

Approach Paper

Evaluation of World Bank Group Programs Supporting Innovation and Entrepreneurship

Introduction

1. It is widely acknowledged that innovation can be an important driver in addressing complex and systemic development challenges. An extensive literature emphasizes the mutually reinforcing role that innovation and entrepreneurship can play in driving improvements and commercialization of products and processes that improve productivity, enhance competitiveness, and stimulate long-term economic growth (Dutz 2007; World Bank 2010).¹
2. This evaluation will attempt to assess how well the World Bank Group (WBG) is fostering innovation and entrepreneurship, which are intended to promote productivity gains enhance competitiveness and, in turn, contribute to reducing poverty. Innovation refers to the development or adaptation of new products, processes, services, marketing, and organization. Innovation also includes transfer or adaptation of foreign-sourced innovations to local markets and the diffusion and adoption of innovations through the economy. Entrepreneurship refers to the risk taking and organization required for creating new businesses.² Innovation, together with entrepreneurship, can be a powerful source of improved competitiveness, which drives economic growth and poverty reduction with the right framework conditions.³
3. The evaluation will analyze the case for WBG support for innovation and entrepreneurship in its client countries and identify the types of interventions that have been used. Evidence will be sought on how these interventions are reflected in strategies and project documents, the results that were accomplished and if not, why. The evaluation will comment on the extent to which the WBG is learning from its operations and whether current strategy guidance is adequate. Evidence will be drawn both from WBG operations and from outside the WBG in order to fully capture and learn from existing knowledge and experience on supporting innovation and entrepreneurship.⁴ The scope of the evaluation will cover operations in the World Bank, IFC, and MIGA that attempt to compensate for or alleviate market and/or government failures associated with innovation and entrepreneurship. It is expected that the findings from the

¹ Recently there has been a push for inclusive innovation, meaning the creation, acquisition, absorption, and distribution of knowledge most relevant to the needs of the poor or those who live at the base of the income pyramid (Goel 2011).

² Some entrepreneurs, known as replicative entrepreneurs, organize a new business firm that is like other firms that are already in existence. Another type of entrepreneur, an innovative entrepreneur, organizes a business that provides something new—a new product or process, new type of business structure, or new approach to marketing.

³ The evaluation's focus on entrepreneurship is limited to WBG support for the development and growth of new enterprises, such as science parks and business incubators. It does not cover support for management education and programs to support general business development such as information services, consulting services, and twinning arrangements.

⁴ Some of the evidence from outside the WBG will come from the experience of developed countries, unless there is a reason the evidence would not be applicable to developing countries.

evaluation would inform future strategic directions and enhance program and project implementation across the World Bank Group institutions and similar development agencies.

RATIONALE FOR WBG SUPPORT

4. The rationale for WBG institutions' support to innovation and entrepreneurship is based on two claims, first, that innovation and entrepreneurship can be important for growth and poverty reduction, and second, that markets are likely to under-provide innovation and entrepreneurship because the social benefits are likely to exceed the private benefits. If the private market were to provide the right level of innovation, there would be little justification for public sector involvement. Public sector involvement would displace private activity, wasting scarce public funds and effort that could be deployed elsewhere. Thus, the justification for supporting innovation and entrepreneurship for a public sector-oriented institution like the World Bank hinges on the existence of a gap between the value of what the private sector would provide alone and what would be socially desirable. Innovation may also serve to reduce poverty irrespective of its impact on growth, adding to the rationale for public sector support. To complete the case for public support it must also be shown that the benefits of public interventions will exceed the costs. If a public intervention is so costly or entails public sector failures such that the costs exceed the benefits, the intervention would not raise national welfare even if the social benefit exceeded the private benefit.

5. The rationale for intervention by development financing institutions with a primary focus on the private sector, such as IFC and MIGA, is also based on the idea that their investments should be additional and support private firms in ways that help developing countries achieve sustainable economic growth (IFC 2011). Market failures, in the form of positive externalities, imply that the private sector, on its own, would under-provide investments that are socially desirable. In the case of support for innovation, an IFC-financed project would be justified if it brought an innovation to the local market (for example, a new kind of mortgage lending), that would not have existed without IFC intervention, or provided a demonstration of the financial feasibility of an innovation that was previously uncertain or was not thought to be financially feasible in the local market. To the extent that IFC involvement results in a net increase in innovation and the benefits exceed the costs, then IFC intervention would raise national welfare. The above discusses the rationale for public sector involvement in general, which is applicable to the Bank or IFC in their roles as public-sector organizations and with the client governments they work with. A second justification for Bank or IFC involvement comes in their role as advisors to governments, in which they attempt not so much to do themselves what the private sector would not do, but to offer assistance to improve the operation of the client government in providing government services and public goods the private sector would not provide. In the case of innovation support, this would include projects that help governments provide innovation supporting public goods such as intellectual property law. The rationale for this activity is rooted in the expertise of the Bank and IFC and/or in their ability to mitigate public sector failures on the part of partner governments.

6. In summary, both market and state failures are at the root of the rationale for World Bank, IFC, and MIGA involvement in innovation and entrepreneurship projects. The remainder of this section identifies several varieties of market and state failures specifically, since these will

later be used to define the scope of the projects to be examined and therefore the scope of this evaluation.

Incentive Issues

7. The major market failure associated with innovation is due to the low incentive to invest in either innovation itself or in the adaptation of innovations to local contexts. Because many innovations are so easily copied, private innovators face difficulties in preventing imitation and provision by other investors. Thus, the private benefits are likely to fall below the social benefits, and the private market is likely to under-supply innovation, particularly in the presence of weak intellectual property rights (IPR) regimes. This incentive problem and likely undersupply also applies to firms thinking about investing in training workers, because workers may leave to take jobs in other establishments. Most WBG projects on innovation address this market failure. These include IPR projects, research and development support, business incubators and science parks, matching grant programs, and publically supported venture capital funds.

Information Asymmetry

8. Information asymmetries and possibly coordination problems are further market failures that may justify WBG intervention. An information asymmetry refers to the case where one agent of a transaction is misinformed or has incomplete information to make a decision. The classic case for intervention is when potential financiers lack the necessary information about potential markets for a given innovation to make the necessary investments to bring it to the market. Such financing constraints lead to a lack of early-stage funding necessary for entrepreneurs to pursue innovations, providing some justification for support for venture capital or other forms of innovative financing. Information asymmetries may also extend to incorrect perceptions of risks. Furthermore, information asymmetries are thought to be especially relevant for new or cutting-edge technologies. Coordination failures may also impede innovation. This occurs where the profitability of one investment depends on an initial investment being in place and vice versa. In such a case neither investment would occur alone but would occur if some coordinating mechanism existed to make them happen. The coordinating mechanism does not have to be the state—indeed a private firm could undertake the investments and serve this function. Nevertheless, the state is sometimes proposed to serve this purpose, especially if some of the investments are public goods. WBG projects that address information gaps include science and technology parks, business incubators, enterprise innovation support, and export promotion activities.⁵

Inadequate Innovation-Supporting Public Goods

9. Public-sector failure may also justify WBG involvement to improve the operation of the public sector. Innovation or entrepreneurship may be lower than socially desirable if the state fails to provide some complementary public service, such as effective support for basic scientific research, higher education, or national standards and certification. Interventions that address this issue include publically supported basic research projects, science programs such as laboratory

⁵ Export promotion activities are justified in response to information failures. Such projects support firm-level innovation in cases where they involve new products, processes, services, or ways of delivering products or services.

facilities for higher education, IPR projects, Metrology, Standards, and Quality Control (MSQC), and some aspects of science and technology parks.

Weak Enabling Environment

10. A weak enabling environment for private sector operations may prove to be an important constraint on innovation and entrepreneurship. Effective competition policy can spur innovation as pressure from competitors is a powerful motive for continual upgrading and innovation. Therefore, state failure may refer to either failure to provide effective innovation-targeted interventions, policy failures, or failure to provide public goods that generate benefits for society.

11. This evaluation will cover WBG-supported operations that are intended to address these market failures as well as policy failures that manifest themselves in an inadequate supply of public goods supporting innovation. The next two sections describe the context and theory of change or the conceptual framework guiding the evaluation of WBG support for innovation and entrepreneurship.

CONTEXT

12. World Bank support for science and technology development goes back many years; one of the first projects was the 1979 Electronics and Technology Project in Korea (Goel and others 2003). In their review *Innovation Systems: World Bank Support for Science and Technology Development*, Goel and others (2003) identified innovation systems projects that focus on building (i) an environment conducive to business development, (ii) a framework for generation of new ideas, and (iii) support at the enterprise level to establish new knowledge based companies. Such projects tended to include support for research and development (R&D) institutions; IPR regimes; measurements, standards, testing, and quality (MSTQ) systems; and upgrading innovation capabilities of enterprises. At the firm or enterprise level, World Bank support has mainly focused on (i) incentives for productive entrepreneurship; (ii) skills development and helping companies to upgrade their capabilities, information, and knowledge spillovers; and (iii) financing instruments and institutional delivery mechanisms (Goel and others 2003, Dutz 2007). A preliminary scoping of the World Bank project portfolio was conducted based on characterization of projects supporting innovation and entrepreneurship and search within project objectives and component instruments for key themes related to innovation, entrepreneurship, and competitiveness. While only indicative and noting that a manual review will have to be conducted to finalize any sample based on this methodology, this scoping identified approximately 150 projects with commitments approaching \$17 billion for projects closing from FY99 to FY11.⁶

13. IFC has sought to play an important role in bringing new products, processes, services, and ways of doing business that are new to local contexts to developing countries. This includes support for new types of financing through its investment projects. Private equity and SME (small and medium enterprise) can help finance firms, including some innovative firms that may

⁶ The World Bank search currently includes closed projects (those with Implementation Completion Report reviews conducted by IEG—approximately 3,200 projects with some approvals beginning in 1984). This will be more thoroughly assessed during the evaluation.

otherwise have not had access to capital. These funds seek to identify high-potential SMEs and help them to grow by providing investment as well as management assistance. Through these interventions, IFC’s support may help bring in necessary skills and knowledge for SMEs to achieve business sustainability and obtain access to financing. IFC venture capital funds are another type of innovative financial mechanisms that can provide assistance to support innovative activities in client companies, such as developing new products and adopting new technologies—especially in middle-income countries. A preliminary review of projects in private equity and SME funds showed that from FY00 to FY10, IFC approved 74 private equity SME funds and 4 venture capital funds, with net commitments of \$1.3 billion and \$48 million, respectively.⁷ MIGA supports some diffusion of innovation through foreign direct investment stimulated by political risk insurance. The 2002 Private Sector Development (PSD) strategy set new directions and policy principles for WBG support to individual firms, stressing that the public and private sector should play complementary roles. Even though the strategy did not focus on innovation and entrepreneurship, it recognized their importance, noting for instance that innovation and dissemination of best practices are crucial for increased productivity and income. Technological, process, and organizational innovations were also identified as necessary inputs to improving SME performance. The PSD strategy also emphasized that the investment climate and competition are a key source of innovation. The World Development Report 2005 endorses the same point, drawing on new research and new data.

14. The 2009 *Private Sector Development Strategy Mid Cycle Implementation Progress Paper* (MCIPP) noted the increased client demand for competitiveness and innovation projects, especially in middle-income countries. Furthermore, it emphasized that projects promoting competitiveness by encouraging knowledge generation, technology transfer, and innovation would be new directions for the PSD work in the future. This experience supporting innovation, entrepreneurship, and competitiveness is being undertaken in various pockets of the World Bank, IFC, and MIGA.

15. The recent Finance and Private Sector Development (FPD) restructuring has defined two of its six global practices to address the growing work in innovation, entrepreneurship, and competitiveness. In the 2011 reorganization of the World Bank-IFC FPD network, two new global practices were defined: Innovation, Technology, and Entrepreneurship (ITE) and Competitive Industries. The ITE Global Practice area includes national innovation strategies, the regulatory framework for innovation, quality standards and technology development and transfer to SMEs, and incubation and venture capital funding. The Competitive Industries Global Practice includes sub-sections on Competitiveness Partnerships, Competitive Industry Analytics, and Integrated Industry Support Systems. It is expected that the new practices on innovation, entrepreneurship, and competitiveness will provide platforms for WBG activities and knowledge sharing in these areas.

⁷ It should be noted that although SME support may also support innovation, there is no necessary connection. Some studies, such as Meghana and others (2007) find that more innovative firms are large exporting firms. Innovation-supporting IFC projects also potentially include real sector investment and financial markets operations, as well as support through advisory services.

PURPOSE, OBJECTIVES, AND EXPECTED USE

16. This evaluation will assess how well the Bank Group is fostering innovation and entrepreneurship in client countries with a view to informing future strategic directions and enhancing program and project implementation, including the results agenda. It addresses both accountability and learning objectives. The accountability objective focuses attention on the extent to which specific WBG interventions supporting innovation and entrepreneurship have achieved their stated objectives. Insights into such questions are important for understanding future priority actions, including resource allocation as these areas are of growing importance in the WBG portfolio. The learning objective is important, because notwithstanding the growing importance of projects in innovation systems and the knowledge economy area in the WBG portfolio, interventions addressing innovation and entrepreneurship are relatively new. Innovation is also risky and in many cases entails failures that can provide useful lessons. Moreover, evaluation of such interventions that provide lessons related to what works, what does not work, why, and in what contexts is scarce.

17. The evaluation will identify the types of interventions that the WBG has used to support innovation and entrepreneurship following from the policy rationale for supporting such projects. Based on this typology of interventions the specific evaluation objectives are to:

- Assess what specific interventions on innovation and entrepreneurship were expected to achieve and how they are addressed in strategies and project documents.
- Assess whether or not the expected results from these were achieved.
- Find out why certain results occurred or did not occur as expected and draw lessons for the future design and implementation of strategies and operations.

18. The audience for this evaluation is the WBG's Boards of Directors, as well as policymakers and practitioners supporting programs and projects on innovation and entrepreneurship in client countries. Other users are expected to be staff and senior management involved in designing and implementing strategies, programs, and projects on innovation and entrepreneurship at the World Bank, IFC, and MIGA. This includes the new practice on innovation, technology, and entrepreneurship in the FPD network, their colleagues in other networks, regions, and sectors of the World Bank, IFC, and MIGA. Given that this evaluation is expected to be delivered during the formative stages of the new global practice areas in the FPD network, it is expected that the conclusions will offer helpful inputs into strategy development and project design and implementation that is applicable across the WBG. However, since the new practice groups in FPD have just been established, it would be too early to evaluate how the new practice groups are functioning. Thus the performance of the practice groups themselves will not be part of the evaluation.

CONCEPTUAL FRAMEWORK FOR EVALUATION

19. The rationale for WBG support to innovation and entrepreneurship discussed above is used as a building block for developing a conceptual framework for the evaluation. The WBG institutions have responded with different types of interventions that attempt to address several market failures or government failures. If the market or government failures are dealt with successfully, then innovation and entrepreneurship are expected to increase. The implementation

or commercial application of innovations, in turn, directly promotes higher productivity, competitiveness, growth, and improvements in welfare, including poverty reduction. This framework allows for joint causality: it may be the case that innovation promotion will only be successful if a policy and regulatory environment supporting innovative firms is in place. Therefore, some of the measures to deal with market and government failures may be complementary in their impact.

20. The WBG does not articulate a comprehensive strategy and results framework for projects supporting innovation and entrepreneurship. This is partly because the agenda on innovation and entrepreneurship is still evolving. Some of the projects are new and were not anticipated in the 2002 Private Sector Development Strategy while others were only briefly mentioned in the 2009 Progress Paper, World Bank (2002, 2009). Nevertheless WBG strategy documents stress that the overall PSD strategy is for the public and the private sector to “complement” each other. The operational guidance is that the public sector should efficiently fill the gaps that the private sector does not (due to incentive problems and other positive externalities) but should not attempt to do what the private sector would do on its own. Assessing whether WBG action is complementing or replacing the private sector is one critical step in assessing the results achieved by WBG action.

Addressing Market and Government Failures

21. The WBG works to address four main categories of market or government failures impeding innovation and entrepreneurship: incentives issues, information asymmetries, lack of supporting public services, and poor business enabling environment. These four are further described here together with different types of interventions for supporting innovation and entrepreneurship.

22. **Incentive Issues**—incentive problems impeding innovation arise when innovators cannot appropriate the full benefits of an innovation due to the ease with which others can copy the innovation. WBG interventions addressing this incentive problem includes:

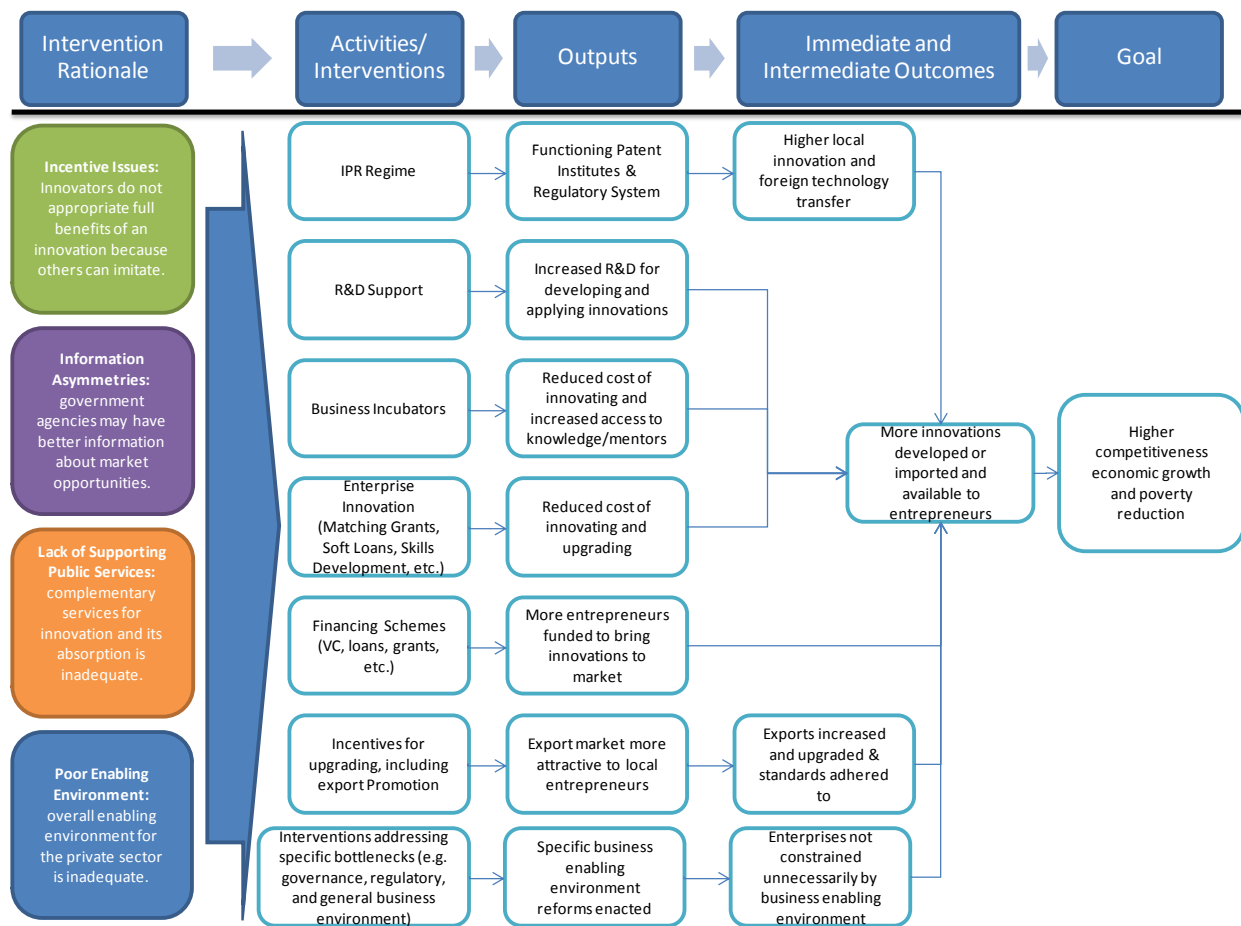
- a. **IPR regime:** projects that attempt to establish or improve the functioning of licensing agencies, patent institutes, and the general regulatory system for licensing and transferring foreign-sourced innovations. Clearer and better-enforced IPR regimes are expected to stimulate innovation, entrepreneurship, and technology transfer by sanctioning those that attempt to copy innovations and result in more innovations brought to market.
- b. **Support for R&D Funding and Commercialization of Innovations:** R&D subsidies for enterprises such as fiscal incentives, grants and matching grants including those for hiring or training researchers and other technical personnel necessary for R&D. It is expected that government funding will stimulate research at a level above what would have been carried out by the private sector and thus contribute to a higher level of R&D. In other cases funding provides support for commercialization of products from R&D, helping entrepreneurs to bring innovations to market.

23. **Information Asymmetries**—when potential financiers lack the necessary information about potential market opportunities, WBG interventions may include:
- a. **Business incubators:** government operation or subsidization of business incubators. Funding a portion of business costs for start-ups is expected to raise private returns of innovation and entrepreneurship, raise the levels of innovation and entrepreneurship above the level they would have been without the interventions, and result in additional innovations developed and brought to market.
 - b. **Support for enterprise upgrading and innovation:** this includes government sponsorship or support for innovation at the firm level, including matching grant competitions, soft loans, and incentives for skills development and product upgrading, including through export promotion. Subsidies are expected to stimulate innovations and increase the level of innovation at the firm level, resulting in more innovations developed and brought to market. MIGA guarantees potentially support innovation—if the foreign direct investment stimulated happens to have innovative characteristics.
 - c. **Financing instruments:** support to encourage venture capital funds and financing of such funds. Also included are publically sponsored direct investments such as loans and grants in innovative or entrepreneurial companies and innovation-oriented SMEs. Successful sponsorship of venture capital or direct investments is expected to directly enable more innovations to be developed and brought to market, demonstrate feasibility, and lead to imitation and further growth of this kind of financing.
 - d. **Support for innovation capability:** includes science and technology information services providing access to basic science and technology databases, skills development, and subsidies to encourage the use of specialized technical services.
24. **Lack of Supporting Public Services**—when public goods and services complementary to innovation and its absorption are inadequate the WBG interventions may include support for:
- a. Public research institutions and science and technology parks to do basic research and research in applied areas that is not done by the private sector (such as basic public health and environment research).
 - b. Public research universities, in particular the science and mathematics departments and research labs at universities.
 - c. Metrology, standards, and quality control infrastructure, including institutions, laws, and regulation.
25. **Weak Enabling Environment**—this category refers to all the aspects of the business enabling environment that affect business operations and incentives but do not mainly benefit innovation or entrepreneurship. Examples include government support for basic education, including higher education, as well as trade policies that restrict the entry or raise the costs of

importing products or services poor competition policies and regulations, and the overall legal and regulatory environment.

26. The conceptual framework that links the rationale with the interventions and the intended outcomes is illustrated in Figure 1. In summary, the theory of change underlying this evaluation is that WBG interventions supporting innovation and entrepreneurship respond to market and public sector failures in client countries. Successful interventions deliver diverse outputs that can spur the development and marketing of new products, processes, and services by innovative firms. The activities of these firms, in turn, improve productivity and competitiveness which drives economic growth and poverty reduction. This framework also informs the evaluation questions that will be used to assess WBG support for innovation and entrepreneurship in its client countries.

Figure 1. Conceptual Framework for Assessing World Bank Support for Innovation and Entrepreneurship



SCOPE

27. The scope of the evaluation covers two major kinds of interventions the WBG uses to support innovation and entrepreneurship: those that promote a more conducive environment for innovation, and those that directly support innovation in client countries and enterprises.

Following the conceptual framework in Figure 1, the specific interventions considered in the evaluation include:

- a. IPR regime: includes projects that aim to improve the IPR environment, attempt to establish or improve the functioning of licensing agencies or patent institutes, and provide protection and procedures for licensing and transferring foreign-sourced innovations. IPR regimes interventions are an endeavor of the public sector and are therefore found in the World Bank.
- b. R&D funding: includes public provision of government subsidized R&D, such as World Bank support for government scientific research bodies as well as IFC R&D subsidies for enterprises through initiatives such as grassroots business, Lighting Africa, and inclusive business.
- c. Business incubators: includes government operation or subsidization of business incubators. These interventions are supported by the World Bank and IFC through programs such as infoDev.
- d. Enterprise-based innovation and upgrading: includes promotion of innovation at the firm level through matching-grant competitions, soft loans, incentives for skills development, and export promotion. These interventions are supported to varying degrees by the World Bank and IFC. MIGA's political risk guarantees potentially support innovation or inward transfer of technology to the extent that the guarantees stimulate foreign direct investment with these characteristics.
- e. Financing schemes: includes venture capital funds or other publically sponsored direct investments, such as loans and grants in innovative or entrepreneurial companies and SMEs. Venture capital is a form of financing for innovative entrepreneurs that is available in few countries. Venture capital investors typically spend more time on due diligence than other financiers, only undertake investments with high potential returns, insist on special legal safeguards to protect their investments, always co-invest, and provide financing in stages to permit the option of opting out of the investments. Financing scheme interventions are largely the endeavor of the IFC through its venture capital funds, mid-cap growth funds, SME funds, and inclusive business financing.
- f. Government provision of innovation-supporting public services: This includes public research institutions, science and technology parks to do basic research, and research in applied areas which is not done by the private sector (such as basic public health and environment research); public research universities, and in particular the science and mathematics departments and research labs at universities; and metrology, standards, and quality control infrastructure, including institutions, laws, and regulation.

28. To maintain the focus of the evaluation, the scope will not be extended to cover everything that could conceivably impinge on innovation and entrepreneurship. Thus, projects aiming to improve the enabling environment for all kinds of private sector activities—such as support to

basic education, higher education, or the overall business and regulatory environment—will not be assessed as a stand-alone section of the evaluation.

29. The distribution of these interventions across the WBG institutions is summarized in Table 1.

Table 1. Distribution of Operations by Institution

<i>Categories of projects</i>	<i>WBG institution</i>		
	<i>World Bank</i>	<i>IFC</i>	<i>MIGA</i>
Intellectual property rights	X		
Research and development support	X	X	
Incubators	X	X	
Enterprise-based innovation	X	X	X
Financing schemes	X	X	
Innovation-related public services	X	X	

Source: Authors

Evaluation Questions and Criteria

30. This evaluation will address questions about overall project performance, results, and WBG strategy. The overarching question is: To what extent do WBG targeted interventions foster innovation and entrepreneurship that are intended to transform new ideas into greater competitiveness, economic growth, and poverty reduction? Note that the focus is not on innovations in donor delivery mechanisms but rather support that fosters innovation in client countries and enterprises.

31. Specific evaluation questions can be classified into (i) the relevance and alignment of WBG agenda on innovation and entrepreneurship, (ii) the effectiveness and efficiency of its interventions, and (iii) the results and learning agenda.

1. Does the WBG provide adequate guidance to support the right interventions?
 - a. How do WBG institutions identify different types of interventions for supporting innovation and entrepreneurship in client countries?
 - b. Do WBG strategies and policies provide adequate guidance and principles for selection and design of these interventions?
 - c. How are interventions for supporting innovation and entrepreneurship addressed in strategies and project documents?
2. Are innovation and entrepreneurship interventions effective and efficient in achieving their objectives?
 - a. To what extent do project interventions achieve their stated objectives?
 - b. To what extent do project interventions achieve their expected outcomes?
 - c. To what extent do project interventions achieve these outcomes efficiently?
3. Is the WBG learning effectively from its experiences in supporting innovation, entrepreneurship, and competitiveness?

- a. What are the factors associated with what works or does not work for supporting innovation and entrepreneurship, using both WBG evidence and outside evidence?
- b. Are mechanisms for sharing experiences, best practices, and learning within and across the WBG institutions working adequately?
- c. What do these lessons imply for future WBG support for innovation and entrepreneurship?

Methodology

32. The evaluation approach will be primarily non-experimental. The study will combine qualitative and quantitative methods to address the evaluation questions (see Attachment I for detail). Project performance will be assessed based on relevance, effectiveness, and efficiency criteria. Strategies will be assessed for adequacy of the guidance they provide and for the relevance and degree to which the learning agenda is promoted and results are fed back into guidance on operations.

33. A desk analysis of the strategy documents will provide the starting point to determine how WBG institutions choose the different interventions they support, the degree to which adequate guidance is given, and whether learning is incorporated into strategies. This analysis will be cross-checked through interviews with project leads (TTLs) who will provide a reality check and also provide an opportunity to surface additional issues. The analysis will also be supplemented with an “organizational mapping” of staff linkages that will help understand information flows and contact between staff in the World Bank Group. Quantitative analysis will also be used if warranted.

34. Structured desk reviews of project documents—project appraisal and Board documents, supervision reports—and evaluations—World Bank Implementation Completion Report Reviews, Project Performance Assessment Reports (PPARs), and Country Assistance Strategy Completion Report (CASCR) Reviews; IFC Extended Project Supervision Reports (XPSRs) and Project Completion Reports (PCRs); and MIGA Project Evaluation Reports (PERs), will be used as appropriate to complete a standard questionnaire on each project, providing a common database for the project analysis. This analysis will be supplemented with interviews with project leads to help resolve ambiguities in the information in the project documents. Additional information will be obtained from focus group discussions and case studies.

35. Innovation-specific instruments in different types of projects supporting firm-level innovation will be characterized on the basis of their innovative features, such as new products and services, new business models, new technologies, new markets. Additional analysis would involve examination of patterns of innovation by sector and region, how specific WBG institutions identify and support these projects, and factors associated with success.

36. In assessing the extent to which project achieved their expected outcomes and whether or not this was done efficiently, the study will need to go beyond analysis of project documents. A subsample of cases that represent different types of projects, spanning those that appear to be successful as well as those that are less successful or unsuccessful, will be investigated in depth.

These projects will be used for drawing lessons of success drivers, reasons for failures, and the factors associated with these outcomes.

37. Data from project documents will be used to assess what can be concluded about what works and what does not work at the project level. Interviews with project leads will be helpful in providing further information and indicating additional data. They will also be helpful in understanding the extent to which mechanisms for sharing learning are working. Statistical analysis will supplement this analysis where warranted.

38. The analysis of WBG interventions will be supplemented with in-depth assessment of the experiences of other institutions supporting innovation and entrepreneurship at both the national and international level. Such insights will be useful to set meaningful benchmark for this evaluation as well as for learning from experiences outside the WBG.

SAMPLE SELECTION METHODOLOGY

39. The sample of projects for the study will be drawn from the universe of projects at the World Bank, IFC, and MIGA. The evaluation team will first identify the different projects that the WBG uses to support innovation and entrepreneurship based on the policy rationale identified above. Interventions will be categorized into major categories or according to major market or government failures addressed. The team will search WBG databases (for example, World Bank Project Appraisal Documents, World Bank ICR Reviews, IFC Board Documents, XPSRs, and PCRs; and MIGA Board and appraisal documents) to develop a list of candidate projects. (A sample of such projects may be selected if the number of candidate projects is very large.)

40. The initial list of candidate projects and the methodology for project selection will be refined further in consultation with IFC and with the FPD network at the World Bank. These projects will be subject to a further manual review to ensure that the final list of projects fall within the scope defined above. The output of the search process is to identify World Bank, IFC, and MIGA projects that have innovative features as defined in the evaluation. No arbitrary limits will be placed on the time period to be covered by the evaluation; however, it is expected that the vast majority of projects will have been approved after 1995.

METRICS FOR RESULTS MEASUREMENT

41. Projects supporting innovation and entrepreneurship will have quite different objectives. This suggests different and unique outputs and outcomes that also call for different measures of performance. Intermediate indicators of success for projects supporting innovation and entrepreneurship are also likely to be diverse. The evaluation will provide operational definitions of project outputs and outcomes and associated metrics for measuring performance. These metrics will be developed from a growing set of resources for measuring innovation and entrepreneurship that includes not only the project evaluations but also enterprise surveys, doing business surveys, and investment climate surveys.

42. The data to be used to measure performance will include national-level, enterprise-level, and project-level indicators. In some cases the metric used will depend on the level at which it is

being measured. Metrics for innovation, for example, can be defined at the national level (patent applications, patents granted, licenses granted for importing technology), at the enterprise level (percentage of enterprises reporting use of foreign technology), or at the project level (percentage of project evaluations that credit the project for promoting innovation). In other cases the same metric can be used at different levels of aggregation. For example labor productivity can be measured at the national level (GDP per employment) or at the enterprise level (value-added per employee). Therefore it will sometimes be the case that the level of aggregation of the question will dictate the metrics used. Metrics will also be sought for the extent to which innovations are replicated via demonstration effects. While not exhaustive, Table 2 describes examples of potential metrics for each type of intervention at the output and immediate outcome level. The Oslo Manual, which provides internationally recognized standards for collecting and interpreting technological innovation data, will be used when warranted.

43. It is anticipated that ideal data to measure performance will not be available in many cases. This will necessitate use of proxies that are likely to correlate with the ideal data. To some extent the common IEG project rating system enables comparison of diverse objectives, and this will be used. The evaluation will also attempt to report what additional performance indicators are provided in project completion reports.

Table 2. Examples of Metrics for Measuring Performance

<i>Intervention type</i>	<i>Output/outcome</i>	<i>Metrics/sources</i>
IPR regime	Functioning patent institutes and regulatory system supporting local innovation and foreign technology transfer.	<ul style="list-style-type: none"> • Number of patents granted (WB KAM Database) • National office filings for patents, trademarks, industrial designs, and utility models (WIPO World Intellectual Property Indicators) • Percentage of firms using foreign technology (WB Investment Climate Surveys) • Payments for royalties and licensing in absolute values as well as per unit of country GDP • Percentage of firms using foreign technology by size of firm
R&D funding	Increased R&D and more innovations developed or imported and available to entrepreneurs.	<ul style="list-style-type: none"> • Private expenditures on R&D as percent of GDP • Share of private expenditure on R&D as share of country's expenditure on R&D • Percentage of firms in WB Investment Climate surveys who do research
S&T parks/business incubators	Higher survival rates and value added of participating firms	<ul style="list-style-type: none"> • Various metrics from enterprise surveys (WBG Enterprise Surveys) • Percentage of firms introducing new products and processes (WB Investment Climate Surveys) • Growth of number of firms in incubator, number that graduate out of incubator • Number of firms in S&T parks, their employment, value added and sales and exports

Enterprise innovation	Innovations developed or imported and available to entrepreneurs.	<ul style="list-style-type: none"> • Percentage of firms introducing new products and processes (WB Investment Climate Surveys) • Percentage of firms training workers (WB Investment Climate Surveys) • Exports as percentage of GDP (WB World Governance Indicators) • Percentage of firms using foreign technology (WB Investment Climate Surveys) • Various metrics from enterprise surveys (WBG Enterprise Surveys)
Financing schemes	Net increase in commercially viable enterprises pursuing innovations.	<ul style="list-style-type: none"> • Percentage of investments financed externally (WB Investment Climate Surveys) • Rate of return on investments • Percentage of firms using banks to finance investments (WB World Governance Indicators)
Business enabling environment	Reforms support an enabling environment for innovative firm.	<ul style="list-style-type: none"> • Informal payments as percentage of sales (WB Investment Climate Surveys) • Rule of law ratings, recovery rate of business closings, percentage of enrollment rate in tertiary education, percentage of internet users (WB World Governance Indicators) • Various metrics from enterprise and doing business surveys (WBG Enterprise Surveys; Doing Business)

Team, Work Plan, and Budget

44. The task manager for the report is Ade Freeman, who will be supported by Andrew Warner, Unurjargal Demberel, and Vinod Goel. The team composition provides key analytical strengths in evaluation, innovation systems, entrepreneurship, and competitiveness. Vinod Goel also brings in-depth experience of World Bank Group operations on innovation systems and entrepreneurship. Additional consultants and analysts will be brought in to support the team as needed. Carl Dahlman, Raj Nallari, and Charles Wessner will serve as peer reviewers. These peer reviews will complement the team with their expertise and experience on innovation, entrepreneurship, and competitiveness.

45. The evaluation work plan is included in Attachment II and the evaluation budget is shown in Table 3.

Table 3. Evaluation Budget

Cost category	Cost (US\$ thousands)
Staff costs (including consultants)	\$650
Travel	\$60
Field studies	\$120
Contingency	\$20
Total	\$850

Evaluation Outputs, Dissemination, and Follow-up

46. The main outputs of the study will be an evaluation report and an overview. These documents will be disseminated to a broad audience inside and outside the World Bank Group. The team will discuss the findings and recommendations and seek feedback from staff working on these issues across the World Bank, IFC, and MIGA. The team will also use existing dissemination tools, such as IEG and WBG websites, seminars, videoconferencing, press releases, and blogs, as well as social media, such as Twitter and Facebook, to disseminate findings to policymakers and development practitioners in client countries. A dissemination workshop will be organized in a client country where issues relating to innovation and entrepreneurship are high on the policy agenda.

Attachment I: Matrix for Evaluation of WBG Support to Innovation and Entrepreneurship

Overarching question: “To what extent do WBG interventions foster innovation and entrepreneurship intended to enhance competitiveness, economic growth, and help reduce poverty?”

Key questions	Information required	Information sources	Data collection method	Data analysis method	Limitations
Q1. Does the WBG provide adequate guidance to support the right interventions?					
How do WBG institutions identify different types interventions for supporting innovation and entrepreneurship in client countries? Do WBG strategies and policies provide adequate guidance and principles for selection and design of these interventions?	<ul style="list-style-type: none"> Strategic objectives and policies Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Sector strategy and policy documents Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Desk review Interviews 	<ul style="list-style-type: none"> Qualitative analysis 	Relatively new area guidance likely to be sparse
How are interventions for supporting innovation and entrepreneurship addressed in strategies and project documents?	<ul style="list-style-type: none"> Extent and manner in which interventions are addressed in strategy documents and Project Reports Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Strategy Documents and Project reports Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Desk review Interview 	<ul style="list-style-type: none"> Qualitative analysis 	Information on strategic directions scattered and incomplete
Q2. Are innovation and entrepreneurship interventions effective and efficient in achieving their stated objectives?					
To what extent do project interventions achieve their stated objectives?	<ul style="list-style-type: none"> Performance ratings Project completion assessments Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Project completion reports for all lending, investment services (IS) IEG micro project reviews Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Desk review, interview, Statistical analysis 	<ul style="list-style-type: none"> Qualitative analysis, Statistical analysis 	Project objectives may be un-ambitious so that evaluation is against a low standard. Stated objectives may be only remotely related to innovation and entrepreneurship
To what extent do project interventions achieve their expected outcomes?	<ul style="list-style-type: none"> Metrics for Innovation and entrepreneurship before and after project interventions 	<ul style="list-style-type: none"> Project completion reports and IEG project evaluations Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Desk review of project documents 	<ul style="list-style-type: none"> Qualitative and quantitative analysis of project completion documents 	This information likely to be available in only a few projects
To what extent do project interventions achieve stated outcomes efficiently?	<ul style="list-style-type: none"> Data on relevant costs and benefits 	<ul style="list-style-type: none"> Project completion reports for WBG, lending, IS 	<ul style="list-style-type: none"> Desk review, interviews, 	<ul style="list-style-type: none"> Qualitative analysis 	Information likely to be available

Key questions	Information required	Information sources	Data collection method	Data analysis method	Limitations
	<ul style="list-style-type: none"> Economic rate of return data Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> IEG micro product reviews Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Case study 	<ul style="list-style-type: none"> Potential statistical analysis 	for a subset of projects
Q3: Is the WBG learning effectively from its experiences in supporting innovation, entrepreneurship, and competitiveness?					
What are the factors associated with what works or does not work for supporting innovation and entrepreneurship, using both WBG evidence and outside evidence?	<ul style="list-style-type: none"> Evidence on results from specific interventions Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Evaluations and Research (WBG and non-WBG sources) Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Desk review of evaluation and research findings Interviews 	<ul style="list-style-type: none"> Quantitative analysis Meta-analysis of literature Qualitative analysis 	Data land results from rigorous studies likely to be limited
Are mechanisms for sharing experiences, best practices, and learning within and across the WBG institutions working adequately?	<ul style="list-style-type: none"> Mechanisms and processes in place for information sharing and learning Evidence of similar experiences outside the WBG Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Strategy documents and project reports Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> Desk reviews, interviews 	<ul style="list-style-type: none"> Qualitative analysis— Review of lessons in project documents Descriptive statistics 	Risk of missing learning that occurs but is not recorded in project, policy, or strategy documents
What do these lessons imply for future WBG support for innovation and entrepreneurship?	<ul style="list-style-type: none"> Results from evaluation Sector management and project lead (TTL) views 	<ul style="list-style-type: none"> Evidence from evaluations Interviews with Sector management and project leads (TTLs) 	<ul style="list-style-type: none"> interview, focus group discussion 	<ul style="list-style-type: none"> Qualitative analysis 	Information on lessons specific to innovation and entrepreneurship scarce

Attachment IV: References

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