Who Is Screened Out? Application Costs and the Targeting of Disability Programs

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Introduction

- Social Security Disability Insurance (SSDI or DI) provides cash benefits and Medicare to disabled workers in the United States.
- In 2015, it covered nearly 9 million workers.
- Additionally, Supplemental Security Income (SSI) offers cash welfare and Medicaid eligibility to nearly 7 million low-income, disabled Americans, including 1.4 million children in 2015.
- This program strictly targets those with severe disabilities who are unable to work.

This Paper

- This paper examines the role of application costs in the targeting of disability programs and importantly looks at trade-offs between screening through ordeal and targeting.
- The authors use a novel dataset of 1.6 million initial disability applications to estimate the effect of application costs on the composition of program participants using a natural experiment that lead to closing of some field offices that assisted in the application process.
- They find that application costs are a key determinant of program participation, and that the targeting of disability programs is sensitive to the stringency of the application process.

Institutional Background and Data I

- The Social Security Administration (SSA) administers both SSDI and SSI.
- The application process is complex and time-consuming, requiring extensive documentation and medical evidence.
- The authors use a novel dataset of 1.6 million initial disability applications to estimate the effect of application costs on the composition of program participants.
- The dataset includes all initial disability applications filed between 2006 and 2015, and includes detailed information on the characteristics of applicants, the medical evidence they submit, and the outcomes of their applications.
- They use variables such as disability type and severity, age, education, and languages spoken to estimate the effect of application costs on the composition of program participants.

Institutional Background and Data II

- importantly, study channels through which application costs affect the composition of program participants, use office wait times, processing times and staff counts to quantify congestation at neighborhood offices.

First Stage

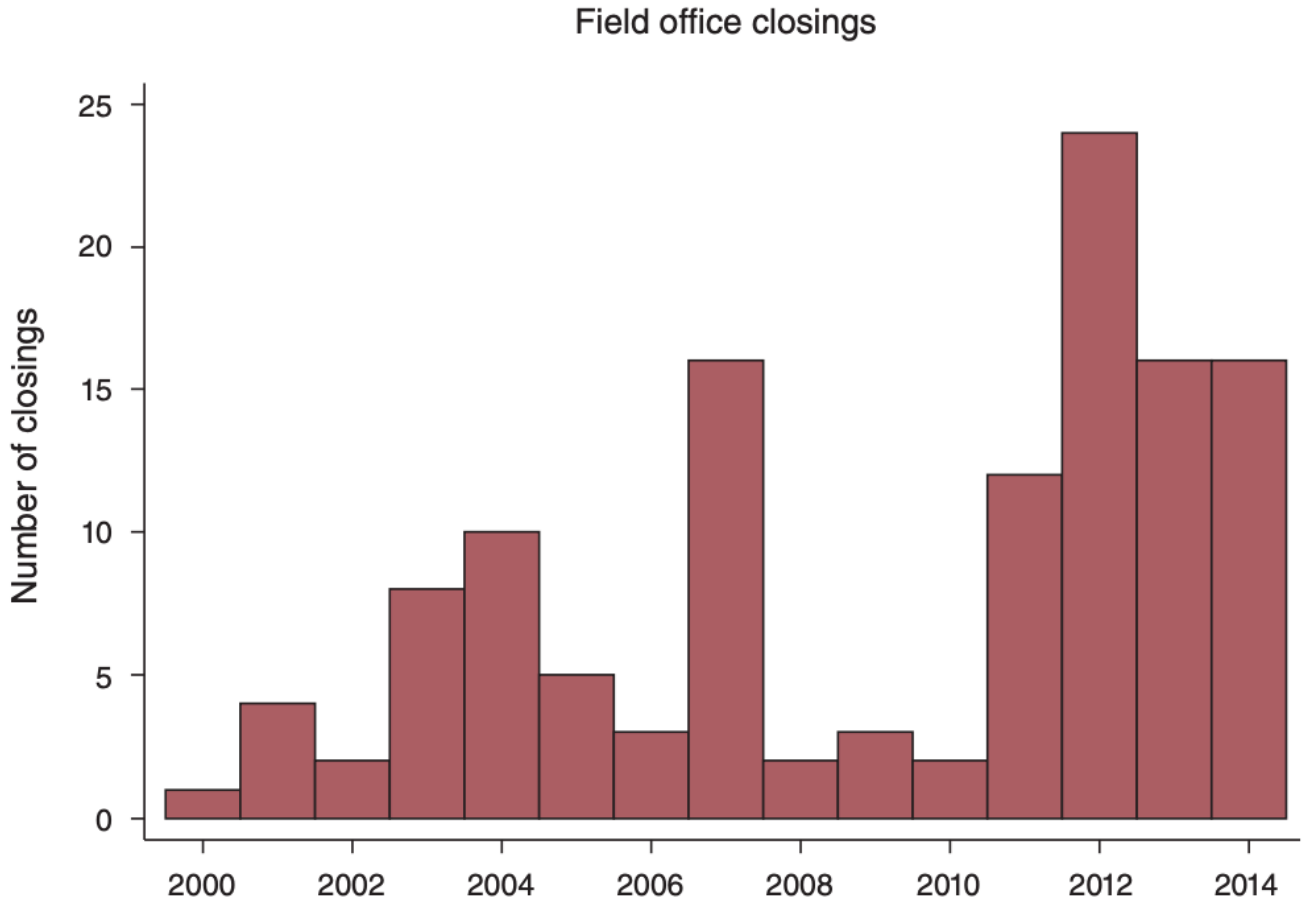

FIGURE 1. TIMING OF FIELD OFFICE CLOSINGS

Zip Codes

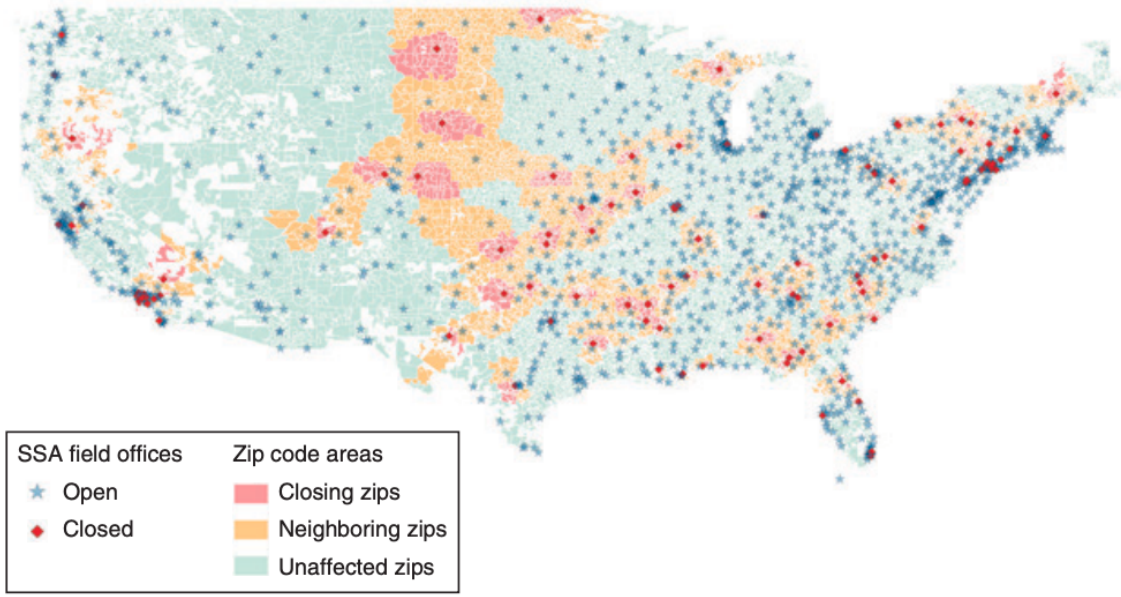

FIGURE 2. MAP OF FIELD OFFICE CLOSINGS AND ZIP CODE CLASSIFICATION IN THE UNITED STATES

Empirical Strategy

- The SSA office closing in a zip code is considered as a treatment. However, there is some selection in that. Instead, timing of closing is fairly random.
- The zip codes that experience current closings are treatment, and the zip codes that experience closing after 2 years are control.
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Effect on Applications and Allowances

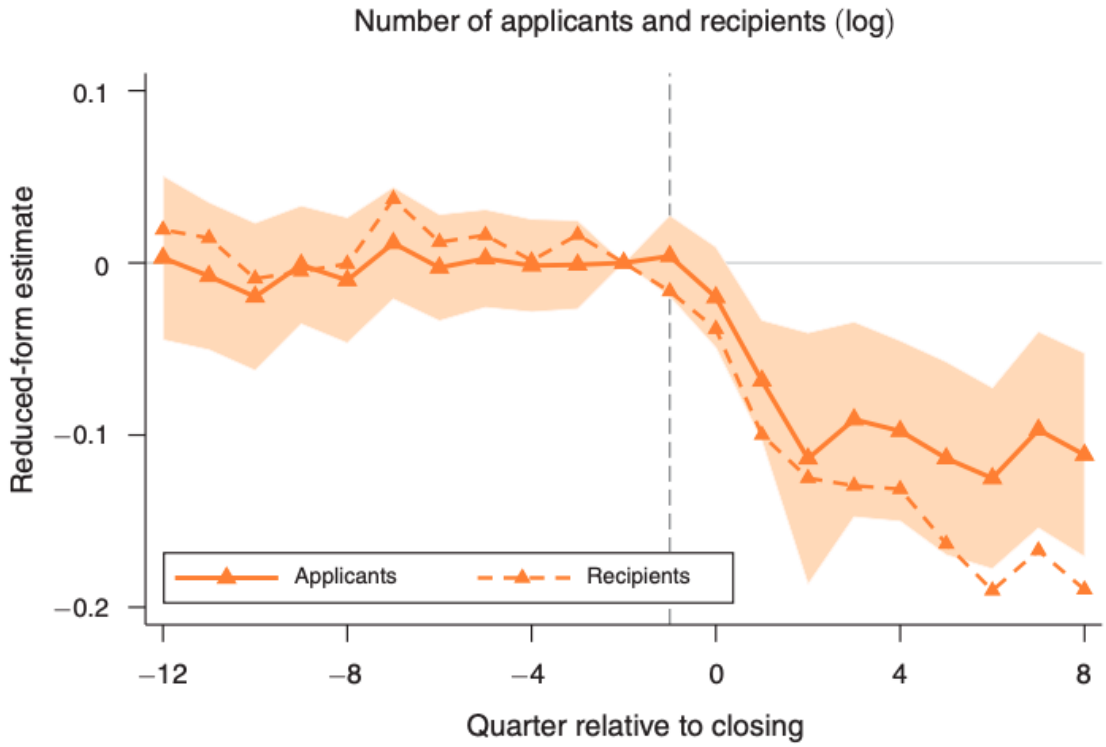

FIGURE 3. EFFECT OF CLOSINGS ON NUMBER OF DISABILITY APPLICATIONS AND ALLOWANCES

Larger decline in recipients than applicants implies that closings disproportionately discourage applications by those who would have been allowed by SSA adjudicators if they had applied.

Who is Screened Out?

TABLE 2—ESTIMATES OF THE EFFECT OF CLOSINGS ON DISABILITY APPLICATIONS

	Count (log)			Proportion/average		
	Point estimate	Standard error	Control count	Point estimate	Standard error	Control mean
All	−0.100	(0.0288)	39.7			
Severity						
Low	−0.0483	(0.0295)	18.0	0.0278	(0.00444)	0.425
Medium	−0.338	(0.0503)	6.9	−0.0274	(0.00402)	0.184
High	−0.173	(0.0367)	8.5	−0.0118	(0.00318)	0.209
Very high	−0.0327	(0.0271)	6.2	0.0114	(0.00239)	0.183
Disability type						
Mental	−0.115	(0.0356)	12.3	−0.00522	(0.00376)	0.289
Musculoskeletal	−0.0576	(0.0298)	10.2	0.0101	(0.00255)	0.276
Other physical	−0.109	(0.0283)	17.2	−0.00485	(0.00353)	0.435
Education (years)				0.0666	(0.0201)	11.8
High school dropout	−0.142	(0.0275)	9.9			
High school graduate	−0.0740	(0.0280)	19.4			
College graduate	−0.0496	(0.0288)	2.4			
Pre-application earnings ($)				413.1	(202.0)	$15,362
$0–$5,000	−0.112	(0.0338)	18.7			
$5,000–$15,000	−0.0887	(0.0331)	8.9			
$15,000–$25,000	−0.0928	(0.0294)	5.0			
$25,000+	−0.0414	(0.0343)	7.0			
Language						
Speaks English	−0.0621	(0.0976)	24.9	0.00719	(0.0172)	0.623
Does not speak English	−0.107	(0.0530)	14.7			
Age (years)				0.469	(0.118)	40.7
18–34	−0.126	(0.0339)	7.9			
35–49	−0.130	(0.0292)	12.9			
50+	−0.0489	(0.0262)	13.1			
Applicant behavior						
Files online	0.135	(0.0682)	2.8	0.0374	(0.00741)	0.075
Files in person or by phone	−0.194	(0.0319)	36.9			
Provides email address	0.260	(0.0795)	4.2	0.0455	(0.00953)	0.111
No email address	−0.158	(0.0309)	35.4			
Has representation	0.264	(0.0711)	2.2	0.0325	(0.00545)	0.054
No representation	−0.139	(0.0297)	37.4			

Notes: The first set of columns presents estimates of the effect of field office closings on log applications by subgroup, specifically estimates of β from equation (5), which is a regression of log applications for a subgroup on zip code fixed effects, quarter-by-state fixed effects, a treatment indicator, event quarter indicators, an interaction

Who is Screened Out?

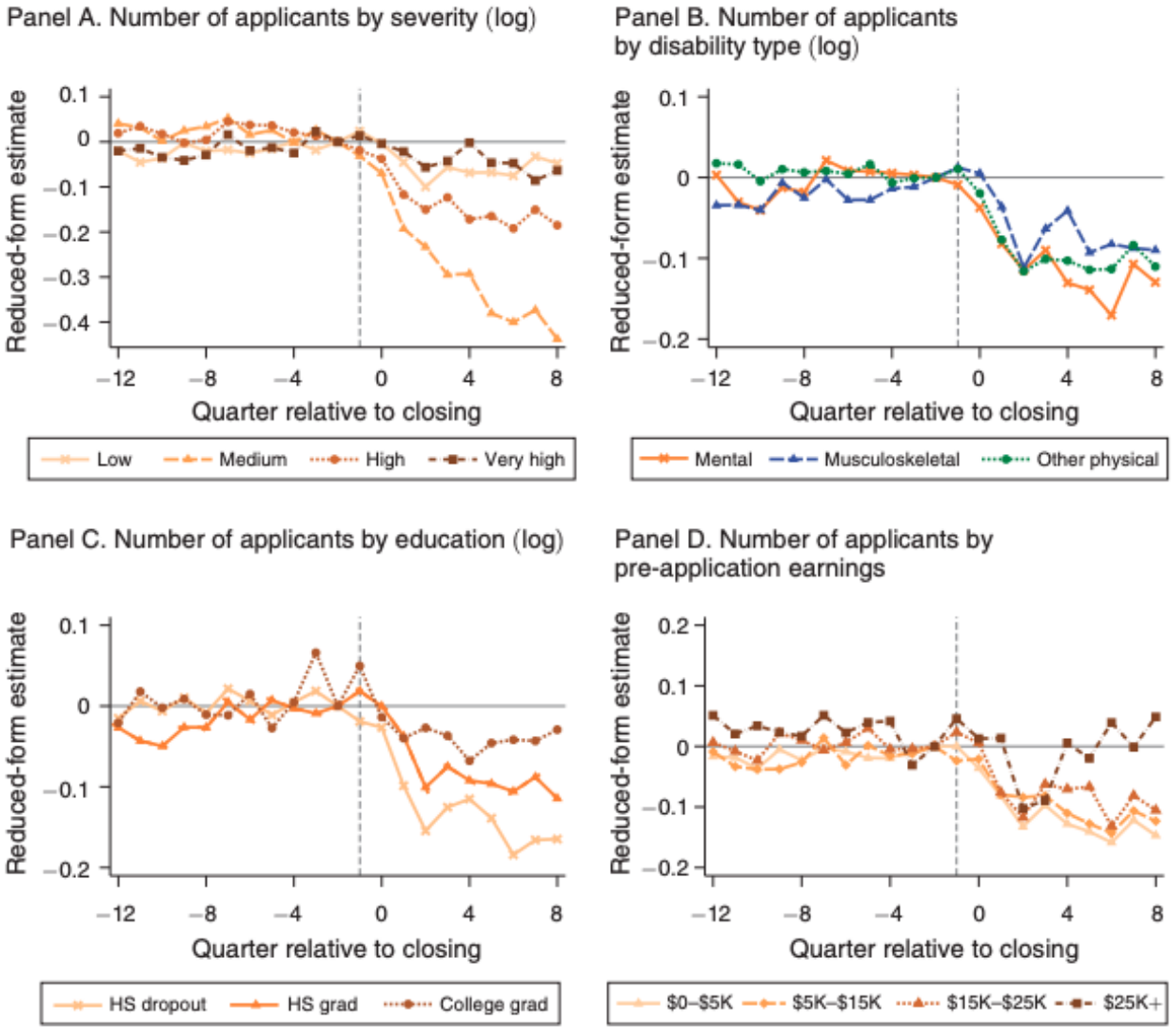

FIGURE 4. EFFECT OF CLOSINGS ON NUMBER OF DISABILITY APPLICATIONS, BY SUBGROUP

Notes: The figure plots estimates of the effect of the closing on applications by subgroup in closing zip codes in the event quarters before and after the closing. Specifically, the figure plots estimates of δ_τ coefficients from equation (4), which is a regression of the number of disability applicants by subgroup on zip code fixed effects, quarter-by-

Who is Screened Out?

TABLE 3—ESTIMATES OF THE EFFECT OF CLOSINGS ON DISABILITY RECEIPT

	Count (log)			Proportion/average		
	Point estimate	Standard error	Control count	Point estimate	Standard error	Control mean
All	−0.155	(0.0301)	21.7			
Severity						
Low	N/A			N/A		
Medium	−0.319	(0.0484)	6.9	−0.0417	(0.00689)	0.329
High	−0.165	(0.0351)	8.5	−0.00376	(0.00532)	0.359
Very high	−0.0287	(0.0255)	6.2	0.0455	(0.00647)	0.312
Disability type						
Mental	−0.190	(0.0358)	6.9	−0.0120	(0.00338)	0.289
Musculoskeletal	−0.129	(0.0354)	5.1	0.00279	(0.00325)	0.252
Physical	−0.132	(0.0280)	9.7	0.00924	(0.00386)	0.459
Education (years)				0.0197	(0.0281)	11.9
High school dropout	−0.180	(0.0314)	5.1			
High school graduate	−0.153	(0.0321)	10.6			
College graduate	−0.0931	(0.0278)	1.6			
Pre-application earnings ($)				516.2	(249.3)	$18,328
$0–$5,000	−0.154	(0.0338)	9.0			
$5,000–$15,000	−0.168	(0.0384)	4.5			
$15,000–$25,000	−0.134	(0.0327)	3.1			
$25,000+	−0.0948	(0.0312)	5.1			
Age (years)				0.510	(0.145)	43.0
18–34	−0.210	(0.0336)	3.1			
35–49	−0.255	(0.0386)	6.1			
50+	−0.0908	(0.0279)	9.3			

Notes: The first set of columns presents estimates of the effect of field office closings on log allowances by subgroup, specifically estimates of β from equation (5), which is a regression of log allowances for a subgroup on zip code fixed effects, quarter-by-state fixed effects, a treatment indicator, event quarter indicators, an interaction between the treatment indicator and a "post" indicator (coefficient of interest β), and an interaction between the treatment indicator and an "event year zero" indicator. The second set of columns presents estimates of β for the same equation, where the dependent variable is the proportion of recipients with that characteristic (for indicator variables like severity, disability type, applicant behavior, and language) or the average of the characteristic across recipients (for continuous variables like education, earnings, and age). Earnings and education estimates include only adult allowances. The "control count" is the number of individuals in the control zip code in a category, and "control mean" is the mean characteristic in the control group. "Low" severity is not applicable at the allowance

Robustness I

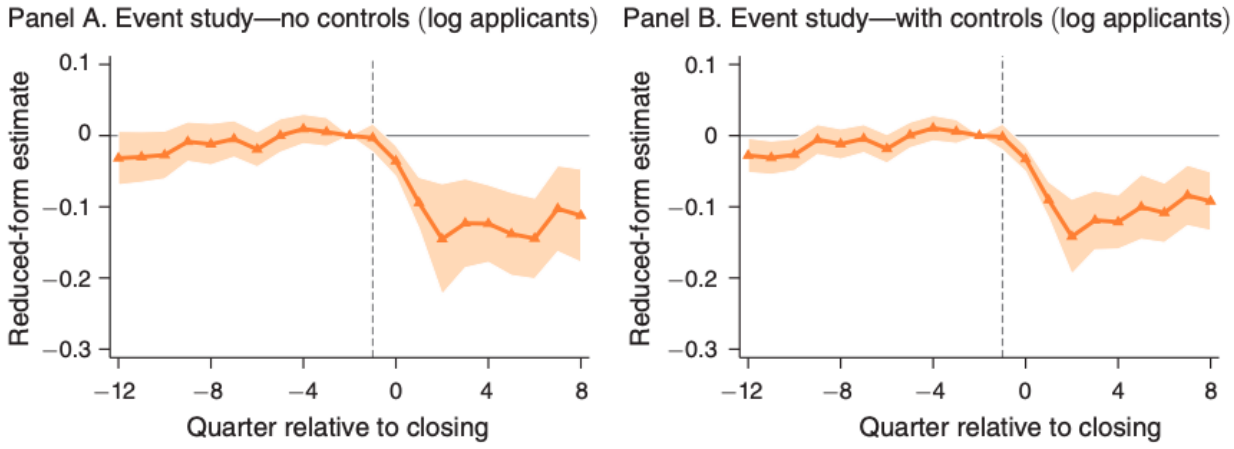

FIGURE 5. ROBUSTNESS: EVENT STUDY SPECIFICATIONS, WITH AND WITHOUT UNAFFECTED ZIP CODES

Notes: The figure plots estimates of the effect of the closing on applications in closing zip codes in the event quarters before and after the closing, using an event study specification with and without controls. Specifically, the figures plot estimates of δ_τ coefficients from equation (6), which is a regression of the number of disability applications on zip code fixed effects, quarter-by-state fixed effects, and event quarter indicators. The dependent variable is the log number of disability applications. The left graph includes only closing zip codes, while the right graph also includes unaffected zip codes, which help to identify the quarter-by-state fixed effects. For both, the sample contains only zip codes with an average of at least four disability applications per quarter in the year before the closing. Regressions are weighted by application volume in the year before the closing.

For control (unaffected) zip codes, all D_{ct}^{τ} are set to zero. For treatment (closing) zip codes, the D_{ct}^{τ} are equal to one when the quarter is τ quarters after (or before, if negative) the closing

Mechanisms

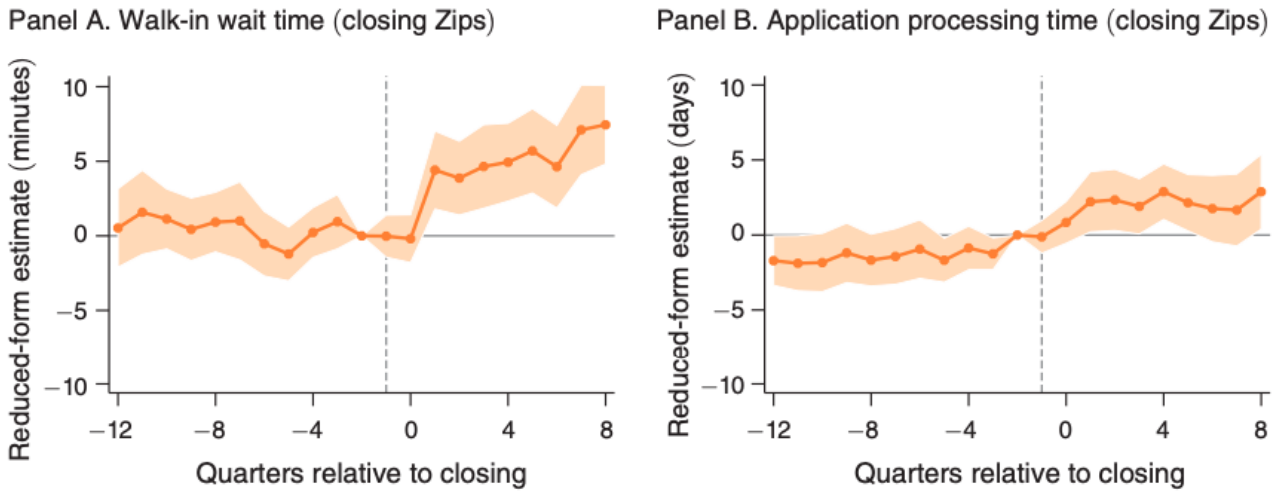

FIGURE 6. EFFECT OF CLOSINGS ON MEASURES OF FIELD OFFICE CONGESTION

Notes: The figure plots estimates of the effect of the closing on walk-in wait time (left) and application processing time (right) in closing zip codes in the event quarters before and after the closing. Specifically, the figures plot estimates of δ_τ coefficients from equation (4), which is a regression of the dependent variable on zip code fixed effects, quarter-by-state fixed effects, a treatment indicator, event quarter indicators, and event quarter indicators interacted with the treatment indicator. The dependent variable is average walk-in wait time in minutes at the nearest field office (left) or the average number of days it takes the field office to process a disability application (right). The shaded region is the 95 percent confidence interval. The sample is zip codes in which the nearest office closes after 2000 and that have an average of at least four disability applications per quarter in the year before the closing. Regressions are weighted by application volume in the year before the closing.

Mechanisms

TABLE 4—ESTIMATES OF THE EFFECT OF CLOSINGS ON TYPES OF APPLICATION COSTS

	Closing zip code			Neighboring zip code		
	Point estimate	Standard error	Control mean	Point estimate	Standard error	Control mean
Applications (log)	−0.100	(0.0288)	39.7	−0.0460	(0.0134)	42.5
Recipients (log)	−0.155	(0.0301)	21.7	−0.0928	(0.0146)	22.6
Congestion measures						
FO processing time	3.426	(0.732)	28.8	1.764	(0.515)	28.4
Apps with processing time > 40 days	5.052	(1.551)	7.3	3.245	(0.739)	7.6
Walk-in wait times	4.842	(1.199)	13.6	3.211	(0.991)	16.3
Travel cost measures						
Driving time	10.43	(1.691)	23.5			
Driving distance	12.83	(1.423)	24.3			
Transit time	37.45	(6.617)	89.4			

Notes: The table presents estimates of the effect of field office closings on log applications, log allowances, and measures of application costs for closing and neighboring zip code. Specifically, the table presents estimates of β from equation (5), which is a regression of the dependent variable on zip code fixed effects, quarter-by-state fixed effects, a treatment indicator, event quarter indicators, an interaction between the treatment indicator and a "post" indicator (coefficient of interest β), and an interaction between the treatment indicator and an "event year zero" indicator. For the neighboring zip code regressions, the treatment indicator is replaced by an indicator for being a neighboring zip code of that closing. A closing zip code is a zip code in which the nearest office closes. A neighboring zip code is a zip code in which the nearest office is the second or third closest office of a closing zip code. Walk-in wait time is the average time (in minutes) that a visitor to a field office waits to be seen. Processing time is the number of days it takes a field office to send an application to a state disability determination services office. Driving time, driving distance, and public transit time to the nearest field office are calculated using Google Maps with the trip originating from the zip code centroid. The sample is zip codes in which the nearest office closed after

Cost and Benefits of Closings

TABLE 6—WELFARE CALCULATIONS: SOCIAL COSTS AND BENEFITS OF FIELD OFFICE CLOSINGS

	Scenario 1 (current): M, H, VH deserving		Scenario 2: H, VH deserving		Scenario 3: VH deserving	
	$\gamma = 1$	$\gamma = 4$	$\gamma = 1$	$\gamma = 4$	$\gamma = 1$	$\gamma = 4$
Cost of closing (thousands)						
Lower receipt for deserving in closing zip codes	\$2,200	\$22,400	\$900	\$8,600	\$100	\$900
Lower receipt for deserving in neighboring zip codes	\$8,700	\$86,700	\$3,800	\$38,000	\$200	\$1,800
Higher applicant time and earnings decay	\$1,900	\$1,900	\$1,900	\$1,900	\$1,900	\$1,900
Total	\$12,800	\$111,000	\$6,600	\$48,500	\$2,200	\$4,600
Benefits of closing (thousands)						
Benefit savings from discouraging undeserving	\$0	\$0	\$2,000	\$2,000	\$3,300	\$3,300
Administrative savings from processing fewer applicants	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400
Administrative savings from closing field office	\$500	\$500	\$500	\$500	\$500	\$500
Application cost savings from discouraged applicants	\$500	\$500	\$500	\$500	\$500	\$500
Total	\$2,400	\$2,400	\$4,400	\$4,400	\$5,700	\$5,700
Ratio of costs to benefits	5.4	46.7	1.5	11.2	0.4	0.8

Notes: The table presents estimates of costs and benefits of field office closings, in thousands of dollars. Scenario 1 uses current government eligibility standards in which severity groups "medium (M)," "high (H)," and "very high (VH)" (defined in Section IV) are considered deserving of disability benefits. Scenario 2 uses higher severity standards in which only severity groups "high" and "very high" are considered deserving. Scenario 3 uses the highest severity standards in which only severity group "very high" is considered deserving. On the costs side, "lower

where γ is coefficient of relative risk aversion.

Welfare Calculations

TABLE 7—WELFARE CALCULATIONS: NET CLOSING COSTS FOR ALL FIELD OFFICES

	All offices	Actual 118 closings	Lowest cost 118 closings	Future 20 low-cost closings
Average closing characteristics				
Average net cost of closing (thousands)	$9,048	$6,941	$2,652	$1,515
Number of closing zip codes	25	17	23	20
Number of neighboring zip codes	144	109	119	109
Number of applicants in closing zip codes	1,486	978	571	362
Number of applicants in neighboring zip codes	8,151	7,059	2,823	2,126
Number of offices within 20 km	4.9	10.5	4.8	2.0
Average applicant characteristics				
Years of education	11.2	11.2	11.3	11.2
Fraction DI adult	46%	45%	47%	48%
Fraction SSI adult	41%	42%	42%	43%
Fraction SSI child	13%	13%	11%	10%
Fraction low severity	47%	46%	45%	45%
Fraction medium severity	17%	16%	17%	19%
Fraction high severity	20%	20%	19%	17%
Fraction very high severity	16%	18%	19%	20%

Notes: The table presents the average net cost of closing for different sets of offices, calculated using the method from Table 6, but using a baseline year of 1999 for the number of applications. The sets of offices are as follows: all SSA field offices that were open in 1999 ("all offices"), the 118 field offices that were closed between 2000–2014 ("actual 118 closings"), the 118 offices with the lowest closing costs as calculated in 1999 ("lowest cost 118 closings"), and the 20 offices that were still open in 2014 and have the lowest closing costs as estimated using the methodology in Section VIC ("future 20 low-cost closings"). The table also reports summary statistics for each set of offices using 1999 as the baseline year. The closing costs for the actual closings are lower than those estimated in Table 6 because the number of applications nearly doubled between 1999 and the baseline years used in Table 6. See Section VIC for a detailed explanation of calculations.

Conclusion

- Closings of SSA offices reduces the number of applicants by 10% and the number of recipients by 16%.
- These effects persistent even after 2 years of closing.
- The closings disproportionately discourage applications by applicants with lower education and pre-application earnings levels and moderately to severe conditions.
- Importantly, this increase in hassles costs reduces both production and targeting efficiency.
- The field office closings exacerbate the very inequality that disability programs are intended to mitigate.