# Dallas Small Business Continuity Fund Impact Evaluation

*Leveraging a lottery to understand small business relief during COVID-19*

## Target a Priority Outcome

The Small Business Administration (SBA) aims to restore small business revenue and sustain jobs after disasters. SBA is interested in understanding the impact of community-based approaches to help small businesses respond and recover to the COVID-19 pandemic.[1] In spring 2020, the Dallas City Council used CARES Act[2] funding to set up the Small Business Continuity Fund (SBCF) to help small businesses affected by the economic fallout from the COVID-19 pandemic. OES partnered with the City of Dallas to understand how receiving a grant or a loan affected businesses' ability to generate revenue and remain open, as well as the differential impact of such funding for women-owned and black- and hispanic-owned businesses.

## Design Evaluation

The funding was made available to Dallas businesses both as grants of up to 10,000 USD and as low-interest (0-1%) loans of up to 50,000 USD. In anticipation of oversubscription, the City of Dallas designed a lottery system to disburse the funds fairly, while targeting the areas of the city most in need.

OES worked with the City of Dallas to understand the lottery implementation in detail. This understanding allowed OES to approximate the conditions of a randomized controlled trial by reconstructing the assignment probabilities implied by the lottery procedure.

The grant and loan lotteries randomly assigned a rank to each business application[3] that passed initial eligibility checks. That rank determined the order in which the City of Dallas sent businesses invitations to follow up with additional documentation for funding. In the loan lottery, each of the 396 business applications had the same probability of being ranked 1 through 396. The grant lottery prioritized applications from businesses located in "high-poverty or low-income areas," which were designated on a map the city provided to applicants. In total, 585 applications from non-targeted areas and 471 applications from targeted areas were entered into the grant lottery. By simulating the lottery process 10,000 times, OES calculated each business's probability of being invited to submit documentation for funding on a specific day in 2020. These probabilities are illustrated in Figure 1.

**Figure 1.** Daily probability of having received an invitation to submit documents for funding by lottery. Solid green line is for grants in non-targeted areas, dotted blue line is for grants in targeted areas, dashed red line is for loans

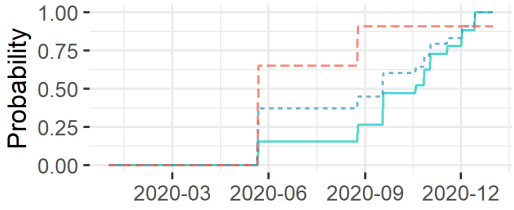



Figure 1 shows some applications have a higher daily probability of invitation than others — in June 2020, for example, grant applications from non-targeted areas had a 15% chance of being invited, whereas those from targeted areas had a 37% chance of being invited, and loan applications had a 65% probability of invitation. OES used inverse propensity weights to correct for this skew in the group composition over time, which might have otherwise biased the estimation. The figure also illustrates that, due to new funds becoming available in the fall, almost all applicants had been invited to submit documents by the end of 2020. Estimation of the program impact thus relies on comparing not-yet invited businesses to those same businesses after they were invited to submit documentation for funding.

[1] https://www.sba.gov/document/report-enterprise-learning-agenda.

[2] The Coronavirus Aid, Relief, and Economic Security (CARES) Act was enacted to combat the effects of the COVID-19 pandemic on the economy, and established the Paycheck Protection Program and the Economic Injury Disaster Loan (EIDL) Advance grant program.

[3] 11/396 business applications were moved from the loan to the grant lottery. Additionally, some businesses entered both lotteries or even entered the same lottery twice, so that multiple applications might be associated with one business. These processes are accounted for in the simulations that calculate the inverse propensity weights used in the analyses.

While almost all applicants were invited to submit documents for funding, many invited applicants did not receive funding because they did not follow up, withdrew, or were found ineligible. The timing of invitations is randomized, but whether and when a business receives funds depends on an unobserved process: businesses must accept the invitation and return the requested supplementary documents, these must be reviewed by program staff at the City, additional reviews and follow-up may be conducted, then the request for funds needs to be processed through the financial department. Unobserved attributes of the business that might help with completing these steps—for instance, having an on-staff accountant to respond to requests—are likely correlated with the business's ability to weather the pandemic. A simple comparison of funded to unfunded businesses would therefore be biased, despite randomization of invitations.

To address this issue, OES first estimated the effect of being invited to submit documents for funding. This estimate is then scaled up by a factor proportional to the rate at which invited businesses were funded, using a procedure called two-stage instrumental variables regression, to estimate the effect of receiving funding among *those businesses that would receive funding if they were invited.*

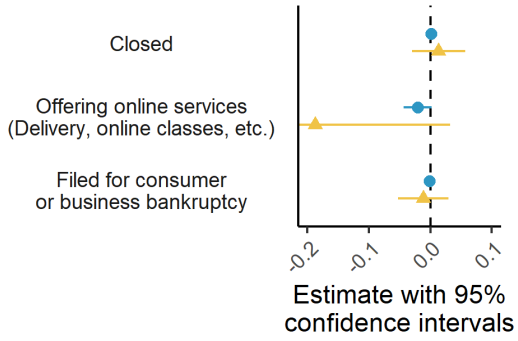
## Analyze Using Existing Data

To assess how funding affected business resilience during the pandemic, OES matched the lottery data with a panel of outcome data for every day in 2020, including federal bankruptcy court data and data from a business rating review platform company on whether businesses were open or closed on a given day and whether they offered virtual services (delivery, online classes and consultations, etc.). This step proved unexpectedly challenging: OES only found 353 businesses in the lotteries that also had a business review account, for a match rate of 25%, and only five business owners who filed for consumer or business bankruptcy, for a match rate of 0.4%. These low match rates, coupled with the fact that not all invited businesses were funded, place important limitations on the analysis.

## Results

OES did not find statistically significant evidence of program impact across any of the main analyses specified in the analysis plan: business closures, provision of online services, and bankruptcy filings (see **Figure 2**). This should not be mistaken with finding evidence that the program did not work: given the data, we cannot rule out either positive or negative program impacts. The inability to say more relates to the statistical uncertainty in the estimates. The large number of applications suggests business owners saw a great need for the funding.

**Figure 2.** The estimated effect of funding on business closures, online services, and bankruptcy. Blue circles show estimated effect of invitation, yellow triangles show estimated effect of funding, among businesses that would receive funding if invited




## Key Takeaways

OES identified at least two directions for future work to improve both program implementation and evaluation. First, building comprehensive and easily accessible datasets on the small business population. Access to EIN, address, and quarterly wage bill of all of the business establishments in a jurisdiction, could allow outreach to be better targeted and support additional research on employment impacts of relief programs. Second, prioritizing additional evaluation activities on how to increase follow-up by relief applicants. Most businesses (56%) who were invited to submit documents for funding simply did not follow up or withdrew. Reducing this rate might improve the efficiency of relief fund distribution and enhance ability to measure its impact.