COMPANION APPENDIX

Human capital and the size distribution of firms

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I - Data

II - Additional model results

I - Data

In this section we perform several robustness checks to our main result in Section 2; i.e. that the average firm size of a country has a positive and significant association with the fraction of the population with secondary education. We verify the validity of the results along three dimensions. First, we use the data and baseline specification of another study, by García-Santana and Ramos (2015). Second, we add several institutional and financial variables to our baseline regression. Third, we use an additional data set from the OECD. Table A1 displays the additional series that we use, and Table A2 shows summary statistics for all our variables. Table A3 presents results for our baseline regression corrected for the potential heteroskedasticity of standard errors. In Table A4 and Table A5 we show results for two alternative regressions. The first only includes GDP per capita as an additional control and does not control for population size, and the second uses a continuous measure for education, average years of schooling, instead of the share of secondary and tertiary educated.

Regarding measure of institutional quality and financial development, we start with the data and specification used in García-Santana and Ramos (2015). In this paper, which provides a good description of the Enterprise Survey, the authors regress the share of employment accounted for by small firms on measures of distortion in the economy and several controls. We use the exact same variables for our regressions, adding the share of secondary educated workers and the log of GDP per capita (which they do not include). These variables include measures of the weight of informality, the percentage of foreign firms, the percentage of exporting firms, average years of managers' experience, the World Bank Doing Business Index and several of its sub-categories (financial constraints, tax burden, cost of entry, and control of corruption). García-Santana and Ramos (2015) use the population weights provided by the Enterprise survey to compute average firm size. In our benchmark regression, we decided not to use these weights because it implies dropping several countries from the sample (many of the surveys between 2002 and 2006 do not provide weights). In this robustness exercise however, we use population weights to compute average firm size such as to be consistent with García-Santana and Ramos (2015), and also to show that results are not influenced by how average firm size is computed.

The results from this exercise are shown in Table A6. Columns (1) and (2) reproduce our baseline regressions. Using the average firm size calculated with population weights increases, marginally, the size and significance of the coefficient for the share of secondary educated. When additional variables are included, the fraction of the population with secondary education remains significant. Out of all other variables, the log of population, the average years of managers' experience, the fraction of foreign firms, and several of the sub-categories of the Doing Business Index show a significant relationship with average firm size.

Our second approach is to introduce a variety of institutional and financial variables into our baseline regression. Better institutions and more financial development are likely to be correlated with education as well as with larger firms. To control for the quality of a country's institutions which might be correlated with education, we use six of the World Bank Governance Indicators: Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability. To control for financial development we consider seven variables, including

the percentage of domestic credit in the economy (and the sector if provided) as well as different measures of interest rate spreads.

Tables A7 and A8 show the results when using data from the Enterprise Survey, and Tables A9 and A10 show them for the Global Entrepreneurship Monitor survey. In general, very few of the variables turn out to be significant. Controlling for the log of GDP per capita already absorbs much of the effect. Regarding institutional variables, we only estimate a positive and significant coefficient for "Political Stability" in the Entrepreneurship survey. None of the variables capturing financial development show any significant relationship with

Table A1: Data used and sources

Variable	Description	Source
Firm size (ES)	Average firm size	Enterprise Survey
Firm size (ES*)	Average firm size (weighted with population weights)	Enterprise Survey
Firm size (GEM)	Average firm size	Global Entrepreneurship Monitoring
Firm size (OECD)	Average firm size	OECD
Secondary	% of population 25+ that completed high school but not college	Barro and Lee
Tertiary	% of population 25+ that completed college	Barro and Lee
GDP per capita	Log of GDP per capita	Penn World Tables
Population	Log of population	Penn World Tables
WBGI1	Control of Corruption	World Bank Governance Indicators
WBGI2	Government Effectiveness	World Bank Governance Indicators
WBGI3	Political Stability and Absence of Violence/Terrorism	World Bank Governance Indicators
WBGI4	Regulatory Quality	World Bank Governance Indicators
WBGI5	Rule of Law	World Bank Governance Indicators
WBGI6	Voice and Accountability	World Bank Governance Indicators
FIN1	Domestic credit to private sector (% of GDP)	World Bank
FIN2	Interest rate spread (lending rate minus deposit rate, %)	World Bank
FIN3	Commercial bank branches (per 100,000 adults)	World Bank
FIN4	Domestic credit provided by financial sector (% of GDP)	World Bank
FIN5	Domestic credit to private sector by banks (% of GDP)	World Bank
FIN6	Risk premium on lending (lending minus treasury bill rate, %)	World Bank
FIN7	Stocks traded, total value (% of GDP)	World Bank
Informality	% of plants reporting informal firms a main obstacle to growth	García-Santana and Ramos (2015)
Foreign	% of foreign firms	García-Santana and Ramos (2015)
Export	% of exporting firms	García-Santana and Ramos (2015)
Experience	Average years of experience of managers	García-Santana and Ramos (2015)
Distortions	Doing business index (normalized)	García-Santana and Ramos (2015)
FinConstraint	% of firms in need of capital without credit loan	García-Santana and Ramos (2015)
Taxes	% of commercial profits taxes by public adminstration	García-Santana and Ramos (2015)
CostEntry	Business start-up costs (% national income per capita)	García-Santana and Ramos (2015)
Cont. Corrupt	Control of Corruption	García-Santana and Ramos (2015)

Notes: The Enterprise Survey includes the following countries: Albania, Algeria, Argentina, Armenia, Bangladesh, Barbados, Belize, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burundi, Cote d'Ivoire, Cambodia, Cameroon, Central African Republic, Chile, China, Colombia, Democratic Republic of Congo, Congo, Costa Rica, Croatia, Czech Republic, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Fiji, Gabon, Gambia, Germany, Ghana, Greece, Guatemala, Guyana, Honduras, Hungary, India, Indonesia, Iraq, Ireland, Jamaica, Jordan, Kazakhstan, Kenya, Korea, Kyrgyz Republic, Lao, Latvia, Lesotho, Liberia, Lithuania, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Niger, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Rwanda, Senegal, Serbia, Sierra Leone, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Swaziland, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe. The GEM survey includes the following countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Taipei, Croatia, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, Jamaica, Japan, Korea, Latvia, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Uganda, United Kingdom, United States, Venezuela.

average firm size. In all cases, the fraction of secondary educated remains significant (except in two cases when using the GEM survey in which missing data reduces the sample to 32 and 24 observations).

Our third approach is to use average firm size data from the OECD, for 20 developed countries. The variable used is "Number of persons employed in the population of active enterprises" for the Total Industry and market services for 2005. In the regressions, shown in Table A11 both the fraction of secondary and tertiary educated workers are significant, although only the first remains significant after including controls. The coefficient has the same magnitude as in the other regressions.

Finally, we run a regression of the dispersion in firm size (calculated using standard errors) on educational attainment. Results are shown in Table A12. We find a positive correlation

Table A2: Data summary statistics

Variable	Obs.	Mean	S.d	Min	Max
Firm size, logs (ES)	137	3.959	0.747	2.307	5.547
Firm size, logs (ES*)	137	3.527	0.656	2.121	5.383
Firm size, logs (GEM)	44	1.865	0.626	0.302	3.282
Firm size, logs (OECD)	20	2.431	0.330	1.397	2.869
Secondary	104	23.562	17.532	1.280	78.720
Tertiary	104	6.130	5.646	0.120	24.720
GDP per capita, logs	123	9.205	1.132	6.445	11.285
Population, logs	126	2.088	1.867	-3.012	7.158
WBGI1	137	-0.317	0.707	-1.563	1.863
WBGI2	135	-0.268	0.719	-1.612	1.564
WBGI3	135	-0.266	0.935	-3.185	1.414
WBGI4	135	-0.215	0.761	-2.027	1.602
WBGI5	137	-0.299	0.789	-1.888	1.630
WBGI6	137	-0.163	0.847	-1.851	1.492
FIN1	134	32.976	30.027	0.802	133.209
FIN2	112	10.928	17.619	1.500	175.708
FIN3	117	13.456	16.228	0.126	98.191
FIN4	134	45.320	42.135	-30.085	231.540
FIN5	135	31.628	28.668	0.802	133.052
FIN6	67	9.282	19.037	-5.644	153.240
FIN7	80	11.701	22.350	0.000	111.692
Informality	103	0.304	0.157	0.000	0.760
Foreign	103	0.227	1.255	0.000	12.807
Export	103	0.134	0.147	0.000	0.778
Experience	103	15.907	4.275	5.469	25.467
Distortions	103	6.191	46.259	0.021	471.000
FinConstraint	102	0.286	0.196	0.023	0.908
Taxes	102	54.875	51.006	8.400	339.700
CostEntry	103	58.475	99.210	0.000	735.100
Cont. Corrupt	102	-0.379	0.657	-1.417	1.376

between the dispersion in firm size and the fraction of secondary educated workers.

Table A3: Average employment per firm and educational attainment, corrected for heteroskedasticity

	Enterprise survey			**GEM survey**		
	(1)	(2)	(3)	(1)	(2)	(3)
Secondary education	0.015***	0.009***		0.019***	0.012*	
	(3.72)	(2.63)		(3.16)	(1.84)	
Tertiary education	0.006		0.003	0.006		-0.004
	(0.58)		(0.25)	(0.55)		(-0.30)
Income per capita		0.201***	0.282***		0.323*	0.494***
		(3.27)	(4.72)		(1.82)	(3.33)
Population		0.136***	0.130***		-0.375**	-0.537***
		(3.54)	(3.17)		(-2.49)	(-3.92)
Observations	104	100	100	44	44	44
R-squared	0.164	0.316	0.284	0.275	0.427	0.353

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size. For the Global Entrepreneurship Monitor survey, we use the log of the country's average firm employment, as calculated by Poschke (2014). The standard errors are corrected for heteroskedasticity. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 10% level.*

Table A4: Average employment per firm and educational attainment, only GDP per capita as control

	Enterprise survey				**GEM survey**			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Secondary education	0.015***	0.009*		0.009*	0.019***	0.021***		0.019***
	(3.12)	(1.87)		(1.73)	(3.24)	(4.00)		(3.22)
Tertiary education	0.006		0.009	-0.003	0.006		0.027*	0.001
	(0.41)		(0.69)	(-0.17)	(0.45)		(2.16)	(0.61)
Income per capita		0.194***	0.251***	0.198***		-0.043	-0.050	-0.050
		(2.72)	(3.60)	(2.63)		(-0.80)	(-0.83)	(-0.89)
Observations	104	100	100	100	44	44	44	44
R-squared	0.164	0.229	0.205	0.229	0.275	0.283	0.105	0.290

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size. For the Global Entrepreneurship Monitor survey, we use the log of a country's average firm employment, as calculated by Poschke (2014). The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 10% level.*

Table A5: Average employment per firm and years of schooling

	Enterprise survey			**GEM survey**		
	(1)	(2)	(3)	(1)	(2)	(3)
Secondary education	0.011**			0.014**		
	(2.28)			(2.46)		
Tertiary education	-0.013			-0.013		
	(-0.85)			(-0.97)		
Avg. years schooling		0.096***	0.331***		0.056	0.305
		(2.94)	(3.38)		(0.82)	(0.39)
Avg. years schooling squared			-0.0165**			-0.013
			(-2.54)			(-0.72)
Income per capita	0.219***	0.099	0.068	0.395***	0.356**	0.316*
	(3.08)	(1.18)	(0.83)	(2.71)	(2.19)	(1.83)
Population	0.142***	0.151***	0.149***	-0.439***	-0.402**	-0.354**
	(3.59)	(3.92)	(3.99)	(-3.24)	(-2.54)	(-2.05)
Observations	104	100	100	44	44	44
R-squared	0.321	0.342	0.384	0.440	0.365	0.332

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size. For the Global Entrepreneurship Monitor survey, we use the log of the country's average firm employment, as calculated by Poschke (2014). The standard errors are corrected for heteroskedasticity. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 10% level.*

Table A6: Average employment per firm and educational attainment, robustness with data and specification of García-Santana and Ramos (2014)

	Entrepreneurship Survey (weighted)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Secondary education	0.012***	0.012***	0.012***	0.010***	0.009*	0.014***	0.013***
	(2.64)	(2.88)	(2.87)	(2.73)	(1.94)	(3.31)	(3.11)
Tertiary education	0.0157						
	(1.04)						
Income per capita		0.121*	-0.011	-0.037	-0.044	-0.007	0.029
		(1.82)	(-0.14)	(-0.54)	(-0.54)	(-0.10)	(0.37)
Population		0.141***	0.171***	0.178***	0.169***	0.166***	0.161***
		(3.62)	(3.89)	(4.30)	(3.89)	(3.82)	(3.55)
Informality			-0.021	-0.012	0.011	-0.006	-0.030
			(-0.65)	(-0.42)	(0.27)	(-0.18)	(-0.91)
Export			0.457	0.276	0.623	0.583	0.644
			(0.76)	(0.53)	(1.01)	(0.99)	(1.05)
Foreign			1.226*	1.205**	1.123*	1.021	1.117
			(1.80)	(2.04)	(1.67)	(1.51)	(1.62)
Avg. experience			0.037**	0.024	0.039**	0.038**	0.037**
			(2.37)	(1.62)	(2.53)	(2.48)	(2.31)
Distortion			0.102				
			(1.44)				
Financial constraint				-1.205***			
				(-3.28)			
Cost of entry					-0.119*		
					(-1.89)		
Taxes						-0.170*	
						(-1.69)	
Control Corruption							-0.027
							(-0.25)
Observations	80	77	77	76	76	77	77
R-squared	0.215	0.362	0.454	0.545	0.467	0.460	0.438

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size (calculated using population weights). The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A7: Average employment per firm and educational attainment, robustness with institutional variables

	Enterprise Survey					
	(1)	(2)	(3)	(4)	(5)	(6)
Secondary education	0.009**	0.009**	0.008**	0.009**	0.009**	0.009**
	(2.13)	(1.99)	(1.98)	(1.99)	2.05)	(2.13)
Income per capita	0.212**	0.155*	0.148**	0.174**	0.171**	0.209**
	(2.56)	(1.82)	(2.06)	(2.11)	(2.14)	(2.57)
Population	0.134***	0.134***	0.178***	0.138***	0.139***	0.134***
	(3.47)	(3.47)	(4.09)	(3.53)	(3.55)	(3.38)
WBGI1	-0.027					
	(-0.24)					
WBGI2		0.104				
		(0.90)				
WBGI3			0.171**			
			(2.02)			
WBGI4				0.064		
				(0.57)		
WBGI5					0.071	
					(0.70)	
WBGI6						-0.016
						(0.86)
Observations	100	100	100	100	100	100
R-squared	0.316	0.321	0.344	0.318	0.319	0.316

*Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size. The remaining variables are from the World Bank Development Indicators. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A8: Average employment per firm and educational attainment, robustness with financial development variables

	Enterprise Survey						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Secondary education	0.009**	0.009**	0.007*	0.009**	0.009*	0.011*	0.007*
	(2.01)	(2.15)	(1.80)	(1.99)	(2.01)	(1.96)	(1.71)
Income per capita	0.174**	0.182**	0.265***	0.193**	0.170**	0.195*	0.134
	(2.29)	(2.49)	(3.37)	(2.73)	(2.22)	(1.89)	(1.63)
Population	0.123***	0.174***	0.111***	0.127***	0.123***	0.168***	0.119***
	(3.14)	(4.68)	(2.68)	(3.23)	(3.13)	(3.00)	(2.74)
FIN1	0.002						
	(0.78)						
FIN2		0.002					
		(0.81)					
FIN3			-0.001				
			(-0.27)				
FIN4				0.001			
				(0.36)			
FIN5					0.002		
					(0.88)		
FIN6						0.002	
						(0.57)	
FIN7							-0.002
							(-0.64)
Observations	99	82	85	99	99	50	71
R-squared	0.310	0.362	0.379	0.307	0.311	0.346	0.189

*Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of a country's average firm size. The remaining variables are from the World Bank. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A9: Average employment per firm and educational attainment, robustness with institutional variables

	Global Entrepreneurship Monitoring Survey					
	(1)	(2)	(3)	(4)	(5)	(6)
Secondary education	0.012**	0.012**	0.013**	0.012**	0.012**	0.013**
	(2.16)	(2.27)	(2.31)	(2.22)	(2.24)	(2.46)
Income per capita	0.416**	0.561***	0.370**	0.338*	0.451**	0.568***
	(2.08)	(2.84)	(2.47)	(1.80)	(2.35)	(3.78)
Population	-0.475**	-0.630***	-0.447***	-0.391**	-0.512***	-0.648***
	(-2.32)	(-3.12)	(-2.75)	(-2.04)	(-2.62)	(-4.25)
WBGI1	-0.080					
	(-0.60)					
WBGI2		-0.248				
		(-1.55)				
WBGI3			-0.093			
			(-0.66)			
WBGI4				-0.019		
				(-0.11)		
WBGI5					-0.129	
					(-0.89)	
WBGI6						-0.358**
						(-2.63)
Observations	43	43	43	43	43	43
R-squared	0.430	0.459	0.431	0.425	0.437	0.514

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Global Entrepreneurship Monitor survey, we use the log of the country's average firm employment, as calculated by Poschke (2014). The remaining variables are from the World Bank Development Indicators. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A10: Average employment per firm and educational attainment, robustness with financial development variables

	Global Entrepreneurship Monitoring Survey						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Secondary education	0.013**	0.011	0.011*	0.012**	0.013**	0.006	0.012**
	(2.27)	(1.40)	(1.93)	(2.21)	(2.34)	(0.75)	(2.11)
Income per capita	0.273	0.240	0.337**	0.357**	0.256	0.439**	0.390**
	(1.65)	(1.51)	(2.27)	(2.35)	(1.58)	(2.58)	(2.56)
Population	-0.332**	-0.289*	-0.407**	-0.401***	-0.309*	-0.527**	-0.428***
	(-2.20)	(-2.20)	(-2.70)	(-2.95)	(1.99)	(-2.82)	(-3.12)
FIN1	0.001						
	(0.48)						
FIN2		-0.017					
		(-1.11)					
FIN3			0.001				
			(0.09)				
FIN4				-0.001			
				(-0.41)			
FIN5					0.002		
					(0.69)		
FIN6						-0.008	
						(-0.51)	
FIN7							-0.001
							(-0.81)
Observations	43	32	40	43	43	24	43
R-squared	0.428	0.384	0.426	0.427	0.432	0.478	0.434

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Global Entrepreneurship Monitor survey, we use the log of the country's average firm employment, as calculated by Poschke (2014). The remaining variables are from the World Bank Development Indicators. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A11: Average employment per firm and educational attainment, robustness with OECD data

	OECD		
	(1)	(2)	(3)
Secondary education	0.009*	0.011*	
	(1.99)	(2.09)	
Tertiary education	0.027*		0.027
	(1.96)		(1.21)
Income per capita		0.229	0.054
		(1.30)	(1.21)
Population		-0.216	-0.105
		(-1.08)	(-0.39)
Observations	20	16	16
R-squared	0.345	0.351	0.212

*Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. Average firm size data are from the OECD. The sample includes the following countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden. The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

Table A12: Standard deviation of employment per firm and educational attainment

	Enterprise survey (weighted)			**GEM survey**		
	(1)	(2)	(3)	(1)	(2)	(3)
Secondary education	0.698	1.041**		0.400**	0.303*	
	(1.25)	(2.05)		(2.22)	(1.69)	
Tertiary education	2.682		2.444	0.152		0.066
	(1.25)		(1.63)	(0.40)		(0.15)
Income per capita		12.753	16.884**		5.126	8.084*
		(1.55)	(2.23)		(1.23)	(1.68)
Population		22.831***	20.173***		-6.230	-9.102*
		(4.73)	(4.19)		(-1.58)	(-2.05)
Observations	80	77	77	44	44	44
R-squared	0.127	0.334	0.320	0.157	0.210	0.154

*Notes: Data on educational attainment of the population over the age of 25 are from the Barro-Lee dataset for 2005. Tertiary education refers to the fraction of the population that has a college degree. Secondary education refers to the fraction of the population that has completed high school but does not hold a college degree. Data on population and income per capita are from the Penn World Tables. For the Enterprise survey, we compute the log of the standard deviation of firm size in a country. For the Global Entrepreneurship Monitor survey, we use the standard deviation of firm employment, as calculated by Poschke (2014). The t-statistics are shown in brackets.*** indicates significance at the 1% level, ** indicates significance at 5% level, and * indicates significance at the 1% level.*

II - Additional model results

1) Model with unique distribution In this section we report the calibrated parameters (fixed parameters are maintained from the baseline calibration) and targeted moments for the model with a unique distribution of managerial ability for all three education groups.

Table A13: Calibration: Model with unique distribution

Calibrated parameters		**Target**
Shape parameter (α)	1.1009	Mean establishment size
Scale parameter (xm_z)	0.0970	Establishment share (< 10)
Location parameter (θ)	1.7067	Establishment share (> 100)
		Employment share (> 100)
Span-of-Control (γ)	0.8532	Profit share
Weight of Unskilled Labor in Production (μ)	0.3073	Labor share
Weight of Capital in Production (λ)	0.5419	Capital-output ratio
Relative Productivity of secondary educated workers (ϵ^h)	0.6103	College premium
Relative Productivity of primary educated workers(ϵ^n)	0.7577	High school premium
Substitutability of secondary educ workers for skilled jobs (ψ^h)	0.6553	College and High school premia 90's & 70's
Substitutability of primary educ workers for unskilled jobs (ψ^n)	0.6610	College and High school premia 90's & 70's
Substitutability of capital and skilled labor (σ)	0.8620	College and High school premia 90's & 70's
Substitutability of Capital and Unskilled Factors (ρ)	-1.1314	College and High school premia 90's & 70's
TFP 90s (A_{90})	0.9563	GDP per capita 90's
TFP 70s (A_{70})	0.8731	GDP per capita 70's

Table A14: Determinants of the evolution of firm size in the US: Unique Distribution

Year	Data	Model		
		Baseline	Only changing education (P, S and T)	Only changing technology (q and A)
1970	-	**19.23**	15.38	**19.23**
1975	-	18.11	15.50	18.59
1980	17.00	17.34	15.77	18.04
1985	16.59	16.49	15.50	17.28
1990	17.11	16.03	15.42	16.64
1995	16.87	15.85	15.64	15.95
2000	18.11	15.74	15.72	15.41
2005	17.47	**16.15**	**16.15**	15.38
2010	16.79	16.19	16.19	15.38

Notes: Data on average establishment size are from the US Census' Business Dynamic Statistics available since 1977. For the baseline case, we vary the education shares in the population, the relative price of capital, and TFP estimated for three dcades (2000's, 1990's and 1970's). In the last two columns we change in turn only the education shares and only the relative price of capital and TFP.

Table A15: Calibration targets and model values for unique talent distribution

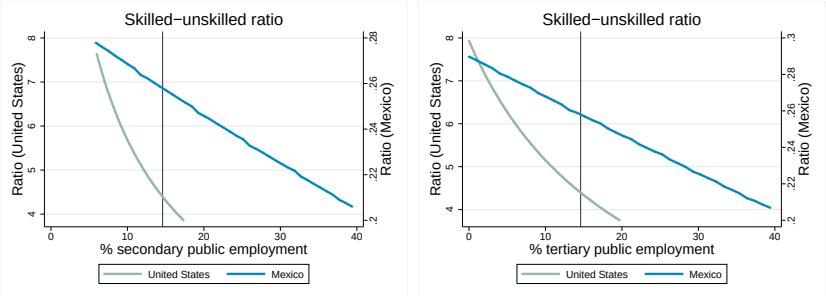
Targeted moments	**Source**	**Data**	**Model**
Mean establishment	US Census	17.46	16.15
Relative size establishment primary educated manager	SBO(2007)	0.50	0.65
Relative size establishment secondary educated manager	SBO(2007)	0.83	0.95
Establishment share, < 10 employees	US Census	0.70	0.72
Establishment share, > 100 employees	US Census	0.03	0.03
Employment share, > 100 employees	US Census	0.45	0.38
Capital-output-ratio	Kamps (2006)	2.00	1.98
Profits to GDP	BEA	0.13	0.13
Wage bill	BEA	0.63	0.63
College Premium 2000	Goldin and Katz 2009	0.61	0.61
College Premium 1990	Goldin and Katz 2009	0.55	0.54
College Premium 1970	Goldin and Katz 2009	0.47	0.47
High School Premium 2000	Goldin and Katz 2009	0.31	0.31
High School Premium 1990	Goldin and Katz 2009	0.28	0.29
High School Premium 1970	Goldin and Katz 2009	0.23	0.23
GDP per capita 1990's relative to 2000's	BEA	0.82	0.83
GDP per capita 1970's relative to 2000's	BEA	0.55	0.54
Non-targeted moments	**Source**	**Data**	**Model**
Relative size establishment tertiary educated manager	SBO(2007)	1.27	1.58
Employment share, < 10 employees	US Census	0.15	0.20
Employment share, $20 - 99$ employees	US Census	0.30	0.29
Establishment share, $20 - 99$ employees	US Census	0.13	0.11
Fraction of large (> 100 employees) firms managed by			
tertiary educated	SBO(2007)	0.63	0.31
secondary educated	SBO(2007)	0.35	0.58
primary educated	SBO(2007)	0.02	0.11
Self-employment rate	OECD	0.07	0.05

Table A16: Results: United States and Mexico: Model with unique talent distribution

	US	Mexico
Firm size distribution		
Mean establishment size		
Overall	16.15	15.33
Entrepreneurs with primary education	10.52	13.29
Entrepreneurs with secondary education	15.27	38.33
Entrepreneurs with tertiary education	25.57	51.67
Establishment share, < 10 employees	0.72	0.73
Establishment share, > 100 employees	0.03	0.02
Employment share, < 10 employees	0.20	0.19
Employment share, $20 - 99$ employees	0.29	0.30
Employment share, > 100 employees	0.38	0.39
Fraction of large firms (> 100 employees) with		
Primary educated manager	0.11	0.75
Secondary educated manager	0.58	0.16
Tertiary educated manager	0.31	0.09
Dispersion in establishment size	99.3	100
Entrepreneurship		
Share of entrepreneurs	0.05	0.05
Fraction of entrepreneurs with		
Primary education	0.19	0.93
Secondary education	0.63	0.05
Tertiary education	0.17	0.02
Threshold to become entrepreneur		
Primary education	2.93	3.45
Secondary education	3.85	9.64
Tertiary education	6.19	13.81
Aggregate variables		
Private capital-output-ratio	1.98	1.03
Profits to GDP	0.13	0.13
Wagebill	0.63	0.75
College premium	0.61	0.43
High-school premium	0.31	1.80
College premium of entrepreneurs	0.67	0.35
High-school premium of entrepreneurs	0.45	1.88
Private sector output per worker	178.3	100
GDP per capita	175.3	100
Output per Establishment	187.8	100

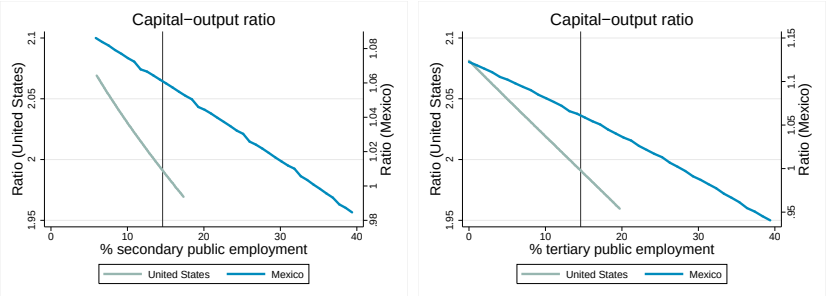
2) Additional Results Skill-Biased Public Employment

Figure A1: The effects of skill-biased public employment on skilled-unskilled labor ratio



Note: vertical line indicates the baseline calibration. Increases (decreases) in the share of secondary or tertiary educated public employees are obtained by reducing (increasing) the share of primary educated. The low shares of primary educated workers in the US and secondary and tertiary educated workers in Mexico place a lower and an upper bound on how many primary, secondary, and tertiary educated public sector workers can be hired.

Figure A2: The effects of skill-biased public employment on capital-output ratio



Note: vertical line indicates the baseline calibration. Increases (decreases) in the share of secondary or tertiary educated public employees are obtained by reducing (increasing) the share of primary educated. The low shares of primary educated workers in the US and secondary and tertiary educated workers in Mexico place a lower and an upper bound on how many primary, secondary, and tertiary educated public sector workers can be hired.

Table A17: US with biased public sector employment

	US baseline	US biased
Public employees		
Overall	0.146	0.146
Primary educated	0.109	0.028
Secondary educated	0.581	0.464
Tertiary educated	0.311	0.507
Firm size distribution		
Mean establishment size		
Overall	17.57	17.91
Entrepreneurs with primary education	8.74	8.79
Entrepreneurs with secondary education	14.57	14.75
Entrepreneurs with tertiary education	33.41	35.38
Establishment share, <10 employees	0.73	0.72
Establishment share, >100 employees	0.03	0.03
Employment share, <10 employees	0.19	0.18
Employment share, 20-99 employees	0.25	0.25
Employment share, >100 employees	0.45	0.45
Fraction of large firms (>100 employees) with		
Primary educated manager	0.07	0.07
Secondary educated manager	0.44	0.44
Tertiary educated manager	0.49	0.49
Dispersion in establishment size	180.90	183.16
Entrepreneurship		
Share of entrepreneurs	0.05	0.05
Fraction of entrepreneurs with		
Primary education	0.19	0.19
Secondary education	0.60	0.60
Tertiary education	0.22	0.21
Threshold to become entrepreneur		
Primary education	3.22	3.22
Secondary education	4.22	4.24
Tertiary education	6.81	7.16
Aggregate variables		
Private capital-output-ratio	1.99	1.96
Profits to GDP	0.13	0.13
Wagebill	0.63	0.64
College premium	0.61	0.69
High-school premium	0.31	0.32
College premium of entrepreneurs	1.29	1.40
High-school premium of entrepreneurs	0.67	0.68
Private sector output per worker	0.94	0.92
GDP per capita	0.84	0.83
Output per Establishment	16.51	16.40

3) Results with high substitutability between education groups

In this section we report the calibrated parameters (fixed parameters are maintained from the baseline calibration) and targeted moments for the model when parameters ψ^n and ψ^h are fixed at 0.976.

Table A18: Calibration: Model with high substitutability between education groups; $\psi^n = \psi^h = 0.976$

Calibrated parameters		**Target**
Shape parameter, tertiary (α_t)	1.149	Mean establishment size,
Shape parameter, secondary (α_s)	1.005	– entrepreneur secondary educated
Shape parameter, primary (α_p)	0.962	– entrepreneur primary educated
Scale parameter (ξ)	0.112	Establishment share (< 10)
Location parameter (θ)	1.982	Establishment share (> 100)
		Employment share (> 100)
Production function		
Span-of-Control (γ)	0.855	Profit share
Weights		
Unskilled labor in production (μ)	0.310	Labor share
Capital in Production (λ)	0.548	Capital-output ratio
Secondary educ. workers in skilled input (ϵ^h)	0.619	College premium (2000)
Primary educ. workers in unskilled input (ϵ^n)	0.765	High school premium (2000)
Substitutability		
Between capital and skilled labor (σ)	0.856	College and High school premia 90's & 70's
Between capital and unskilled labour (ρ)	-1.124	College and High school premia 90's & 70's
Time series		
TFP 90s (A_{90})	0.957	GDP per capita 90's
TFP 70s (A_{70})	0.873	GDP per capita 70's

Table A19: Calibration targets and model values: Model with high substitutability between education groups; $\psi^n = \psi^h = 0.976$

Targeted moments	**Source**	**Data**	**Model**
Mean establishment	US Census	17.46	17.40
Relative size establishment primary educated manager	SBO(2007)	0.50	0.50
Relative size establishment secondary educated manager	SBO(2007)	0.83	0.83
Establishment share, < 10 employees	US Census	0.70	0.73
Establishment share, > 100 employees	US Census	0.03	0.02
Employment share, > 100 employees	US Census	0.45	0.45
Capital-output-ratio	Kamps (2006)	2.00	1.94
Profits to GDP	BEA	0.13	0.13
Wage bill	BEA	0.63	0.63
College Premium 2000	Goldin and Katz 2009	0.61	0.61
College Premium 1990	Goldin and Katz 2009	0.55	0.61
College Premium 1970	Goldin and Katz 2009	0.47	0.59
High School Premium 2000	Goldin and Katz 2009	0.31	0.31
High School Premium 1990	Goldin and Katz 2009	0.28	0.30
High School Premium 1970	Goldin and Katz 2009	0.23	0.30
GDP per capita 1990's relative to 2000's	BEA	0.82	0.82
GDP per capita 1970's relative to 2000's	BEA	0.55	0.52
Non-targeted moments	**Source**	**Data**	**Model**
Relative size establishment tertiary educated manager	SBO(2007)	1.27	1.91
Employment share, < 10 employees	US Census	0.15	0.19
Employment share, $20 - 99$ employees	US Census	0.30	0.25
Establishment share, $20 - 99$ employees	US Census	0.13	0.10
Fraction of large (> 100 employees) firms managed by			
tertiary educated	SBO(2007)	0.63	0.49
secondary educated	SBO(2007)	0.35	0.45
primary educated	SBO(2007)	0.02	0.06
Self-employment rate	OECD	0.07	0.05

Table A20: Results: United States and Mexico; Model with high substitutability between education groups; $\psi^n = \psi^h = 0.976$

	US	Mexico
Firm size distribution		
Mean establishment size		
Overall	17.39	15.13
Entrepreneurs with primary education	8.65	12.18
Entrepreneurs with secondary education	14.46	32.47
Entrepreneurs with tertiary education	33.23	65.11
Establishment share, < 10 employees	0.73	0.76
Establishment share, > 100 employees	0.02	0.02
Employment share, < 10 employees	0.19	0.22
Employment share, $20 - 99$ employees	0.25	0.25
Employment share, > 100 employees	0.45	0.41
Fraction of large firms (> 100 employees) with		
Primary educated manager	0.06	0.63
Secondary educated manager	0.45	0.17
Tertiary educated manager	0.49	0.20
Dispersion in establishment size	100.7	100
Entrepreneurship		
Share of entrepreneurs	0.05	0.05
Fraction of entrepreneurs with		
Primary education	0.19	0.90
Secondary education	0.60	0.07
Tertiary education	0.21	0.03
Threshold to become entrepreneur		
Primary education	3.12	3.41
Secondary education	4.08	6.79
Tertiary education	6.57	10.98
Aggregate variables		
Private capital-output-ratio	1.94	1.11
Profits to GDP	0.13	0.13
Wagebill	0.63	0.74
College premium	0.61	0.62
High-school premium	0.31	1.00
College premium of entrepreneurs	1.30	1.01
High-school premium of entrepreneurs	0.67	1.67
Private sector output per worker	165.3	100
GDP per capita	163.7	100
Output per Establishment	190.0	100