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"Dividend Taxation and Firm Performance with Heterogeneous Payout Responses" by Katarzyna Bilicka, Irem Güçeri, and Evangelos Koumanakos

Appendices

A Comparison with previous literature on investment effects of dividend taxation

Why do the results for the effects of dividend taxes differ so much across countries and studies? Why do Matray (2022) find a positive effect of dividend tax increases on investment, while Yagan (2015) finds no investment response? There are several potential answers.

First, given differential investment responses across asset categories, we turn to examine differences in the share of machinery and construction in gross capital formation in private sector between France, Greece and US. OECD statistics on gross capital formation suggests that Greek firms have the largest share of equipment in all capital formation, followed by US, followed by France. In particular, Greek firms have, on average, 36% of their capital formation coming from equipment during the 2000 - 2019 period. In turn, French firms have only 23% and US firms have 33%. We find that dividend taxes have no effect on equipment investment, but large effects on land and BVF (buildings, vehicles and furniture), offering a likely explanation to the differential responses between countries. In Greece, where equipment capital formation plays a large role, we find no overall effect on investment. In France, where equipment capital formation is much less important for overall investment, Matray (2022) find a large overall positive investment response. In the US, which is very similar to Greece in that respect, Yagan (2015) also found no average investment response. Our new detailed asset breakdown data allows us to reconcile these findings.

Second, in France, a median firm distributes dividends according to descriptives provided by Matray (2022), while a median firm in Greece does not. This suggests much higher propensity for dividend distributions in France, and consequently a larger exposure to the dividend tax reform. We find that firms that have high dividend distributions prior to the reform, increase their investment, which is also consistent with results from Matray (2022). The lack of average investment effect that we find may be driven by relatively fewer firms for which this reform is binding.

Table A1: Recent empirical papers on payout taxation.

Paper	Tax base	Direction of policy change	Identifying variation	Main data source	Payout response	Payout elast.	Investment response	Other outcomes
Poterba (1987)	Dividend	Cut	Dynamic model, US (1986)	Aggregate NIPA, US	(+)	1.57	(+)	n.a
Chetty and Saez (2005)	Dividend	Cut	Before/After Owner taxable status	Listed firms, CRSP (US)	(+), ext.margin	0.5	n.a	Repurchases
Alstadsæter and Fjærli (2009)	Dividend	Expected rise	Before/After announcement [then implementation]	Shareholder & Accounting Register, Norway		(+) [then (-)]	n.a	Capital structure
Yagan (2015)	Dividend	Cut	US S-Corps vs C-Corps	Tax returns, US	(+)	0.5	Zero	Compensation
Alstadsæter et al. (2017)	Dividend	Cut	Closely- vs widely-held	Tax returns, Sweden	(+)	n.a	(+) for cash-constrained	Equity
Jacob and Michaely (2017)	Dividend	Cut	High-vs low-tax owners of closely-held	Tax returns, Sweden	(+)	[0, 5.3]	(+)	Wages
Moon (2022)	Capital gains	Cut	Small vs Large (Eligibility)	Tax returns, Korea	n.a	n.a	(+)	Various
Hanlon and Hoopes (2014)	Dividend	Expected rise	Before/After announcement	Listed firms, CRSP (US)	(+)	n.a	n.a	n.a
Bach et al. (2023)	Dividend	Rise, then Cut	Two reforms in France	Tax returns, France	(-), then (+)	n.a	Zero	Various
Our paper	**Dividend**	**Introduction**	**SA vs LLC year-end date**	**Tax returns, financials, Greece**	**(-), ext.margin**	**1.25**	**Zero or positive**	**Survival, growth, wages**

Third, according to the new view vs old view debate (see, for example, Zodrow (1991)), investment financing policies are likely to affect firms' responsiveness. If the financing source of marginal investment is new equity, a new dividend tax could reduce the amount of investment that firms do. If firms prefer funding investment using retained earning, then the amount of investment that firms do should not change. It is entirely plausible that an average Greek firm is very different from a French firm, in terms of how they finance their investment. For example, on average, before the reform SAs used more retained earnings than LLCs in Greece, which could explain a small investment response. Further, if an average Greek firm uses retained earnings more often than the French one, this would further explain diverging results.

B Are private firms different from listed ones?

Payout policies of listed firms may be significantly different from those of private firms. In principle, payout responses of listed firms are likely to be more sticky, as shareholders may demand dividend payouts. In turn, private firms may be more responsive to policies. Given that the majority of firms in our sample are private, with only 240 listed firms in 2007, the paper focuses on private firms. In Table B1, we show the differential response of listed firms. We include an interaction term between listed dummy variable and the SA dummy to have triple difference in difference interaction. We show results across all main outcome variables that we consider in the paper. First, we find that listed firms did not change how much dividends they paid out relative to LLC, confirming the payout policy stickiness for those firms. At the extensive margin, it even appears that listed firms increased the incidence of dividend distributions relative to LLCs. We also find that listed firms reduced overall investment and investment in land and BVF. This reduction in investment in response to a new tax is consistent with old view and runs contrary to the agency view proposed by (Chetty and Saez, 2010).

Table B1: Listed firms responses.

	(1) Div/ta	(2) $1_{(\text{Div}>0)}$	(3) investment	(4) land & BVF.	(5) equipment	(6) reserves	(7) cash	(8) ret.earn.	(9) s.t. leverage	(10) l.t. leverage
Treated x [Year = T]	-0.005***	-0.073***	0.006	0.020**	0.002	0.012***	0.001	0.004	-0.051***	-0.006***
	(0.001)	(0.010)	(0.015)	(0.009)	(0.004)	(0.003)	(0.005)	(0.005)	(0.011)	(0.002)
Treated x [Year = T]	0.004***	0.092***	-0.108***	-0.047	-0.003	-0.022*	0.004	0.005	-0.036**	0.004
× listed	(0.001)	(0.006)	(0.033)	(0.032)	(0.027)	(0.012)	(0.009)	(0.017)	(0.018)	(0.010)
Observations	93394	93394	91978	93394	92091	93394	93394	93394	93394	93394
Mean	0.020	0.288	0.106	0.123	0.014	0.119	0.154	-0.161	0.478	0.045

Note: This table summarizes results on dividend distributions for listed and unlisted firms. The dependent variable is dividends scaled by asset value fixed in 2007 in column 1, a dummy equal to 1 when a firm distributed dividends in a given year in column 2, overall investment calculated as the growth rate of fixed assets in column 3, investment in land and BVF (buildings, vehicles and furniture) assets in column 4, investment in equipment in column 5. In column 6, 7, 8, 9, and 10 we consider reserves, cash, retained earnings and leverage. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. Listed equals 1 when a firm is publicly traded. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. Year T refers to the reform year. There is no listed firms with financial year ending in June, so we only include December year end firms here.

C Payout policy heterogeneity

C.A Heterogeneity of response by payout policy preferences

Figure C1 demonstrates that there is a large heterogeneity in firm payout policies in our sample even in the absence of tax reform. In Panel A, we show that the majority of firms actually never distribute dividends and this is the case across all legal ownership statuses. In Panel B, we show that firms that pay above median dividends are distributed across firm types. Table C1 also confirms that firms with different regular distribution policies are significantly different from those that never distribute dividends across all firm observable characteristics. Nevertheless, in Table C2, we show that the effect of the reform on dividend distributions at the extensive and intensive margin is prevalent both for firms that always distribute (Panel A) and those that do so only sometimes (Panel B).

Table C1: Descriptive statistics for firms with different payout policies.

	Never payer	Sometime payer	diff	t-test
Divid/ total ass	0.000	0.046	0.046***	68.555
% firms paying dividends	0.000	0.660	0.660***	145.310
log revenue	10.981	13.932	2.952***	57.548
log assets	13.847	14.364	0.517***	27.887
inv rate	0.093	0.127	0.034***	5.984
Short-term Leverage	0.433	0.535	0.103***	20.950
Long-term Leverage	0.051	0.037	-0.014***	-9.191
reserves	0.138	0.092	-0.046***	-16.053
cash	0.157	0.154	-0.003	-1.335
ret. earn.	-0.291	0.003	0.294***	50.982
Observations	14287	10879	25166	

Note: This table summarizes average firm characteristics in 2007, the last year before the reform, for firms the never distribute dividends (column 1) and firms that sometimes distribute dividends (column 2).

Figure C1: Dividend distribution patterns before the reform.

a Number of firms by payout patterns.

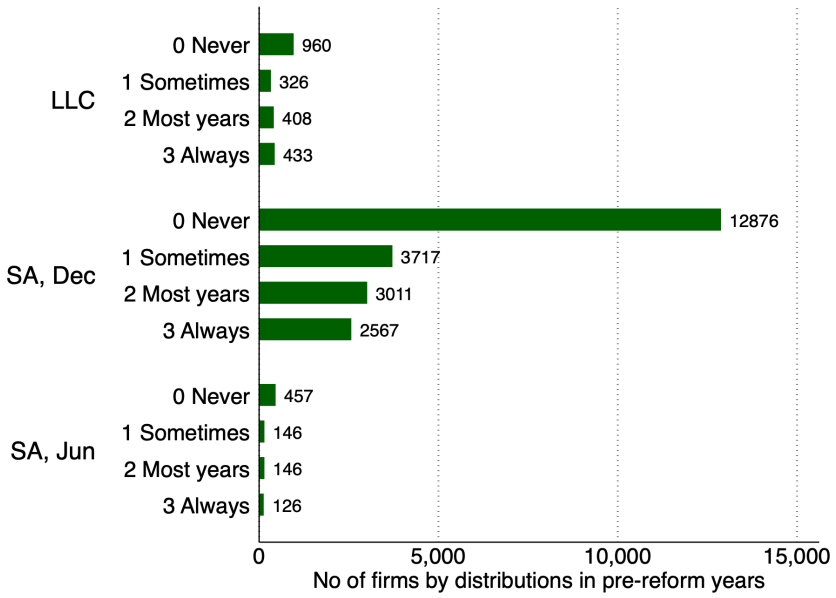
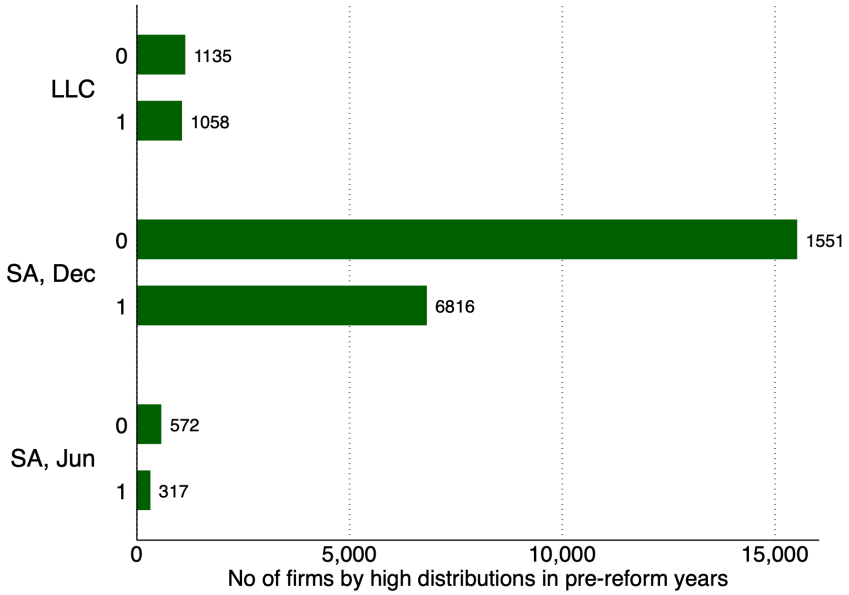


Figure C2: Number of firms by high dividend distribution patterns.



Note: In Panel A, we show the distribution of firms across payout categories before the reform. We classify firms according to whether and how often they distribute dividends before the reform. In Panel b, we classify firms according to whether they paid more than 50% of their profits out before the reform - high payers, value 1 - and those that paid below 50% of their profits before the reform - non-high payers, value 0.

Table C2: Dividend distributions: heterogeneity in payout persistence.

	(1) Div/ta	(2) Div/ta	(3) Div/ta	(4) $1_{(\text{Div}>0)}$	(5) $1_{(\text{Div}>0)}$	(6) $1_{(\text{Div}>0)}$
			Panel A: Always distributors			
Treated x [Year = *T*]	-0.008*			-0.133***		
	(0.004)			(0.024)		
Tr. (Jun) x [Year = *T*]		0.031***	0.033***		0.111***	0.108***
		(0.007)	(0.007)		(0.032)	(0.032)
Tr. (Dec) x [Year = *T*]		-0.011**	-0.010**		-0.148***	-0.145***
		(0.004)	(0.004)		(0.024)	(0.023)
Tr. (Jun) x [Year = *T+1*]			0.008			-0.169***
			(0.007)			(0.050)
Tr. (Dec) x [Year = *T+1*]			0.007			-0.115***
			(0.005)			(0.027)
Observations	13714	13714	17230	13714	13714	17230
Mean	0.082	0.082	0.082	1.000	1.000	1.000
			Panel B: Often and sometimes distributors			
Treated x [Year = *T*]	-0.006*			-0.112***		
	(0.003)			(0.021)		
Tr. (Jun) x [Year = *T*]		0.009**	0.008**		0.104***	0.100***
		(0.004)	(0.004)		(0.034)	(0.034)
Tr. (Dec) x [Year = *T*]		-0.006**	-0.006**		-0.123***	-0.120***
		(0.003)	(0.003)		(0.021)	(0.021)
Tr. (Jun) x [Year = *T+1*]			-0.004			-0.174***
			(0.004)			(0.037)
Tr. (Dec) x [Year = *T+1*]			-0.001			-0.132***
			(0.004)			(0.023)
Observations	35746	35746	43053	35746	35746	43053
Mean	0.031	0.031	0.031	0.523	0.523	0.523

Note: This table summarizes heterogeneity results on dividend distributions. In Panel A we include firms that distributed dividends in each of the years 2000 -2007 and in Panel B firms that distributed dividends in some of the years between 2000 - 2007. The dependent variable is dividends scaled by total capital (asset value fixed in 2007) in columns 1 - 3. In columns 4 - 6, the dependent variable is a dummy equal to 1 when a firm distributed dividends in a given year. In columns 2,3, 5 and 6 we split the treated dummy into treated June and treated December firms. In each column we include year, firm and sector-year fixed effects. In columns 1,2,4 and 5, we include a sample that ends in 2008, in columns 4 and 6, we include a sample that ends in 2009. Standard errors are clustered at the firm level. Year *T* refers to the reform year, and Year *T+1* is the year following the reform. In Year *T*, December year-end firms are directly affected by the reform, while June year-end firms are not taxed, but anticipate the tax in year *T+1*.

C.B Heterogeneity of response by payout policy types: high dividend payers

The median firm in each sector distributes no dividends. We therefore label the firms that distribute over 50% of their after-tax profits (prior to the reform) as 'high payers'.[23] We posit that the firms that distribute over 50% of profit (in the pre-reform period) have a strong preference to distribute dividends, and this may affect their response to the dividend tax introduction relative to the responses of other firms. On the one hand, these firms may choose not to respond to a dividend tax at all, given their strong preferences for distribution. On the other hand, given the large amount of distributions that they make, the total cost of the dividend tax will be large for them in absolute terms.

In Table C4 we test the responsiveness of these two types of firms. In Panel A, we focus on the effect for high payers, while in Panel B on non-high payers. The format of this Table follows the exposure in Table 2 in the paper, where in columns 1 and 4 we show baseline results, while in columns 2, 3, 4, and 5, we present results splitting SAs into June and December in the post period.

We show that the strong extensive margin response to the dividend tax is largely driven by high payers. High payers give a strong and sustained response by reducing their likelihood to distribute dividends by an average of 15-17 percentage points. In turn, for non-high payers, we find a much smaller response, at around half the magnitude (7 percentage points) of the coefficient for high payers. In Column 3, we show that the December year-end firms that paid high dividends prior to the reform have a large, *knee-jerk*-type short-lived overall response to the introduction of the dividend tax. Non-high payers with December year-ends, on the other hand, respond with a sustained average reduction on the intensive margin. This may mean that the firms that distributed in moderate amounts in the pre-reform period permanently reduced their payout amounts.

Further, the announcement effect (to distribute in the last tax-free year) for the June year-end high payers is strong both on the intensive and the extensive margin. On average, June year-end firms increased the dividend distribution (as a share of their asset size) by 1.5 percentage points. On the extensive margin, June year-end high payers increased the likelihood of distributing by 9.4 percentage points. At the same time, non-high payer June firms did not see a significant response to the announcement of the reform.

In Table C3 and Figure C3 we show descriptive statistics that compare high and non-high

[23] Changes to this threshold, or using the median value for positive dividend distributions lead to similar results and conclusions to the analysis that we present here.

payers both in terms of their observable characteristics and industry distribution. We show that these two types of firms are similarly distributed across sectors. However, we find that a much larger fraction of non-high payers is loss-making. This is a concern if loss-making and profit-making firms respond differently to dividend taxes. We explore this possibility in Table C6 to show that the payout response is mainly driven by profitable firms, especially with regard to June dividend payout increases.[24] However, we still observe a reduction in payouts for December loss-making firms, even though it is of a smaller magnitude than that for profitable firms.

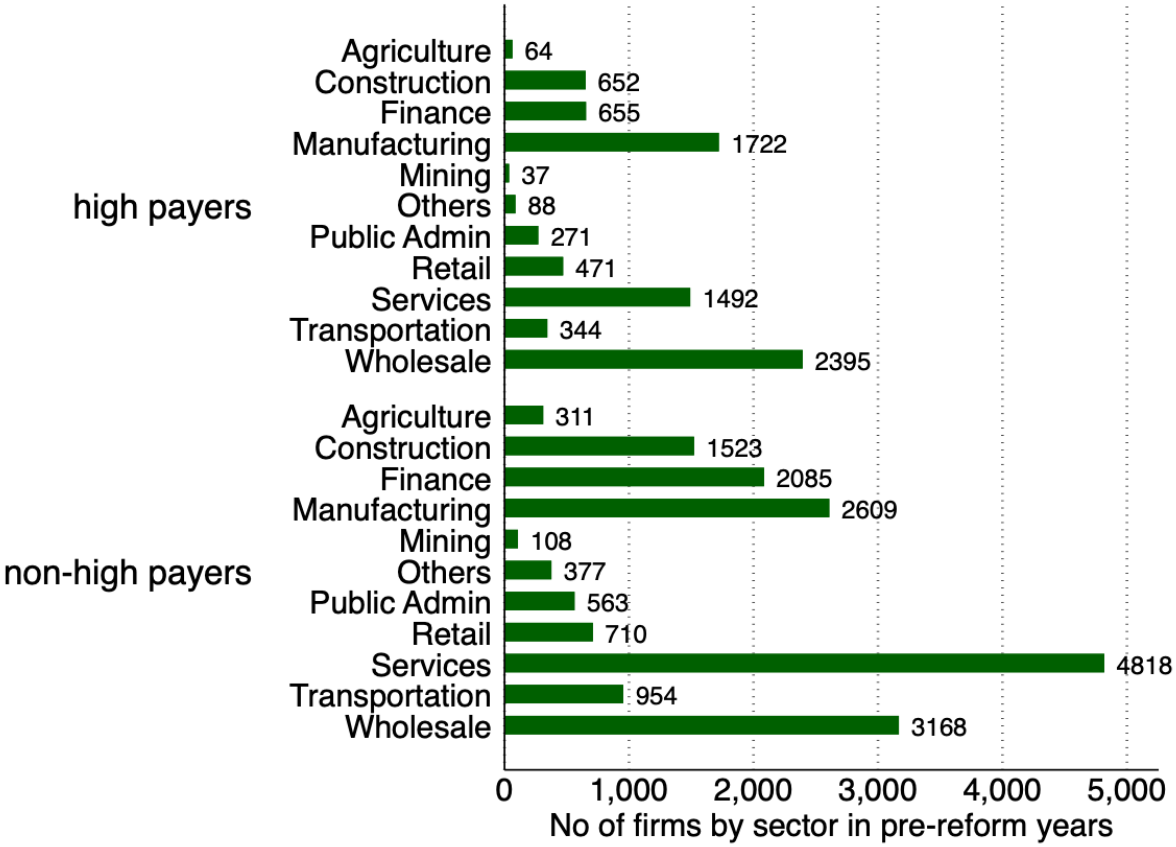
[24] We define a loss-making firm as a firm that made losses in each of the years 2005 - 2007. These results are robust to alternative definitions of loss-making, such as, for example, being loss-making in all time periods.

Table C3: Descriptive statistics: high vs non-high payers.

Panel A: All firms				
	(1) non-high	(2) high	(3) diff	(4) t-test
Divid/ total ass	0.001	0.059	-0.058***	-68.959
% firms paying dividends	0.052	0.787	-0.735***	-152.287
log revenue	11.485	13.965	-2.481***	-53.427
log assets	13.967	14.286	-0.319***	-16.958
tax prof/ total ass	-0.134	0.095	-0.229***	-62.466
acc prof/ total ass	-0.009	0.100	-0.109***	-53.785
% firms with tax loss	0.594	0.084	0.509***	105.198
% firms with acc loss	0.478	0.073	0.404***	84.729
inv rate	0.098	0.132	-0.034***	-5.545
land and buildings	0.111	0.145	-0.034***	-8.323
Short-term Leverage	0.446	0.548	-0.102***	-21.713
Long-term Leverage	0.051	0.033	0.018***	11.739
reserves	0.132	0.086	0.046***	18.160
cash	0.154	0.159	-0.004	-1.540
ret. earn.	-0.245	0.015	-0.260***	-53.256
Age	29.937	31.497	-1.561***	-9.545
SA=1	0.934	0.871	0.063***	15.210
Observations	17226	8191	25417	
Panel B: Profitable firms				
Divid/ total ass	0.003	0.063	-0.060***	-64.298
% firms paying dividends	0.130	0.845	-0.715***	-111.215
log revenue	13.641	14.179	-0.537***	-11.920
log assets	14.342	14.341	0.002	0.066
tax prof/ total ass	0.068	0.115	-0.047***	-20.793
acc prof/ total ass	0.062	0.114	-0.052***	-21.805
% firms with tax loss	0.031	0.003	0.027***	10.818
% firms with acc loss	0.091	0.010	0.081***	19.267
inv rate	0.148	0.135	0.014	1.636
land and buildings	0.146	0.148	-0.002	-0.265
Short-term Leverage	0.466	0.560	-0.093***	-17.846
Long-term Leverage	0.041	0.032	0.009***	4.511
reserves	0.108	0.082	0.026***	7.223
cash	0.155	0.154	0.000	0.064
ret. earn.	0.022	0.026	-0.004	-1.071
Age	31.114	31.742	-0.628***	-2.822
SA	0.896	0.865	0.032***	5.311
Observations	5046	6921	11964	

Note: This table summarizes the average firm characteristics for high and non-high dividend paying firms in 2007, the last year before the reform. We define high payers as those firms that have the ratio of dividend payments to adjusted earnings above 50% between 2005 and 2007. Adjusted earnings is after tax profits (accounting profits minus income tax) less 5% that has to be put aside for reserves.

Figure C3: Dividend distribution patterns before the reform: industry variation.



Note: We show the distribution of firms across sectors before the reform. We classify firms according to whether they pay out high dividends before the reform in years 2005 - 2007. We define high dividend payers as those firms that have the ratio of dividend payments to adjusted earnings above 50% between 2005 and 2007. Adjusted earnings is after tax profits (accounting profits minus income tax) less 5% that has to be put aside for reserves.

Table C4: Dividend distributions: high payout heterogeneity.

	(1) Div/ta	(2) Div/ta	(3) Div/ta	(4) $1_{(\text{Div}>0)}$	(5) $1_{(\text{Div}>0)}$	(6) $1_{(\text{Div}>0)}$
			Panel A: High-payers			
Treated x [Year = *T*]	-0.010***			-0.151***		
	(0.003)			(0.017)		
Tr. (Jun) x [Year = *T*]		0.015***	0.016***		0.092***	0.091***
		(0.004)	(0.004)		(0.029)	(0.029)
Tr. (Dec) x [Year = *T*]		-0.011***	-0.011***		-0.164***	-0.161***
		(0.003)	(0.003)		(0.017)	(0.017)
Tr. (Jun) x [Year = *T+1*]			-0.003			-0.211***
			(0.004)			(0.034)
Tr. (Dec) x [Year = *T+1*]			0.000			-0.160***
			(0.003)			(0.020)
Observations	36643	36643	44989	36643	36643	44989
Dep. var. mean	0.059	0.059	0.059	0.787	0.787	0.787
			Panel B: Non-high payers			
Treated x [Year = *T*]	-0.005***			-0.060***		
	(0.001)			(0.010)		
Tr. (Jun) x [Year = *T*]		0.002	0.002		0.020	0.017
		(0.002)	(0.002)		(0.016)	(0.016)
Tr. (Dec) x [Year = *T*]		-0.005***	-0.005***		-0.064***	-0.065***
		(0.001)	(0.001)		(0.009)	(0.010)
Tr. (Jun) x [Year = *T*]			-0.006***			-0.057***
			(0.002)			(0.017)
Tr. (Dec) x [Year = *T*]			-0.006***			-0.059***
			(0.002)			(0.012)
Observations	74699	74699	93228	74699	74699	93228
Dep. var. Mean	0.001	0.001	0.001	0.052	0.052	0.052

Note: This table summarizes heterogeneity results on dividend distributions. In Panel A we include firms that distributed more than 50% of their after tax profits before the reform and in Panel B firms that distributed less than 50% of their profits before the reform. The dependent variable is dividends scaled by total asset value fixed in 2007 in columns 1 - 3. In columns 4 - 6, the dependent variable is a dummy equal to 1 when a firm distributed dividends in a given year. In columns 2,3, 5 and 6 we split the treated dummy into treated June and treated December firms. In each column we include year, firm and sector-year fixed effects. In columns 1,2,4 and 5, we include a sample that ends in 2008, in columns 4 and 6, we include a sample that ends in 2009. Standard errors are clustered at the firm level. Year *T* refers to the reform year, and Year *T+1* is the year following the reform. In Year *T*, December year-end firms are directly affected by the reform, while June year-end firms are not taxed, but anticipate the tax in year *T+1*.

Table C5: Heterogeneity by high payers.

Panel A: High payers

	(1) investment	(2) land and BVF	(3) equipment	(4) reserves	(5) cash	(6) ret. earn.	(7) ret. earn. dummy	(8) s.t leverage	(9) l.t. leverage
Treated x [Year = T]	0.033	0.031**	0.005	0.008**	0.018*	0.022***	0.001	-0.060***	-0.006
	(0.023)	(0.013)	(0.006)	(0.003)	(0.009)	(0.008)	(0.018)	(0.022)	(0.005)
Observations	34874	35071	34899	22336	22336	22336	22336	22336	22336
Dep. var. mean	0.133	0.147	0.023	0.089	0.150	0.020	0.861	0.535	0.035

Panel B: Non-high payers

	(1) investment	(2) land and BVF	(3) equipment	(4) reserves	(5) cash	(6) ret. earn.	(7) ret. earn. dummy	(8) s.t leverage	(9) l.t. leverage
Treated x [Year = T]	-0.010	0.011	0.004	0.014**	0.010	-0.005	0.015	-0.047***	-0.004
	(0.019)	(0.012)	(0.005)	(0.006)	(0.008)	(0.010)	(0.011)	(0.018)	(0.003)
Observations	70801	71618	70924	58234	58234	58234	58234	58234	58234
Mean	0.098	0.112	0.009	0.131	0.155	-0.253	0.271	0.442	0.052

Note: This table summarizes results for investment responses for high (Panel A) and non-high dividend payers (Panel B). High payers are we firms that paid more than 50% of their profits out in years 2005 - 2007 before the reform, and non-high firms are those that paid below 50% of their profits before the reform. In column 1, the dependent variable is the growth rate of fixed assets. In column 2 it is the growth rate of land, buildings, vehicles and furniture assets; in column 3 it is growth rate of equipment assets. In column 4 w have reserves, in column 5 cash, in column 6 retained earnings, in column 7 retained earnings dummy, in columns 8 and 9 short term and long term leverage, respectively. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. T refers to the reform year.

Table C6: Dividend distributions: profit- vs loss-makers.

	(1) Div/ta	(2) Div/ta	(3) Div/ta	(4) $1_{(\text{Div}>0)}$	(5) $1_{(\text{Div}>0)}$	(6) $1_{(\text{Div}>0)}$
			Panel A: Profitable firms			
Treated x [Year = *T*]	-0.008***			-0.119***		
	(0.002)			(0.013)		
Tr. (Jun) x [Year = *T*]		0.015***	0.015***		0.109***	0.103***
		(0.003)	(0.003)		(0.023)	(0.024)
Tr. (Dec) x [Year = *T*]		-0.009***	-0.009***		-0.131***	-0.130***
		(0.002)	(0.002)		(0.013)	(0.013)
Tr. (Jun) x [Year = *T+1*]			-0.001			-0.157***
			(0.003)			(0.029)
Tr. (Dec) x [Year = *T+1*]			0.000			-0.117***
			(0.002)			(0.015)
Observations	53330	53330	66224	53330	53330	66224
Dep. var. mean	0.038	0.038	0.038	0.544	0.544	0.543
			Panel B: Loss-making firms			
Treated x [Year = *T*]	-0.002			-0.036***		
	(0.002)			(0.013)		
Tr. (Jun) x [Year = *T*]		0.001	0.001		0.001	0.004
		(0.002)	(0.002)		(0.019)	(0.019)
Tr. (Dec) x [Year = *T*]		-0.002	-0.002		-0.038***	-0.035***
		(0.002)	(0.002)		(0.013)	(0.013)
Tr. (Jun) x [Year = *T+1*]			-0.008***			-0.066***
			(0.003)			(0.021)
Tr. (Dec) x [Year = *T+1*]			-0.005**			-0.046***
			(0.002)			(0.017)
Observations	58119	58119	72101	58119	58119	72101
Dep. var. mean	0.004	0.004	0.004	0.063	0.063	0.063

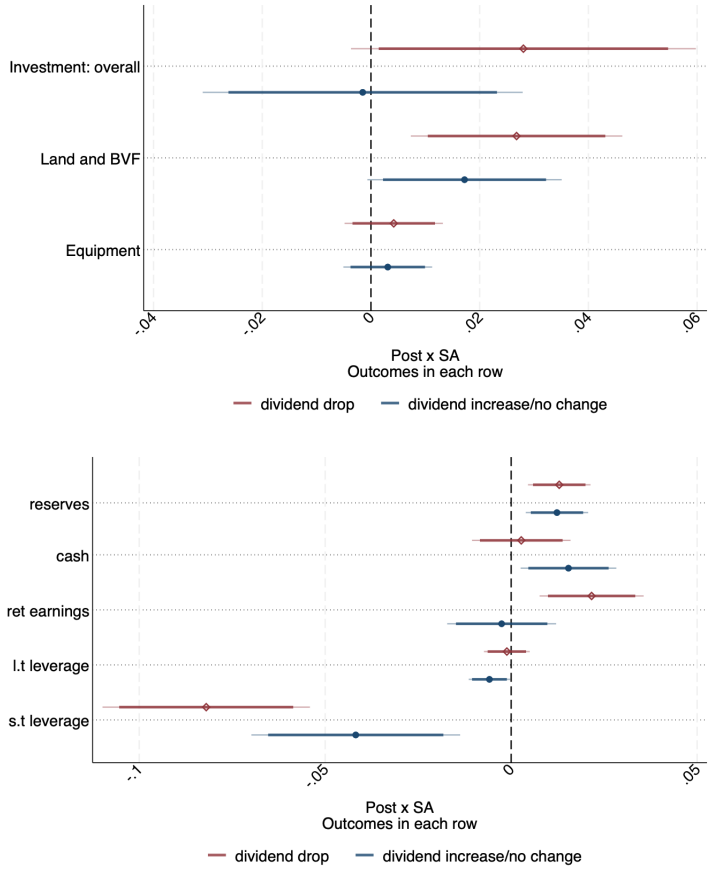
Note: This table summarizes results on dividend distributions dividing firms between profitable (Panel A) and loss-making (Panel B). Loss makers are those firms that have negative taxable profits in years 2005 - 2007. Profitable firms are defined as those that did not have negative taxable profits in any one of the years 2005 - 2007. The dependent variable is dividends scaled by total capital (asset value fixed in 2007) in columns 1 - 3. In columns 4 - 6, the dependent variable is a dummy equal to 1 when a firm distributed dividends in a given year. In columns 2,3, 5 and 6 we split the treated dummy into treated June and treated December firms. In each column we include year, firm and sector-year fixed effects. In columns 1,2,4 and 5, we include a sample that ends in 2008, in columns 4 and 6, we include a sample that ends in 2009. Standard errors are clustered at the firm level. Year *T* refers to the reform year, and Year *T+1* is the year following the reform. In Year *T*, December year-end firms are directly affected by the reform, while June year-end firms are not taxed, but anticipate the tax in year *T+1*.

Table C7: Other margins of responses: profit- vs loss-makers.

	(1) investment	(2) land and BVF	(3) equipment	(4) reserves	(5) cash	(6) ret. earn.	(7) ret. earn. dummy	(8) s.t leverage	(9) l.t. leverage
					Panel A: Loss-making firms				
Treated x [Year = T]	0.022	0.020*	0.004	0.010***	0.003	-0.002	-0.011	-0.049***	-0.007
	(0.019)	(0.011)	(0.005)	(0.002)	(0.007)	(0.005)	(0.013)	(0.015)	(0.004)
Observations	50989	51156	50655	34957	34957	34957	34957	34957	34957
Dep.var mean	0.141	0.148	0.024	0.093	0.149	0.030	0.815	0.508	0.038
					Panel A: Profitable firms				
Treated x [Year = T]	0.007	0.032**	0.006	0.014	0.025**	0.022	0.031**	-0.054**	0.000
	(0.024)	(0.015)	(0.007)	(0.009)	(0.012)	(0.015)	(0.013)	(0.026)	(0.004)
Observations	54778	55639	55267	45714	45714	45714	45714	45714	45714
Dep. var. mean	0.080	0.100	0.005	0.139	0.157	-0.334	0.145	0.437	0.054

Note: This table summarizes results on investment, reserve, cash, retained earnings, and leverage. We divide firms between profitable (Panel B) and loss-making (Panel A). Loss makers are those firms that have negative taxable profits in years 2005 - 2007. Profitable firms are defined as those that did not have negative taxable profits in any one of the years 2005 - 2007. In column 1, the dependent variable is the growth rate of fixed assets. In column 2 it is the growth rate of land and BVF (buildings, vehicles and furniture) assets; in column 3 it is growth rate of equipment assets. In column 4 w have reserves, in column 5 cash, in column 6 retained earnings, in column 7 retained earnings dummy, in columns 8 and 9 short term and long term leverage, respectively. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. T refers to the reform year. We exclude June firms in this table and only present the effect for December-year end firms.

Figure C4: Heterogeneity by dividend response.



Note: This Figure summarizes the heterogeneous response to the reform from firms that either decrease their dividend payouts or increase/ do not change them. Each dot represents a coefficient estimate on $[Year = T] \times SA$, i.e. the response of SAs in 2008. Red hollow diamonds correspond to coefficient estimates for firms that decreased their dividends. Blue full circles correspond to coefficient estimates for firms that increased or did not change their dividends in 2008. Lines are confidence intervals, where the darker ones are 90% and lighter ones are 95%. A dependent variable in each specification is listed on the left of the panel. Investment is growth rate of fixed assets. Land and BVF (buildings, vehicles and furniture) is growth rate of assets held in land and BVF, similar for equipment. Reserves, cash and retained earnings are all scaled by total assets in 2007. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. In each regression we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. Corresponding coefficient estimates are in Table C8 in the Online Appendix.

Table C8: Heterogeneity by dividend responses.

Panel A: Firms that reduced dividends

	(1) investment	(2) land and BVF	(3) equipment	(4) reserves	(5) cash	(6) ret. earn.	(7) ret. earn. dummy	(8) s.t leverage	(9) l.t. leverage
Treated x [Year = T]	0.028*	0.027***	0.004	0.013***	0.003	0.022***	-0.089***	-0.082***	-0.001
	(0.016)	(0.010)	(0.005)	(0.004)	(0.007)	(0.007)	(0.011)	(0.014)	(0.003)
Observations	34727	35024	34857	23460	23460	23460	23460	23460	23460
Mean	0.131	0.144	0.022	0.094	0.152	-0.019	0.775	0.565	0.037

Panel B: Firms that did not reduce dividends

	(1) investment	(2) land and BVF	(3) equipment	(4) reserves	(5) cash	(6) ret. earn.	(7) ret. earn. dummy	(8) s.t leverage	(9) l.t. leverage
Treated x [Year = T]	-0.002	0.017*	0.003	0.012***	0.015**	-0.003	0.052***	-0.042***	-0.006**
	(0.015)	(0.009)	(0.004)	(0.004)	(0.007)	(0.007)	(0.009)	(0.014)	(0.003)
Observations	76751	77603	76951	60386	60386	60386	60386	60386	60386
Mean	0.102	0.117	0.011	0.126	0.156	-0.231	0.315	0.453	0.050

Note: This table summarizes results on investment, reserve, cash, leverage, revenues and retained earnings responses by heterogeneous dividend response. Panel A includes only firms that reduced dividends in 2008. Panel B includes firms that did not reduce dividends (either did not change them or increased them). In column 1, the dependent variable is the growth rate of fixed assets. In column 2 it is the growth rate of land and BVF (buildings, vehicles and furniture) assets; in column 3 it is growth rate of equipment assets. In column 4 w have reserves, in column 5 cash, in column 6 retained earnings, in column 7 retained earnings dummy, in column 8 short-term leverage, and in column 9 long-term leverage. Short-term leverage is defined as short-term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. Year T refers to the reform year.

D Long-run implications: survival and growth

In this Online Appendix, we explore whether responses to the dividend tax reform by the treatment group firms predict either the likelihood of going bankrupt during and after the financial crisis or the growth rate of surviving firms over the challenging period of 2010-2013. We carry out this analysis solely for the treatment group firms, because LLCs were subject to the dividend tax in 2010, which makes them an inappropriate control group after 2010. Further, we limit the sample to include only firms that reduced their payouts in response to the introduction of dividend taxation. In each specification we control for growth rate over the period 2004 - 2007.

For the analysis of bankruptcy, we use the information on all firms that have gone bankrupt in Greece after 2010 to create a dummy variable for firm status by the end of 2013. In a series of regressions, we estimate the probability of being bankrupt on dummy variables that capture how the firm responded to the reform. Specifically, we generate the following dummy variables to explain the probability of going bankrupt during the Greek sovereign debt crisis years: (i) investment increase (also splitting into investment increase in land and BVF and equipment), (ii) reserves increase, (iii) cash holdings increase, (iv) retained earnings increase, (v) decrease in short-term and long-term debt stock .

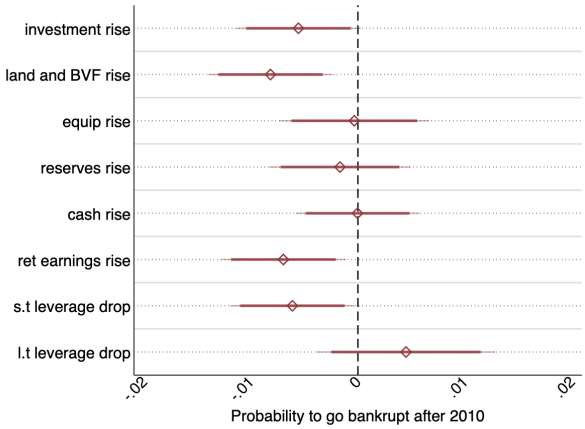
In Panel A in Figure D1, we show the relationship between each margin of response and the probability of bankruptcy during the 2010-2013 period. We find that firms that retained their earnings and consequently increased investment, especially in land and BVF, and/or reduced their short-term debt stock have a lower likelihood of bankruptcy during the liquidity crunch of 2010-2013. In fact, including both investment and short-run leverage in the same specification reveals that both of those matter equally to determine the probability to go bankrupt. Our results suggest that the tax may have improved the long-run economic performance of a subset of responding companies. In Panel B of Figure D1, we show the role of the dimensions (i-v) of response to the reform for sales growth during 2008-2013. Among the surviving firms, we find that the firms that use the funds that remain in the firm to increase investment have performed better in terms of sales growth (captured by the change in the log of sales between 2008 and 2013). In turn, treated firms that focused on 'avoiding to pay' this tax at all costs, i.e. increased their reserve accounts, see lower sales growth between 2008 and 2013 than those that did not increase these margins. While repaying short-term debt significantly reduces the risk of bankruptcy in a liquidity crisis, it does not significantly affect the overall firm growth relative to treated firms that did not reduce short-term debt.

However, our results suggest that reducing long-term debt has positive effect on sales growth during 2008-2013.

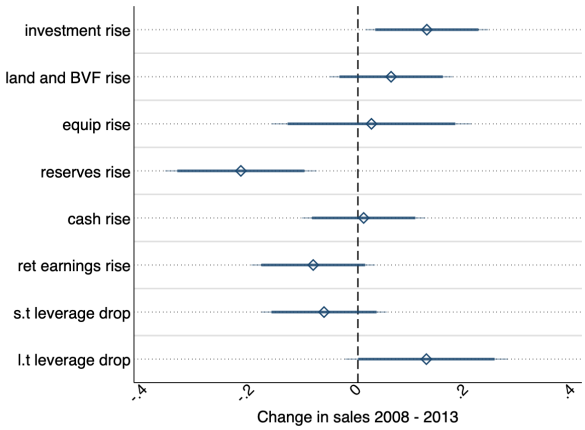
To establish the relationship between these long-run responses and the dividend payout heterogeneity, in Figure D2 we split the sample of treated SAs into those that were high dividend payers before the reform and those that were not and perform the same analysis as in Figure D1. We start by making an observation that being a high dividend payer increases the probability to go bankrupt and reduces the sales growth during 2008-2013 significantly. However, within the subsample of high dividend payers, those firms that increased investment in land and BVF, increased retained earnings, and reduced their short-term debt are those for which we observe a reduction in the probability to go bankrupt (LHS of Panel A). While we also see a reduction in probability to go bankrupt for firms that increase investment and retain earnings for the subsample of firms that are non high payers, all non-high payers have a lower probability to go bankrupt (RHS of Panel A). In Panel B, we find that high-dividend paying firms that use the funds that remain in the firm to increase investment have performed better in terms of sales growth, especially given that being high dividend payer, on average, substantially reduced firm's sales growth. For this subsample, we also observe the repaying long-term debt improves their performance. These results corroborate our findings from D1 and suggest that our effects are driven by high dividend payers, which we find are the firms that behave consistently with our conceptual framework.

Figure D1: Long-run responses: likelihood of bankruptcy and sales growth.

Panel A: Reform response and the likelihood of going bankrupt



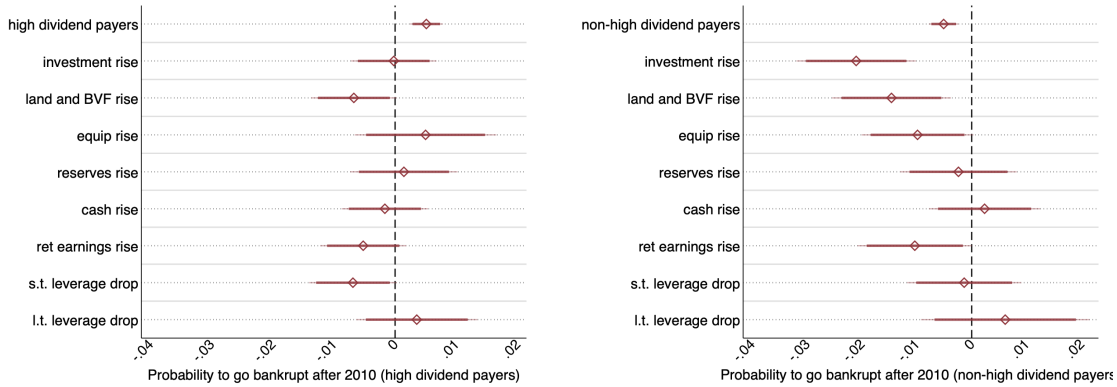
Panel B: Reform response and sales growth



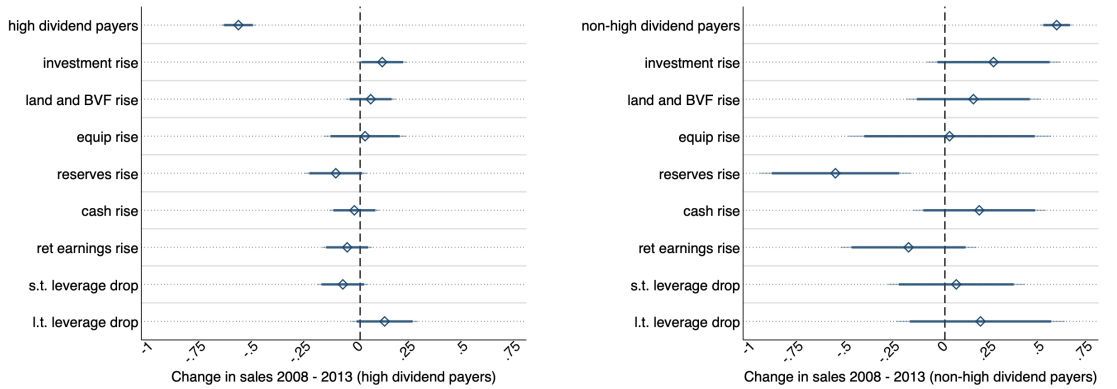
Note: In Panel A, we plot the coefficients from a regression of the likelihood of a firm going bankrupt after 2010 on dummy variables capturing how the firm reacted to the reform. In Panel B, we plot the coefficients from a regression of sales growth (in log) over the 2008-2013 period on dummy variables capturing how the firm reacted to the reform. Red and blue hollow diamonds correspond to coefficient estimates. Lines are confidence intervals, where the darker ones are 90% and lighter ones are 95%. Investment is growth rate of fixed assets. Investment categories: land and BVF (buildings, vehicles and furniture), and equipment are also growth rates of assets in these respective categories. Reserves, cash, retained earnings, and leverage are all scaled by total assets in 2007. Reserves, retained earnings, cash, and all investment categories are all equal to 1 if a firm increased any of those firm observables in 2008. For leverage, the dummy is equal to 1 if a firm decreased its leverage. Short-term leverage is defined as short-term loans, while long-term leverage is long-term bank loans, both divided by total assets in 2007. For each of those regressions, we collapse the dataset at the firm level using post 2007 data only and include only SAs that reduced their dividends. In each specification we control for growth rate over the period 2004 - 2007. Standard errors are clustered at the firm level. Corresponding coefficient estimates are in Table D1 in the Online Appendix.

Figure D2: Long-run responses: heterogeneity by high dividend payers status.

Panel A: Reform response and the likelihood of going bankrupt



Panel B: Reform response and sales growth



Note: In Panel A, we plot the coefficients from a regression of the likelihood of a firm going bankrupt after 2010 on dummy variables capturing how the firm reacted to the reform. In Panel B, we plot the coefficients from a regression of sales growth (in log) over the 2008-2013 period on dummy variables capturing how the firm reacted to the reform. The left-hand side panels show results for a sub-group of firms that were paying high dividends before the reform and the right-hand side panels show results for a sub-group of firms that were not. High dividend payers are firms that paid more than 50% of their profits out before the reform. Red and blue hollow diamonds correspond to coefficient estimates. Lines are confidence intervals, where the darker ones are 90% and lighter ones are 95%. High dividend payers is a dummy equal to 1 when a firm was a high dividend payer, non-high dividend payers is a dummy equal to 1 when a firms was a non-high dividend payer. Investment is growth rate of fixed assets. Investment categories: land and BVF (buildings, vehicles and furniture), and equipment are also growth rates of assets in these respective categories. Reserves, cash, retained earnings, and leverage are all scaled by total assets in 2007. Reserves, retained earnings, cash, and all investment categories are all equal to 1 if a firm increased any of those firm observables in 2008. For leverage, the dummy is equal to 1 if a firm decreased its leverage. Short-term leverage is defined as short-term loans, while long-term leverage is long-term bank loans, both divided by total assets in 2007. For each of those regressions, we collapse the dataset at the firm level using post 2007 data only and include only SAs that reduced their dividends. In each specification we control for growth rate over the period 2004 - 2007. Standard errors are clustered at the firm level. Corresponding coefficient estimates are in Tables D2 and D3 in the Online Appendix.

Table D1: Long-run responses: bankruptcy and sales growth.

Dep. var. bankrupt	**Panel A: Reform response and the likelihood of going bankrupt**							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
investment rise	-0.006*							
	(0.003)							
land & BVF rise		-0.008***						
		(0.003)						
equip. rise			-0.000					
			(0.004)					
cash rise				-0.000				
				(0.003)				
reserves rise					-0.002			
					(0.003)			
ret earn. rise						-0.007**		
						(0.003)		
s.t. leverage drop							-0.006**	
							(0.003)	
l.t. leverage drop								0.004
								(0.004)
Observations	8099	8099	8099	8099	8099	8099	8099	8099
Dep. var. sales growth	**Panel B: Reform response and sales growth**							
investment rise	0.129**							
	(0.059)							
land & BVF rise		0.062						
		(0.059)						
equip. rise			0.025					
			(0.095)					
cash rise				0.011				
				(0.059)				
reserves rise					-0.219***			
					(0.072)			
ret earn. rise						-0.084		
						(0.059)		
s.t. leverage drop							-0.063	
							(0.060)	
l.t. leverage drop								0.128*
								(0.077)
Observations	4818	4818	4818	4818	4818	4818	4818	4818

Note: This table summarizes the results for bankruptcy likelihood and sales growth following the financial crisis. In Panel A, we estimate the effects on the likelihood of a firm going bankrupt after 2010 on dummy variables capturing how the firm reacted to the reform. In Panel B, we estimate the effects on sales growth (in log) over the 2008-2013 period on dummy variables capturing how the firm reacted to the reform. Investment is growth rate of fixed assets. Investment categories: land and BVF (buildings, vehicles, and furniture), and equipment are also growth rates of assets in these respective categories. Reserves, cash, retained earnings, and leverage are all scaled by total assets in 2007. Reserves, retained earnings, cash, investment are all equal to 1 if a firm increased any of those firm observables in 2008. For leverage, the dummy is equal to 1 if a firm decreased its leverage. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. For each of those regressions, we collapse the dataset at the firm level using post 2007 data only and include only SAs that reduced their dividends. Standard errors are clustered at the firm level.

Table D2: Long-run responses: bankruptcy high dividend payers heterogeneity.

Dep. var. bankrupt				**Panel A: High dividend**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
investment rise	-0.000							
	(0.004)							
land & BVF rise		-0.007*						
		(0.004)						
equip. rise			0.005					
			(0.006)					
cash rise				-0.002				
				(0.004)				
reserves rise					0.001			
					(0.004)			
ret earn. rise						-0.005		
						(0.004)		
s.t. leverage drop							-0.007*	
							(0.004)	
l.t. leverage drop								0.004
								(0.005)
Observations	5393	5393	5393	5393	5393	5393	5393	5393
Dep. var. sales growth				**Panel B: Non-high dividend**				
investment rise	-0.021***							
	(0.006)							
land & BVF rise		-0.015***						
		(0.006)						
equip. rise			-0.010*					
			(0.005)					
cash rise				0.002				
				(0.005)				
reserves rise					-0.002			
					(0.005)			
ret earn. rise						-0.010*		
						(0.005)		
s.t. leverage drop							-0.001	
							(0.005)	
l.t. leverage drop								0.006
								(0.008)
Observations	2706	2706	2706	2706	2706	2706	2706	2706

Note: This table summarizes the results for bankruptcy likelihood following the financial crisis. We estimate the effects on the likelihood of a firm going bankrupt after 2010 on dummy variables capturing how the firm reacted to the reform. In Panel A, we estimate the effect of the reform for firms that had high dividend payouts before the reform, while in Panel B for firms that did not have high dividend payouts. High dividend payers are firms that paid more than 50% of their profits out before the reform. Investment is growth rate of fixed assets. Investment categories: land and BVF (buildings, vehicles, and furniture), and equipment are also growth rates of assets in these respective categories. Reserves, cash, retained earnings, and leverage are all scaled by total assets in 2007. Reserves, retained earnings, cash, investment are all equal to 1 if a firm increased any of those firm observables in 2008. For leverage, the dummy is equal to 1 if a firm decreased its leverage. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. For each of those regressions, we collapse the dataset at the firm level using post 2007 data only and include only SAs that reduced their dividends. Standard errors are clustered at the firm level.

Table D3: Long-run responses: sales growth, high dividend payers heterogeneity.

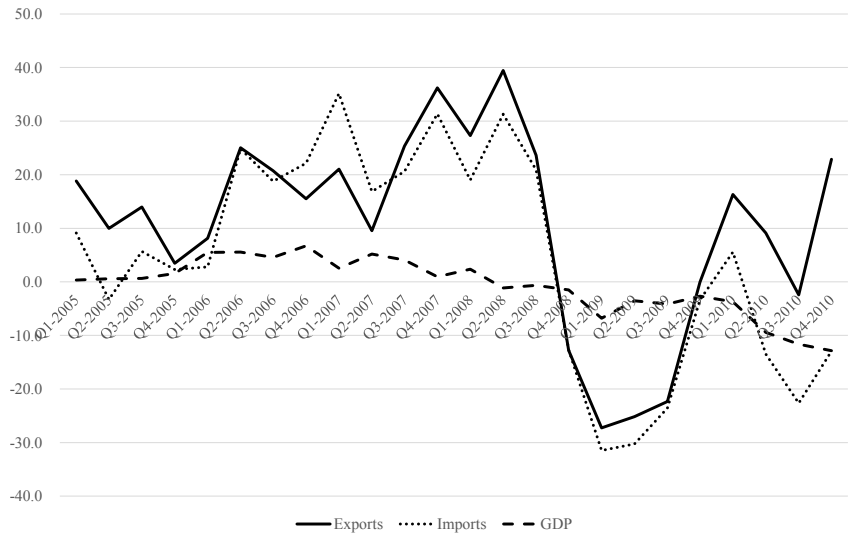
Dep. var. bankrupt				**Panel C: High dividend**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
investment rise	0.105*							
	(0.061)							
land & BVF rise		0.051						
		(0.061)						
equip. rise			0.024					
			(0.100)					
cash rise				-0.027				
				(0.061)				
reserves rise					-0.116			
					(0.077)			
ret earn. rise						-0.062		
						(0.061)		
s.t. leverage drop							-0.082	
							(0.062)	
l.t. leverage drop								0.117
								(0.081)
Observations	3999	3999	3999	3999	3999	3999	3999	3999
Dep. var. sales growth				**Panel D: Non-high dividend**				
investment rise	0.252							
	(0.177)							
land & BVF rise		0.148						
		(0.178)						
equip. rise			0.024					
			(0.268)					
cash rise				0.178				
				(0.176)				
reserves rise					-0.568***			
					(0.201)			
ret earn. rise						-0.188		
						(0.179)		
s.t. leverage drop							0.059	
							(0.181)	
l.t. leverage drop								0.185
								(0.223)
Observations	819	819	819	819	819	819	819	819

Note: This table summarizes the results for sales growth following the financial crisis. We estimate the effects on sales growth (in log) over the 2008-2013 period on dummy variables capturing how the firm reacted to the reform. In Panel A, we estimate the effect of the reform for firms that had high dividend payouts before the reform, while in Panel B for firms that did not have high dividend payouts. High dividend payers are firms that paid more than 50% of their profits out before the reform. Investment is growth rate of fixed assets. Investment categories: land and BVF (buildings, vehicles, and furniture), and equipment are also growth rates of assets in these respective categories. Reserves, cash, retained earnings, and leverage are all scaled by total assets in 2007. Reserves, retained earnings, cash, investment are all equal to 1 if a firm increased any of those firm observables in 2008. For leverage, the dummy is equal to 1 if a firm decreased its leverage. Short term leverage is defined as short term loans, while long term leverage is long term bank loans, both divided by total assets in 2007. For each of those regressions, we collapse the dataset at the firm level using post 2007 data only and include only SAs that reduced their dividends. Standard errors are clustered at the firm level.

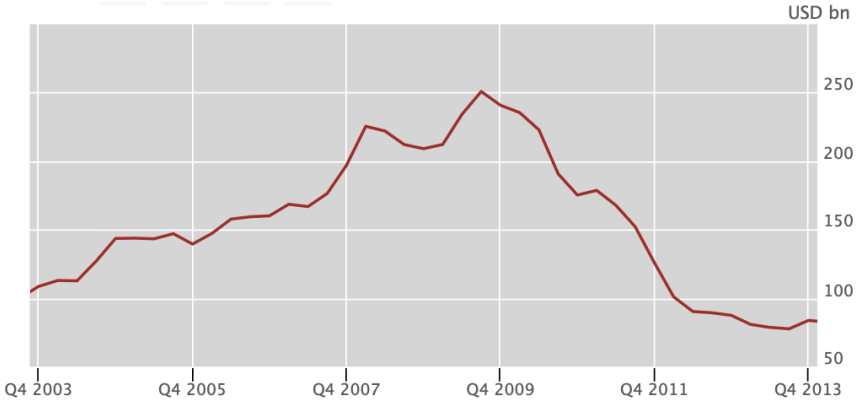
E Additional figures and tables

Figure E1: Financial Crisis evolution: Greece.

a Evolution of GDP, exports and imports.



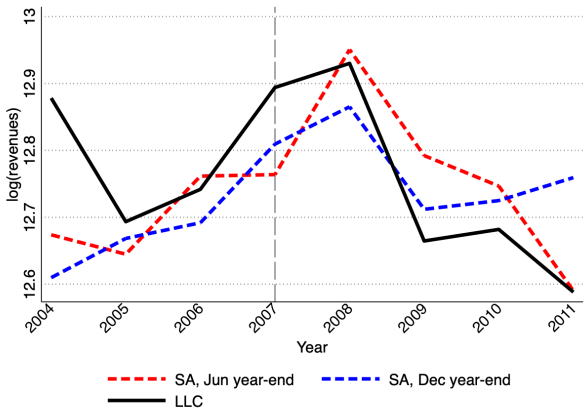
b Evolution of international claims on all Greek counterparts.



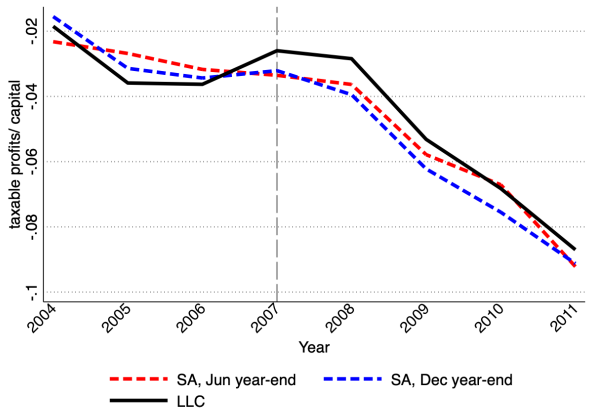
Note: In Panel A, we plot the quarterly evolution of GDP, imports and exports in Greece between 2005 and 2010. Each variable is a growth rate relative to the same period in the previous year. Source: OECD Quarterly statistics. In Panel B, we plot the quarterly evolution of banks' cross-border positions on residents of Greece. Source: Bank for International Settlement, Locational banking statistics.

Figure E2: Financial crisis: revenues and profits.

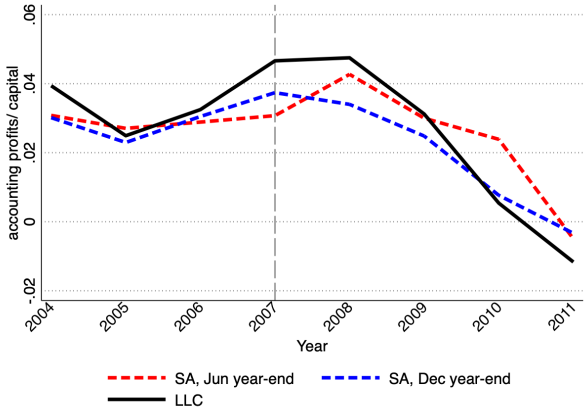
a Logarithm of revenues.



b Taxable profits scaled by total assets.



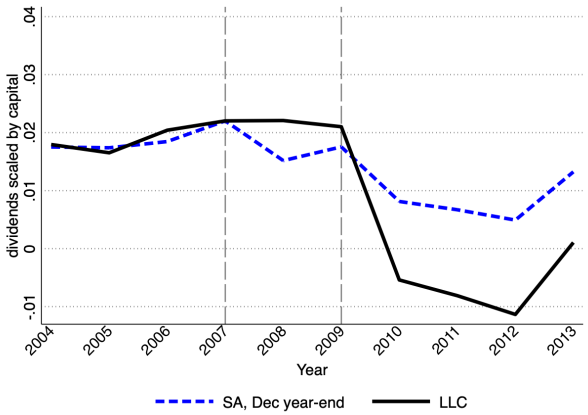
c Accounting profits scaled by total assets.



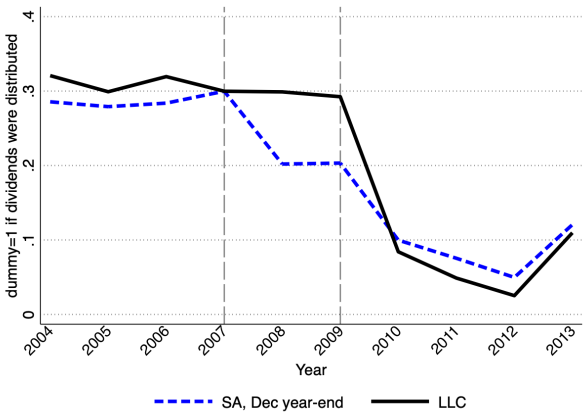
Note: In Panel A, we plot the raw average logarithm of revenues for SAs and LLCs. In Panel B, we plot the taxable profits scaled by capital. In Panel C, we plot the accounting profits scaled by capital. We split SAs into firms with December year end, the blue dashed line, and firms with June end year, the red dashed line. LLCs are represented by black solid line. In Panels B and C, we use as the scaling variable, capital, balance sheet total assets in 2007. For comparability, we remove firm fixed effects, subtract from each data point the group average for 2007 and add back the pooled mean from the same period. The vertical dashed line marks the last pre-reform period. In all samples, we remove MNEs, single-owner firms and the finance sector.

Figure E3: Dividend distributions in the long-run: SAs vs LLCs.

a Dividends scaled by total assets.

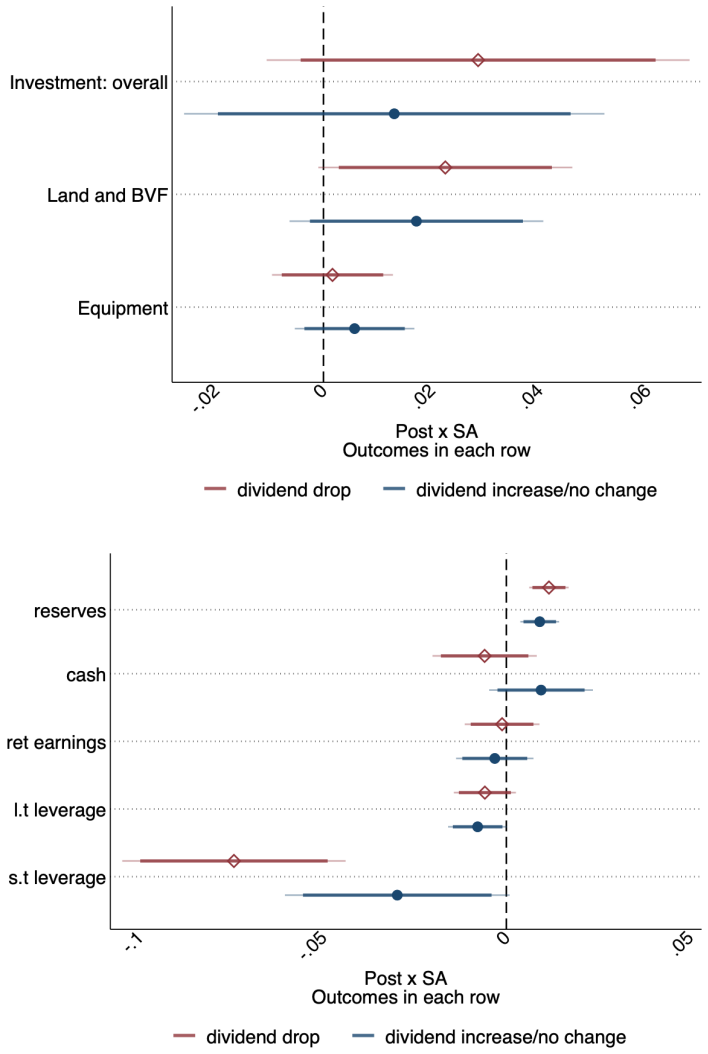


b Share of firms paying dividends.



Note: In Panel A, we plot the average dividend distributions scaled by capital for SAs and LLCs. In Panel B, we plot the share of firms distributing dividends in each year. SAs are represented by the red dashed line. LLCs are represented by black solid line. We use as the scaling variable, capital, balance sheet total assets in 2007. For comparability, we remove firm fixed effects, subtract from each data point the group average for 2007 and add back the pooled mean from the same period. The vertical dashed lines mark the last pre-reform periods. The first vertical line is when the SAs are subject to dividend tax for the first time, while LLCs are not. The second vertical line is when the new, higher, dividend tax rate is imposed on both LLCs and SAs.

Figure E4: Heterogeneity by dividend response: profitable firms only.



Note: This Figure summarizes the heterogeneous response to the reform from firms that either decrease their dividend payouts or increase/ do not change them. Here, we only include profitable firms, which are defined as those that did not have negative taxable profits in any one of the years 2005 - 2007. Each dot represents a coefficient estimate on $[Year = T] \times SA$, i.e. the response of SAs in 2008. Red hollow diamonds correspond to coefficient estimates for firms that decreased their dividends. Blue full circles correspond to coefficient estimates for firms that increased or did not change their dividends in 2008. Lines are confidence intervals, where the darker ones are 90% and lighter ones are 95%. A dependent variable in each specification is listed on the left of the panel. Investment is growth rate of fixed assets. Land and BVF (buildings, vehicles and furniture) is growth rate of assets held in land and BVF, similar for equipment. Reserves, cash and retained earnings are all scaled by total assets in 2007. Short-term leverage is defined as short-term loans, while long-term leverage is long-term bank loans, both divided by total assets in 2007. In each regression we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level.

Table E1: Investment responses: June vs December firms.

	(1) investment	(2) BVF	(3) land	(4) land and BVF	(5) equipment
Tr. (Jun) x [Year = *T*]	-0.046**	-0.042***	-0.037***	-0.042***	0.008
	(0.022)	(0.014)	(0.007)	(0.013)	(0.007)
Tr. (Dec) x [Year = *T*]	0.010	0.019**	0.028***	0.023***	0.003
	(0.015)	(0.009)	(0.004)	(0.009)	(0.004)
Tr. (Jun) x [Year = *T+1*]	0.103***	0.093***	0.073***	0.095***	-0.005
	(0.023)	(0.016)	(0.009)	(0.014)	(0.008)
Tr. (Dec) x [Year = *T+1*]	-0.011	0.005	-0.016***	0.001	0.004
	(0.015)	(0.009)	(0.003)	(0.009)	(0.003)
Observations	136,085	137,276	134,418	137,515	136,499
# firms	27,112	27,358	27,316	27,398	27,326
# June firms	1,046	1,050	1,052	1,050	1,052
Mean	0.109	0.129	-0.012	0.122	0.014

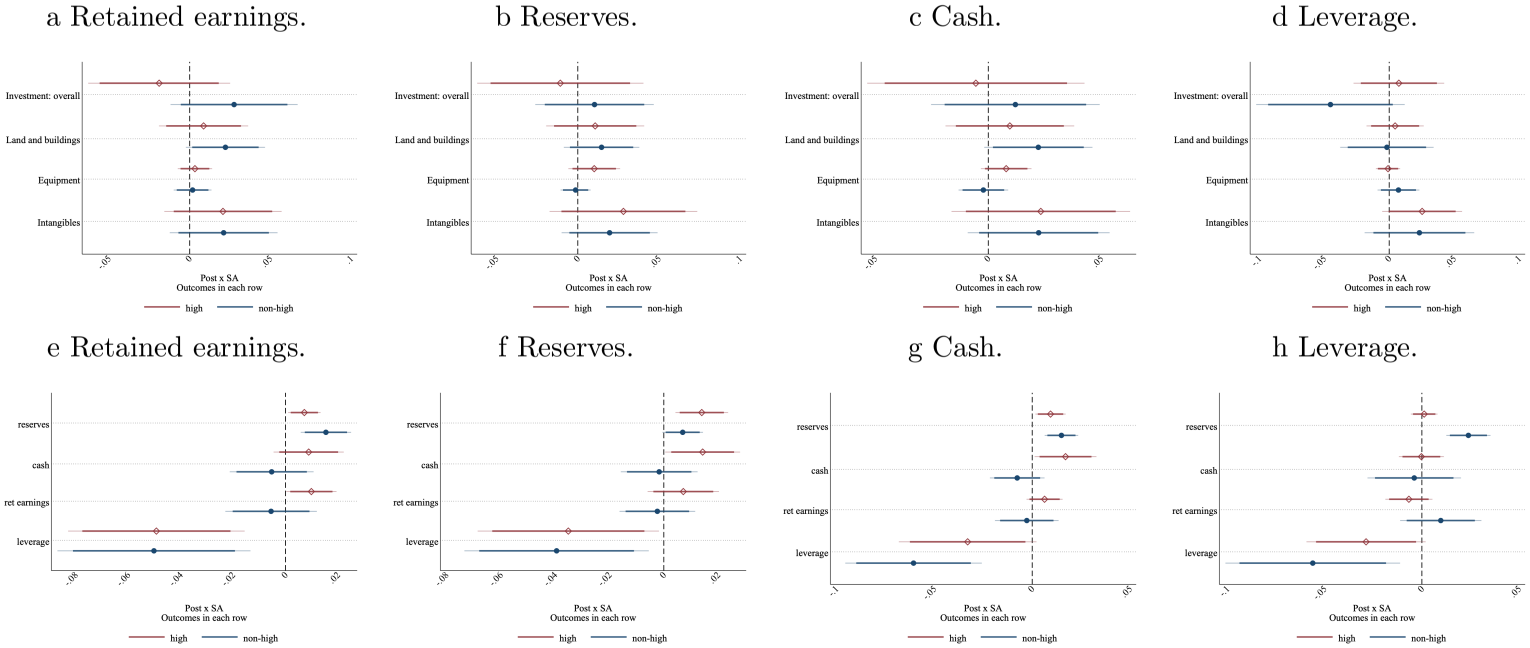
Note: This table summarizes results for investment responses. In all columns, we split the treated dummy into treated June and treated December firms, but only in post periods. In column 1, the dependent variable is the overall investment calculated as the growth rate of fixed assets. In column 2, it is the investment in buildings, vehicles and furniture (BVF), in column 3 investment in land, in column 4 sum of investment in land and BVF, and in column 5 investment in equipment. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. Year *T* refers to the reform year, and Year *T+1* is the year following the reform. In Year *T*, December year-end firms are directly affected by the reform, while June year-end firms are not taxed, but anticipate the tax in year *T+1*.

Table E2: Other margins of responses: June vs December firms.

	(1) reserves	(2) cash	(3) ret. earn.	(4) ret. earn. dummy	(5) short t leverage	(6) long t. leverage
Tr. (Jun) x [Year = *T*]	-0.012*	0.019**	-0.005	0.021	-0.034*	-0.005
	(0.007)	(0.009)	(0.011)	(0.015)	(0.020)	(0.005)
Tr. (Dec) x [Year = *T*]	0.012***	0.014**	0.005	0.013	-0.045***	-0.004
	(0.004)	(0.006)	(0.007)	(0.009)	(0.014)	(0.003)
Tr. (Jun) x [Year = *T+1*]	0.012	0.014	-0.007	0.002	-0.026	-0.002
	(0.009)	(0.011)	(0.015)	(0.019)	(0.025)	(0.006)
Tr. (Dec) x [Year = *T+1*]	0.014***	0.003	0.013	0.006	-0.072***	-0.009**
	(0.005)	(0.008)	(0.009)	(0.012)	(0.018)	(0.004)
Observations	108,526	108,526	108,526	108,526	108,526	108,526
# firms	25,580	25,580	25,580	25,580	25,580	25,580
# June firms	976	976	976	976	976	976
Mean	0.120	0.153	-0.181	0.431	0.470	0.047

Note: This table summarizes results on reserve, cash, retained earnings, leverage, profits and revenue responses. In all columns, we split the treated dummy into treated June and treated December firms, but only in post periods. The dependent variable is reserves divided by total assets in 2007 in column 1, cash scaled by total assets in 2007 in column 2, retained earnings scaled by total assets in 2007 in column 3, retained earnings dummy, which is equal to 1 if a firm has any retained earnings in column 4, leverage in column 5, dummy equal to 1 if a firm has positive profits in column 6, and logarithm of revenues in column 7. In each column we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level. Year *T* refers to the reform year, and Year *T+1* is the year following the reform. In Year *T*, December year-end firms are directly affected by the reform, while June year-end firms are not taxed, but anticipate the tax in year *T+1*.

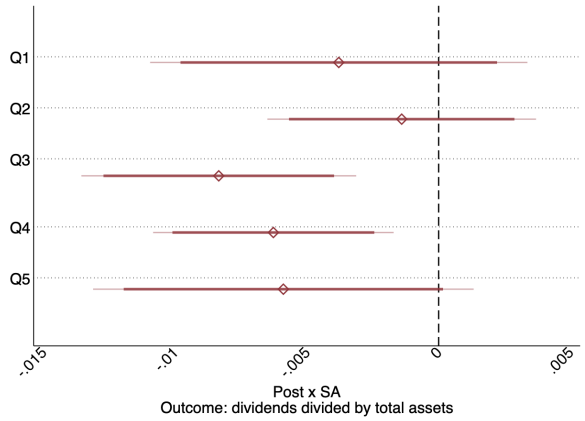
Figure E5: Heterogeneities by 'high' reserves, leverage, cash and retained earnings.



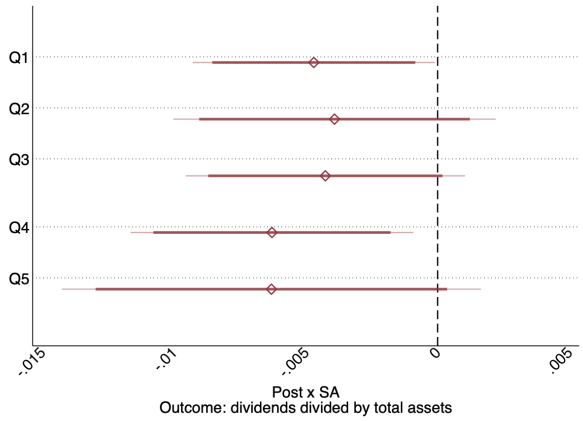
Note: This Figure plots the coefficients on $[Year = T] \times SA$, i.e. the response of SAs in 2008. Each panel considers a heterogeneous response across firm-level outcomes depending on whether a firm had 'high' retained earnings (panels A, E), 'high' reserves (Panels B, F), 'high' cash (Panels C, G), 'excess' leverage (Panels D, H). 'High' is defined as above median is each sector in the last year before the reform, 2007. Red hollow diamonds correspond to coefficient estimates for 'high' firms. Blue full circles correspond to coefficient estimates for non-high firms. Lines are confidence intervals, where the darker ones are 90% and lighter ones are 95%. A dependent variable in each specification is listed on the left of the panel. Investment is growth rate of fixed assets. Land and BVF (buildings, vehicles and furniture) is growth rate of assets held in land and BVF, similar for equipment. Reserves, cash and retained earnings are all scaled by total assets in 2007. In each regression we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level.

Figure E6: Heterogeneities by size and cash holdings.

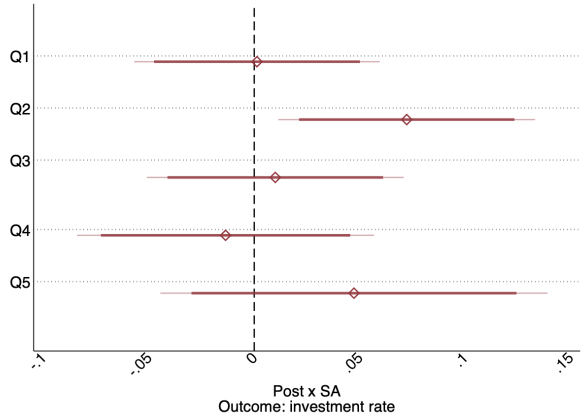
a Dividends: by size.



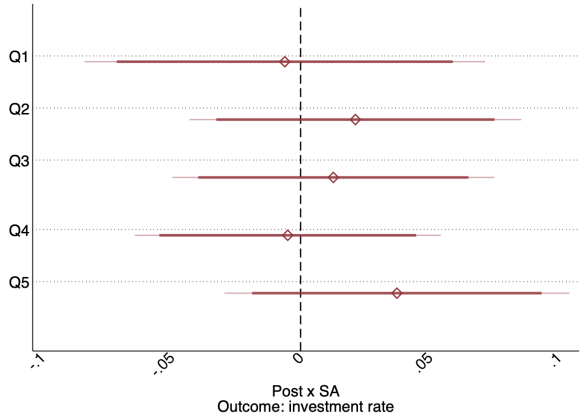
b Dividends: by cash quantiles.



c Investment: by size.



d Investment: by cash quantiles.



Note: This Figure plots the coefficients on $[Year = T] \times SA$, i.e. the response of SAs in 2008. Each coefficient is estimated separately within each quantile of size or cash distribution. In Panel A, we plot coefficients of dividends response by quantiles of total assets distribution in 2007. In Panel B, we plot coefficients of dividends response by quantiles of cash holdings in 2007. In Panel C, we plot coefficients of investment response by quantiles of total assets n 2007. In Panel D, we plot coefficients of investment response by quantiles of cash holdings in 2007. Lines are confidence intervals, where the darker ones are 90% and lighted ones are 95%. Investment is growth rate of fixed assets, while dividends are scaled by total assets in 2007. In each regression we include year, firm and sector-year fixed effects. Standard errors are clustered at the firm level.