Does It Pay to Find a Partner for Microenterprises in Turkey?

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Outline

- Big question: Does the organizational form have any effect on economic performance such as profit
- Next question: What about for the small firms (ie. microenterprises)
- There are millions of micro-enterprises in Turkey. They provide livelihood for tens of millions of people.
- The effects of organizational form of these micro-enterprises are not studied.

- The micro-enterprises are almost always organized as sole proprietorship in which a single individual is the owner.
- The firm has no legal status.
- The exception is the ordinary partnership form in which two or more individuals share the ownership and control.
- A partner may or may not provide her labour services as well

- Costs and benefits of partnerships
- Hansmann (1996, 2003): Costs of governance, bargaining and heterogeneity of preferences in partnerships
- Lazear(1999): Ex-ante selection bias, trying to find alike partners
- Kremer (1997): Egalitarian rewarding systems hampers efficiency as incentives diverge
- Conflicts of interest in coventional capitalist firms (proprietorships)

- Demirguc-Kunt et. al. (2006): Study the incorporation decisions and the effects of incorporation on economic performance under different institutions across countries. They find that incorporated businesses on average grow faster than unincorporated businesses in countries with high quality legal systems and institutions that support formal contracting
- Edmark and Gordon (2013) examine the choice of organizational form in Swedish closely held firms. They find that larger firms prefer corporate form rather than sole proprietorship. Tax advantages favour the corporate form.

- Ozar et. al. (2008): The study uses a special survey dataset that covers both the micro-enterprises (1-9 workers) and small firms (10-49 workers) in 2001. The organizational forms in their sample include not only the sole proprietorships and ordinary partnerships but also the limited liability companies.
- The study finds that only the sole proprietorship has a small but statistically significant negative effect on the growth the sampled firms. Their discussion of their findings is rather sketchy and points to the risk-averse nature of individual ownership.

- The data we use come from the 2000 "Urban Areas Small and Unincorporated Enterprise Survey" that was collected by the State Institute of Statistics in Turkey
- The survey covers 20,000 micro-enterprises, defined as firms of less than ten individuals, and was carried out in four major metropolitan cities.
- Out of those 20,000, we keep only 2-person firms as the lack of data on worker characteristics in larger firms constrain our empirical analysis.

Table: Summary statistics

Total				Sole Proprietorships			Partnerships		
Variable	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**
profit	422.547	382.455	2953	416.456	381.248	2749	504.625	390.123	204
age	38.766	10.743	2953	38.93	10.774	2749	36.559	10.075	204
female	0.067	0.251	2953	0.069	0.254	2749	0.039	0.195	204
educyear	6.183	2.92	2953	6.186	2.952	2749	6.142	2.464	204
daysofac	26.762	3.446	2953	26.781	3.366	2749	26.51	4.384	204
hourswor	10.996	2.37	2953	10.976	2.345	2749	11.255	2.677	204
sizeofHo	3.422	2.354	2953	3.467	2.361	2749	2.819	2.175	204
firmlife	7.598	7.577	2953	7.694	7.56	2749	6.309	7.707	204
number of workers	1.33	0.90	2953	1.30	0.87	2749	1.76	0.81	204
CapitalStock	761.673	1130.826	2953	773.822	1157.044	2749	597.956	666.433	204
HouseInc	544.499	566.619	2868	552.152	578.334	2672	440.174	356.724	196
spaced	0.082	0.274	2953	0.075	0.263	2749	0.176	0.382	204
social security	0.805	0.396	2953	0.818	0.39	2749	0.64	0.48	204
creditd	0.195	0.396	2953	0.196	0.397	2749	0.172	0.378	204
wealthd	0.304	0.46	2953	0.3	0.458	2749	0.363	0.482	204
stayd	0.658	0.474	2953	0.658	0.475	2749	0.662	0.474	204
industry	0.241	0.428	2953	0.244	0.43	2749	0.196	0.398	204
trade	0.529	0.499	2953	0.527	0.499	2749	0.564	0.497	204
services	0.23	0.421	2953	0.229	0.42	2749	0.24	0.428	204

- Sole proprietorships have higher capital stock per firm than partnerships.
- The firms are slightly older and family incomes are a bit higher than those in partnerships.
- There are very few partnerships with women.
- Size of the households in partnerships is smaller than in sole proprietorships.
- The workplaces are more mobile in partnerships.

- The main difference is in social security coverage. About % 64 of entrepreneurs in partnerships are covered by social security whereas % 81 of entrepreneurs in sole proprietorships are covered.
- In terms of size, partnerships are bigger with 1.7 workers compared to 1.3 workers in sole proprietorships. Thus, partnerships use with less capital with more labour.
- Still, the profits in partnerships are significantly higher than in sole proprietorships. The raw difference is 88 dollars, which is about % 20 of average profits in sole proprietorships.

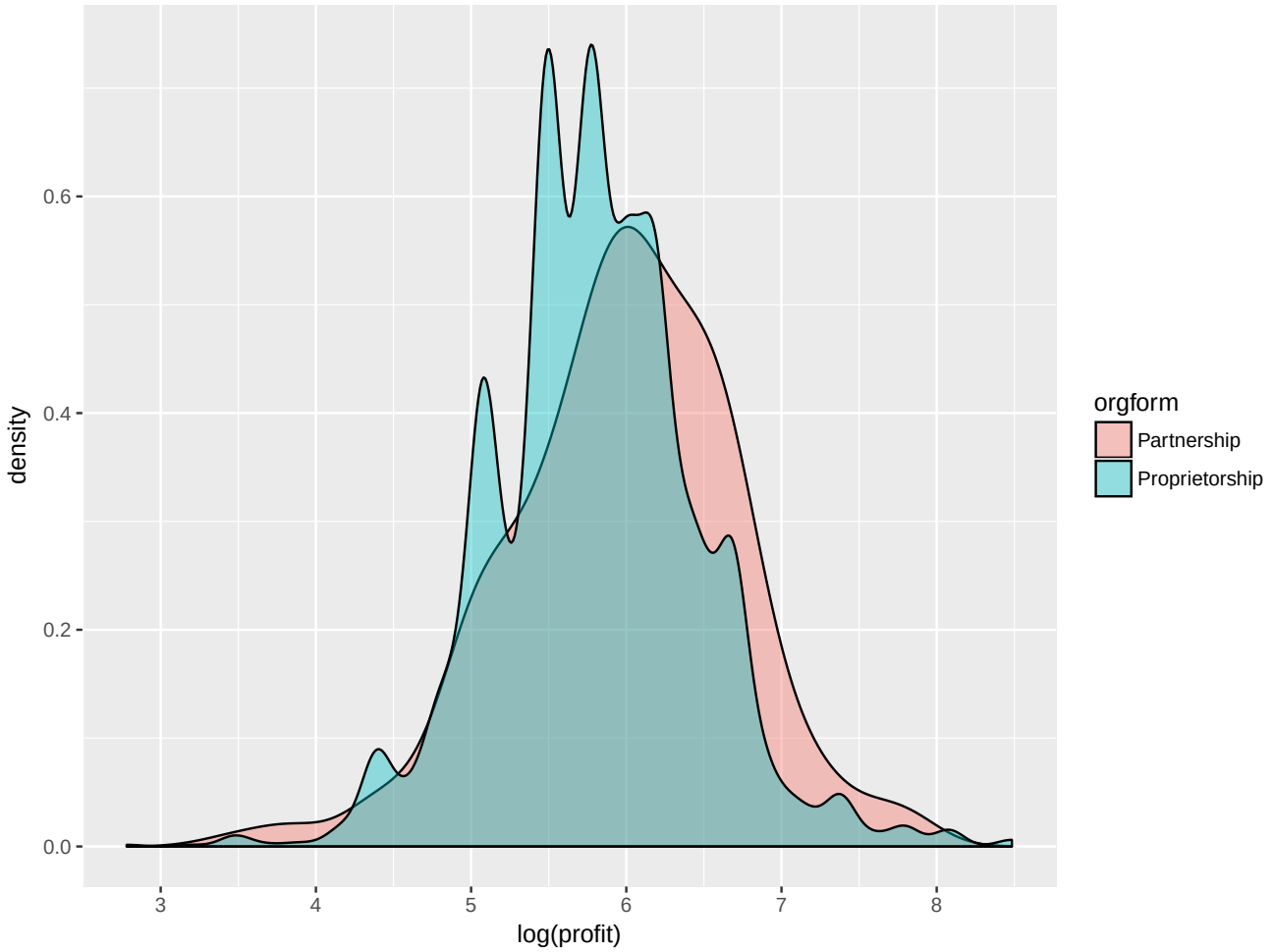

Figure: Profit Distribution in Different Organizational Forms

Table: OLS regressions

	(1) profit b/se	(2) profit b/se
contract	88.169**	88.878***
	(28.21)	(26.35)
noworker		57.626***
		(8.50)
CapitalStock		0.157***
		(0.01)
_cons	416.456***	220.188***
	(7.27)	(14.40)
N	2953	2953
adj. R^2	0.003	0.222

Benchmark Regressions

- Thus our estimate of SATT is 88 dollars per month.
- Because the variable treated, that is the organizational choice, was not randomly assigned, the covariates differ between the treated and the control groups.
- Hence, OLS estimate maybe biased.
- Use Propensity Score Matching

If the conditional independence assumption is true, then
$Pr(D_i = 1 \mid Y_i^0, Y_i^1, X_i) = Pr(D_i = 1 \mid X_i) = \pi(X_i)$
where $\pi(X)$ is called propensity score.
The consequence of this relation, that is $(Y^0, Y^1) \perp D \mid X$ implies $(Y^0, Y^1) \perp D \mid \pi(x)$.
So under strong ignorability the average causal effect can be estimated by conditioning on the propensity score $\pi(X)$ instead of X. This is remarkable, because the information in X, which may include many variables, can be reduced to just one dimension. This greatly simplifies the matching task.

For identification, we make the unconfoundedness assumption (or selection on observables), which is that the values of the potential outcomes are determined in a manner conditionally independent of the treatment assignment: $[Y(0), Y(1)] \perp T \mid X$.
A reasonable way to try to satisfy this assumption is to include in X any variable known to affect either Y or T , since if any subset of these variables satisfies unconfoundedness, this set will too. In order specify which covariates affect profit or organizational form choice we refer to the ordinary least squares and logit regression that are reported below.

Table: Contract Determinants regressions

	(1) contract	
contract		
female	-0.443	(0.38)
age	-0.00160	(0.01)
educyear	0.0186	(0.03)
spaced	0.866**	(0.28)
creditd	-0.153	(0.21)
wealthd	0.346*	(0.16)
stayd	0.260	(0.17)
daysofac	0.00572	(0.02)
hourswor	0.0549	(0.03)
sizeofHo	-0.0678	(0.04)
marriage	0.555*	(0.26)
ssk	-0.718***	(0.18)
firmlife	-0.0354**	(0.01)
noworker	0.494***	(0.07)
CapitalStock	0.0000344	(0.00)
HouseInc	-0.000454	(0.00)
industry	-0.140	(0.20)
services	0.278	(0.20)
_cons	-3.843***	(0.81)
N	2868	
Log lik.	-653.6	
Chi-squared	122.9	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- In order to judge in which matching method the covariate balance has improved the most, we graph covariate imbalance for two methods; exact and full matching.
- The best outcomes are obtained in full matching.
- Although we report the robust estimates of average treatment effect (ATE) (the estimates we find by using the matched samples and running an OLS regressions with relevant control variables), we prefer the full-matching results as this method achieves the best covariate balance.

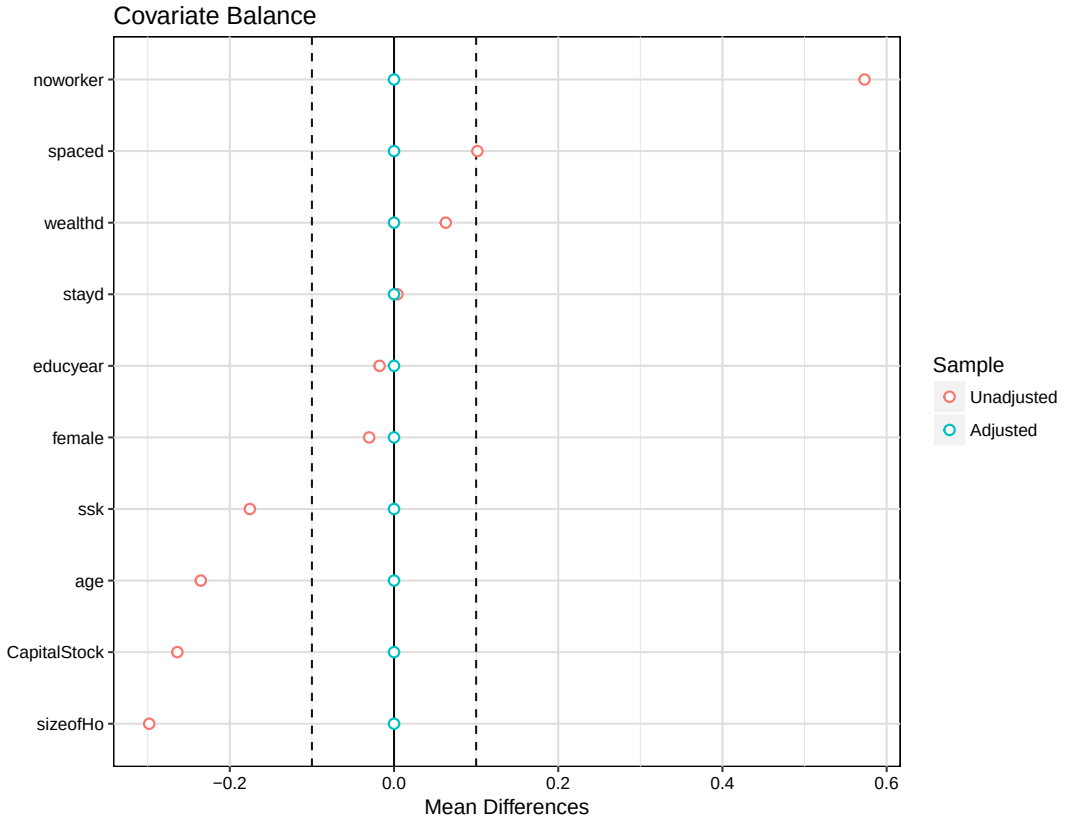

Figure: Full Macthing

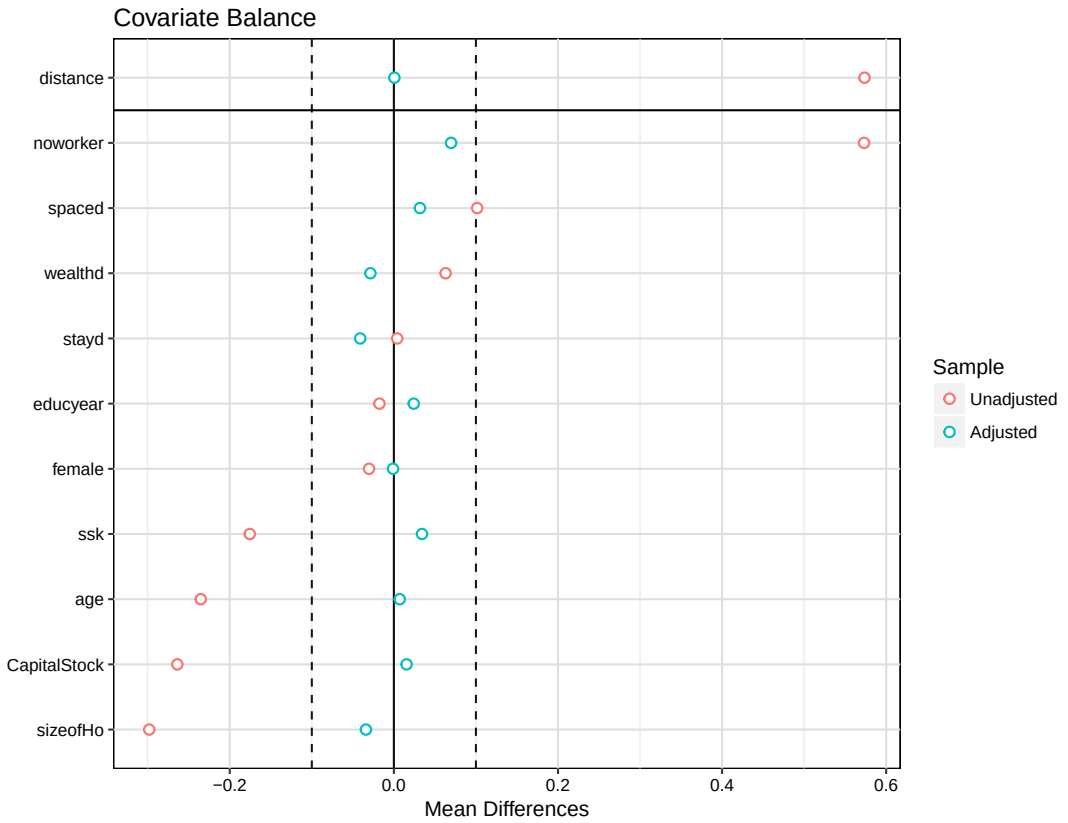

Figure: Exact Macthing

Table 5: Exact, Full, Nearest, Optimal Matching and Regression

	Dependent variable:			
	profit			
	(1)	(2)	(3)	(4)
contract	0.732	101.958***	68.149**	69.740**
	(48.861)	(24.620)	(32.168)	(32.610)
age	9.279***	1.890***	2.371	3.108*
	(2.731)	(0.615)	(1.673)	(1.692)
educyear	28.896***	7.531***	10.189	15.709**
	(9.978)	(2.223)	(6.464)	(6.419)
female	307.377	−23.369	8.619	74.422
	(230.953)	(24.620)	(103.162)	(92.502)
ssk	79.981	64.522***	126.099***	140.204***
	(66.081)	(16.326)	(37.433)	(36.128)
wealthd	−94.529*	−18.551	−38.348	−44.363
	(51.545)	(13.476)	(33.342)	(34.402)
spaced		−44.201*	−167.850***	−85.521
		(25.731)	(56.069)	(54.105)
stayd	35.014	77.879***	24.214	86.892**
	(62.159)	(12.996)	(36.770)	(36.702)
noworker	198.255***	60.139***	61.834***	46.555***
	(28.255)	(6.963)	(16.828)	(16.558)
CapitalStock	0.102***	0.149***	0.191***	0.174***
	(0.030)	(0.006)	(0.023)	(0.020)
sizeofHo	−48.367***	−7.816***	−23.816**	−11.132
	(16.791)	(2.928)	(9.564)	(8.877)
Constant	−238.607	36.761	76.986	−49.301
	(153.261)	(35.153)	(91.778)	(93.641)
Observations	168	2,953	408	408
R^2	0.438	0.248	0.268	0.282
Adjusted R^2	0.402	0.245	0.248	0.263
Residual Std. Error	305.241 (df = 157)	332.384 (df = 2941)	320.275 (df = 396)	326.223 (df = 396)
F Statistic	12.229*** (df = 10; 157)	87.944*** (df = 11; 2941)	13.196*** (df = 11; 396)	14.174*** (df = 11; 396)

Note: *p<0.1; **p<0.05; ***p<0.01

Table: Trust in Turkey and Germany: Employer/Manager of a Firm with less than 10 employees

	Turkey	Germany
Trust completely	0.9	0.6
Trust somewhat	13.5	39.2
Not very much	55.8	39.8
No trust at all	25	18.6

Note: In percentages, WWS.

- We compare economics performances of partnerships and proprietorships (conventional capitalist firms) in Turkey.
- Partnerships provide higher profits both in OLS and Propensity Score matching analysis.
- We employ matching control for selection bias. We find that after appropriate matching and controlling for relevant covariates, the positive contribution of partnerships on profits remain high

- The finding suggests a puzzle: why are partnerships rare given their higher profitability
- We suggest that this outcome is due to the low level of trust in Turkey.
- Lack of panel data limit the generalization of our results.
- In future research, we may check the robustness of our results by examining micro level firm data in other countries.