WORLD BANK GROUP

FIRST initiative
Strengthening Financial Sectors

Toolkit for Impact Evaluation of Public Credit Guarantee Schemes for SMEs (Preliminary)

Madrid – June 2, 2017

Pietro Calice
Finance & Markets Global Practice
World Bank Group

Outline of the Presentation

1. Background.
2. Assessing the Impact of CGSs.
3. Implementing the Impact Evaluation of CGSs.
4. Conclusions and Next Steps.

Outline of the Presentation

1. **Background.**
2. Assessing the Impact of CGSs.
3. Implementing the Impact Evaluation of CGSs.
4. Conclusions and Next Steps.

Why Evaluating the Impact of CGSs?

- CGSs for SMEs have become a common feature of financial systems across the world triggering greater demand for evidence on their impact.

- CGSs are established to improve access to finance for SMEs and in some cases to facilitate other important economic outcomes such as investment and jobs.

- CGS managers and policymakers commonly focus on controlling and measuring inputs and immediate outputs.

- However, it is crucial to assess whether CGSs have achieved their intended goal of improving access to finance for SMEs and contributing to economic development.

- Evaluating a CGS' impact is necessary to account for the effective use of public resources, measure the achievement of the CGS policy objectives, and improve its performance.

The Principles

- The Principles provides an internationally-agreed set of good practices to assist governments in establishing, operating and evaluating public CGSs for SMEs.

- The Principles cover four key areas: (i) legal and regulatory framework, (ii) corporate governance and risk management, (iii) operational framework, and (iv) monitoring and evaluation.

- Monitoring and evaluation is a critical component of a CGS to report and communicate its activities and achievements.

- Principle #16 calls for a systematic and periodic evaluation of CGSs' performance, including their impact (financial additionality and economic additionality).

Key Issues with Evaluations

- Measuring impact is not an easy task and involves a trade-off among evaluation techniques and budget considerations, among others.

- Methods:

  - Quantitative approach vs. qualitative approach.
  - Quantitative methods can provide clearer answers but are technically challenging.
  - Qualitative techniques are easier to implement but cannot provide reasonable estimates of the impact.

- Budget:

  - Evaluations can be costly, especially data collection, and therefore to be justified stakes should be high.
  - Little should be known about the CGS impact.

Purpose of the Toolkit

- To identify a set of uniform methodologies for assessing the financial and economic impact of public CGSs as systematically and objectively as possible.

- To ensure comparability across time and countries, and therefore provide a global reference for impact evaluations of CGSs.

- To provide guidance to CGS managers, policymakers and stakeholders on how to design and implement an effective and efficient CGS impact evaluation.

- The Toolkit reviews a variety of impact evaluation techniques and proposes a selection process for an impact evaluation framework that is rigorous, credible, and at the same time practical, straightforward, and relatively inexpensive to implement.

Outline of the Presentation

1. Background.
2. **Assessing the Impact of CGSs.**
3. Implementing the Impact Evaluation of CGSs.
4. Conclusions and Next Steps.

What is Impact Evaluation?

- The impact evaluation of a CGS involves evaluating the changes in the outcomes of interest (e.g. loan amount, interest rate, maturity, collateral, investment, sales, export, jobs) that can be attributed to the CGS itself.

- The key challenge in carrying out a meaningful impact evaluation is to identify the causal relationship between the CGS and the outcomes of interest.

- Any methodology chosen must estimate what the outcome would have been for eligible SMEs had they not participated in the scheme.

- Two types of impact evaluations:
  - **Prospective evaluations** developed at the same time as the CGS is being designed and are built into its implementation.
  - **Retrospective evaluations** assess impact at a given time after the CGS has started implementation, generating treatment and control groups ex-post.

Causal Inference and Counterfactual

- One can think of the impact of a CGS as the difference in the outcome of interest for the same SME with and without the guarantee.

- Yet measuring the same firm in two different states at the same time is impossible: commonly referred as “counterfactual problem”.

- In practice a key objective of the impact evaluation is to identify a group of guaranteed SMEs (treatment group) and a group of non-guaranteed SMEs (control group) that are statistically identical in the absence of the CGS intervention and estimate the average impact of the CGS.

- Impact evaluation techniques deal with these issues and allow the identification of a proper counterfactual group to compare with the group of SMEs that were granted a credit guarantee.

Experimental Approach

- Randomized experiments, also known as randomized control trials (RCT), are the best methodology for ensuring a valid counterfactual.
- The essence of a RCT is the random assignment of the CGS's participants to a fraction of the eligible participants.
- This ensures by design that CGS participation is the only reason different average outcomes are observed in the two groups.
- Encouragement design (ED) is a form of RCT where some SMEs selected randomly receive incentives to participate in the CGS that is available to all eligible firms.
- Such encouragement can be in the form of information, marketing materials, or financial incentive (for example, reducing the cost of applications for a random subset of SMEs to the CGS).

Regression Discontinuity

- Regression discontinuity design (RDD) is a methodology used to assess interventions such as CGSs that have a continuous eligibility index with a clearly defined cut-off score to determine who is eligible and who is not.

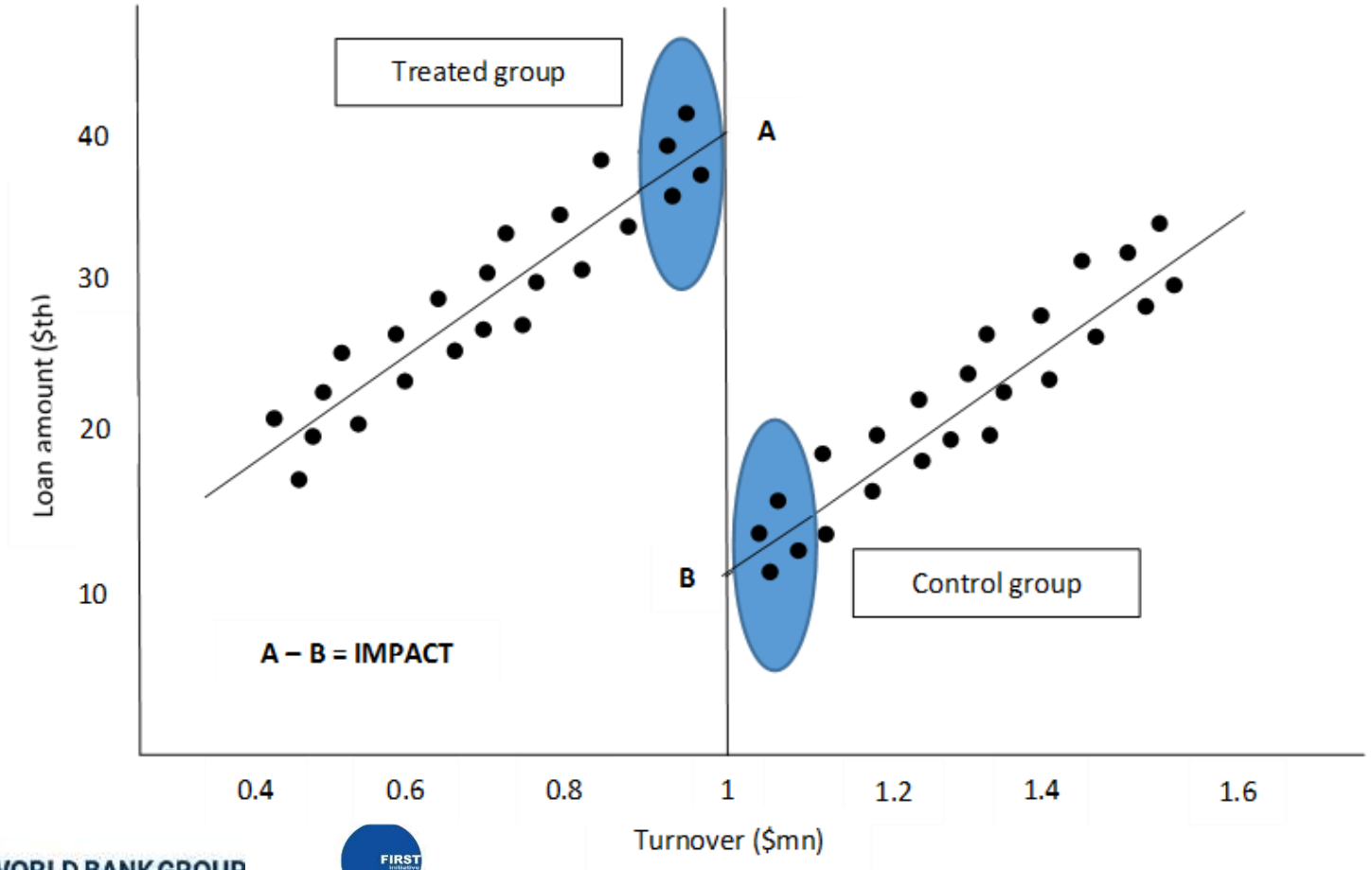
- RDD takes advantage of existing program rules, and thus allows it to be evaluated without changing program design. It can be a retrospective evaluation tool as it does not rely on random assignment.

- CGSs for SMEs generally aim to improve access to credit for eligible firms below (or above) a certain threshold in terms of number of employees, sales, total assets, credit scoring or a combination of these criteria.

- This exogenous cut-off can provide a design that allows the identification of the intervention's impact, since SMEs at the margin of the threshold would not differ substantially.

Regression Discontinuity (2)

Example: Credit amounts in relation to firm size (post-intervention)



WORLD BANK GROUP

FIRST initiative
Strengthening Financial Sectors

Propensity Score Matching

- Propensity Score Matching (PSM) can be used to identify a control group that is statistically equivalent to the treatment group.
- Because there are many dimensions (firm size, profitability, leverage, urban-rural location, etc.) along which the evaluator might like to match firms, PSM can be used to incorporate many different characteristics.
- PSM takes a number of measures and combines them into a single score, the propensity score, which represents the predicted probability of participating in the CGS.
- The impact of the intervention will then be measured as the difference in outcomes between the treated group and the control group.
- Requires a large dataset to allow for a large enough set of usable data points, including baseline data.

Difference-in-Difference

- The difference-in-difference (DID) method compares the changes in the outcome of interest over time between treatment group and the control group.

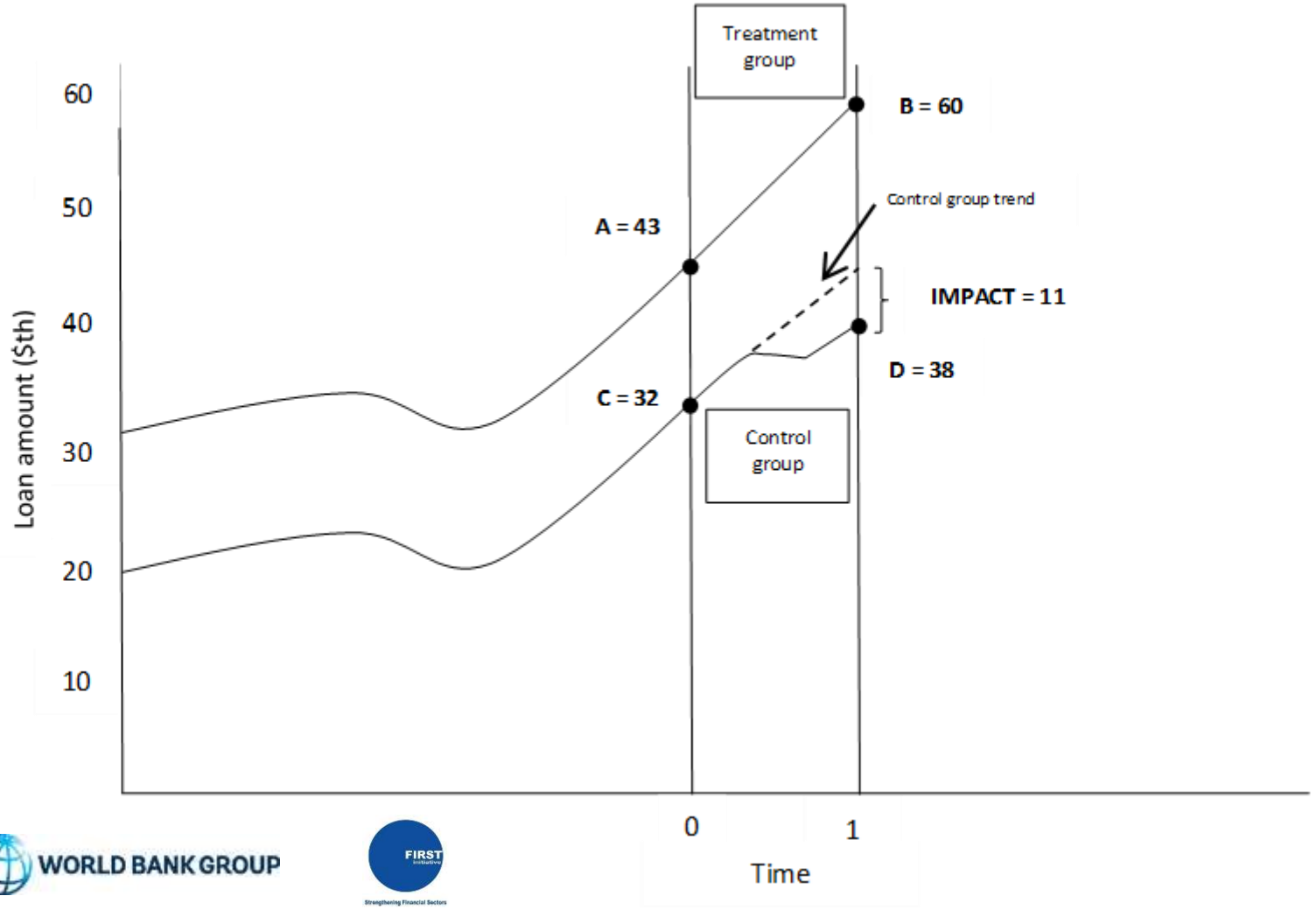
- The DID compares the before-and-after-changes in the outcome of interest, e.g. credit amount, for the group of firms that benefited from the guarantee to the before-and-after-changes of a group that did not participate in the scheme.

- The counterfactual being estimated here is the changes in credit amount for the comparison group.

- The use of the DD estimator requires baseline data, that is, data on the outcomes of interest for both the treatment group and the control group are needed from periods before and after the intervention.

Difference-in-Difference (2)

Difference-in-difference (DID)



Outline of the Presentation

1. Background.
2. Assessing the Impact of CGSs.
3. **Implementing the Impact Evaluation of CGSs.**
4. Conclusions and Next Steps.

Identifying the Evaluation Questions

- The research question should draw from the mandate and policy objectives of the CGS described in its mission statement.

- Typically, the mission statements of CGSs around the world emphasize access to finance for SMEs that lack adequate collateral (financial additionality). However, many CGSs have broader developmental objectives such as supporting job creation and promoting investment (economic additionality).

- The fundamental impact evaluation questions for a CGS can, therefore, be formulated as:

  - **What is the effect of the CGS on access to finance for SMEs?**

  - **What is the effect of the CGS on economic development?**

Theory of Change

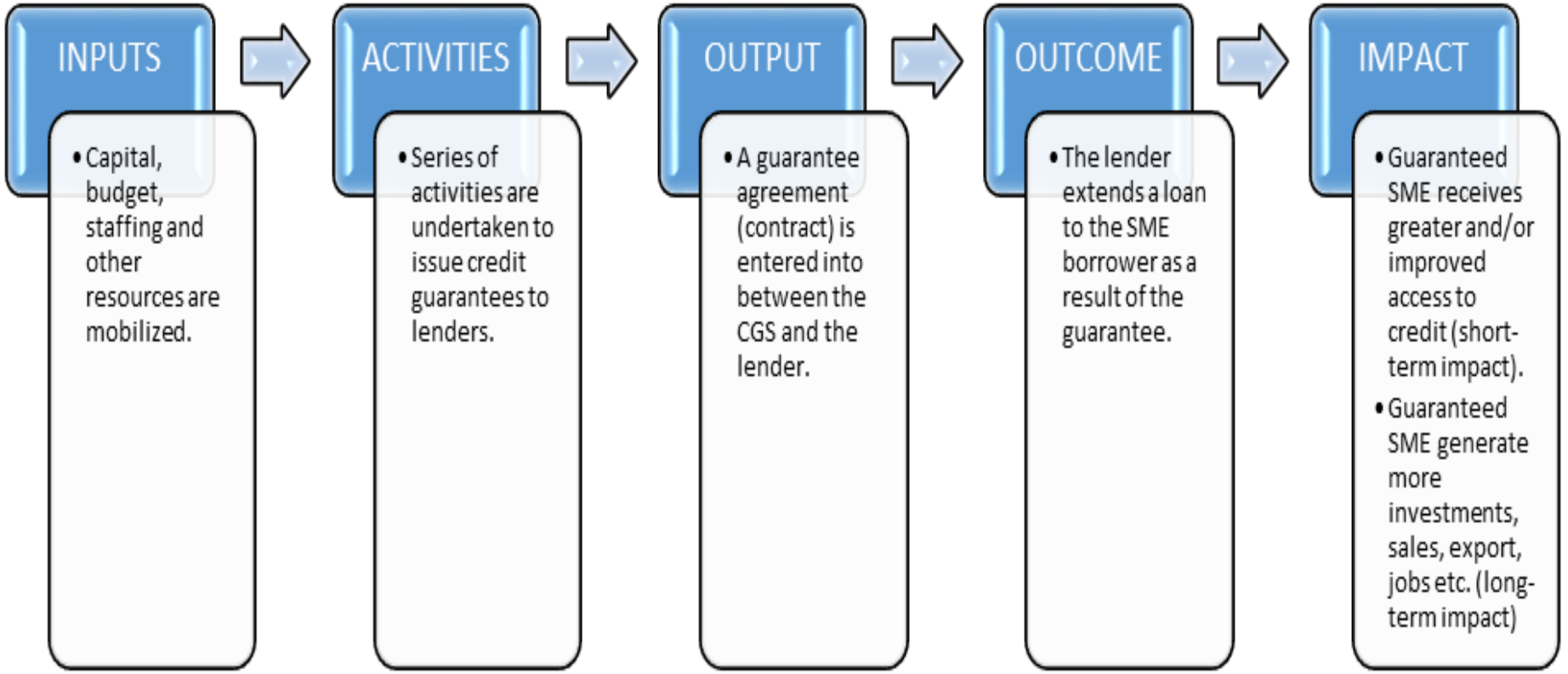
- Describes how an intervention is supposed to deliver the desired result, highlighting the causal logic of how and why a particular policy will achieve its intended outcome.

- Typically modelled using a results chain:

  - **Inputs**: resources available to the CGS, including capital, operating budget and staff.
  - **Activities**: work performed to issue credit guarantees, including credit analysis, due diligence, etc.
  - **Outputs**: the tangible service produced by the CGS, i.e. a guarantee agreement or contract.
  - **Outcome**: the result likely to be achieved once the partner lender uses the output, that is the guarantee agreement, and extends a loan to the SME borrower.
  - **Impact**: the guaranteed SME obtains better access to credit than it would otherwise (financial additionality) and contributes more to economic development (economic additionality).

Theory of Change (2)

Simplified Results Chain of CGSs



Hypotheses and Indicators

Hypotheses to be tested

- CGS entails first-time SME borrowers to enter the formal financial system.
- Guaranteed SME borrowers obtain higher volumes of credit than non-guaranteed SMEs.
- Guaranteed SMEs pay lower interest rates than non-guarantees SMEs.
- CGS allows guaranteed SMEs to obtain longer loan maturities than non-guaranteed SME borrowers.
- Guaranteed SME borrowers benefit from reduced collateral requirements.
- Guaranteed SMEs generate more investment, sales, export, jobs etc. than non-guaranteed SMEs.

Outcomes to be measured

- Financial additionality – (short-term impact)
  - Loan amount ($).
  - Loan collateral ($ or %).
  - Loan interest rate (%).
  - Loan tenor (months/years).
- Economic additionality (long-term impact)
  - Firm employment (number).
  - Firm investment ($).
  - Firm sales ($).
  - Firm exports ($).

WORLD BANK GROUP

FIRST initiative
Strengthening Financial Sectors

Selecting the Method

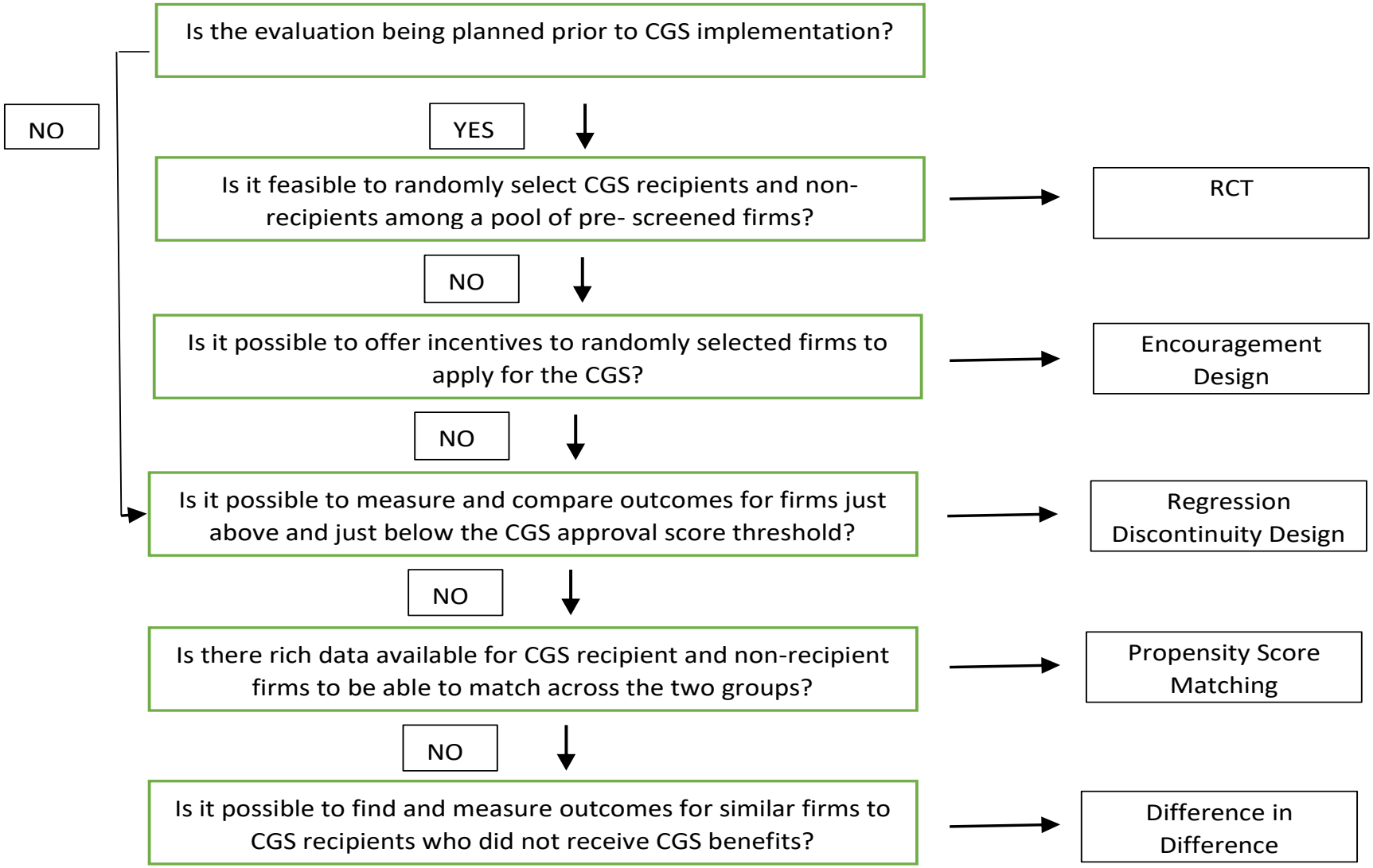
- The overarching principle guiding the selection of the impact evaluation method is that the operational rules of the CGS determine the evaluation methodology.

- CGSs' operational rules typically cover eligibility, allocation rules and the phasing in of beneficiary SMEs.

- The key rules generating a roadmap to a method for identifying comparison groups relate to:

  - **Targeting criteria**: generally a continuous indicator or cut-off point which is cheap and easy to collect (firm size and/or firm age; credit score).
  - **Capital**: limited financial resources generally imply excess demand.
  - **Timing**: CGSs typically phase implementation of their programs over time due to administrative and resource constraints (first-come, first-served).

Hierarchy of Methods



Data

- Impact evaluations require collecting data not only for recipients of CGSs but also non-recipients.
- Use of monitoring data for impact evaluation should be seriously considered as it can substantially reduce the cost of the impact assessment.
- More difficult in the case of portfolio approach yet CGSs should obtain relevant data from lenders as a part of regular reporting.
- Monitoring data must be complemented by administrative data or data collected and maintained by other public agencies and private actors.
- CGSs should explore options to systematically access and obtain relevant administrative data in a standardized format on the basis, for example, of memoranda of understanding or other relevant instrument.

Setting Up the Evaluation Team

- The impact evaluation of a CGS should be seen as a partnership between the CGS's main shareholder (the government), CGS management, and the evaluator.

- Evaluations should ideally be conducted by external evaluators to ensure objectivity and credibility yet the process should not be divorced from the policy relevance and strategic importance of the assessment and from the operational rules of the CGS.

- To manage and coordinate the evaluation process, CGSs should establish independent evaluation units reporting directly to the board of directors.

- Evaluation capacity varies greatly from country to country and implementation (or part of it) of the evaluation may require outside assistance.

Time and Budget

- The timing of data collection should take into account how much time is needed after a guarantee is granted for results to become apparent.
- Evaluations and data collection will have to be calibrated to the objectives of the evaluation and the outcome indicators of interest.
- As a general guidance, it is recommended to measure financial additionality assessment after 1-2 years and economic additionality after 2-3 years.
- Should also time production of results to inform policy making and synchronize data collection and analysis to key decision-making points.
- While expensive, international experience shows that impact evaluations constitute only a small fraction of overall CGS budgets.
- Financing for impact evaluations can come from many sources.

Outline of the Presentation

1. Background.
2. Assessing the Impact of CGSs.
3. Implementing the Impact Evaluation of CGSs.
4. **Conclusions and Next Steps.**

Next steps

- Secretariat to finalize the draft Toolkit by end-June after peer review process.
- Draft Toolkit to be reviewed and approved by Task Force by end-July.
- Public consultation in August-September.
- Secretariat to incorporate all relevant comments by mid-October.
- Task Force to approve the final document by end-October.
- Dissemination in November.

MUCHAS GRACIAS

Pietro Calice
Senior Financial Sector Specialist
Finance & Markets
T +1 (202) 458-1246
F +1 (202) 522-2151
E pcalice@worldbank.org
W www.worldbank.org
1818 H Street, NW, Washington, DC 20433 USA