Initial empirical results from SCOMP data

September 5, 2025

In this document I will present what we are learnign from out empirical work. This is the continuation of the file which presents the initial datawork.

1 IE 4

1.1 Elasticity of shoppers vs non-shoppers

The following table shows the coefficients of a conditional logit to test whether customers that ask for an external offer are more price elastic. Odd (even) columns run the specification on the sample with(without) external offers, which we think of as shoppers (non-shoppers). Once we control by the company fixed effects the shopers are more elastic.

Table I: Conditional Logit: Price Elasticity by External Offer Status

	(1) Has External	(2) No External	(3) Has External (FE)	(4) No External (FE)	(5) m5	(6) m6
accepted						
val_uf_pension1	7.227***	7.924***	7.996***	7.689***		
	(0.077)	(0.192)	(0.082)	(0.210)		
Nrisk	0.555***	0.284***	0.148***	0.254***	0.126***	0.283***
	(0.010)	(0.012)	(0.033)	(0.046)	(0.037)	(0.049)
val_uf_pension_z					2.586***	2.077***
					(0.022)	(0.039)
N	207700	45580	207700	45580	207700	45568
Log likelihood	-26295.01	-7517.02	-24596.21	-7095.09	-18225.26	-6097.02
Chi-squared	20103.57	3677.36	23501.18	4521.20	36243.08	6509.03

Standard errors in parentheses.

Models 1-2: Without firm fixed effects.

Models 3-4: With firm fixed effects.

*** p¡0.01, ** p¡0.05, * p¡0.10

1.2 Firms using more-less external offers

Figure 1

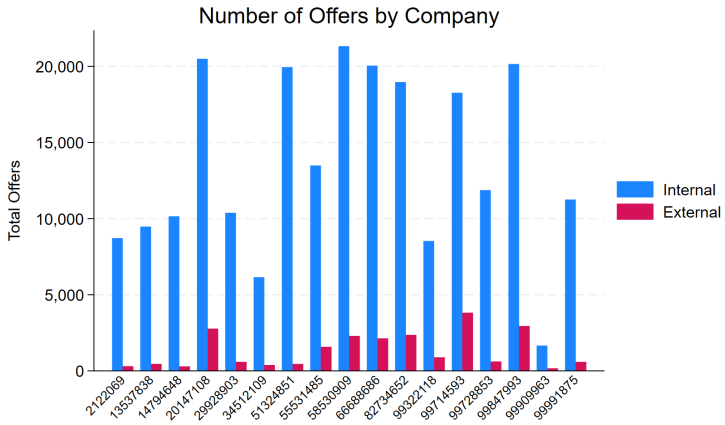
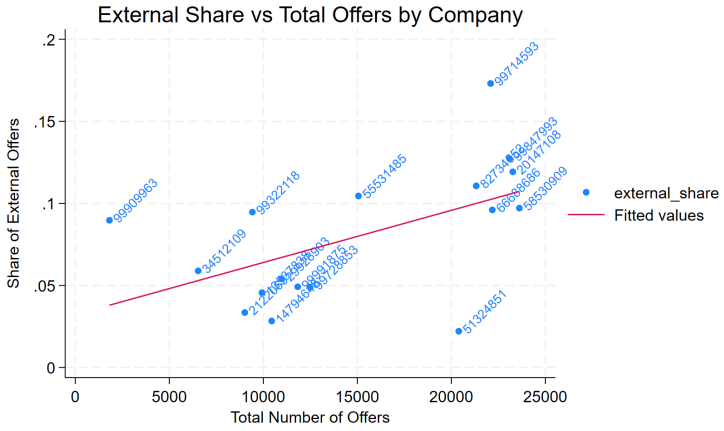
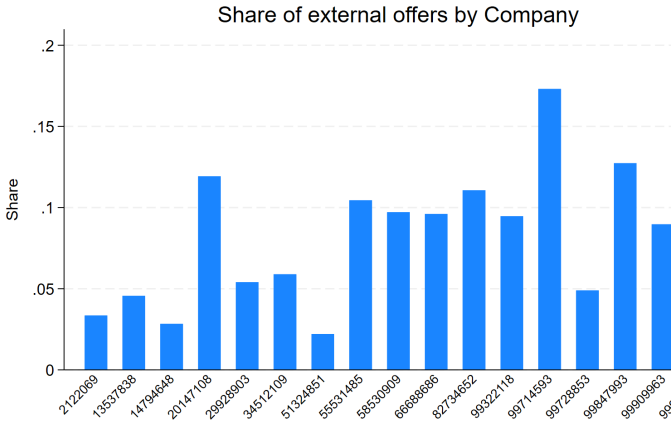


Figure 2





1.3 Negative correlation credit rating and offers

Offers with better credit ratings make worse offers, this could reflect cost issues or a less elastic demand.

Figure 3

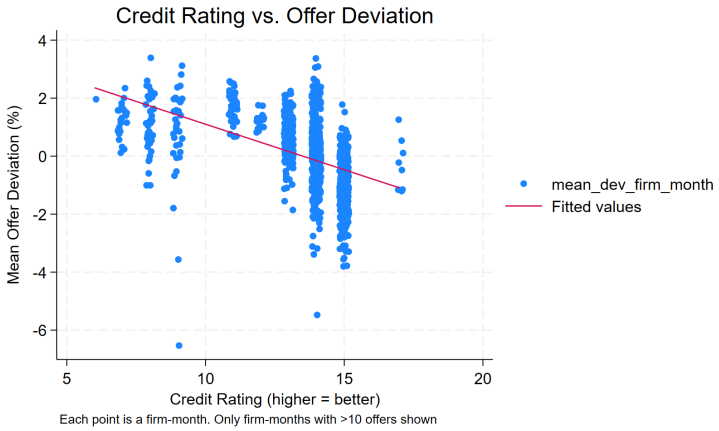
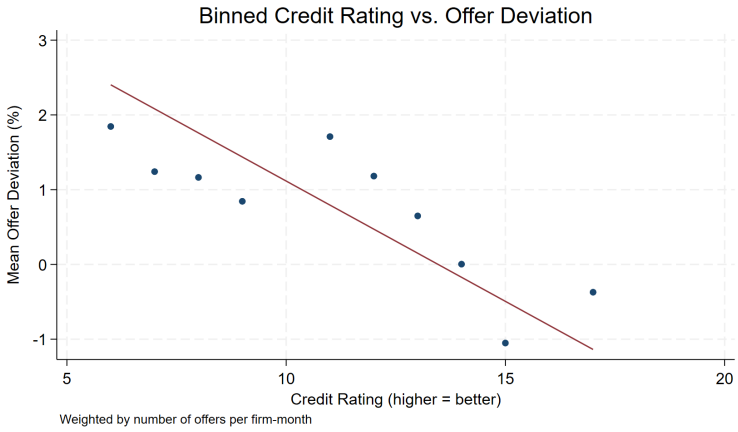
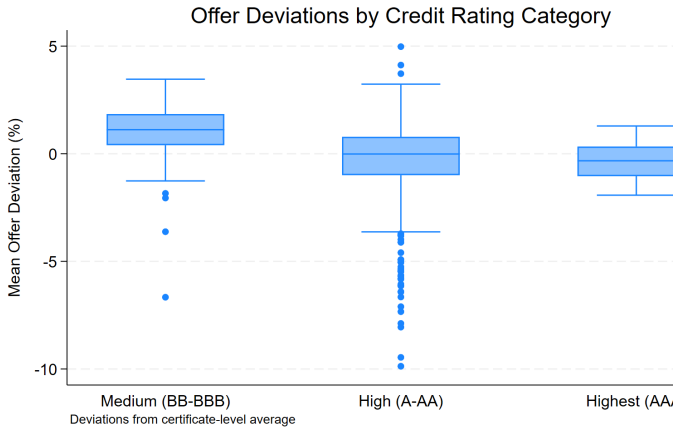


Figure 4





Correlation: Coefficient: -0.322 (SE: 0.017)

1.4 Intermediaries and external offers

Figure 5 shows the distribution of external offers by intermediary use, the table below show the ttest of means, where buyers with intermediaries receive .48 extra external offers, and this number is significant.

Figure 5

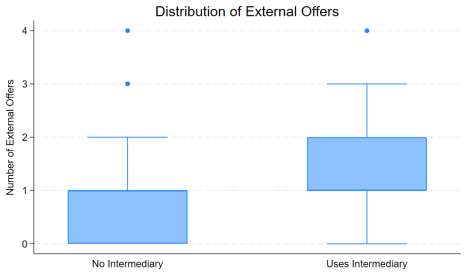


Table II: Search Intensity by Intermediary Use

	No Intermediary	Has Intermediary	Difference	t-statistic	p-value
n_ext	1.08645	1.566799	-.4803491***	-25.95889	2.3e-146
N	21956				

1.5 Intermediaries and external offers(2)

Table 3 shows the number of external, initial offers received and the probability of choosing one of the external offers by intermediary status. Buyers with intermediaries accept external offers at a significantly higher rate than those without them.

Table 4 shows the number of external offers and the probability of choosing one of the external offers by intermediary type. Buyers with agents receive the least amount of external offers but are the most likely to choose one of them reflecting that they buy from the agent's company. Whereas buyers with advisors receive more offers but are sligthly less likely to buy from them. Figure 7 shows similar data and additionally the probability of choosing an external offer having one in the data, which is similar across groups.

Table III: Search Behavior by Intermediary Status

	mean	sd	min	count
0				
n_external	1.09	1.33	0	10908
n_internal	14.09	7.26	0	10908
n_total_offers	15.17	7.75	1	10908
chose_external	0.61	0.49	0	10908
1				
n_external	1.57	1.41	0	11048
n_internal	14.96	8.81	0	11048
n_total_offers	16.52	9.33	1	11048
chose_external	0.91	0.29	0	11048
Total				
n_external	1.33	1.39	0	21956
n_internal	14.52	8.09	0	21956
n_total_offers	15.85	8.61	1	21956
chose_external	0.76	0.43	0	21956
N	21956			

number of searches

Figure 6 shows the averaage number of external offers by intermediary tye and the distribution of external offers by having/not having an intermediary.

Figure 6

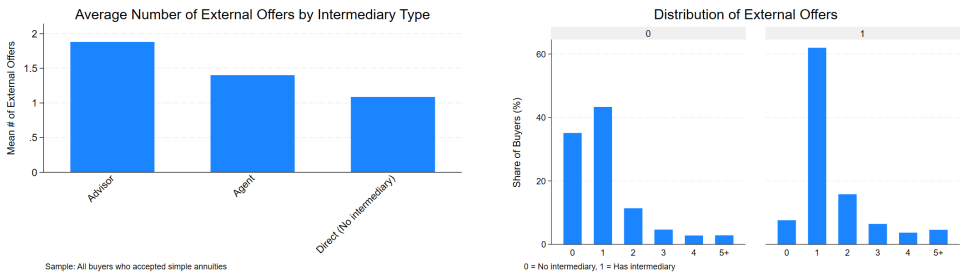


Table IV: External Offers by Intermediary Type

	mean	sd	count
Advisor			
n_external	1.88	1.70	3828
chose_external	0.89	0.31	3828
Agent			
n_external	1.40	1.19	7220
chose_external	0.92	0.28	7220
Direct (No intermediary)			
n_external	1.09	1.33	10908
chose_external	0.61	0.49	10908
Total			
n_external	1.33	1.39	21956
chose_external	0.76	0.43	21956
N	21956		

Figure 7

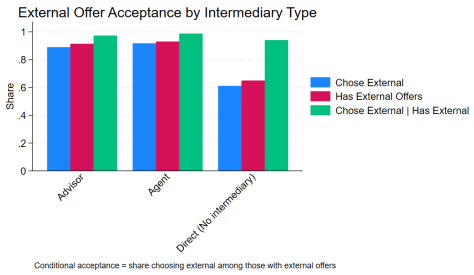


Table 5 shows that intermediariees generally increase the number of external offers, but when desaggregating the effect, agents actually generate less offers and brokers are the ones driving the increase in offers.

Table 6, shows that intermediareis increase the chances of accepting an external offer, conditionaal on having offers, but this is driven mainly by agents and not by brokers.

figure 14 shows that buyers with intermediaries receive more offers along the income distribution.

Figure 8

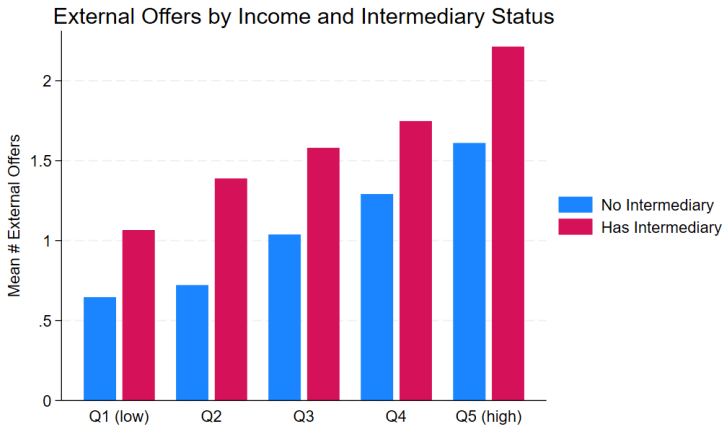


Table V: Effect of Intermediaries on External Offers

	(1)	(2)	(3)	(4)
has_intermediary	0.480***	0.518***		
	(0.018)	(0.018)		
val_uf_saldo_sols		0.000***		0.000***
		(0.000)		(0.000)
year		-0.005		-0.006*
		(0.003)		(0.003)
1.intermediary_id			0.000	0.000
			(.)	(.)
2.intermediary_id			-0.315***	-0.367***
			(0.019)	(0.018)
3.intermediary_id			0.478***	0.434***
			(0.031)	(0.030)
_cons	1.086***	10.763	1.401***	12.666*
	(0.013)	(7.009)	(0.014)	(6.920)
Obs.	21,956	21,956	21,956	21,956
R-squared	0.030	0.093	0.043	0.104

Robust standard errors. Models 2 and 4 include savings amount and year controls.

Table VI: Probability of Choosing External Offer (Conditional on Having External)

	(1)	(2)
chose_external		
has_intermediary	1.245***	
	(0.090)	
A		0.000
		(.)
D		-1.562***
		(0.118)
P		-0.742***
		(0.149)
Constant	2.759***	4.321***
	(0.050)	(0.107)
Obs.	17,289	17,289

1.6 Choose highest offer and Intermediaries

Table 7 shows the share of buyers choosing the highest income, the foregone percentage in case (difference between highest and chosen offer) and the total number of offers by income quintile. Richer individuals receive higher offers but there is no clear pattern in the share of buyers choosing the highest offer or in the foregone percentage over income quintiles. Figure 15 shows the sam pattern of the share of buyers choosing the highest offer by income quintile.

Table VII: Choosing Highest Offer by Income Quintile

	mean	sd	count
Q1(low)			
chose_highest_cert	0.516	0.500	3700
foregone_pct	1.076	1.585	3700
foregone_pct2	2.222	1.626	1791
n_total_offers	7.571	4.231	3700
Q2			
chose_highest_cert	0.550	0.498	3659
foregone_pct	0.674	1.094	3659
foregone_pct2	1.497	1.195	1648
n_total_offers	12.286	4.705	3659
Q3			
chose_highest_cert	0.574	0.495	3644
foregone_pct	0.568	0.999	3644
foregone_pct2	1.332	1.151	1554
n_total_offers	15.037	5.649	3644
Q4			
chose_highest_cert	0.576	0.494	3640
foregone_pct	0.594	1.121	3640
foregone_pct2	1.402	1.355	1542
n_total_offers	17.129	6.833	3640
Q5(high)			
chose_highest_cert	0.505	0.500	3649
foregone_pct	0.782	1.348	3649
foregone_pct2	1.579	1.553	1807
n_total_offers	17.362	7.377	3649
Total			
chose_highest_cert	0.544	0.498	18292
foregone_pct	0.740	1.262	18292
foregone_pct2	1.622	1.436	8342
n_total_offers	13.857	6.920	18292
N	18292		

Figure 9

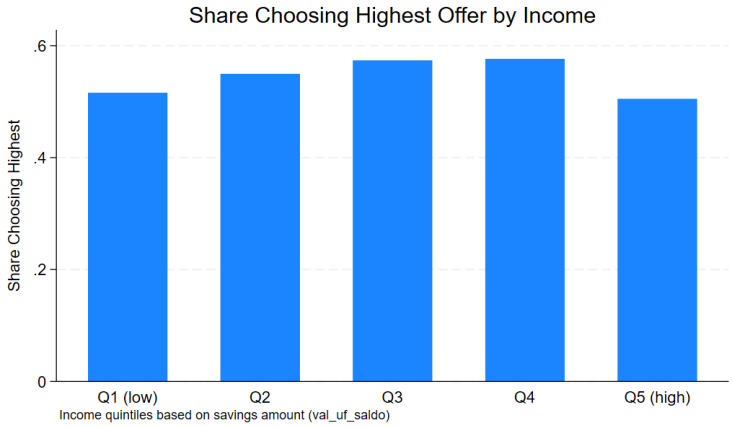


Table 8 shows that buyers with intermediaries have a lower likelihood of choosing the highest offer (first row in each subtable) and when they choose lower offers they forego a higher percentage of income (third row of each subtable). Figure 14 shows that actually this effect of intermediaries is driven by sales agents, and buyers with brokers actually choose the highest offer at a higher rate that those without any intermediaries.

Table VIII: Choosing Highest Offer by Intermediary Status

	mean	sd	count
0			
chose_highest_cert	0.629	0.483	9507
foregone_pct	0.518	1.047	9507
foregone_pct2	1.398	1.315	3524
n_total_offers	13.501	6.185	9507
1			
chose_highest_cert	0.452	0.498	8785
foregone_pct	0.979	1.421	8785
foregone_pct2	1.786	1.498	4818
n_total_offers	14.242	7.618	8785
Total			
chose_highest_cert	0.544	0.498	18292
foregone_pct	0.740	1.262	18292
foregone_pct2	1.622	1.436	8342
n_total_offers	13.857	6.920	18292
N	18292		

Figure 10

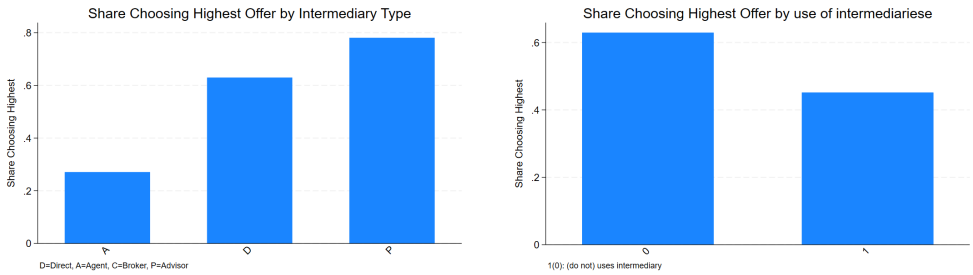


Table 9 shos the patterns of table 8 but for buyers with and without external offers. Both types of buyers have a similar rate at which they choose the lower offers, this is not consistent with the idea that external offers are requested from firms with particularly good non-offer characteristics.

Table IX: Choosing Highest Offer by External Offer Status

	mean	sd	count
0			
chose_highest_cert	0.523	0.500	4181
foregone_pct	0.786	1.306	4181
foregone_pct2	1.646	1.468	1995
n_total_offers	10.943	5.360	4181
1			
chose_highest_cert	0.550	0.497	14111
foregone_pct	0.726	1.249	14111
foregone_pct2	1.614	1.426	6347
n_total_offers	14.720	7.093	14111
Total			
chose_highest_cert	0.544	0.498	18292
foregone_pct	0.740	1.262	18292
foregone_pct2	1.622	1.436	8342
n_total_offers	13.857	6.920	18292
N	18292		

Finally figures 11 show the patterns of the share of buyers choosing the highest offer by income quintile for buyers with and without intermediaries and with and without external offers.

Figure 11

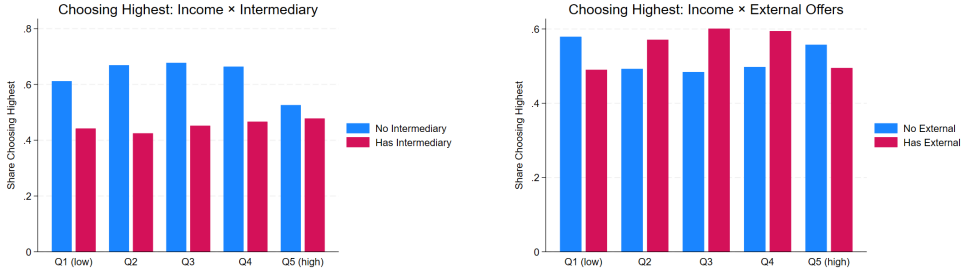


Table X: Determinants of Choosing Highest Offer

	(1)	(2)	(3)	(4)
main				
has_intermediary	-0.867***	-0.879***	-0.873***	-0.209***
	(0.033)	(0.033)	(0.033)	(0.008)
has_external	0.475***	0.498***	0.418***	0.098***
	(0.040)	(0.040)	(0.046)	(0.011)
2.income_q		0.066	0.207***	0.049***
		(0.048)	(0.049)	(0.012)
3.income_q		0.122**	0.337***	0.079***
		(0.048)	(0.052)	(0.012)
4.income_q		0.095*	0.360***	0.085***
		(0.048)	(0.055)	(0.013)
5.income_q		-0.222***	0.009	0.003
		(0.049)	(0.056)	(0.013)
n_total_offers			-0.033***	-0.008***
			(0.003)	(0.001)
n_external			0.112***	0.026***
			(0.017)	(0.004)
_cons	0.235***	0.211***	0.416***	0.600***
	(0.032)	(0.044)	(0.047)	(0.011)
Obs.	18,292	18,292	18,292	18,292
Pseudo R2	0.029	0.032	0.038	

Models 1-3: Logit. Model 4: LPM. Robust standard errors.

Figure 12

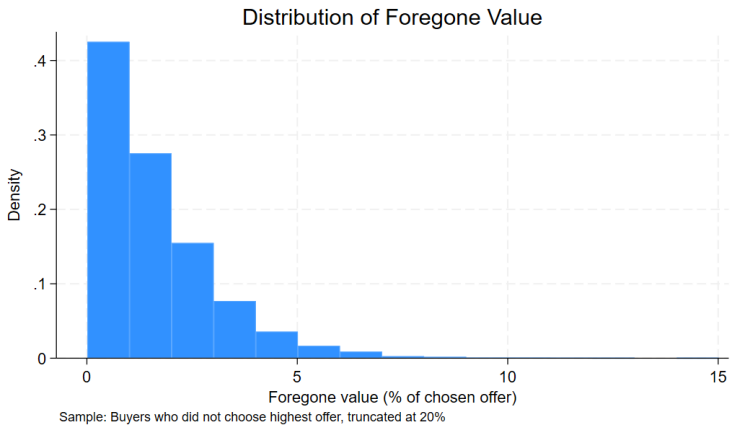


Table XI: Determinants of Foregone Value

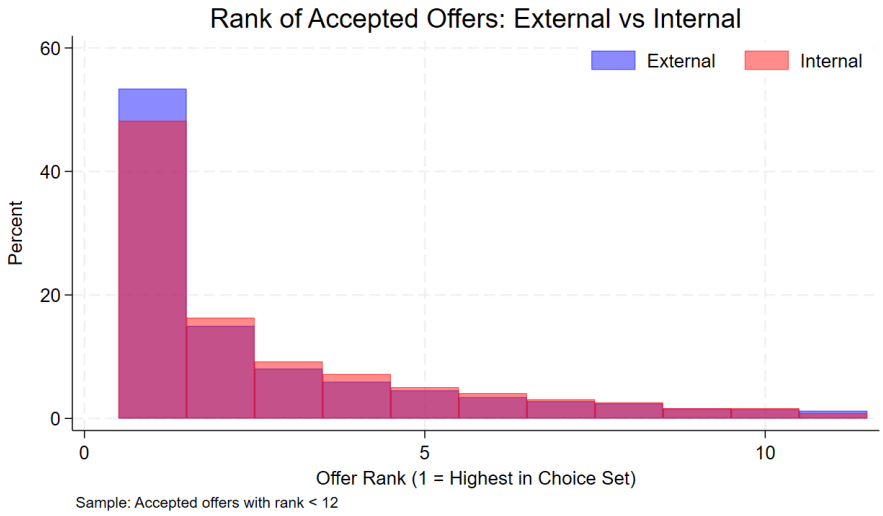
	(1)
has_intermediary	0.498***
	(0.034)
has_external	-0.287***
	(0.041)
1.income_q	0.000
	(.)
2.income_q	-0.680***
	(0.048)
3.income_q	-0.791***
	(0.049)
4.income_q	-0.660***
	(0.055)
5.income_q	-0.408***
	(0.059)
n_total_offers	-0.012***
	(0.002)
_cons	2.217***
	(0.050)
Obs.	8,342
R-squared	0.075

Sample: Buyers who did not choose highest offer. DV: Foregone

1.7 External offer ranking when accepted

External offers are different (14), the difference is significant, see wilcoxon rank-sum. Table 12 shows a similar pattern.

Figure 13



Distribution tests for offer ranks: Wilcoxon rank-sum: z = 5.490, p = 0.0000

Table XII: Rank Comparison: External vs Internal Accepted Offers

	mean	p50	sd	count
External				
offer_rank	2.90	1.0	3.18	13683
offer_rank_pct	14.74	0.0	21.98	13666
Internal				
offer_rank	2.98	2.0	3.11	4609
offer_rank_pct	19.82	8.3	26.81	4438
Total				
offer_rank	2.92	1.0	3.17	18292
offer_rank_pct	15.98	0.0	23.36	18104
N	18292			

Table 13 shows that

Figure 14

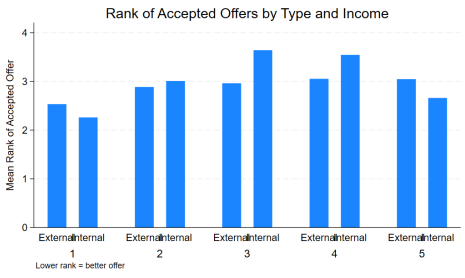


Table XIII: Share of Accepted Offers in Top Rankings

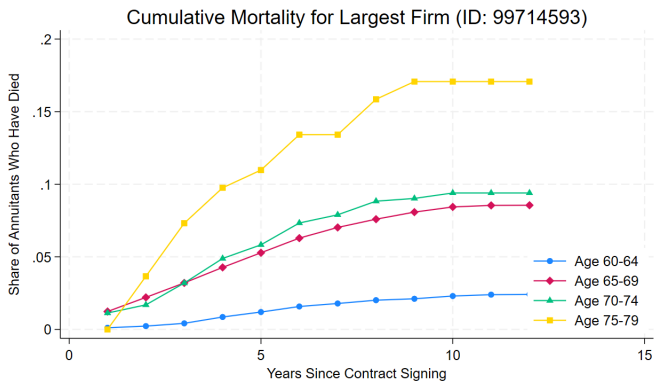
	mean
External	
is_best	0.522
is_top3	0.746
is_top5	0.846
Internal	
is_best	0.475
is_top3	0.723
is_top5	0.844
Total	
is_best	0.510
is_top3	0.740
is_top5	0.845
N	18292

A

1.8 Mortality and survival rates

Figure 15 shows the mortality curves for the biggest firm.

Figure 15



1.9 Mortality and survival rates

Figure 16 shows the share of individuals at each age that die. The left panel is unshmoothed and the right panel is smoothed. We can see that some firms have consistently lower mortalities (e.g. firm2).

Figure 17 shows the survival curves for the same firms, where we can see that the survival rates vary across firms.

Figure 16

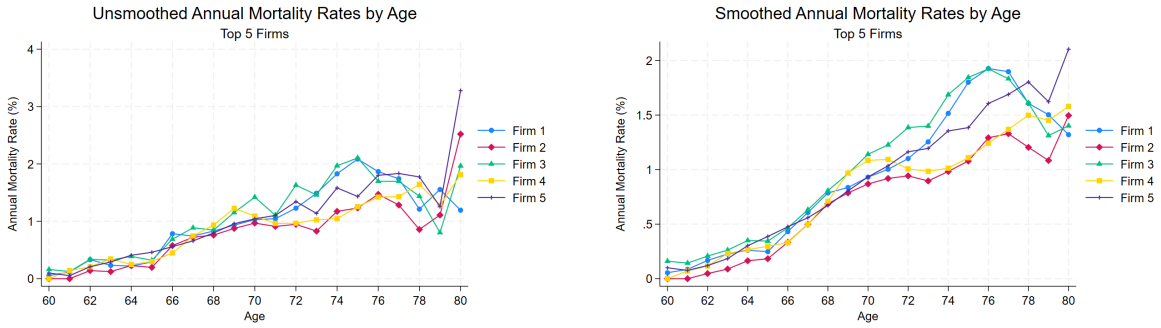


Figure 17

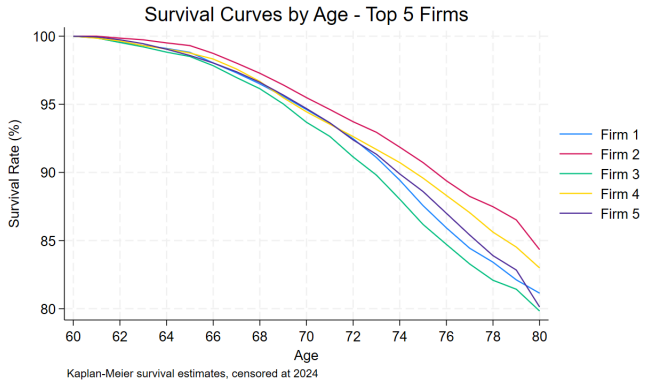


Table XIV: Equality of Survival Functions Tests

	tests		
	Chi2	P-value	df
Log-rank	19.798	0.0005	4
Wilcoxon	14.415	0.0061	4
Stratified_LR	13.937	0.0075	4

Log-rank test is sensitive to late differences

Wilcoxon test weights early times more heavily

Stratified log-rank adjusts for 5-year age groups