Web appendix

to the paper

Politicians at Work
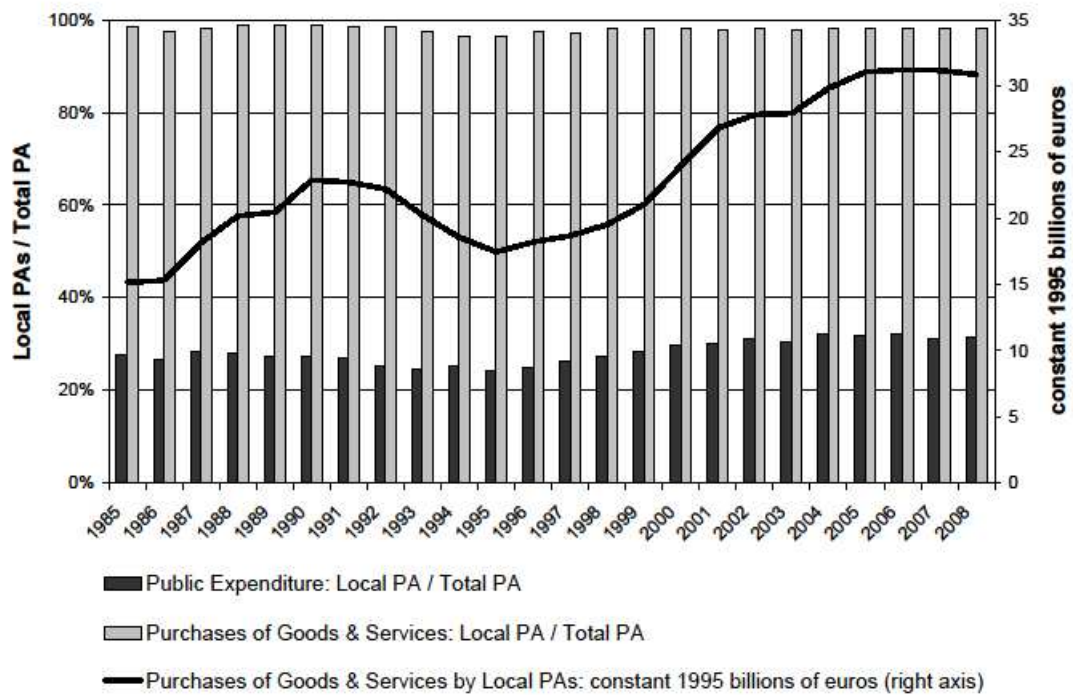
The Private Returns and Social Costs
of Political Connections

Federico Cingano and Paolo Pinotti

May 2011

downloadable from: http://sites.google.com/site/paolopinotti/

Figure A1: public expenditure in Italy, by type of purchases and level of the public administration, years 1985-2008


Note: This Figure shows, for the period 1985-2008, the value of purchases of goods and services by local administrations (at constant 1995 billions of euros). It also shows their incidence on total purchases by the public administration, as well as the same ratio for the overall public expenditure. Source: authors' calculations on national accounts data from the Italian Statistical Institute (ISTAT).

Figure A2: changes in firm revenues and connections with the majority coalition in the local public administration, before and after local elections; restricting to beginning-of-period employees
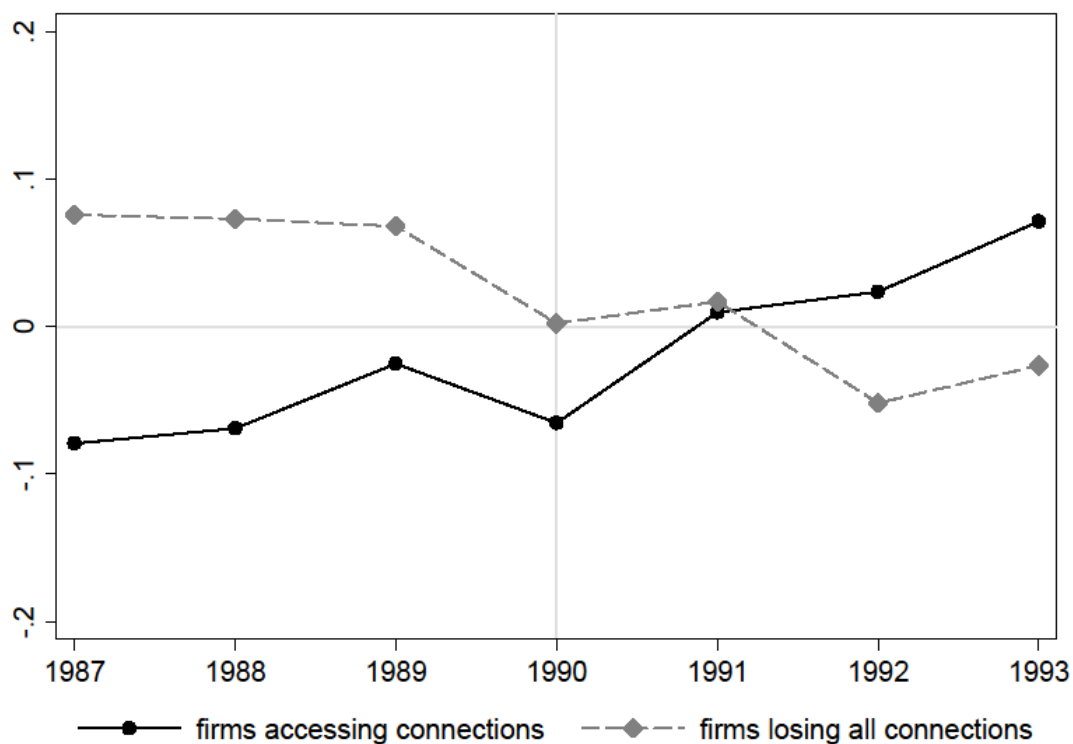

Note: The figure plots the yearly averages of the residuals obtained from a firm-level regression of (log of) yearly revenues on firm, sector-year and province-year fixed effects. Averages are computed for two groups of firms: those accessing (solid line) and losing (dashed line) connections to local administrations as a consequence of elections held in 1990. Firms accessing a connection are those experiencing the appointment of (at least) one employee with a party (or coalition of parties) that *won* the elections for a local government in 1990. Firms in the second group are those that in 1990 lost any previously held connection to a winning party (or coalition of parties). Variation in connection status is restricted to connections established and/or lost through the subsample of workers already employed by the firm at the beginning of the sample period (in most cases, 1985).

Figure A3: changes in firm revenues and connections with the majority coalition in the local public administration, before and after local elections; restricting to changes in political majorities
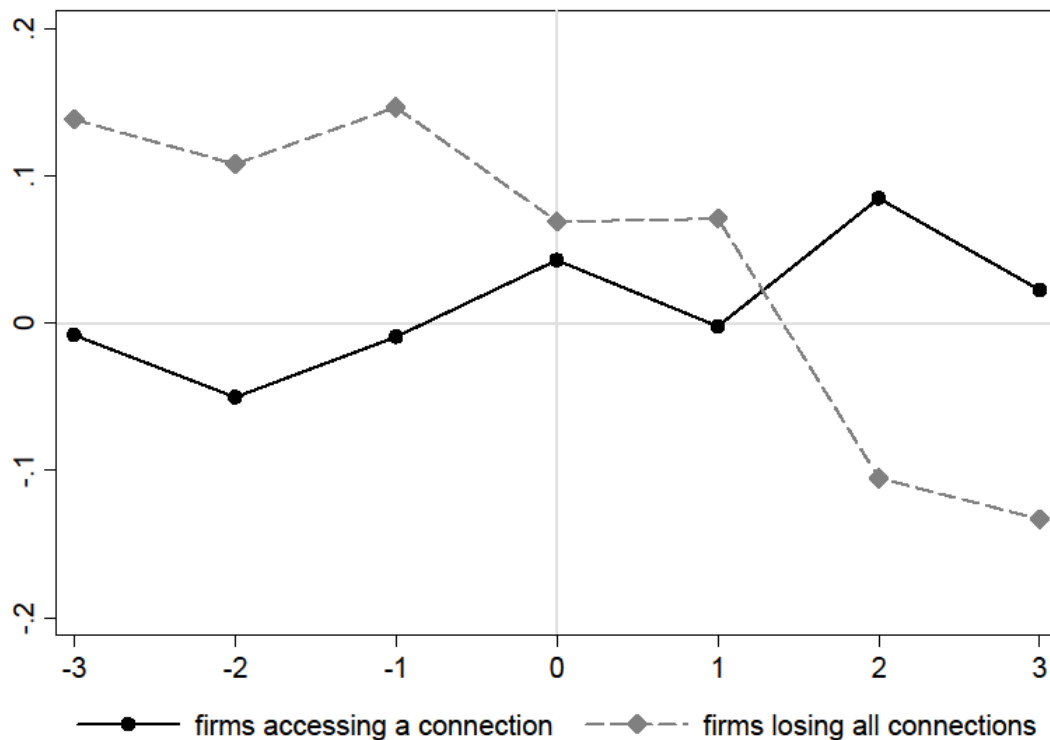
Note: The figure plots the yearly averages of the residuals obtained from a firm-level regression of (log of) yearly revenues on firm, sector-year and province-year fixed effects. Averages are computed for two groups of firms: those accessing (solid line) and losing (dashed line) connections to local administrations as a consequence of elections held at time t=0. Switching in the connection status occurs as a consequence of changes in the majority of local governments. More specifically, firms accessing a connection are those that, having been connected to a minority party up to year t-1, experience in year t the appointment of (at least) one employee with a party (or coalition of parties) that *won* the elections. Firms in the second group are those that lost any previously held connection to a winning party and remain connected to a minority party (or coalition of parties) starting from year t.

Figure A4: public expenditure over value added in manufacturing across regions and political malfeasance across provinces
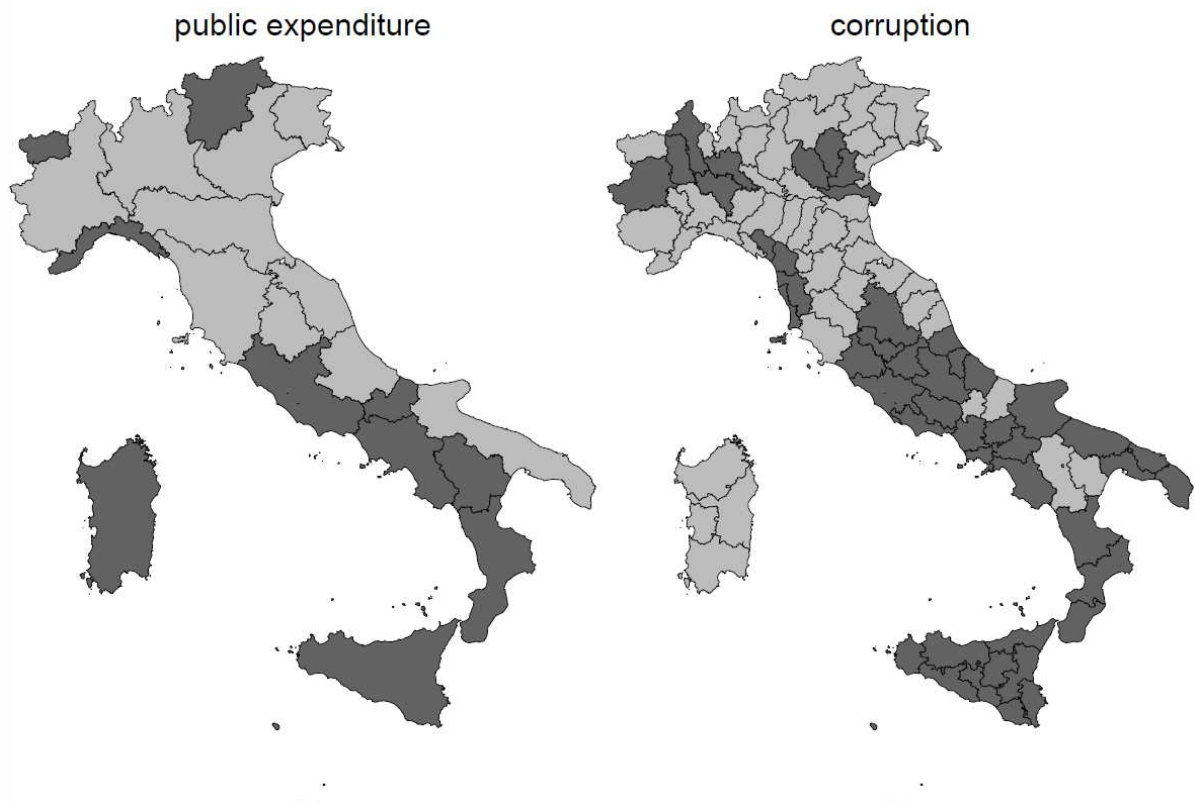
Note: The map on the left shows the Italian regions characterized by a high and low ratio of public expenditure over value added in manufacturing, based on the Italian Regional Economic Accounts for years 1996 and 1997. The map on the right shows the Italian provinces characterized by high and low incidence of political malfeasance, as measured by the fraction of members of the national Parliament that were subsequently accused of misbehavior by the judiciary authority. Darker colors denote regions and provinces above the median in terms of each variable.

Table A1: number of local politicians in Italy, by government level and role, and summary statistics for the individuals in the INPS-INVIND employer-employee data, years 1985-1997

universe of local PAs		INPS-INVIND employer-employee matched data set						
				only year 1991				
				WEEKLY WAGE		AGE		FEMALE
				avg.	median	avg.	median	fraction
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		whole sample						
employees		1,423,519	1,130,403	478	409	38.2	39	0.21
local politicians	307,783	11,037	5,431	562	471	40.6	41	0.03
region- & province-level	9,583	162	49	752	528	45.4	44	0.04
municipality-level	302,646	10,943	5,382	560	471	40.6	41	0.03
council	291,521	10,741	5,376	560	470	40.6	41	0.03
executive	91,880	3,044	1,498	569	483	41.6	42	0.02
mayor	17,755	431	192	727	583	44.2	44	0.01
		trimmed sample						
employees		507,656	380,127	439	379	36.6	36	0.26
local politicians		3,710	1662	555	461	39.8	40	0.05
region- & province-level		53	9	817	782	45.3	47	0.00
municipality-level		3,677	1,653	554	460	39.8	40	0.05
council		3,621	1,649	553	459	39.8	40	0.05
executive		990	459	592	489	41.2	42	0.03
mayor		144	60	752	592	44.3	44	0.02

Note: This table presents summary statistics for the universe of local politicians in Italy (column 1) and for the individuals in our matched worker-firm dataset (columns 2-8), both as regards the total and the trimmed sample (top and bottom panel, respectively). The first column reports the number of individuals ever appointed in a local public administration in Italy during the period 1985-97, distinguishing between higher (regions and provinces) and lower levels of local government (municipalities) and, within the latter, between politicians with different roles. Column (2) reports the same numbers for the subset of local politicians ever employed in an INVIND firm during the period 1985-97. For reference, the total number of employees is also reported (first row). Column (3) reports the same numbers for the individuals employed in the median year of our sample period. For these workers, the remaining columns (cols. 4-8) report some basic individual characteristics.

Table A2: summary statistics for the firms in the INPS-INVIND employer-employee data, years 1985-1997

VARIABLE	SUMMARY STATISTICS			STANDARD DEVIATION			DISTRIBUTION		
	obs.	firms	mean	overall	between	within	10th pc	50th pc	90th pc
economic variables									
log of total revenues, r	9139	878	9.984	1.073	1.017	0.421	8.705	9.942	11.350
log of value added, va	9072	877	8.797	0.963	0.913	0.382	7.649	8.758	10.083
log of exports	9139	878	4.730	4.482	3.273	3.165	0	6.461	9.964
log of domestic sales	9112	878	9.674	1.173	1.080	0.514	8.330	9.648	11.154
log change of output, Δy	3690	773	-0.008	0.266	0.180	0.231	-0.206	-0.001	0.195
log change of sale prices, Δp	3762	777	0.034	0.067	0.045	0.058	-0.030	0.040	0.100
number of workers	9139	878	395	309	303	51	128	293	882
capital, ths. of euros (constant 1990 prices)	7450	704	20182	42478	40136	7272	2206	9414	45874
intermediate inputs, ths. of euros (constant 1990 prices)	9139	878	29394	60719	54778	24023	3571	14006	62934
log of EBITDA	8215	862	7.159	1.317	1.169	0.675	5.561	7.140	8.828
EBT ths. of euros (constant 1990 prices)	9139	878	1071	8075	5413	6378	-607	315	4032
ROA	9139	878	9.404	10.559	8.521	7.393	0.262	8.274	21.489
total income taxes (ratio over EBT)	9121	877	0.331	1.117	0.379	1.053	0	0.380	0.671
total taxes (ratio over EBT)	9121	877	0.334	1.145	0.392	1.079	0	0.386	0.684
log of total wages	9139	878	15.923	0.848	0.820	0.270	14.889	15.884	17.088
log of weeks worked	8982	866	9.603	0.727	0.739	0.129	8.741	9.563	10.656
log of number of workers	9080	878	5.178	0.837	0.787	0.350	4.220	5.136	6.303
political variables									
connection(s) with local PA(s), POLCON	9139	878	0.585	0.493	0.407	0.290	0	1	1
with the majority coalition, POLWIN	9139	878	0.511	0.500	0.405	0.304	0	1	1
through council member(s), COUNCIL	9139	878	0.505	0.500	0.404	0.306	0	1	1
through executive member(s), EXECUTIVE	9139	878	0.254	0.436	0.347	0.277	0	0	1
through mayor(s), MAYOR	9139	878	0.059	0.236	0.201	0.140	0	0	0
through an employee in the I quartile of firm wages	9139	878	0.351	0.477	0.387	0.291	0	0	1
through an employee in the II quartile of firm wages	9139	878	0.310	0.463	0.356	0.304	0	0	1
through an employee in the III quartile of firm wages	9139	878	0.230	0.421	0.316	0.286	0	0	1
through an employee in the IV quartile of firm wages	9139	878	0.136	0.343	0.251	0.244	0	0	1
number of connections (with the maj. coalition)	9139	878	1.376	2.477	2.266	1.069	0	1	4
total population in connected PA (with the maj. coalition)	9139	878	17830	191000	118738	157640	0	422	18318
average population in connected PA (with the maj. coalition)	9139	878	9781	133000	92389	106101	0	319	8129

Table A3: the effect of political connections on the productivity of connected firms, fixed effects panel regressions controlling for local and sectoral shocks, years 1985-1997

DEPENDENT VARIABLE: ALTERNATIVE MEASURES OF TOTAL FACTOR PRODUCTIVITY			
	Solow residual	*Olley Pakes*	*Levinsohn Petrin*
	(1)	(2)	(3)
connected, with the majority	0.024	0.026	0.031
	(0.017)	(0.020)	(0.022)
obs.	7339	7280	7280
firms	704	696	696
R-square	0.304	0.326	0.256

Note: The unit of analysis are firm-year observations in the INPS-INVIND employer-employee data over the period 1985-97. The dependent variable is the log of Total Factor Productivity obtained using three alternative procedures, indicated on top of each column, to estimate the production factor coefficients. The Solow method assumes perfect competition in the input markets and constant returns to scale to derive production coefficients from the labor share. The Olley and Pakes procedure allows for direct estimates of production coefficients, accounting for both endogeneity in the choice of inputs (by approximating unobserved productivity shocks with a nonparametric function of observable variables) and for selection in firms continuation decision (introducing a Heckman-type correction term). The Levinsohn-Petrin procedure is very similar but uses the quantity of inputs instead of investment to account for the unobserved productivity shocks. The coefficients are allowed to vary at the industry-level. The procedure is applied to all firms in the Company Accounts Data Service (CADS, described in section 4.1). Value added is deflated using 2-digit National Accounts deflators. The capital stock has been reconstructed using the perpetuary inventory method. The explanatory variables are binary indicators for the firm employing at least one local politician in a given year and are constructed merging the INPS-INVIND data to the Italian Registry of Local Politicians. All regressions include firm, province-year and sector-year fixed effects. Robust standard errors clustered by firm are reported in parenthesis. *, ** and *** denote coefficients significantly different from zero at the 90%, 95% and 99% confidence level, respectively.

Table A4: ratio of sales to the public administrations over total sales for industrial sectors in Italy, year 1992

nace rev. 2	name	dependence
	most dependent sectors	
25	Pharmaceutical products	0.399
49	Building and repairing of ships and boats	0.118
51	Manufacture of planes, aircrafts and spacecrafts	0.095
20	Pulp, paper and paper product	0.046
21	Publishing and printing	0.046
24	Chemicals and chemical products	0.045
54	Other manufacturing industries	0.042
22	Manufactures of coke and petroleum products	0.037
27	Rubber products	0.032
43	Manufacture of communication equipment	0.030
45	Manufacture of medical and precision instruments	0.028
55	Recycling	0.023
	least dependent sectors	
13	Tobacco and beverages	0.002
12	Manufacture of prepared animal feeds	0.002
18	Manufacture of footwear	0.001
14	Fabric and Textiles	0.001
46	Optical equipment	0.001
50	Manufacture of railway and tramway locomotives and rolling stock	0.000
39	Manufacture of computers and other information processing equipment	0.000
38	Manufacture of domestic appliances n.e.c.	0.000
40	Manufacture of electrical equipment for engine and other	0.000
42	Manufacture of electronic components	0.000
44	Manufacture of television and radio receivers, sound or video recording	0.000
53	Manufacture of watches and clocks	0.000

Note: This table reports the sectors characterized by the highest and lowest incidence of sales to the public administration over total sales. The measure of industry dependence on public demand was computed from the 2-digit IO matrix issued by the Italian National Statistical Institute (Istat) in 1992. Specifically, manufacturing industries were ranked based on the fraction of demand of their products (``use'') from the PA, Education, Health and Waste sectors. The sectoral classification follows the 2-digit ATECO 1991, which is the Italian adaptation of the NACE Rev. 1.

Table A5: the effect of political connections on the market shares of connected firms and their main competitors, fixed effects panel regressions controlling for local and sectoral shocks, years 1985-1997

	1digit ESA (baseline) (1)	2digit ESA (2)	4digit NACE (3)	1digit ESA * NUTS2 reg. (4)	Effects on own industry (5)
connections with the majority	.057*** (.021)	.064*** (.021)	.064*** (.023)	.061*** (0.021)	.056** (0.021)
average connection status of main competitors					-0.166* (0.087)
obs.	9139	9139	9139	9130	9139
firms	878	878	878	877	878
R^2	0.308	0.383	0.552	0.307	0.309

Note: The unit of analysis are firm-year observations in the INPS-INVIND employer-employee data over the period 1985-97. The dependent variable is the log of total yearly revenues, deflated using industry-level indexes from the Italian National Accounts. The explanatory variables are binary indicators for the firm, or the fraction of the firm's main competitors, employing at least one local politician in a given year and are constructed merging the INPS-INVIND data to the Italian Registry of Local Politicians. All regressions include firm, province-year and sector-year fixed effects, with different levels of sectoral detail. Column (1) replicates our baseline specification (column 1 of table 2), using 1-digit (ESA79) sector-year dummies. Column (2) increases the industry breakdown using the 48 industries in the 2-digit ESA79 classification. Column (3) exploits the highest available breakdown, namely the 4-digit NACE Rev. 1 classification (217 industries). Results in column (4) are obtained controlling for industry-by-area (1-digit ESA79*regions) interactions. The regions of Italy are the first-level administrative divisions of the state, corresponding to the EU NUTS2 subdivision. Finally, in column (5) the baseline specification of column (1) is augmented with the share of connected firms in the same ESA79 2-digit industry. Robust standard errors clustered by firm are reported in parenthesis. *, ** and *** denote coefficients significantly different from zero at the 90%, 95% and 99% confidence level, respectively.