Shareholder illiquidity and firm behavior: Financial and real effects of the personal wealth tax in private firms

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Outline

1. **We identify the link between**
   a. The personal liquidity of firm owners
   b. The liquidity of the firm they own
   (The “equity channel”.)
2. **We illustrate the liquidity effects of wealth taxes**
   (And similar asset-based taxes.)

Main idea

Setting:

- (Small) private firms are generally thought to be more financially constrained than large firms
- They are also more likely to have controlling owners
- Those owners are usually not well diversified

Implication:

- Shocks to the owners' liquidity can propagate to the firms they own

The wealth tax in Norway

- **Tax base:**
  - Tax on a household's net assets
  - Real estate, bank savings, shares… - less debt
- **Tax base largely unrelated to the firm's situation:**
  - Conventional value of real estate (until 2010)
  - Book value of net assets for private firms
- **Trends: tax base vs. threshold**
  - Increase in the tax value of real estate
  - Increase in tax thresholds
  - Fewer tax payers pay more

Residential real estate

- **Traditionally undervalued as part of taxable wealth**
- **Changes in tax rules:**
  - Increase by 15% in 2001
  - Decrease by 5% in 2003
  - Increase by 25% in 2006
  - Increase by 10% in 2007, 2008, 2009
  - Link to market values in 2010 (large increase)
  - Overall: fairly stable 2000-2005, increasing trend starting from 2006
  - Not influenced by the evolution of market real estate prices and firm performance
  - Not related to the pre-existing liquidity at the personal or corporate level

Links

1. Exogenous shock to personal liquidity

The tax value of residential real estate increased by 67% in 2006-2009;

further 50% on average in 2010

Unrelated to/higher than changes in market values, unrelated to personal and firm liquidity

Tax payment significant share of personal liquidity: wealth tax payments for residential real estate owners go from 2.3% to 7.4% of liquid assets

2. Shock to firm liquidity

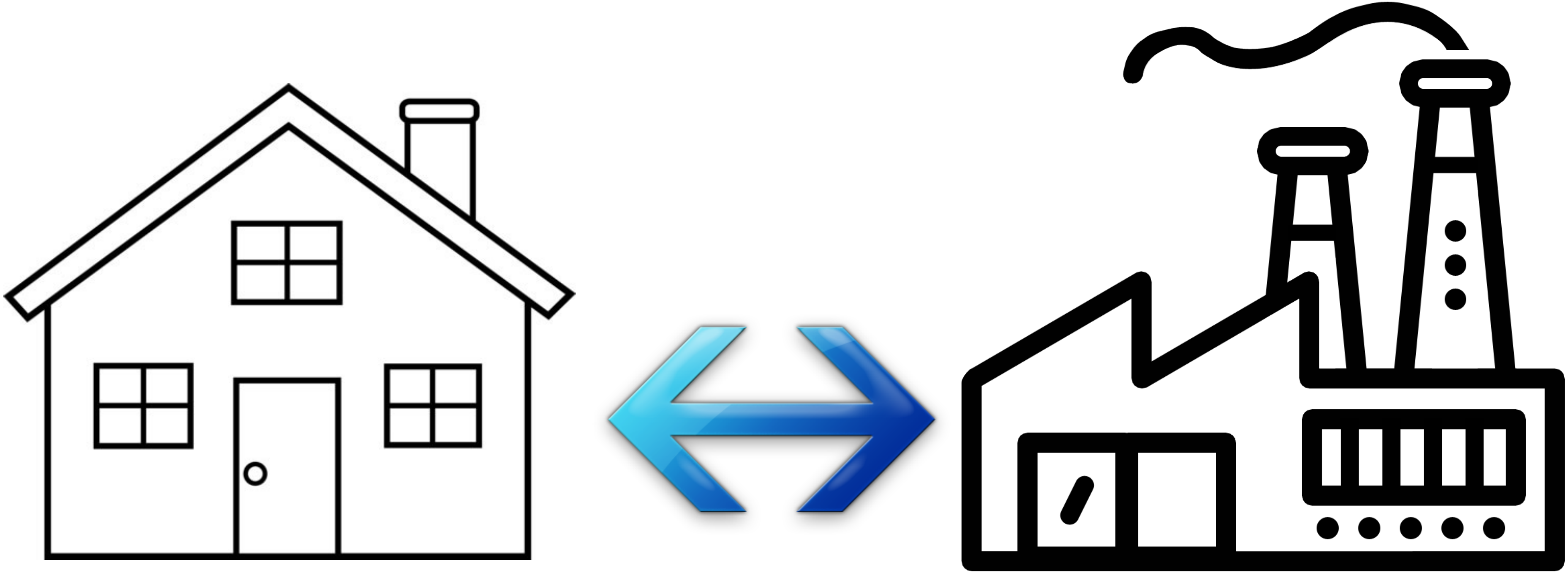
1% incr. wealth-tax-to-liquid-assets ratio

vs higher dividends (0.49%), decrease in cash holdings (-1.09%)

3. Real effects on the firm

1% incr. wealth-tax-to-liquid-assets ratio

vs lower growth (sales: -0.45%, assets: -0.30%), profitability



Contribution to existing literature

1. **Household finance and corporate finance**
   - The collateral channel: Chaney, Sraer, Thesmar (2012), Schmalz, Sraer and Thesmar (2017), Bequests and entrepreneurship: Hurst and Lusardi (2004), Andersen and Nielsen (2012)
2. **Debate on wealth taxes**
   - Piketty (2013), Fagereng et al. (2016), Fisman et al. (2017), Jakobsen et al. (2018), Guvenen et al. (2019), Zucman (2019)
3. **Personal and corporate taxes**
   - Personal capital income taxes and capital structure: Graham (1999)
   - Dividend taxes, dividends, and investment: Chetty and Saez (2006, 2010); Desai and Jin (2011); Becker, Jacob, and Jacob (2013); Colombo and Caldeira (2018).
   - Succession taxes: (Tsoutsoura 2015). We: Ownership const., shock to personal assets, effect of tax on firm behavior, policy implication.
4. **Financial constraints in private firms**
   - Bank illiquidity shocks: Khwaja and Mian (2008)
5. **Determinants of cash holdings in private firms**
   - Illiquid equity market & cash importance: Gao, Harford, and Li (2013)
6. **Determinants of payout policy**
   - General: Banerjee, Gatchev, and Spindt (2007), Griffin (2010).
   - Dividends from loss making firms: DeAngelo, DeAngelo, and Skinner (1992),

Contribution to existing literature

1. Household finance and corporate finance, personal and corporate taxes

- The collateral channel: Chaney, Sraer, Thesmar (2012), Schmalz, Sraer and Thesmar (2017), Bequests and entrepreneurship: Hurst and Lusardi (2004), Andersen and Nielsen (2012)
- Succession taxes: (Tsoutsoura 2015). We: Ownership constant, shock to personal assets, effect of tax on firm behavior, policy implication.

2. Debate on wealth taxes

- Piketty (2013), Fagereng et al. (2016), Fisman et al. (2017), Jakobsen et al. (2018), Guvenen et al. (2019), Zucman (2019)
- "*Liquidity problems* arising from paying tax on imputed property income constitute another possible reason for the low popularity of property taxation, but one that has *received less attention in the academic literature*." (Bastani and Waldenström, 2018)

Not just Norway

French economy

Macron slashes France's wealth tax in pro-business budget

Deep cut in levy central to jobs and growth platform

Critics of Emmanuel Macron say the tax cuts show him to be the 'president of the rich' © Bloomberg

Anne-Sylvaine Chassany in Paris OCTOBER 24, 2017

Not just Norway, not just wealth taxes

- Wealth taxes are unusual
- But property taxes are common
- OECD average: 1.94% of GDP, up from 1.75% in 2000
- The proportion is higher in the United Kingdom, France, and the United States, and lower in Norway (1.27% in 2017).

The register data, sample

- **Data**
  - Accounting
  - Ownership
  - Family relationships – households as the main unit of observation
  - Tax returns
  - Labor income
- **Sample**
  - All active limited-liability firms in Norway
    - A family holds more than 50% of the equity.
    - A family consists of parents and underage children.
  - Excludes
    - financials, business groups, holding companies,
    - the smallest 5% of firms by assets, sales, and employment.

Panel A. Mean wealth tax paid per owner, family-controlled firms

Year	All	Home owner	Not home owner	Home owner; wealth tax payer	Not home owner; wealth tax payer
2000	35 284	38 418	19 361	60 571	39 166
2001	33 769	36 728	18 813	57 559	37 524
2002	39 123	43 175	17 437	69 044	35 714
2003	40 708	45 416	14 477	74 979	30 001
2004	53 111	59 372	16 875	101 364	35 701
2005	30 308	32 428	18 533	56 746	38 563
2006	57 004	62 131	24 074	111 296	50 465
2007	54 904	60 435	21 319	111 828	45 987
2008	55 693	60 792	24 121	111 505	51 373
2009	57 100	62 660	18 946	116 863	44 152
2010	66 245	71 099	27 571	144 061	76 898

Panel B. Proportion of tax payers

Year	All	With real estate	Without real estate
2000	61.1%	63.4%	49.4%
2001	61.6%	63.8%	50.1%
2002	60.4%	62.5%	48.8%
2003	58.7%	60.6%	48.3%
2004	56.9%	58.6%	47.3%
2005	55.8%	57.1%	48.1%
2006	54.7%	55.8%	47.7%
2007	53.0%	54.0%	46.4%
2008	53.5%	54.5%	47.0%
2009	52.3%	53.6%	42.9%
2010	47.8%	49.4%	35.9%

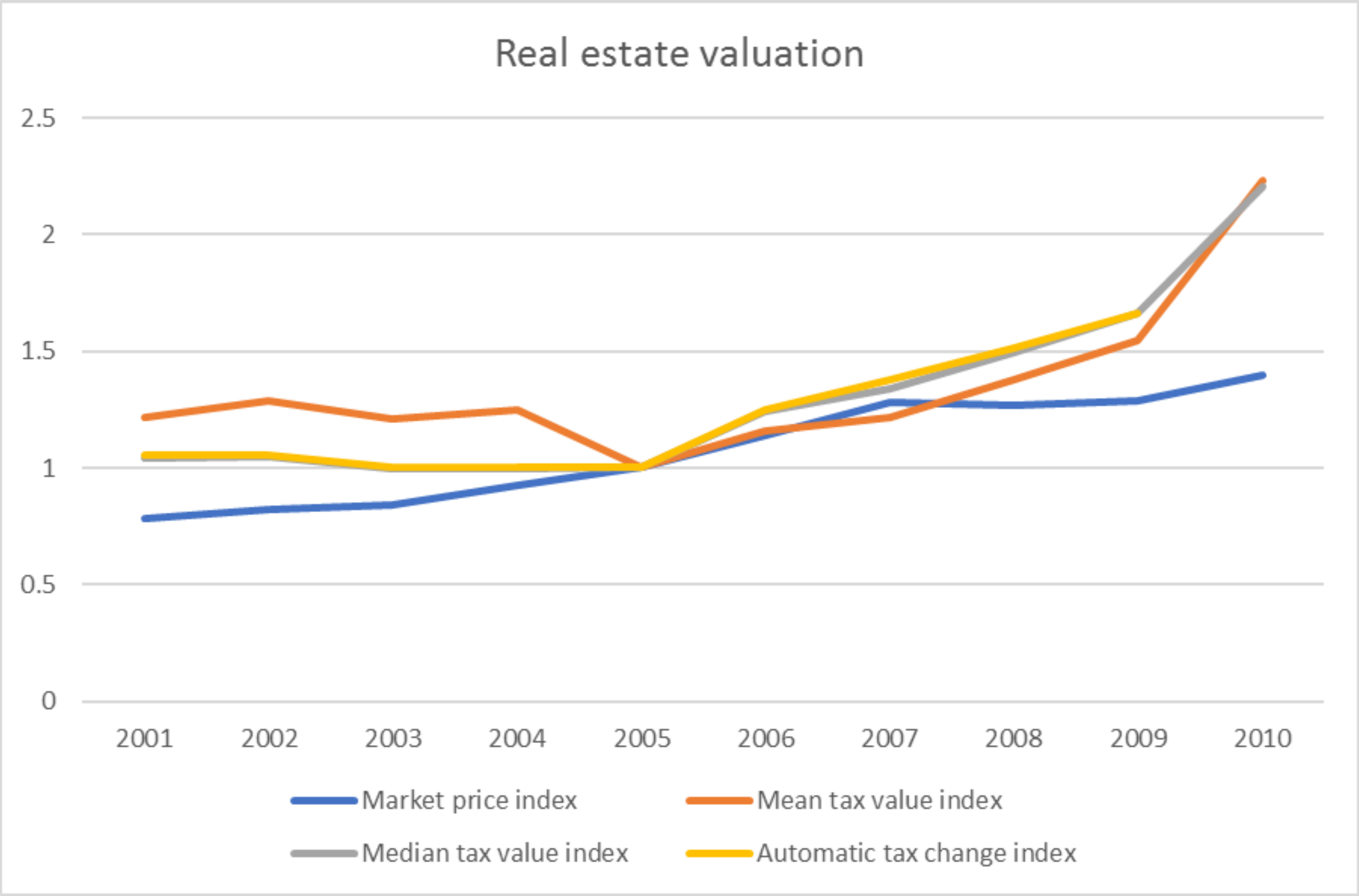
Reform years

Panel C. Wealth tax to liquid assets

Year	All	With real estate	Without real estate	With real estate, tax payer	Without real estate, tax payer
2000	3.6%	3.8%	2.7%	5.9%	5.5%
2001	3.7%	3.9%	2.7%	6.0%	5.5%
2002	2.6%	2.7%	2.1%	4.3%	4.3%
2003	1.9%	2.0%	1.5%	3.3%	3.2%
2004	1.6%	1.6%	1.3%	2.8%	2.8%
2005	1.3%	1.3%	1.1%	2.3%	2.2%
2006	1.5%	1.5%	1.3%	2.7%	2.6%
2007	1.9%	2.0%	1.6%	3.7%	3.4%
2008	3.4%	3.5%	2.8%	6.4%	6.1%
2009	3.9%	4.0%	3.1%	7.4%	7.2%
2010	3.6%	3.7%	2.9%	7.4%	8.1%

The tax value of residential real estate

Year	Number of firms	Proportion of real estate owners	Tax value of real estate (NOK)				Median change in the tax value of real estate	Proportion of real estate owners with standard change
			5th percentile	**Mean**	Median	95th percentile		
2000	29,528	83.6%	74,800	**352,145**	305,700	770,308		
2001	30,987	83.5%	86,242	**402,679**	348,508	885,500	15.1%	57.9%
2002	31,341	84.3%	85,388	**404,612**	349,970	890,970	0.0%	58.2%
2003	32,400	84.8%	81,719	**386,632**	331,683	856,322	-5.0%	62.1%
2004	33,031	85.3%	82,920	**389,151**	330,480	878,478	0.0%	39.6%
2005	32,929	84.7%	82,920	**389,590**	328,695	878,846	**0.0%**	**59.7%**
2006	33,630	86.5%	98,356	**503,749**	422,114	1,177,737	**25.0%**	**56.0%**
2007	33,014	85.9%	109,058	**555,664**	461,065	1,298,825	**10.0%**	**55.8%**
2008	33,510	86.1%	121,783	**618,012**	505,540	1,465,315	**10.0%**	**58.7%**
2009	33,437	87.3%	134,505	**702,955**	575,830	1,674,352	**10.0%**	**55.2%**
2010	34,386	88.8%	208,926	**1,085,960**	787,586	2,801,992	**31.6%**	n.a.


Real estate valuation
2.5
2
1.5
1
0.5
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Market price index
Mean tax value index
Median tax value index
Automatic tax change index

The post-2006 years: Firm liquidity, IV estimation, clean sample

	Dependent variable			
	Dividends to earnings		**Distressed dividends**	
Independent variable	Coefficient	p-value	Coefficient	p-value
Family characteristics				
Wealth tax to liquid assets	**0.487**	***0.001***	**0.119**	***0.009***
Family gross assets	-0.003	*0.006*	-0.005	*0.025*
Family leverage	0.003	*0.041*	0.001	*0.000*
Firm characteristics				
Cash to assets	0.245	*0.000*	-0.001	*0.998*
Return on assets	0.084	*0.000*	-0.032	*0.000*
Sales to assets	-0.005	*0.003*	0.001	*0.298*
Volatility of sales	-0.040	*0.001*	0.005	*0.000*
Size	0.033	*0.000*	-0.002	*0.003*
Age	-0.012	*0.562*	0.001	*0.326*
Firm leverage	-0.261	*0.000*	-0.017	*0.018*
Retained earnings to equity	0.011	*0.000*	0.002	*0.000*
Firm fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
R^2	0.08		0.19	
Number of observations	77,545		78,146	

IV instrument: the change in the tax value of the residential real estate + the ratio of residential real estate and the family's gross assets.

The post-2006 years: Firm liquidity, IV, clean sample *contd.*

	Dividends and salary to earnings		**Change in cash to firm assets**	
Independent variable	Coefficient	p-value	Coefficient	p-value
Family characteristics				
Wealth tax to liquid assets	**0.838**	***0.000***	**-1.085**	***0.000***
Family gross assets	-0.001	*0.070*	0.076	*0.000*
Family leverage	0.005	*0.089*	-0.001	*0.567*
Firm characteristics				
Cash to assets	0.101	*0.000*	0.968	*0.000*
Return on assets	-0.160	*0.000*	-0.005	*0.321*
Sales to assets	0.006	*0.069*	0.000	*0.801*
Volatility of sales	-0.049	*0.010*	0.006	*0.426*
Size	0.029	*0.001*	0.021	*0.000*
Age	-0.021	*0.496*	0.004	*0.763*
Firm leverage	-0.361	*0.000*	0.096	*0.000*
Retained earnings to equity	0.023	*0.000*	-0.002	*0.001*
Firm fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
R^2	0.10		0.127	
Number of observations	56 911		78 263	

The post-2006 years: Firm investment, growth, and profitability, IV estimation, clean sample

	Investment		Sales growth		Employment growth		Profitability	
Independent variable	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Family characteristics								
Family wealth tax to liquid assets	**-0.301**	**0.058**	**-0.450**	**0.003**	**-0.186**	**0.192**	**-0.486**	**0.000**
Family gross assets	0.001	0.681	0.001	0.942	0.001	0.944	0.001	0.037
Family leverage	-0.002	0.336	-0.005	0.004	-0.001	0.440	0.002	0.018
Firm characteristics								
Cash to assets	0.024	0.019	-0.205	0.000	0.087	0.000	-0.049	0.000
Return on assets	-0.046	0.000	-0.114	0.000	0.018	0.037		
Sales to assets	0.170	0.000	-0.030	0.000	-0.004	0.020	0.027	0.000
Volatility of sales	0.017	0.191	-0.019	0.131	0.016	0.175	0.001	0.871
Size	-0.414	0.000	-0.533	0.000	-0.063	0.000	-0.076	0.000
Age	0.059	0.006	0.081	0.000	-0.004	0.822	0.009	0.419
Firm leverage	-0.060	0.000	0.061	0.000	-0.038	0.000	0.124	0.000
Retained earnings to equity	0.001	0.717	-0.001	0.533	0.001	0.468	0.001	0.717
Firm fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
R^2	0.006		0.005		0.010		0.007	
Number of observations	71 841		71 707		71 841		71 830	

The post-2006 years: Firm growth, DD estimation, all firms

	Sales growth		Asset growth		Employment growth		Profitability	
Independent variable								
Residential real estate owner	0.012	*0.032*	0.008	*0.000*	-0.003	0.060	0.014	*0.000*
After tax shock	-0.005	*0.000*	-0.013	*0.000*	-0.001	0.525	-0.007	*0.000*
Residential real estate owner *								
After tax shock	**-0.011**	***0.001***	**-0.004**	***0.091***	**-0.001**	**0.558**	**-0.008**	***0.091***
Family characteristics								
Family gross assets	-0.003	*0.004*	0.007	*0.000*	-0.004	0.000	-0.003	*0.000*
Family leverage	0.002	*0.050*	0.003	*0.000*	-0.001	0.440	-0.001	*0.000*
Firm characteristics								
Cash to assets	-0.042	*0.000*	-0.041	*0.000*	-0.009	0.001	0.190	*0.000*
Return on assets	-0.262	*0.000*	0.092	*0.000*	0.079	0.000		
Sales to assets	-0.012	*0.000*	0.024	*0.000*	-0.003	0.000	-0.014	*0.000*
Volatility of sales	0.016	*0.000*	0.036	*0.000*	-0.002	0.522	-0.025	*0.000*
Size	-0.007	*0.000*	-0.020	*0.000*	0.009	0.000	0.041	*0.000*
Age	-0.026	*0.000*	-0.010	*0.000*	-0.012	0.000	-0.015	*0.000*
Firm leverage	0.013	*0.004*	-0.043	*0.000*	-0.019	0.000	0.062	*0.000*
Retained earnings to equity	-0.004	*0.000*	-0.002	*0.079*	-0.003	0.000	-0.002	*0.079*
Industry fixed effects	Yes		Yes		Yes		Yes	
R^2	0.026		0.023		0.010		0.137	
Number of observations	149,286		149,615		149,618		156,274	
Number of firms	22,076		22,083		22,083		22,404	

The sample: 2001–2010. "Residential real estate owner" equals 1 for firms where the controlling family owns residential real estate and pays wealth tax in 2006, and 0 otherwise. "After tax shock" is 1 for 2006–2010.

Robustness

- Including/excluding 2010
- Matching
- Definition of liquid assets (2008 effect)
- Changes in the market value of residential real estate
- Debt capacity
- Fixed firm and year effects, interactions

Conclusion

- **Look at a personal liquidity shock**
- **Show that it propagates to the firm level**
  - Liquidity
  - Investment, growth, profitability
- **Policy implications: link between personal taxes and the corporate sphere**
- **Economic effects for cross section of small business owners:**
  - Wealth tax payments for residential real estate owners
    - incr. from 2.3% to 7.4% of liquid assets
  - 1% incr. wealth-tax-to-liquid-assets ratio vs.
    - higher dividends (0.49%),
    - decrease in cash holdings (-1.09%)
    - lower growth (sales: -0.45%, assets: -0.30%),
    - profitability (-0.5%)