Measuring Jobs-Linked Externalities in Private Investment Projects

A Fragility, Conflict, and Violence Perspective

Federica Ricaldi and Peter Mousley
MEASURING JOBS-LINKED EXTERNALITIES IN PRIVATE INVESTMENT PROJECTS
A FRAGILITY, CONFLICT, AND VIOLENCE PERSPECTIVE

Authors: Federica Ricaldi and Peter Mousley

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**Abbreviations and Acronyms**

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<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank Group</td>
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<td>AfDB</td>
<td>African Development Bank Group</td>
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<td>BMF</td>
<td>Austrian Federal Ministry of Finance</td>
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<td>CBA</td>
<td>cost-benefit analysis</td>
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<td>C&amp;I</td>
<td>construction and installation</td>
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<td>DCE</td>
<td>discrete choice experiment</td>
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<td>DFID</td>
<td>Department for International Development</td>
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<td>EDFI</td>
<td>European Development Finance Institution</td>
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<td>EIB</td>
<td>European Investment Bank</td>
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<td>EPC</td>
<td>engineering, procurement, and construction</td>
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<td>ERR</td>
<td>economic rate of return</td>
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<td>F4J</td>
<td>Finance for Jobs</td>
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<td>FCV</td>
<td>fragility, conflict, and violence</td>
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<td>FVL</td>
<td>financial value of labor</td>
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<td>GEDCO</td>
<td>Gaza Electricity Distribution Corporation</td>
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<td>GIE</td>
<td>Gaza Industrial Estate</td>
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<td>IADB</td>
<td>Inter-American Development Bank</td>
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<td>ICD</td>
<td>Islamic Corporation for the Development of the Private Sector</td>
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<td>ICF</td>
<td>Investment Co-Financing Facility</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>IRR</td>
<td>internal rate of return</td>
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<td>IYF</td>
<td>International Youth Foundation</td>
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<td>LWP</td>
<td>Let’s Work Program</td>
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<td>m²</td>
<td>square meter</td>
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<td>MOFP</td>
<td>Ministry of Finance and Planning</td>
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<td>MW</td>
<td>megawatt</td>
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<td>NIS</td>
<td>new shkalim</td>
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<td>ODI</td>
<td>Overseas Development Institute</td>
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<td>PENRA</td>
<td>Palestinian Energy and Natural Resources Authority</td>
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<td>PIA</td>
<td>Project Implementation Agency</td>
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<td>PIDG</td>
<td>Private Infrastructure Development Group</td>
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<td>PV</td>
<td>photovoltaic</td>
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<td>SECO</td>
<td>Swiss State Secretariat for Economic Affairs</td>
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<td>SOP</td>
<td>Series of Projects</td>
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<td>SRR</td>
<td>social rate of return</td>
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<td>SVL</td>
<td>social value of labor</td>
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<td>UN</td>
<td>United Nations</td>
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<td>WBCSD</td>
<td>World Business Council for Sustainable Development</td>
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<td>WBG</td>
<td>World Bank Group</td>
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Abstract

This paper presents the rationale, the methodology and the results of the application of an innovative social rate of return (SRR) methodology in the context of an investment project (Gaza Solar Power project) financed through the Finance for Jobs (F4J) Series of Projects (SOP) in West Bank and Gaza. A key assumption behind this work is that creating jobs through private sector investment generates benefits above the market returns to the factors of production (capital, labor, and land). Moreover, in instances where the market returns would not be sufficient for the investment to take place because of elevated risks and market failures, these benefits constitute additional social returns that can justify and merit public financing support to enable fundamentally sound commercial investment to proceed and the benefits to be generated. The paper presents the methodology applied through the use of discrete choice experiment (DCE) in a cost-benefit analysis to better approximate a measurable social value to the benefits (jobs-linked externalities) generated by the investment project in Gaza.
1. Objectives and Background

This World Bank working paper presents the rationale, the approach taken, and the results of a social rate of return (SRR) methodology that was developed and applied in the context of an investment project (Gaza Solar Power project) financed through the Finance for Jobs (F4J) Series of Projects (SOP) in West Bank and Gaza.

The F4J SOP is designed to test different innovative financial products that can foster private sector investment and job creation in the fragility, conflict, and violence (FCV) context that characterizes West Bank and Gaza. A key proposition of the F4J SOP is that creating jobs through private sector investment generates benefits above the market returns to the factors of production (capital, labor, and land). Moreover, in instances where the market returns would not be sufficient for the investment to be made because of elevated risks, market failures, and institutional failures, these benefits constitute additional social returns that can justify and merit public financing support to enable fundamentally sound commercial investment to proceed and the benefits to be generated. This circumstance is the case for FCV countries and contexts where economic growth and social development are prevented by factors that can foment poverty traps, instability, rent-seeking behaviors, and social unrest. The Investment Co-Financing Facility (ICF) is one of the instruments being tested by the World Bank and the Ministry of Finance and Planning of the Palestinian Authority (PA) as an instrument intended to provide the marginal financing needed to allow such investments to proceed. The allocation of ICF funding would be conditional on eligibility and performance criteria, such as the application of the SRR to screen investment proposals.

This report comprises the following sections: (a) in section 2, the rationale for targeted job creation initiatives in FCV settings and the rationale for extending public financing to private investment to create jobs () revisiting financial, economic and social return analysis; (c) in section 4, estimation of the social externalities of jobs through the application of a discrete choice experiment (DCE); (d) in section 5, an outline of the ICF methodology; (e) in section 6, a summary of the Gaza Solar Power project, where the SRR has been applied; (f) in section 7, a social cost-benefit analysis of the Gaza Solar Power project, by applying the SRR; (g) in section 8, a DCE to determine the value of the labor externality; and (h) in section 9, the conclusion.
2. The Rationale for Targeted Jobs Creation Initiatives in Fragility, Conflict, and Violence Settings

Jobs constitute a high priority for economic development in low-income countries given their contribution to household earnings, productivity, and economic growth. Jobs also constitute a tool for policy makers and development agents in their effort to reduce poverty and spur inclusive growth. Income generation can lift people out of poverty, contribute to households’ resilience and social protection, and secure a better future for the next generation, if it helps increase investment in education and health (World Bank 2012).

Moreover, in FCV contexts (or other contexts with high unemployment and underemployment, or low participation in the labor market), jobs can have additional positive feedback loops that go beyond individual (or private) gains. The World Bank’s (2012) World Development Report 2013: Jobs, for example, highlights the additional threat to stability that arises from joblessness and the resultant increased risk of criminality, violence, and radicalization that can come with unemployment. This situation provides a prima facie reason to prioritize initiatives that can foster increased job creation that, in turn, can meet the job aspirations of the working-age labor population and militate against these threats. In fragile situations, expanding economic opportunities and increasing resilience to internal and external shocks are therefore particularly important. To the extent that this approach addresses the patterns of exclusion, it can contribute to peacekeeping in the short term, and peace and institution building in the long term.

How to enable private investment and jobs creation, especially in FCV environments, remains a challenge. Growth diagnostics are used to identify both the problems that affect economic growth in developing countries and the choice of public policy solutions. Their objective and focus are on stimulating investment and improving allocative efficiency with the assumption that, when economies grow, they also create jobs. And when there are no distortions in the allocation of resources—labor and capital—that those jobs are created in the sectors and economic activities in which they generate the most value (Robalino and Walker 2017). Within this framework, job creation and labor productivity growth—and the corresponding gains in earnings—have been viewed as a consequence of economic growth and private sector investment. Hence, to enable structural transformation and to allow poverty reduction, countries should have in place the correct mix of macroeconomic, business environment, labor, and social protection policies.

However, focusing on constraints to growth without understanding the link between private sector investment and job creation is not enough to ensure growth is inclusive. Moreover, the jobs created can disproportionately be of low skill and low quality for many, because wage job opportunities are limited, or the significant segments of the labor force do not have the skills or the information to access them. In IDA\(^1\) and FCV settings, people must earn a living to survive because they cannot afford to be unemployed. Hence, they work in a self-employed situation, in informal enterprises, or as an unpaid family worker. Most of these people are not able to lift themselves out of poverty because their productivity (and income) is very low. A lack of attention to this aspect of quality or productivity risks a growth without jobs transformations.

The link between private sector investments, growth, and jobs is still poorly understood. In various sectors, a given amount of investment generates different numbers of jobs and different compositions of jobs, in terms of the workers’ age, gender, and skills (World Bank 2013). Therefore, policies that increase

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\(^1\) Countries receiving loans and grants from the International Development Association of the World Bank Group.
investment and maximize the returns to capital do not necessarily generate the type or distribution of jobs needed to address problems such as youth unemployment, low female participation rates, inequality, or poverty. Shifting focus in the assessment of investment projects and being able to correctly incorporate jobs-linked externalities would allow one to select and prioritize the private sector investments that maximize job creation and—even if private profitability is low—might merit public support owing to the additional social returns generated.

As the World Development Report 2013 (World Bank 2012) suggests, a framework for job creation must include establishment of a macroeconomic environment that is conducive to private sector job-generating investments and that fosters the development of a labor market that delivers skills and abilities needed by the private sector. Just as important, the proper mix of sectoral and labor market policies must be in place, as well as a good social safety net system that protects the most vulnerable and might help them connect to labor markets. The role of the governments and, particularly in FCV settings, of development actors is increasingly important to provide an enabling environment that supports private sector job creation. In the FCV context of West Bank and Gaza, however, the extent to which these reforms can be undertaken and their potential effect are impeded by a substantial and unique range of exogenous constraints (for example, restrictions to market access and mobility policies, or tax revenue controls) as well as deep-lying political and capacity constraints of the PA. In terms of job creation, the effects of macroeconomic and structural reform efforts feasible to date in West Bank and Gaza have been limited. Beyond the fundamentals of getting the correct balance in this macroeconomic and investment climate and labor market structuring level, what additional actions can be considered?

One possibility—explicitly being tested as the Project Development Objective for the F4J SOP—is the effectiveness of specifically designed, market-based, commercially oriented measures implemented through private sector players. These measures might open up opportunities for and crowd in private sector investment that targets job-creation outcomes over the shorter to medium term. The Investment Co-Financing Facility (IFC) component is one of the tools being tested, and its objective is to close the financing investment gap in order to stimulate private investment with the objective of creating sustainable new jobs in FCV settings. In such environments, benefits arising from the investments and the jobs created might constitute additional returns that can merit the additional support of marginal public financing to enable the investment to proceed.

The challenge in FCV contexts is that rates of financial return are too low relative to the risk profile for private sector parties to proceed with an investment, even where a commercial venture is fundamentally sound. The market and institutional failures facing the private sector in FCV situations (particularly in West Bank and Gaza) include the following:

- **Country and macro levels**
  - **Limited financing availability in the financial sector**: Availability is limited in terms of tenor and price. What is available significantly circumscribes investor options and reduces appetite for longer-term investments that entail a range of risks.
  - **Shortfalls in public infrastructure**: Such shortfalls would, in a more normal market setting, be covered by the public sector to support economic activity but are not feasible in West Bank and Gaza setting owing to constraints on the PA budget and the inability of the nonsovereign authorities to raise funds on capital markets.
  - **Labor market weaknesses**: Shortages of suitably trained job seekers arising from information asymmetries are normally mitigated through targeted government support (such as training and job search), but support is not feasible because of West Bank and Gaza fiscal constraints.
• **Institutional failures**
  - **Lack of control over trade borders:** Lack of control requires importers and exporters to operate through Israeli intermediaries at mark-ups estimated between 2 and 10 percent.
  - **Non-honoring of government obligations:** Failures include no provision of power in Gaza owing to absence of fuel and so on, attributable to fiscal and mobility constraints (for example, transportation between West Bank and Gaza and within Areas B and C² in West Bank).

• **Greater probability of force majeure events**
  - **Security actions that can result in border closures and destruction of assets:** Such actions require the private sector to delay projects, replace assets, and so on.
  - **Government of Israel Dual Use policy:** This policy can result in a range of additionally heightened risks to investors. Risks include (a) cost and quality risks to capital equipment owing to confiscation of assets, thereby resulting in delay to investments and replacement purchases, often with suboptimal and less effective inputs; (b) construction risks owing to dual use limitations on access to materials; and (c) commercial risk because of constraints on mobility and marketability of good production that depends for profitability on scale and access to markets between and outside of West Bank and Gaza.

• **Firm level**
  - **Information asymmetry:** There is a lack of information for potential investors, both in-country and foreign.
  - **Transaction costs:** Investors face a fixed cost to evaluate a market, to identify opportunities and partners, and to set up the appropriate investment strategy. Difficulties in repatriation of capital also exist.

These types of barriers—all the more difficult to tackle in fragile contexts—prevent entrepreneurs and investors from connecting. Transactions costs and information asymmetry are higher than in developed markets and prevent information availability and exchange between market actors. As a result, attracting private capital to risky markets can be extremely challenging.

What corrective actions are possible to mitigate risk and increase return to the private sector in order to realize the job and associated wider social outcomes the investment promises? First, one must distinguish between what this report refers to as the financial and economic returns and the social returns. This distinction will provide the basis on which the eligibility and performance criteria for the ICF will be designed and the social rate of return on the projects will be calculated, and thus justify government interventions in the project by reducing investment costs or reducing or sharing the risk.

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² Area C constitutes about 61 percent of the West Bank territory. It is defined by the 1995 Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, Article XI, para. c, as “areas of the West Bank outside Areas A and B, which, except for the issues that will be negotiated in the permanent status negotiations, will be gradually transferred to Palestinian jurisdiction in accordance with this Agreement.” According to the agreement, the gradual transfer should have been completed by 1997. However, it has not been implemented as envisaged in the agreement, and in the meantime, access to this area for most kinds of economic activity has been severely limited. Area C is richly endowed with natural resources and is contiguous, whereas Areas A and B are smaller territorial islands. The manner in which Area C is currently administered virtually precludes West Bank and Gaza businesses from investing there (Niksic, Eddin, and Cali 2014).
3. From Financial to Economic Analysis

Financial analysis examines the financial flows generated by a project, and the direct costs of the project are measured at market prices. The principal financial indicator is the internal rate of return (IRR). Private investors will elect to proceed with an investment if the IRR is higher than the hurdle rate or discount rate (that also reflects the cost of capital, consistent with an economy’s macroeconomic constraints). In more risky environments, the IRR will need to be higher than in normal markets for an investor to decide to proceed with the project.

In addition to the return to the private investor, there will be wider returns to the economy from a given investment. Taking these into account requires assessment beyond the net costs and benefits to the investor and the return to the investment risk. Put differently, whereas the financial rate of return is the IRR calculated when all the inputs and outputs are reckoned at market prices, the economic rate of return (ERR) is the IRR based on the economic opportunity costs of the inputs and outputs.

Cost-benefit analysis (CBA) aims to determine whether a project is socially profitable, and it is measured by the ERR. Social and private profitability might diverge because private agents respond to market prices, which may be distorted by market failures. For example, the prices of inputs might not be fully reflective of economic opportunity cost, and market revenues might not reflect the full social benefit of the project or activity. The focus is on identifying projects that might not be commercially profitable given the context, but that might be socially profitable and merit public support.

In standard cost-benefit analysis, the total net benefits are defined as

\[ B1 = p^t y^t - r^t K^t - \sum_i w_i L_i \]

where the benefits \( B1 \) are equal to the overall economic return \( (p^t y^t) \) (\( p \) is price, \( y \) is quantity, \( t \) is time) minus the cost of capital \( (r^t K^t) \) and the cost of labor (the direct jobs created and employed in the project) \( (\sum_i w_i L_i) \) (\( w \) is wage, \( L \) is number of direct jobs).

The CBA then adjusts the financial rate of return to generate an estimate of the ERR. First, it adjusts the project’s financial costs to reflect social opportunity costs of the inputs, and second, it incorporates a full measure of the social benefits or costs that are not captured or paid by private investors. If these adjustments lead to an ERR above a reference benchmark rate, then public policy could be considered to support its implementation. The benchmark rate (also reflected in the discount rate used for the analysis) should reflect the economic opportunity cost of capital. The economic analysis also needs to show that the project is using the least-cost option to generate the identified benefit stream (because otherwise the ERR could be increased by shifting to that option). The process to arrive at the ERR can be seen as a two-step exercise.

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3. The hurdle rate, or minimum acceptable rate of return, is the minimum required rate of return that investors are expecting to receive on an investment, based on a number of assumptions such as the cost of capital and the risk profile of the investment.

4. As per the economic theory, the discount rate refers to the interest rate used in discounted cash flow analysis to determine the present value of future cash flows. The discount rate expresses the time value of money and can make the difference between whether an investment project is financially viable or not. In FCV situations, the cost of capital can be prohibitive for businesses, because macroeconomic constraints and lack of access to international capital markets can either reduce the availability or increase the price of the available capital.

5. Opportunity cost is the cost of any activity measured in terms of the value of the best alternative that is forgone. Opportunity costs are not restricted to monetary or financial costs: the real cost of output forgone—lost time, pleasure, or any other benefit that provides utility—should also be considered an opportunity cost. The consideration of opportunity costs is one of the key differences between the concepts of economic and financial cost.
The first step is to adjust a project’s financial costs and benefits using shadow prices that reflect economic opportunity costs and including all benefits and costs of a project on the economy (for example, environmental effects—both positive or negative; health or education outcomes). As part of this process, a CBA evaluates the cost of labor to reflect its economic opportunity cost. This process includes removing taxes and transfers from the market cost of labor. It also factors in the level of unemployment and underemployment by estimating the probability that workers would otherwise have been employed in alternative activities and the degree of their productivity and earnings in those circumstances. In other words, when an economy is at full employment and labor markets are competitive, the market wages paid to the workers are a good measure of the opportunity cost of labor. But when unemployment or underemployment rates are high, the opportunity cost of labor is lower, because if the project were not implemented, then the labor would be underused. The economic opportunity cost of labor is thus computed as the market wage (labor costs) through time \( w(t) \) multiplied by the number of direct jobs \( (L) \) adjusted for its opportunity costs. However, the way to calculate this opportunity cost is challenging (see box 3.1).

**Box 3.1. Opportunity Cost of Labor in Context with High Unemployment**

The shadow wage is less than the market wage when there is unemployment (Stiglitz 2000). If workers become employed in a project, they might have been unemployed before, hence there is no loss in output elsewhere, (that is, there is no displacement). To capture this factor, one must ascertain (for example, with surveys) the percentage of the increased employment that comes from involuntary unemployment—versus displaced other employment—or more voluntary unemployment. Having this information would allow one to calculate the real opportunity cost of labor that might correspond (a) to an increased income compared to what the a worker was earning before (labor externality for displaced labor) or (b) to the whole new wage, if a worker was unemployed before (minus the various costs associated with getting the job, such as transport and taxes).

Another way of adjusting labor costs, if no data are available on the previous occupation of workers, is to weight each category of labor (for example, women/men, youth/old) \( L_i \) by the probability of being unemployed \( (u) \) and underemployed: \( EOCL= w(t)L(t) \times (1 - u) \) where \( EOCL \) is the economic opportunity cost of labor. This is a measure of scarcity: if labor markets are in perfect equilibrium, with no involuntary unemployment, the wages will be equal to the marginal product of labor and the opportunity cost of the worker’s time will be very close to the wage. If there is a 30 percent unemployment rate, \( u = 0.3 \), and hence the opportunity cost is 70 percent of the market cost of labor, and so on.

The concerns with this approach are that (a) it assumes there is no value to leisure and no cost to the unemployed of accessing these jobs (for example, no transport costs); and (b) it assumes that if 30 percent of the population is unemployed, then 30 percent of the new jobs will be taken by the unemployed, which will depend very much on the nature of the jobs. To respond to this concern, first, one must ensure that labor market data are as close as possible to the type(s) of labor, economic sector(s), and region(s) in which the project will be active in order to determine levels of unemployment and underemployment and to correctly determine what jobs will be taken by whom. Second, the argument here is that because of the extreme unemployment and underemployment in FCV contexts, labor has zero or close to zero opportunity cost. In this setting, any jobs that are vacated by workers switching to the new employment created by the project will likely be filled from the ranks of the unemployed whose alternative uses of time are low-valued activities (resulting in overall higher
economic return). Gaza is probably an extreme example, but it could illustrate perfectly that in a context with high rates of unemployment, an increase in demand will lead to employment creation without crowding out existing workers. If displacement occurs, the places left vacant will also be filled by the large group of unemployed and underemployed persons. Furthermore, because the labor market is not open (restriction of movement of labor), employment creation will benefit the local economy.

In line with this approach, Mishan and Quah (2007) argue that the opportunity cost of the unemployed time should include the stigma effects of unemployment, which can reduce the reservation wage to the point that unemployed workers are almost “prepared to pay to be employed even where no wage at all is offered to [them]” (Mishan and Quah 2007, 69). This view is true not only for FCV settings but potentially for all the contexts in which unemployment and its social stigma are very high.

a. However, in the ERR estimation for the projects under the Finance for Jobs Series of Projects, the authors use the more conservative option of reducing (and not eliminating) labor costs to $w(1-u)$.

Similar to adjusting labor costs, in place of the revenue stream of a project’s outputs ($price \times quantity$), which appears in the financial analysis, economic analysis considers social costs and benefits arising from the project. Much of the literature on economic analysis is concerned with the conceptualization and measurement of the economic benefits of projects.

After adjusting all of a project’s financial costs and after including in the analysis all benefits and costs to the overall economy, one then takes into account the value of indirect and induced jobs. Indirect jobs are those created by the production of inputs or downstream value chain transformations that are triggered by the main investment. Induced jobs are created as a result of an increase in demand, when the earnings from the wages and profits in the main investment are respent (including local economy multiplier effects). They can also result when investments in infrastructure unlock profitable opportunities in industries that can use the infrastructure.

The ERR can also be extended beyond the usual adjustments such as taxes and environmental, job, and spillover effects to include estimates of wider externalities arising from job creation, which is of interest in this instance. This estimation is referred to as the social rate of return. It incorporates both the ERR and specific, targeted, jobs externality estimates.
4. Social Rates of Return: The Rationale for Public Funding to Private Investments

The third step is to quantify the benefits linked to jobs that are not captured either by employers or firms or by their workers. As already mentioned, policy makers are increasingly interested in the externalities that arise from particular segments of the population accessing better jobs. This issue was flagged in the World Bank’s (2012) World Development Report 2013, in which jobs that enhance social cohesion were cited as an example of “good jobs for development.” Incorporating jobs externalities into the assessment of investment projects allows one to select and prioritize the private sector investments that maximize job creation and their quality. A social return case can then be made for public support—in cases in which private profitability is too low—to boost the return to private investment to ensure the project proceeds. But what are jobs social externalities and how are they measured? Box 4.1 explains further these externalities.

**Box 4.1. Externalities of Job Creation**

There are two different types of externalities related to jobs. First, there is a labor externality—the difference between the wage and the economic opportunity cost of labor. The definition is an adjustment to the Guillermo-Peon and Harberger (2012) concept, which accounts for benefits not appropriated by a worker. As mentioned previously, the presence of high unemployment, underemployment, or both, leads to a market price of labor that can deviate from the opportunity cost of labor. Firms considering a new investment calculate the internal rate of return using the market wages they expect to pay. But when many workers are unemployed or underemployed, the economic opportunity cost of labor can be well below market wages. The firm does not take into account the benefit of not having labor resources idle, including the benefit to workers whose incomes would rise because of the investment (Robalino and Walker 2017). The labor externality is the accrued (net additional) earnings to individuals getting the jobs thanks to the project and has two dimensions: increased employment rate and higher wages for the workers.

Second, there is a social externality, which is the value to society of better outcomes for groups such as youth, women, and the extreme poor. This value can be considered a multiplier of the private gain, because it is accrued socially (not by the workers). If society has preferences for reducing poverty and inequality, then sustainable jobs for poor people will have a direct effect on this—hence, have a social externality. Similarly, in FCV settings, there can be social externalities linked to jobs for young men that reduce the risks of criminality and radicalization and contribute to social stability. Jobs for young women also can produce externalities by facilitating the human capital accumulation of their children, partly through reduced fertility, which leads to health and nutrition gains for children, and partly through increased women-controlled incomes, leading to more spending on early childhood development (World Bank 2012).

What of their measurement? First, the same level of earnings and benefits from jobs in different contexts with different beneficiaries can lead to different externalities, with the potential of larger social positive benefits to be captured. The challenge is that no adequate market proxy exists for quantifying the benefits to society of these jobs externalities. Moreover, because the jobs externalities entail cultural preferences, any estimate would be highly sensitive to the specific values of a given society. How then to arrive at a societally representative valuation of the externalities that arise from different jobs across different segments of the working-age population? Additionally, the social externality of a job is, prima facie, greater in those areas with a greater threat of FCV, that is, in Gaza, which has been subjected to greater force majeure events. Using the terminology presented in this report, one can say that jobs created in...
Gaza are effectively jobs created in conditions of greater distance from market (that is, where jobs are hard to find) and therefore in principle would have greater social utility. Conceptually, let these externalities be represented by $\beta^n$.

In this formula, social externalities linked to the direct jobs created are introduced. Following the previous analysis, on the benefits side, one can say that the financial value of labor (FVL) (that is, the value of wages paid to the workers) underestimates the social value of labor (SVL) such that any estimate of the economic rate of return made using the FVL as a surrogate for the SVL will underestimate the overall value derived by job creation in a fragile context. More specifically, this report proposes to extend the measurement of benefits to incorporate additional externalities generated by job creation in the measurement of SVL.

The benefits at this second stage ($B2$) are equal to $B1$ plus the labor and social externalities ($\beta$) multiplied for the direct jobs (adjusted as in the first phase):

$$B2 = B1 + (1 + \beta_i)(\sum_i w_i L_i)$$

The third change consists of the inclusion on the benefits side of all the jobs that have been created by the specific investment, not just direct ($B2$) jobs but also indirect jobs and the induced jobs, when it is possible to measure:

$$B3 = B2 + \sum_j w_j L_j^i (\beta_j)$$

where $\sum_j w_j L_j^i$ are all the indirect jobs (and induced jobs) created as a result of the investment.

While one can easily think of reasons why externalities of these sorts might arise, one cannot as easily operationalize them and define a value for $\beta$. In the absence of an established a priori methodology to accord a social value to the previously shown job variations given inherent cultural variations, an empirical approach is required (box 4.2). This approach needs to be grounded in an estimation exercise that generates representative and socially acceptable estimates of the different $\beta$.

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**Box 4.2 Measurement of Externalities**

Externalities are easier to conceptualize than to measure. If a project reduces gas emissions in the environment, society will benefit from it. But the project entity will not be able to charge for this positive result. If an industrial plant produces pollution that affects the adjacent buildings, the additional maintenance and cleaning cost will not be borne by the company. Yet, the costs to society include also the additional maintenance and cleaning costs of the adjacent buildings.

In the case of jobs-linked externalities, two dimensions need to be estimated: the labor externality and the social externality. The labor externality, as explained previously, can be conceptualized as the gap between worker earnings and opportunity cost of labor. It can be measured in two ways: (a) by looking at the supply price of labor (defined target group survey data can be used to calculate unemployment rate and wages in new jobs versus old jobs), and by conducting an impact evaluation to calculate a project’s treatment effect of worker income (the difference between treatment and control’s income is interpreted as a labor externality).

Measuring the social externality part of jobs creation is less straightforward and needs more complex—often piecemeal—calculations (for example, what is the effect of jobs for women on their children’s nutritional status and future earnings?). Two main techniques are used by project appraisal teams for measuring other types of social externalities in economic analysis (for example,
environmental externalities): (a) objective valuation techniques and (b) subjective assessments. The first method includes techniques that assess the effect of externalities through a production function that links the level of activity to the degree of damage (or benefit) (Belli 1996). These techniques rely on observable environmental changes and on market or shadow prices of goods or services or expenditures. Two prominent quantitative methods used by economists to assess externalities are cost of damages and cost of control.  

However, there are cases where estimating values is more difficult because no adequate market value exists for the externalities created. Subjective valuation methods combined with contingent valuation techniques (as needed) provide a revealed preference remedy. Market values can be revealed through the real costs that people signal a readiness to incur in order to capture a social benefit (stated or revealed preferences) (Belli 1996). In some cases, when not even indirect indications of the value of goods are available, contingent valuation techniques can be used to establish hypothetical market values for unpriced goods or services and estimate subjective measures of preferences based on surveys. Subjective techniques offer the only practical way to measure certain categories of benefits and costs. Such preferences are a public good that cannot be observed because they are not traded in a market.

a. In the investments financed under the Finance for Jobs project, the labor externality has been calculated with the first method, by adjusting the net salary (difference between the gross salary and personal income tax) to the opportunity cost (or the difference in earnings that are accrued to the workers as a result of accessing these new jobs and compared with previous earnings).

b. For example, in the case of the pollution mentioned earlier in this box text, the cost of damages method puts a value to the cost of cleanup necessary to clear the pollution and restore the habitat. The other method uses the costs of controlling the externality as a proxy for the damage that may result.

The use of contingent valuation techniques for the evaluation of externalities in cost-benefit analysis is well established in the evaluation of environmental projects. One example of this approach is willingness-to-pay surveys, in which a representative sample of the population is asked about their willingness to pay a tax (for example, to fund a particular outcome). Another approach is the use of discrete choice experiments, in which the population’s preferences for the outcome of interest can be imputed from the analysis of participants’ repeated choices between alternative bundles of outcomes.
5. The Investment Co-Financing Facility: An Outline of Its Modus Operandi

Before describing the application of a discrete choice experiment (DCE) in the social rate of return (SRR) model, this report looks at the project context. The ICF, as mentioned in section 2, would provide the marginal additional financing required to enable private investors who are prevented from pursuing commercial ventures owing to additional or heightened risks, such as market and institutional failures arising from the fragility conditions of West Bank and Gaza, to be able to proceed with the investment. The following is a description of (a) the eligibility and performance criteria for an ICF allocation and (b) the implementation arrangements:

- **Eligibility criteria:** The ICF allocation to potential private investment initiatives would need to address the following eligibility requirements: (a) the proposed investment should be a commercially viable venture; (b) the investment is compliant with World Bank Group safeguard policies; and (c) the ICF allocation clearly addresses a particular FCV risk or market or institutional failure that is the cause for the investment not proceeding.

- **Performance criteria:** Applications to the ICF facility will need to identify prospective job creation, taking into account estimated direct and indirect job creation arising from the investment and applying the SRR methodology.

The ICF is managed by the Finance for Jobs Project Implementation Agency (PIA) recruited by the Ministry of Finance and Planning of the Palestinian Authority under an implementation agreement arrangement. An ICF call for proposals was announced February 2018, and prospective applicants were asked to submit proposals within a fixed time period. Following this, the PIA conducted a preassessment of project investment proposals with the goal of determining their eligibility for public financing, as per the criteria outlined in the previous paragraph. These proposals were then reviewed by the PIA team responsible for the ICF component of the project. The performance assessment is based primarily on the application of the SRR methodology and an estimation of the wider social returns from the jobs created (direct and indirect), using the $\beta$ estimates for the different types of jobs and beneficiaries, as derived from the DCE exercise. Use of this methodology in assessing anticipated project performance of the ICF proposals allows the proposal to be screened for possible ICF financing and to be compared with other proposals on a competitive and targeted job outcome basis.
6. An Example: The Gaza Solar Power Project

By way of a demonstration effect and a signal to the market of the potential that the ICF offers the private sector to pursue investments in risky FCV settings, a potential first mover project has been selected for ICF funding: the Gaza Solar Power project. This project had been identified for its potential job outcomes as early as 2014 during the initial preparation work being undertaken for the first F4J project and was subject to a successful outcome of ongoing due diligence by the World Bank in collaboration with the Ministry of Finance and Planning and the F4J Project Implementation Agency. Since this time, the private investor looking to make this investment has, after market consultations, reached a potential agreement with the IFC to provide financing for the investment. But a shortfall remains before this investment can proceed, even after the IFC has provided blended financing to reduce the cost of the loan to the investor.

The project is the first privately financed infrastructure project in Gaza in over a decade and is designed to provide electricity to the only industrial park in Gaza. The Gaza Industrial Estate (GIE) established in 1999 with the assistance of the World Bank and the United States Agency for International Development, consisted in 2016 of 32 factories and is Gaza’s largest private employer, providing employment to approximately 2,000 people. With total project costs of about US$12 million and development by a local real estate developer, Palestine Real Estate Investment Company, the project marked IFC’s entry into one of the region’s most difficult markets.

Demand for electricity significantly exceeds supply in Gaza, but sustained shortfalls occur because of installed capacity limits and the fiscal and occasional access constraints for fuel for existing generation facility, including security issues preventing lower-cost gas imports from the Arab Republic of Egypt. More specifically, current Gaza demand of 400 megawatts (MW) is met by a supply of only 150 MW to 200 MW. The Gaza Electricity Distribution Corporation (GEDCO) reports to the Palestinian Energy and Natural Resources Authority (PENRA), which owns 52 percent of GEDCO (48 percent of GEDCO is owned by the municipalities), and distributes all electricity in Gaza. To cope with the shortage situation, GEDCO has scheduled daily 8-hour electricity outages. The shortage of electricity available for distribution is further exacerbated by the deteriorated conditions of the electricity networks (the system loses an estimated 24.3 percent of electricity) and the collection of only 65 percent of owed tariff revenue. The GIE is therefore not protected from the consequences of market failures. The GIE has struggled to operate at just more than half capacity since 2006. The peak supply is dependent on the provision of 400,000 liters of fuel oil per day via a pipeline from Israel. Consequently, any disruptions in fuel oil supply have significant effects on the generation of electricity in Gaza to the private sector, and irregular power, in turn, increases factory operating costs. Enterprises in the park must either shut down their operations at the time of any electricity blackouts or generate their own electricity via private generators (capital costs quoted for the purchase of generators range between US$25,000 and US$75,000) at a cost of 2.6 new shkalim (NIS) (0.665 US$) per kilowatt hour, a rate that would render any manufacturing process nonsustainable.

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6 These numbers have been subject to fluctuations over time. In many cases, actual employment is significantly reduced from prior levels. For example, during a site visit a few months after the 2016 survey, four of the five firms interviewed in the park reported having to reduce employment by 23 percent to 33 percent in two cases and 75 percent in another, as a result of electricity outages that preclude higher production activity. Initial estimates indicate these factories have unmet demand that would, subject to available power, enable them to increase production lines and shifts. Also, data from the 2016 survey indicate that 390 of the approximately 2,000 people working in the Gaza Industrial Park (almost 20 percent) were employed by two United Nations (UN) agencies operating in the park: UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East), 350 people; and UNDP (United Nations Development Programme), 40 people. Since then, the UN agencies have left the park.
The Gaza Solar Power project is therefore expected to have a substantial development effect in a very fragile economy. It will provide critical energy infrastructure to the industrial park and improve the reliability of energy supply, with strong positive implications for output and employment. The GIE Photovoltaic Project is expected to result in a cheaper and reliable electricity for tenants in the park. The electricity produced by the photovoltaic (PV) panels will complement GEDCO’s current source of supply and act as substitute for diesel generators. Henceforth, cost savings are estimated to result from the replacement of diesel by clean energy, in addition to increased economic activity and employment. Solar generation of electricity at the GIE would also allow existing enterprises to move from single-shift operations to two (and some potentially to three) shifts per day and allow the GIE operator to extend services to more tenants (currently, only 84,000 square meters [m²] of the park’s 500,000 m² are being used). Two rounds of surveys have been conducted by the project team in the GIE: (a) an initial survey during preassessment of the project was conducted in August 2016, and (b) a second survey was conducted in October 2017 to refine figures on projected employment outcomes and business activity. The results indicate that these factories have unmet demand that would, subject to available power, enable them to increase production lines and shifts. The current estimate of additional jobs created (not including influx of new tenants) is about 600. This estimate is particularly important in an area with one of the highest unemployment rates in the world (see section 7 for details).

The GIE operator has been investigating the potential to invest in solar power capacity. The estimated cost of the investment was about US$12 million, but the internal rate of return of the solar facility at the park is below the investors’ hurdle rate and the payoff period exceeds the normal time required for such an infrastructure facility in a very risky environment. Currently, available financial products in the local market do not provide the tenor (in cases such as this one, 8 to 10 years financing is needed, but the local market is not providing debt financing beyond 5 to 6 years) or pricing necessary to allow the investors to proceed, given also the risks related to access and mobility. As such, the private investment would not occur without additional financial support. The ICF can play a role in this situation by closing this gap financing, reducing the payback period, and allowing the IRR to increase to an acceptable rate. In addition to the ICF contribution and the IFC’s long-term financing and blended financing, the Multilateral Investment Guarantee Agency has provided political risk insurance for war and civil disturbance and expropriation for 10 years through two of its trust funds: the West Bank and Gaza Investment Guarantee Trust Fund, which is supported by Japan, and the Palestinian Authority and the Conflict-Affected and Fragile Economies Facility, which is supported by the Department for International Development (UK), Canadian International Development Agency, and Swedish International Development Cooperation Agency.

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7 Demand for GIE spiked after the physical damage caused to businesses during the 2014 conflict between Gaza and Israel.

The financial assessment carried out indicates that the project is a commercially sound private investment, but it will not be able to move forward owing to exceptional FCV risks and related market failures, including limited financing options (for example, lack of long-term debt financing), especially in Gaza. As such, 45 percent equity is needed to make the project financially viable from a debt perspective. If Palestine Real Estate Investment Company were to provide 45 percent of project cost as equity with no grant funding (from the ICF-F4J), the equity IRR would be around 6 percent. This figure is well below regional benchmarks (13 percent–15 percent in much-lower-risk countries such as Jordan or Egypt) and expected returns for FCV countries on a risk-adjusted basis. The only way for the private investor to still consider an investment in the project without ICF funding support would be to increase the project revenues, through an increase in the electricity price sold to the factories, which may create further burden to the tenants.

The final project financing of a 7 MW rooftop PV energy system comprises (a) an IFC loan of about US$3 million (27 percent of total project cost) and a blended finance and concessional senior loan of about the same amount (27 percent); (b) private investor equity of approximately US$3 million (27 percent); (c) World Bank co-financing of US$2 million through the ICF (18 percent); and (d) Multilateral Investment Guarantee Agency insurance to complement those amounts. This structure would allow the project to get to an equity IRR of 12.8 percent (and project IRR at 8.0 percent). The payback period is shortened to the minimum acceptable (10 years).

The due diligence conducted for this project included, beyond the financial analysis, an economic analysis that measured costs and benefits at their opportunity costs, representing the value of the most valuable of alternative uses and adjusting with an adequate discount rate that converts these uses in their present value. The economic analysis showed that the project could generate significant social and economic benefits in a very fragile economy.

Among the direct costs, in this project land value is zero (in Gaza, as in many other contexts where land is public and government owned, vacant land could not be used for any other purpose, and so its opportunity cost is zero) and the on-site infrastructure and community facilities represent the total cost of the investment (cost to the economy) of about US$12 million. Other economic costs included in the analysis are factors that affect the opportunity cost of an investment. On the one hand, deadweight is included as a loss of investment elsewhere as a result of the investment in the GIE PV Project. On the other hand, displacement refers to those firms—located in other sites in Gaza—that relocate their operations to the industrial park because of the project’s extended benefits. Benchmarks used for this analysis with regard to deadweight and displacement indicate that a share of 25 percent and 10 percent of the investment, respectively, should be applied. The economic cost of deadweight and displacement is estimated at about US$3.2 million.

The main benefits calculated for the economic analysis originate from (a) providing cheaper, cleaner, and reliable electricity for tenants in the GIE; (b) increasing the employment opportunities in the GIE; and (c) allowing other firms to establish sites in the industrial zone.

First, the electricity produced by the PV panels will complement or substitute for both current sources of supply—GEDCO and up to 70 percent of the energy from diesel generators. Henceforth, the resource cost saving is estimated by the replacement of diesel with clean energy.8 Second, and most important as the focus of this report, the project will affect employment creation, both directly and indirectly.

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8 According to the latest numbers, the annual electricity produced by the diesel generator is about 1.3 million kilowatt hours (kWh) at 2.60 new shkalim (NIS)/kWh.
In terms of direct employment, the investor is expected to create seven new jobs to ensure operations for the project. In addition, the model also computes jobs created as a result of the construction and installation (C&I) of the PV system in the GIE by the engineering, procurement, and construction (EPC) contractors. Following interviews with the investor and keeping in line with international benchmarks, the World Bank project team estimated that for each MW installed, three direct jobs in the C&I stage will be created. Hence, an estimated 21 direct jobs will be created. The economic benefit of direct jobs is calculated (the labor externality) by the net salary adjusted to its opportunity cost.

Another important benefit to be included is the indirect job outcomes. In August 2016, a first survey of the tenants in the GIE was conducted. Some of the questions were directed toward electricity constraints, potential increased demand for electricity, production capacity, willingness to expand and constraints, current employment, and potential demand for additional labor based on increased economic activity. The results of this first survey suggested that about 800 new job opportunities might be created because of the Gaza Solar Power project implementation. This survey was updated in October 2017 to reflect the then-current state of the estimation of potential jobs outcome. The team adopted the same methodology: a list of all existing tenants was collected, and of the 35 firms present at the time in the GIE, 33 were interviewed; 20 of them were manufacturers, 8 were service providers, and 5 owned warehouses. The other two organizations that were not officially interviewed, owing to their internal bureaucracy requirements, were the United Nations Relief and Work Agency and United Nation Development Programme.

The results show that seven firms had closed since August 2016 because of the harsh economic situation in Gaza and the shortage of electric supply. As a result, 246 jobs were lost. In 2017, 1,346 people were working in the GIE 1,279 were employed by the private sector and 67 by the United Nations agencies. Approximately 6 percent of tenants in the GIE suggested that without a future reliable source of electricity supply, they would close their factories, and approximately 44 percent of them said they would reduce their current level of operations. However, if the GIE PV project materializes, about 73 percent of the interviewed tenants proposed that they would increase their operational shifts and hire more people. As a result, the revised number of potential new job opportunities was about 600.

The same methodology applied to direct jobs benefits has been applied to the indirect ones: by adjusting wages to their opportunity cost, one can calculate the labor externalities arising from the creation of indirect jobs. Until this point, the analysis has covered the first two steps of the economic analysis explained in the previous sections that led the team to derive the ERR from the IRR, by adjusting all costs

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9 The engineering and construction contractors carry out the detailed engineering design of the project, procure all the equipment and materials necessary, and then construct to deliver a functioning facility or asset to their clients. They are commonly referred to as EPC contractors.

10 This number has been verified because EPC contractors have just been identified and started work on the project.

11 In other words, the benefit is the difference between the gross salary and personal income tax, weighted by its probability of being unemployed: \( w \times (1 - u) \), where \( w \) is the wages as used in the International Finance Corporation Financial Model minus personal income tax and \( u \) is the unemployment rate in Gaza. According to the most recent statistics of the Palestinian Central Bureau of Statistics (end of Quarter 2, 2018), the unemployment rate in Gaza is 53.7 percent. In this case, this estimation is actually very close to the real opportunity cost of the labor employed in the GIE. According to a survey conducted on 21 tenants (of a total of 31 current tenants operating in the park) during February to March, 2016, of the 231 employees surveyed in the park, 114 were previously unemployed (49 percent); 21 were attending school or university (9 percent); 21 were self-employed (9 percent); and 75 were previously employed either in the same business or in another business (32 percent). These figures seem to be roughly in line with labor force data for Gaza (unemployment has varied between 40 percent and 50 percent over the years).

12 Of the 600 potential jobs, 41 percent would be for young males, 57 percent for adult males, 1 percent for young females, and 2 percent for adult females.
and benefits with their relative opportunity measures. The ERR of the project is 19 percent (higher than IRR at 12 percent), which indicates higher social profitability compared to financial profitability.

The third and last adjustment consists of including in the calculation the social benefits arising from jobs creation, as described earlier. The methodology used for the project to define a value for $\beta^n$ included the estimation of social externalities through the application of a discrete choice experiment (contingent evaluation technique) to elicit preferences of people toward jobs outcomes, given the lack of available data on social values of jobs.
8. Discrete Choice Experiment Application in the Finance for Jobs Project

In the context of the ICF for the F4J II, a discrete choice experiment (DCE) has been applied to determine specific weights reflecting the social value for the different types of jobs in West Bank and Gaza. The DCE helped determine how much extra value (social externality) exists per US dollar of labor externality created by the Gaza Solar Power project. The DCE (see box 8.1) helped fill the gap by generating information on preferences and trade-offs among jobs outcomes.

Box 8.1. Discrete Choice Experiments

Discrete choice experiments (DCEs), which are widely used in high-income contexts, are a quantitative technique for eliciting preferences that can be used in the absence of specific data. The method involves asking individuals to state their preference in alternative scenarios. Each alternative is described by several attributes, and the responses are used to determine whether preferences are significantly influenced by the attributes and their relative importance. A typical example of DCE used to determine consumers’ preferences is shown in figure B8.1.1.

![Discrete Choice Experiment Example](image)

**Figure B8.1.1. Example of Discrete Choice Experiment**

If you were in a supermarket buying a 12 pack of eggs and these were the only ones for sale which would you choose?

- **Brand A**
  - Average Egg Weighs 55g
  - Free Range
  - All eggs appear the same
  - Fed only on vegetables
  - $4.90

- **Brand B**
  - Average Egg Weighs 70g
  - Antibiotic and hormone free
  - Free Range
  - Some eggs appear different (e.g. Shell Colour)
  - Fed on grain and fish (high in Omega)
  - $4.80

- **Brand C**
  - Average Egg Weighs 60g
  - Antibiotic and hormone free
  - 10% of Revenue donated to RSPCA
  - Barn Raised
  - All eggs appear the same
  - $3.00

Source: World Bank project team.

Note: g = gram; RSPCA = Royal Society for the Prevention of Cruelty to Animals.

DCEs have recently been used in developing countries across different sectors, although their main application has been in health policy and planning. Although DCEs have been frequently applied in health economic research in high-income countries, there are comparatively fewer examples of DCEs being used in a low- and middle-income countries. A DCE process is implemented in two stages. The first stage aims at identifying the attributes relevant to the stated research question. In this instance, six attributes have been established: (a) age (young, adult); (b) sex (female, male); (c) level of education (skilled, unskilled); (d) quality of the job (formal wage employment, self-employment); (e) place where the jobs are created (West Bank—urban, West Bank—rural, Gaza); and (f) cost option.

Once the attributes are identified, the second stage is to generate the hypothetical alternatives and to test social acceptance of the different values. How does a society value a job for a young, nonskilled male compared with that of an adult, skilled male? Are they both equally valuable in terms of the wider social benefits they generate? Or does one of these jobs offer a potentially greater social externality? To make this assessment, a DCE needs to test values of the eight different combinations from three attributes (see box 8.2).
In the case of West Bank and Gaza, once the choice sets were established, one option was to have a randomly selected sample of individuals drawn from a population set to rate all possible combinations. However, this approach can result in too many possibilities and can lead to the infeasibility of the experiment. Hence, researchers selected a set of specific possible alternatives that has a range of properties that provide a sufficiently representative picture of rating preferences to be operationally useful. Drawing up a representative sample to provide the responses to this specific set of possible alternatives led to the final selection of the choice set of values for the different \( \beta \). Simplification of the choice set and selection of the sample for the survey exercise entailed the following:

- A questionnaire was developed that contains the choice set, and it was pretested with a pilot group. The questionnaire was administered in English and in Arabic to allow respondents to clearly understand the questions. The questionnaire describes different scenarios that represent the various categories of labor regionally disaggregated for both West Bank and Gaza.
- The target group (survey sample) was drawn to represent local stakeholders such as the government, policy makers, target ministries, and representatives of civil society (see appendix C for more information on sampling). The target group was briefed on the purpose of the project (that is, the creation of a certain number and type of jobs) and the reasons to believe that those jobs have social value not only for the earnings they produce but also for other types of social externalities.
- Different combinations of the attributes (see box 8.2) were administered multiple times to the respondents: the questions presented different concrete scenarios of possible projects of job creation interventions that would create a certain number and type of jobs and have different costs. This approach was used to order different projects according to their preferences.
As mentioned earlier, each respondent was asked to price his or her willingness to pay (WTP) for different-sized projects (number of jobs) in addition to different types of jobs.

The next step was to put a dollar value on the options; that is, to aggregate WTP of the respondents. After presenting different choices, options, and situations associated with different values and amounts of money, the survey will serve to reveal preferences and the way respondents trade off the number and type of jobs generated by different projects.

As shown in the questionnaire in box table B8.3.1, each respondent for each scenario indicated what type of jobs promotion program he or she preferred from a set of three alternative programs (A, B, C). Each respondent answered the question for a total of 12 scenarios (combinations of A, B, C). The survey collected data on 119 respondents. (As understood by participants, the median number of jobs created...
by the different projects was 375.) Statistical analysis was then performed on the data collected, and the results are as follows (see figure 8.1)\footnote{All estimations are based on the multinomial logit model using Bayesian procedures by applying the RStan software.}:

- Respondents value significantly more programs that promote skilled workers.
- Respondents value significantly more programs that promote jobs in the Gaza Strip.
- Respondents value significantly more programs that promote jobs for women.
- Respondents are sensitive to the cost attribute, although respondents are not very sensitive in the lower range of the values used.
- All respondents value significantly having a program as opposed to having none.

**Box 8.3. Questionnaire**

The questionnaire used to elicit preferences in the discrete choice experiment included the following statement:

“The Government is considering the implementation of a program to assist in job creation. This program will target specific types of jobs and workers and will be financed partly by the World Bank and with matching funds from people like you—this is the meaning of the contribution item below. Please review the components of each program described below and answer the three questions at the bottom of the screen.”

Each question was then followed by different scenarios that looked like the example in box table B8.3.1.

**Box Table B8.3.1. Discrete Choice Experiment Scenarios Questionnaire**

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<thead>
<tr>
<th>Attribute</th>
<th>Discrete Choice Experiment Scenarios</th>
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<tr>
<td></td>
<td>Program A</td>
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<tr>
<td>Age</td>
<td>Youth</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
</tr>
<tr>
<td>Education</td>
<td>Skilled worker</td>
</tr>
<tr>
<td>Quality of Job</td>
<td>Formal wage employment</td>
</tr>
<tr>
<td>Region</td>
<td>West Bank—rural</td>
</tr>
<tr>
<td>Your monthly contribution in NIS</td>
<td>NIS 18</td>
</tr>
</tbody>
</table>

Q1. Please tell us which program you favor the most.
Q2. Please tell us which program you favor the least.

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<thead>
<tr>
<th></th>
<th>Program A</th>
<th>Program B</th>
<th>Program C</th>
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Q3. Please tell us, if you think

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<th>all the programs are worth implementing.</th>
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<tr>
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<th>some of the programs are worth implementing but not others.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>none of the programs are worth implementing.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

Source: World Bank project team.
Note: WTP = willingness to pay.

Note: W.B rural stands for West Bank and Gaza rural.

Figure 8.1. Discrete Choice Experiment Results
The DCE-derived valuations for the different $\beta$ have then been introduced into the social rate of return estimation exercise to obtain a more comprehensive estimate of the social returns from a given investment. This estimate is part of the final economic rate of return model to be used to rank all the different proposals received by the Project Implementation Agency for ICF funding. In particular, using responses to the WTP question (through monthly contribution), the team estimated the annual average contribution per type of job that respondents would be willing to pay to implement a job package program.

The overall results are also summarized in the table 8.1. The bottom row indicates the average annual contribution (in US dollars) per job per respondent that is used as extra value (social externality) per US dollar of labor externality created by the project (and measured in the social cost-benefit analysis). This amount is US$0.43. In summary, in the economic analysis, the labor externalities are calculated by adjusting the net salary to their opportunity cost. The social externalities are calculated by adding the weighted average WTP for each US dollar paid to labor externalities. Hence, the average WTP for this project is an additional US$0.43 for each US dollar paid to labor externalities. In other words, the market underprices the social value of jobs by 43 percent on average.\(^{14}\)

**Table 8.1. Willingness to Pay Calculation, Discrete Choice Experiment**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>WTP mean</th>
<th>Standard error</th>
<th>50%</th>
<th>WTP annual per respondent per type of job created (US$)</th>
<th>Number of jobs (Gaza Solar Power project)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth + female + skilled</td>
<td>0.539</td>
<td>2.790</td>
<td>0.304*</td>
<td>0.99</td>
<td>6</td>
</tr>
<tr>
<td>Youth + female + unskilled</td>
<td>0.124</td>
<td>1.031</td>
<td>0.099</td>
<td>0.32</td>
<td>—</td>
</tr>
<tr>
<td>Youth + male + skilled</td>
<td>0.374</td>
<td>1.970</td>
<td>0.223</td>
<td>0.72</td>
<td>170</td>
</tr>
<tr>
<td>Youth + male + unskilled</td>
<td>−0.042</td>
<td>1.165</td>
<td>0.041</td>
<td>0.13</td>
<td>98</td>
</tr>
<tr>
<td>Adult + female + skilled</td>
<td>0.501</td>
<td>2.598</td>
<td>0.284</td>
<td>0.92</td>
<td>10</td>
</tr>
<tr>
<td>Adult + female + unskilled</td>
<td>0.085</td>
<td>1.043</td>
<td>0.085</td>
<td>0.28</td>
<td>—</td>
</tr>
<tr>
<td>Adult + male + skilled</td>
<td>0.336</td>
<td>1.783</td>
<td>0.212</td>
<td>0.69</td>
<td>150</td>
</tr>
<tr>
<td>Adult + male + unskilled</td>
<td>−0.080</td>
<td>1.309</td>
<td>0.030</td>
<td>0.10</td>
<td>207</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: World Bank project team calculations.*

*Note: WTP = willingness to pay; — = 0.*

a. Median values as chosen by the respondents.

For the Gaza Solar Power project, the assumptions used are summarized in table 8.2. Using the total population of West Bank and Gaza (4.5 million) and an average household size of 5.2 persons, the project

\(^{14}\) This value is lower, for instance, for adult, unskilled, male jobs (10 percent additional social externality) but very high, for instance, for youth, skilled, female jobs (99 percent additional social externality).
team estimated the number of contributing households. This calculation was based on the assumption that each household above a certain income (that corresponds to the taxpayers represented by the sample selected for the DCE) would annually contribute for a jobs package until the stated number of jobs (375) per program is reached. After that, they would not be willing to contribute. This approach indicates the annual bundle of contributions that people would be willing to make to realize the jobs potential. Given that each project analyzed (after the Gaza Solar Power project, this methodology has been used to screen other projects) has a different combination of number and type of jobs, the average WTP will vary (some jobs cost more than others) to ensure the value of the bundle remains the same.

Table 8.2. Assumptions Used

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of West Bank and Gaza</td>
<td>4,551,566</td>
</tr>
<tr>
<td>Average household size (number of persons)</td>
<td>5.2</td>
</tr>
<tr>
<td>Total number of households</td>
<td>875,301</td>
</tr>
<tr>
<td>Universe of contributing households</td>
<td>25,212a</td>
</tr>
<tr>
<td>Median number of jobs per respondent (as reported)</td>
<td>375</td>
</tr>
<tr>
<td>Effective number of contributing households</td>
<td>15,249b</td>
</tr>
<tr>
<td>Exchange rate NIS to US$</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: World Bank project team calculations.
Note: NIS = new shkalim.
a. The universe is an estimate of households above a certain income threshold (same socioeconomic group as the respondents) using the Pareto distribution with Gini coefficient parameters.
b. The effective number takes into consideration that each household contributes up to the number of stated jobs.

Table 8.3 presents the final results of the financial, economic, and social analysis. The analysis was based on (a) the approximately 600 jobs created by the Gaza Solar Power project and (b) the assumption that labor in the Gaza Industrial Park will be increased gradually by 10 percent on a semiannual basis with the functioning of the PV system.

Table 8.3. Results of the Gaza Solar Power Project Analysis

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Without externalities</th>
<th>With labor externalities (ERR)</th>
<th>With social externalities (SRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity internal rate of return (percent)a</td>
<td>Without grant or VAT recovery: 6.1 Including grant: 11.1 Including grant and VAT recovery: 12.8</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Economic net present value (discounted at 12%b) (US$ thousands)</td>
<td>n.a.</td>
<td>6,565</td>
<td>11,160</td>
</tr>
<tr>
<td>Benefit-to-cost ratio</td>
<td>n.a.</td>
<td>1.6</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Source: World Bank project team calculations.

Note: ERR = economic rate of return; NA = not applicable; SRR = social rate of return; VAT = value added tax.

a. Calculation of the internal rate of return (IRR) by considering only the project cash flows (excluding the financing cash flows) provides the project IRR. It means the project is funded by a mix of debt and equity. If the project is fully funded by equity, the project IRR and equity IRR will be the same. If the project is fully funded by the debt, equity IRR simply does not exist. If equity IRR is lower than project IRR, the cost of debt exceeds the project’s IRR.

b. Discount is in line with Robalino and Walker (2017).

As reported in table 8.3, the internal rate of return of the project increases from 6.1 percent (see table 8.4) to 19 percent by incorporating the labor externalities (that is, correcting for the opportunity cost of labor) to 23 percent by incorporating the social externalities (as estimated by DCE). The benefit-to-cost ratio rises from 1.6 to 2.0, representing a strong justification for the project based on its economic rationale.

Table 8.4. Main Financial Indicators for the Project

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity IRR without IBRD grant and VAT recovery (%)</td>
<td>6.1</td>
</tr>
<tr>
<td>Equity IRR with IBRD (%)</td>
<td>11.1</td>
</tr>
<tr>
<td>Equity IRR with IBRD and VAT (%)</td>
<td>12.8</td>
</tr>
<tr>
<td>ENPV with IBRD (NIS thousands)</td>
<td>1,091</td>
</tr>
<tr>
<td>ENPV with IBRD and VAT recovery (NIS thousands)</td>
<td>2,599</td>
</tr>
</tbody>
</table>

Source: World Bank project team calculations.

Note: ENPV = economic net present value; IBRD = International Bank for Reconstruction and Development; IRR = internal rate of return; NIS = new shukalim; VAT = value added tax.
Conclusion

This report presents an experimental method that seeks to explain and to estimate the benefits associated with private sector job creation in a fragile setting. The report aims to create continuity with the ideas set forth in the World Development Report 2013 (World Bank 2012). Developing practical ways to incorporate development spillovers from jobs into an operational framework takes the agenda articulated in that volume further.

One of the main conclusions of this approach is that—despite the practical measurement challenges—the concept of jobs spillover and the broader benefits of jobs for societies, beyond the earnings that they bring, seem to be widely accepted. During the DCE exercise, the project team noted that respondents were already predisposed to understand that jobs were more than their monetary benefits. All respondents were ready to pay for something, simply for having a jobs creation project rather than no project. This finding alone, beyond the estimation of the exact quantity of social externality, is a practical validation of the concept of jobs-linked externalities.

Of course, the DCE approach is not a tool that all project teams undertaking economic analysis of projects need to use. This exercise provides an example of an instrument that might be useful for the screening and selection of projects and subprojects under World Bank operations, where the decision on the allocation of funds depends on the rate of return of the investment projects. In the absence of such cost-benefit analysis tools, the allocation would happen only on the basis of the internal rate of return, which, some researchers argue, is insufficient to determine the development effect of projects ex ante.

Of course, there are limitations with the presented approach, such as the cultural factors that might play a significant role in shaping social preferences. Favoritism and majority rules might represent segregation dynamics in some contexts, where people might be willing to trade off jobs for some category of people with other jobs. Similarly, in many countries, an attitude that having women in the workforce is culturally taboo would seem to be reinforced by this type of analysis. This outcome did not arise in the case of West Bank and Gaza, but it could potentially represent a barrier to such an analysis.

In conclusion, this report aims to present a possible practical way of measuring jobs-linked externalities in FCV contexts, where a more significant mismatch between private and social profitability seems to exist. The results of this DCE are currently being applied to all subprojects preselected under the ICF component of the F4J project. This approach has proven to be the best possible choice at the moment in this context. Instead of the standard practice for any economic analysis, this approach is a useful tool that can be improved, updated, or adapted for other countries or FCV contexts.
Appendix A. Economic and Social Analysis

Analysis

Economic analysis considers the many aspects of returns of a project to the whole society. Instead of being performed from the investor point of view (financial analysis), economic appraisals adjust costs and benefits to take account of costs and benefits to the economy at large. Some of the main questions an economic analysis should answer are as follows:

- What is the objective of the project? (Indicating a specific and clear objective serves to reduce the alternative options.)
- What is the counterfactual? What would the context look like without the project?
- Is the project the best alternative, or are there other exclusive alternatives to the project?
- Who is going to benefit, who (if anybody) is going to lose, and who is bearing the cost of the project?
- Is the project sustainable, financially and operationally?
- What is the project’s environmental effect?

After taking into account all the costs and benefits of the project, the analyst must decide whether the project is worth undertaking. After this analysis, the final question must be answered: Is the project worthwhile?

A project must be understood in its context. The relationship of the project to the broader development objectives for the sector and for the country is an integral part of its economic justification. Hence, the analysis should understand how the project is in line with the country’s priorities. At this stage, one must consider job creation policies to address income and distributional priorities and, beyond that, to capture the social spillovers of jobs for the society, particularly when operating in an FCV context. Furthermore, to justify a public provision of goods and services that could otherwise be provided by the market, the analysis should demonstrate that the project addresses a market or institutional failure, or it reduces poverty, or it addresses specific equity needs. Specifically, it should identify the failures that prevent the private sector from producing the socially optimal quantity of the good or service.

Economic analysis also seeks to capture and measure social externalities derived from projects. This approach means using a specific tool to quantify specific social outcomes that benefit the whole society or a group. Capturing social externalities in the economic analysis of an investment in fragile settings is very important, because doing so might provide a justification for an intervention in support to the private sector. Conducting the assessment ex ante, before the investment is carried out, aims to predict the social and environmental consequences that are likely to follow. Hence, measurement is critical to assess specific social outcomes that could be generated from an investment.

However, standard economic analysis does not usually take into account specific social externalities when they are difficult to be monetized or estimated. The innovative aspect of this work is to go beyond standard social cost benefit analysis and propose a measurement of specific jobs-related externalities.

Focus on Employment Benefits

To estimate employment benefits in economic analysis, one must understand the fundamental aspects of how many jobs the project is creating, and, among them, how many jobs is the project displacing. Boardman et al. (2011), Haveman and Farrow (2011), and Greenberg and Robins (2008) focus on policies that increase labor demand. In their work, they argue that some portion of the demand increase will probably reduce unemployment. The reduced unemployment has benefits equal to the wages paid minus the unemployed reservation wages. The reservation wage represents the minimum increase in income that would trigger the decision of a person to start working. This approach derives from the theory of
utility, for which individuals have two possible uses of time: labor and leisure. Each individual will choose the combination of leisure and labor that will satisfy his or her utility. The definition of the reservation wage suggests that the person will not work at all if the value of leisure exceeds the market wage, and the person will enter the labor market if the market wage exceeds the reservation wage. The decision to work, therefore, is based on a comparison of the market wage, which indicates how much employers are willing to pay for an hour of work, and the reservation wage, which indicates how much the worker requires to be convinced to work that first hour. What are the factors that influence the willingness of the worker to sacrifice his or her leisure time to work?

The theory—in the case of a perfect market—suggests that these factors depend on the person’s tastes for work, as well on many other factors. If the labor market is in equilibrium, for the level of wage “w”, then supply and demand for labor perfectly match and people are happy with their situation. Concretely, when labor demand increases as the result of a project, (a) labor will respond by displacing other workers from jobs (displacement happens because the labor employed in the project would be otherwise employed elsewhere); and (b) the decrease in labor supply elsewhere may increase wages for that type of labor (the increased wages will decrease the labor demanded). The wage increase redistributes income from employers to workers, with no net efficiency effects. In this situation of equilibrium, the reservation wage will not be affected by the unemployment rate.

However, in an imperfect market, with high involuntary unemployment, the marginal product of increased employment—which equals the wage in perfect markets—will be higher than the reservation wage (the value of time of the unemployed who get a job is lower than the market wage). In this scenario, the previous jobs vacated by labor taking up the new employment opportunities created by the project will likely be filled from the ranks of the unemployed whose alternative uses of time are low-valued activities. If there is an excess of supply (for different reasons), a number of people will be willing to work but will not have the possibility to work. Their reservation wage will be lower than the market wage (hence, they would be willing to work instead). Furthermore, the distribution of jobs in a market can be imperfect because of market failures (skills mismatch, restriction of movement for labor, and so on), and jobs might not be randomly assigned. Jobs may differentially go to labor suppliers with lower reservation wages. Because such labor suppliers benefit more from work, reservation wages of the newly employed will be lower, and employment benefits higher, if initial unemployment rates are higher (Elkhafif and Daoud 2005).
Appendix B. Literature on Jobs and Well-Being and Jobs and Peace

Literature on jobs and well-being has highlighted the effect of employment on individual well-being, which translates into well-being for individuals’ families and communities. A review of the existing evidence commissioned by the UK Department for Work and Pensions (Waddell and Burton 2006) analyzed the issue in modern societies. This review incorporated an extensive range of evidence, of differing type and quality, from a variety of disciplines, methodologies, and literatures. After evaluating the evidence on the relationship between work, health, and well-being, the authors concluded that “employment is generally the most important means of obtaining adequate economic resources, which are essential for material well-being and full participation in today’s society” (Waddell and Burton 2006, p. vii). In addition, “work meets important psychosocial needs in societies where employment is the norm; work is central to individual identity, social roles and social status; and employment and socio-economic status are the main drivers of social gradients in physical and mental health and mortality” (Waddell and Burton 2006, p. vii).

Early research shows that individual unemployment has a significantly negative effect on subjective well-being (Clark and Oswald 1994). Wilson and Walker (1993) analyze the effects of unemployment on physical health and on mental health. Through panel data estimators in cases where same individuals were followed over time, negative effects of unemployment have been demonstrated (Winkelmann and Winkelmann 1998). Furthermore, the UK Department for Work and Pensions argues convincingly in its Social Cost-Benefit Analysis Framework for the consideration of key wider social effects of employment programs (Waddell and Burton 2006) as follows:

- Increase in individual well-being owing to higher income
- Individual cost of leisure time forgone
- Effects of employment programs on employment rates elsewhere in the labor market
- Social costs associated with funding programs through taxation
- Improved health outcomes
- Reductions in crime rates
- Multiplier effects on the economy
- Value of increased economic output

One finding emerging from the literature of unemployment and well-being is that the nonmonetary cost of unemployment seems to exceed the pecuniary cost. Two main approaches and two different groups of causes have been explored and seem to influence these nonmonetary effects. The first focuses on the psychological effects of unemployment. Goldsmith, Veum and Darity (1996) research youth in the United States and report that lack of employment reduces an individual’s perception of self-worth and self-esteem. Similarly, Goldsmith, Veum and Darity (1996) analyze also the psychological dichotomy of individuals feeling in control of their own lives versus unemployed individuals who tend to have feelings of helplessness and, in general, diminished psychological health. The second type of studies look at unemployment in a social context and focus the analysis on interactions among groups. The effects of unemployment depend on one’s relative income position within one’s reference group (such as neighbors and colleagues) (Clark and Oswald 1994; Luttmer 2005).

More recently, according to the World Development Report 2013 (World Bank 2012), having a job affects key elements of social cohesion, such as trust and civic engagement. Conversely, the quality of these institutions can also affect the creation of and access to jobs. Data from developed countries show that unemployment can cause depression and mistrust and can lead people to abandon community life. Unemployment, particularly among youth and when other social institutions do not function, can turn people to violent or criminal activity to compensate for the absence of voice, self-esteem, and belonging that a job might otherwise provide.
Two papers (Wietzke and McLeod 2013; Wietzke 2014) related to the *World Development Report 2013: Jobs* (World Bank 2012) analyze access to good jobs as an important driver of social cohesion, especially after the Arab Spring and the protest movement of unemployed youth in Organisation for Economic Co-operation and Development countries, which have contributed to reviving the debate. The discussion about employment and well-being is therefore global and, in developing countries, considers the effects at a wider level, especially in FCV settings where jobs and stability have been associated. Similarly, the *World Development Report 2011: Conflict, Security, and Development* (World Bank 2011) contends that unemployment can make conflict more likely. Studies undertaken for that report show unemployment and idleness as risk factors for recruitment into both rebel movements and gangs. But the relationship between unemployment and violence is complex, often militated through social identity and exclusion. Employment is more than just a way of generating income; it carries aspects of identity, status, and social interaction. Another interesting approach (Mishan and Quah 2007) considers benefits under Keynesian unemployment. If a project is financed not by taxes, but by money creation (or, in this case, by external financing, at least partially), then the project may produce Keynesian multiplier effects on employment. In this case, the total earnings increase may be many times the project’s payroll.

Although not exhaustive, the previous references to existing literature underline the prevalent theory that recognizes the employment benefits of job creation to contribute to the well-being of the targeted groups and the whole society. To consider specific social externalities for different groups, one should undertake a further step in the analysis, which constitutes the originality of this approach.
Appendix C. Sample Framework for the Discrete Choice Experiment in West Bank and Gaza

Parameters

This discrete choice experiment survey was intended to solicit opinions of respondents in West Bank and Gaza who have experience and can make judgments on the value of jobs in different settings with various attributes. Therefore, the survey was administered on a sample of the population, representing people who have an understanding of jobs issues and could possibly have an opinion about it while also understanding the rationale and the functioning of the survey. The following parameters were used to define the population of the respondents:

- Decision-makers in government at management and operational levels who are informed on and connected to employment and labor market issues
- Private sector employers and managers
- Community leaders engaged in economic and social development programs
- Organizations engaged in employment
- Experts and consultants engaged in service delivery and development
- Geographical and sector representation

Sample Size and Distribution

The total sample size is 120 respondents, 80 in West Bank and 40 in Gaza. The proposed distribution is depicted in table C.1.

Appendix Table C.1. Proposed Population Distribution

<table>
<thead>
<tr>
<th>Population segment</th>
<th>West Bank</th>
<th>Gaza</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government and managers</td>
<td>15</td>
<td>6</td>
<td>Relevant ministries: national economy, labor, finance and planning, agriculture, social affairs, General Personnel Council (job classification department),</td>
</tr>
<tr>
<td>Private sector enterprises</td>
<td>20</td>
<td>12</td>
<td>Light industries, manufacturing, IT, banks, tourism, agriculture and agribusiness, services</td>
</tr>
<tr>
<td>Private sector associations</td>
<td>10</td>
<td>5</td>
<td>Businessmen, businesswomen, federations, chambers of commerce</td>
</tr>
<tr>
<td>Local NGOs and development programs</td>
<td>10</td>
<td>5</td>
<td>NGOs in service provision, economic and social development</td>
</tr>
<tr>
<td>NGOs, employment projects, and youth and women</td>
<td>10</td>
<td>5</td>
<td>Youth employment projects</td>
</tr>
<tr>
<td>Individual experts and consultants</td>
<td>10</td>
<td>5</td>
<td>Consulting firms, free lancers</td>
</tr>
<tr>
<td>International organization in development (United Nations and others)</td>
<td>5</td>
<td>2</td>
<td>International NGOs working on economic development, poverty, and employment</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
Source: World Bank project team.
Note: IT = information technology; NGO = nongovernmental organization. West Bank includes North, Middle and South areas. Gaza includes North, Gaza city, and South areas.

Sample Unit
Respondents to the questionnaire are as follows:
- Directorates general in relevant ministries, human resource managers, managers of development projects
- Chief executive officers, human resource and administration managers of private and corporate enterprises
- Nongovernmental organization managers, managers of development projects
- Association managers
- Consultants
- International nongovernmental organization directors, project managers

Pilot Survey
Testing the questionnaires has been crucial for two reasons: (a) to ensure that the questionnaires are relevant and understandable and answers are useful to the purpose; and (b) to define the range of cost to each program option. The pilot survey confirmed the relevance and the attributes of the discrete choice experiment.

Survey Administration
The questionnaires should have been administered in the presence of the administrator and respondent. The administrator clearly and thoroughly defined the purpose and showed respondents as an example one of the 12 options in the questionnaire. However, the administrator was not present when the respondents filled in the questionnaire because of confidentiality reasons, but he or she was always available to respond to possible inquiries.

The question of how many new jobs people expect such programs to create offered the following options:\(^5\):

- Less than 300
- Between 300 and 449
- Between 450 and 599
- Between 600 and 749
- Between 750 and 899
- Between 900 and 1,049
- Between 1,050 and 1,199
- Between 1,200 and 1,349
- Between 1,350 and 1,499
- More than 1,500

\(^5\) The median number of jobs people believed a project would create was 375.
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