

Readme file- Reproducible package

Readme File for Replication of the Paper:

“Do State SME Programs Work? Evidence from Loan Subsidies and Credit Guarantees in Kazakhstan”

This readme file was created to guide the reproducibility package for the analysis of the paper.

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Overview

This paper evaluates the employment and sales effects of two widely used SME financial support instruments, interest rate subsidies and credit guarantees, using administrative program data from Kazakhstan matched to the universe of firms. Utilizing staggered intervention rollouts and a difference-in-differences design, the analysis reveals significant differences across program designs and local labor market conditions. Interest rate subsidies, despite their large fiscal cost, fail to improve firm performance: beneficiary firms experience a 10 percent decline in employment and no significant increase in sales. Fully subsidized credit guarantees show no discernible effects on sales or employment. By contrast, a market-aligned, fee-based partial credit guarantee that ensures lender and borrower risk-sharing increases employment by 24 percent and sales by 21 percent, with particularly stronger effects among women-led and formally incorporated businesses. These employment gains are substantially larger in regions with higher pre-program unemployment, suggesting that well-designed credit guarantees are more likely to generate net job creation in labor markets with greater slack, rather than merely reallocating workers across firms. Overall, the findings underscore the pivotal role of incentive-compatible program design and local labor market conditions in determining the effectiveness of SME finance policies.

Data Availability

This research utilizes data from proprietary sources that are not publicly available.

Instructions for Replicators

Code

As the reader can see from the folder structure section, there is a Code folder with one (1) Stata do-file script named analysis.do. This do-file produces all the tables and figures of the paper.

Computational settings

The script was developed and tested using **Stata version MP 18.0** and **QGIS version 3.38.1** on a **64-bit Windows system** (MinGW environment) with **32 GB of RAM (32000 MB)**. While the script ran successfully in this environment, we expect it would also run with less RAM.

Under the described settings, the reproducibility package takes around **15 minutes** to run from beginning to end.

List of Exhibits

Exhibit name	Output file name
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel A: Avg revenues (DOG pgm)	Fig1_lavg_rev_DAMU.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel B: Avg employment (DOG pgm)	Fig1_lavg_emp_DAMU.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel C: Total employment (DOG pgm)	Fig1_ltotal_emp_DAMU.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel D: Avg revenues (SG pgm)	Fig1_lavg_rev_GUAR.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel E: Avg employment (SG pgm)	Fig1_lavg_emp_GUAR.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel F: Total employment (SG pgm)	Fig1_ltotal_emp_GUAR.gph

Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel G: Avg revenues (IRS pgm)	Fig1_lavg_rev_SUBS.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel H: Avg employment (IRS pgm)	Fig1_lavg_emp_SUBS.gph
Figure 1. Dynamic impact of DOG, SG, and IRS programs. Panel I: Total employment (IRS pgm)	Fig1_lttotal_emp_SUBS.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel A: Number of DOG program loans by type of entity	AppFigA1_A.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel B: Number of SG program loans by type of entity	AppFigA1_B.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel C: Number of IRS program loans by type of entity	AppFigA1_C.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel D: Number of DOG program loans by gender	AppFigA1_D.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel E: Number of SG program loans by gender	AppFigA1_E.gph
Appendix Figure A1. Number of loans of state-support programs over time. Panel F: Number of IRS program loans by gender	AppFigA1_F.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel A: Avg revenues (cells without IRS or SG pgms)	AppFigA2_lavg_rev_RC1.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel B: Avg employment (cells without IRS or SG pgms)	AppFigA2_lavg_emp_RC1.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel C: Total employment (cells without IRS or SG pgms)	AppFigA2_ltot_emp_RC1.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel D: Avg revenues (cells without SG pgm)	AppFigA2_lavg_rev_RC2.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel E: Avg employment (cells without SG pgm)	AppFigA2_lavg_emp_RC2.gph
Appendix Figure A2. Dynamic impact of DOG program (restricting sample of industry-location cells). Panel F: Total employment (cells without SG pgm)	AppFigA2_ltot_emp_RC2.gph
Table 1: Summary statistics of treated industry-location cells prior to the programs	Tables.xlsx, sheet(T1)

Table 2: Factors predicting the timing of participation in the PCG and IRS programs	Tables.xlsx, sheet(T2)
Table 3: Impact of the PCG program on firm performance of treated industry-location cells	Tables.xlsx, sheet(T3)
Table 4. Impact heterogeneity of the state government programs on firm performance of treated industry-location cells	Tables.xlsx, sheet(T4)
Table 5. Impact heterogeneity of the state government programs by regional ex-ante unemployment rates	Tables.xlsx, sheet(T5)
Appendix Table A1. Placebo test	Tables.xlsx, sheet(RC1)
Appendix Table A2. Impact of the PCG program on firm performance (robustness checks)	Tables.xlsx, sheet(RC2)

Notes: All tables and figures are found in the /Results folder, and are produced when running the script /Code/analysis.do.

Folder structure

~\Replication Package

- Code
 - analysis.do
- Data
 - damu_pgm.dta
 - guar_pgm.dta
 - master_allpgms.dta
 - subs_pgm.dta
- Readme
 - Readme.docx
- Results
 - Fig1_lavg_rev_DAMU.gph
 - Fig1_lavg_emp_DAMU.gph
 - Fig1_ltotal_emp_DAMU.gph
 - Fig1_lavg_rev_GUAR.gph
 - Fig1_lavg_emp_GUAR.gph
 - Fig1_ltotal_emp_GUAR.gph
 - Fig1_lavg_rev_SUBS.gph
 - Fig1_lavg_emp_SUBS.gph

- Fig1_lttotal_emp_SUBS.gph
- AppFigA1_A.gph
- AppFigA1_B.gph
- AppFigA1_C.gph
- AppFigA1_D.gph
- AppFigA1_E.gph
- AppFigA1_F.gph
- AppFigA2_lavg_rev_RC1.gph
- AppFigA2_lavg_emp_RC1.gph
- AppFigA2_ltot_emp_RC1.gph
- AppFigA2_lavg_rev_RC2.gph
- AppFigA2_lavg_emp_RC2.gph
- AppFigA2_ltot_emp_RC2.gph
- Tables.xlsx
- Temp