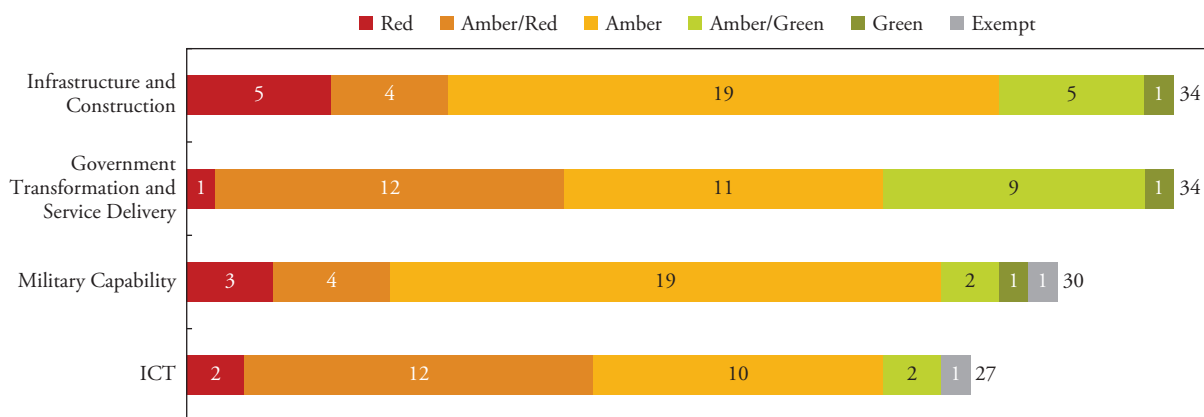
Public Investment Management Must Be Consistent with Other Measures for Postcrisis Recovery

Governments use several different measures to sustain and stimulate economic activity after major crises, and it is important that these be coordinated, consistent, and mutually reinforcing. Measures in one area should not be allowed to undermine the efficiency of measures in other areas. The following issues are particularly relevant when developing a postcrisis investment program.

Avoiding Disruption of Ongoing Public Investment Projects

Critical supplies may be delayed or unavailable, or construction companies may encounter financial difficulties due to losses from other projects. Robust project management and portfolio oversight will help identify such issues and enable the government to take proactive steps to avoid disruption.¹⁵

¹⁵For instance, Ireland took a proactive approach to government dialogue with the construction industry to avoid disruption during

Figure 3. UK Delivery Confidence Assessments by Sector, 2020

Source: UK Infrastructure and Projects Authority, 2020. Image licensed under the Open Government License v3.0.

<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Note: ICT = information and communication technology.

Projects procured as PPPs, and that are already operating, may be susceptible to similar disruptions. The crisis may lead to reduced activity levels that undermine the expected revenue flow, as was the case when the COVID-19 pandemic forced people to isolate at home, rather than travel to work on a public transport system procured as a PPP. Again, active project oversight and contract management will be critical to identifying potential solutions and avoiding disruption.¹⁶

Coordinating Investments with Subnational Governments

SNGs are vital to public investment in many countries. They may be directly impacted by or involved in central government investment programs, for instance, through grant schemes for the maintenance of municipal buildings or the cofinancing of road building programs. SNG investments may be less complex and can be implemented quickly. SNGs also initiate and implement investments of their own. Effective coordination between central and subnational governments will promote efficiency and help ensure that the impacts of infrastructure projects are maximized across the economy. However, an SNG's capacity is often weaker than the central government's, and some coun-

tries may choose centralized approaches to developing postcrisis PIPs.

Promoting Public Corporation Investment

Public corporations play major roles in public investment in many countries, especially in the energy, transport, communication, and water supply sectors.¹⁷ In some cases, these investments are already closely coordinated with the central government and form part of the government's PIP. In other cases, there is an arm's-length relationship between the government and such companies. Public corporations, however, are vulnerable to corruption and other fiscal risks (Allen and Alves 2016; IMF 2020c). When developing its recovery PIP, a government should consider whether it can strengthen existing mechanisms to encourage more and better public corporation investments while respecting a company board's decision-making autonomy. For example, countries could reinforce central oversight mechanisms for monitoring or approving company investment plans. The focus should be on improving both the quantity and quality of such investments, for instance, by encouraging the use of environmentally friendly technologies, as well as sharpening the analysis of the fiscal risks they may create by using stress tests (IMF 2020b).

the COVID-19 crisis: <https://www.gov.ie/en/campaigns/09022006-project-ireland-2040/>.

¹⁶See, for instance, <https://blog-pfm.imf.org/pfmblog/2020/04/what-is-the-covid-19-crisis-impact-on-public-private-partnerships->

¹⁷A World Bank study shows that 55 percent of infrastructure investment by the private and public sectors in emerging markets and LIDCs was undertaken by state-owned enterprises (World Bank 2017).

Stimulating Private Sector Investment and Economic Development

Public and private infrastructure investments often share strong complementarities. These should be harnessed in a postcrisis recovery program. For example, a credible public investment strategy, which is widely shared by the government, would help bolster private sector confidence and thus guide decision-making in specific sectors and activities. In some areas, government leadership will be required. An example is government investment in new energy technologies, which can trigger private companies to engage in similar projects to position themselves for future government contracts. For instance, government support of the development of electric vehicles and wind energy has had a major impact on these markets.¹⁸

¹⁸See, for instance, <https://www.evwind.es/2020/08/06/uk-government-announces-plans-to-quadruple-offshore-wind-power-by-2030/76323>.

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