Taxes and Corporate Policies: Evidence From a Quasi Natural Experiment

The Journal of Finance

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Motivation

- Large literature on interaction between tax incentives and corporate policies (e.g. debt) that create value
- If this is true, then *changes* in tax policies should have impacts that ripple through companies policies

Two challenges to this line of thinking:

1. Skepticism that corporate policies mitigate tax impacts

   "The big open challenge in corporate finance is to produce evidence on how taxes affect market values and thus optimal financing decisions." –Fama (2010)

2. Absence of tests that focus on *changes* in tax policies, and that explore a number of intertwined policies

Motivation

- We address these challenges using a “quasi natural experiment” in the traded Canadian income trust market that allows us to look at:
  - The value of corporate policies to address tax incentives using market evidence
    - Value of tax shields?
    - How much do personal taxes decrease the value of tax shields?
  - The evolution of a wide range of corporate policies following a change in tax incentives
    - Does leverage increase to replace lost tax shields? Non-debt tax shields?
    - Impact of tax policy on payout, cash holding and investment

Preview of findings – event study

- *Market-based evidence* that tax shields have significant value
  - Prospective tax shields worth **4.6% of firm value**
    - The decline in value from imposition of taxes is 4.6% less for firms because they have prospective tax shields
    - In the range of existing studies that do not exploit market responses [e.g., van Binsbergen, Graham, and Yang (2010), and Korteweg (2010)]
- *New evidence* that prospective tax shields value depends upon the personal tax status of the marginal investor
  - Consistent with Miller's (1977) hypothesis about the importance of personal taxes to understand impact of corporate policies

Preview of findings – time series

Rare time series evidence, with identification

- Exploit difference between trusts (affected group) and corporates (that are not) to identify extent to which tax incentives cause change in corporate policies
- Leverage
  - reduces when no tax incentive for leverage/ increases by 6 percentage points when tax incentive for leverage
- Payout and Cash Holdings
  - Raise payout and lower cash when tax incentive to do so
  - Lower payout and raise cash when incentives change
- Investment
  - Lower to optimize on tax savings (costly)
  - Raise when tax incentive changes

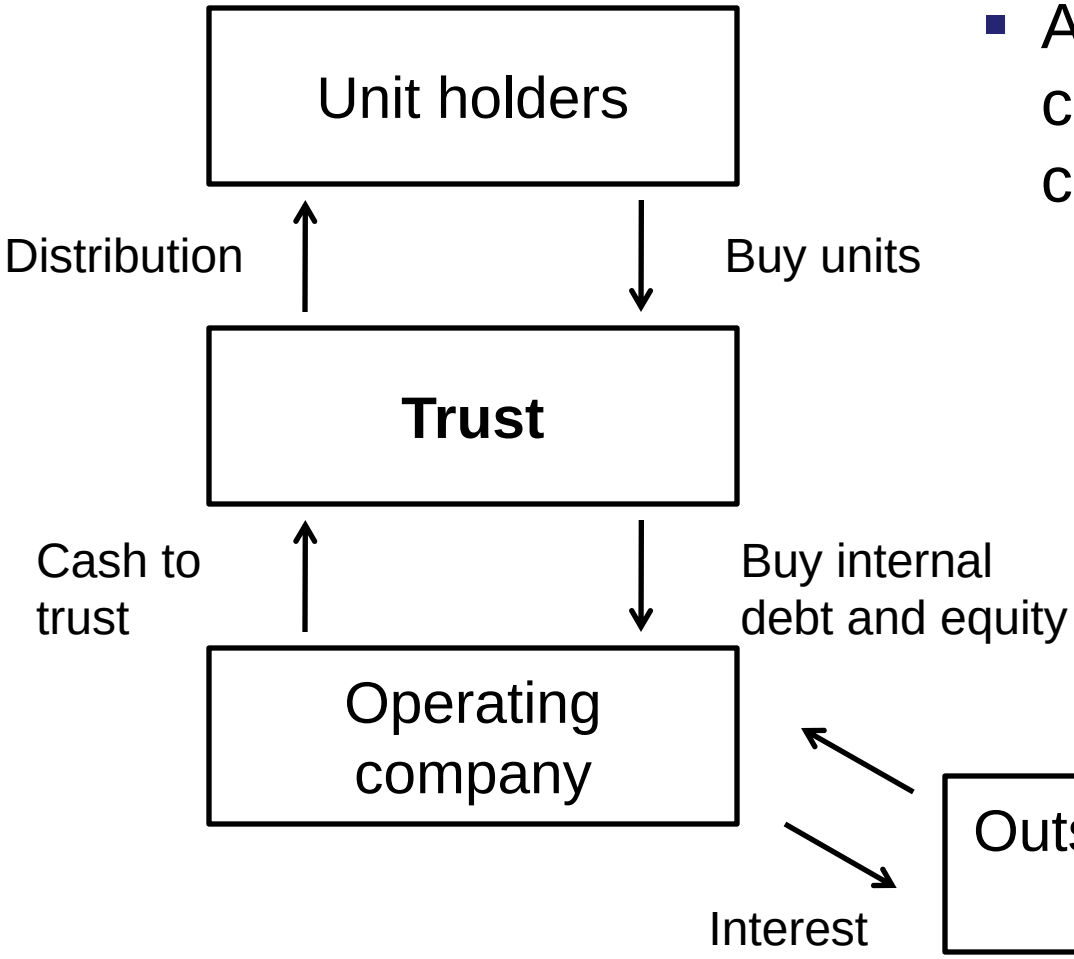
Implications

- Taxes far from Myers conjecture that they are "3rd order" - impact corporate policies
- Broadens tradeoff view of extent to which managers will make changes to capitalize on tax benefit
  - Tradeoff view – accept higher risk of bankruptcy and costs to get tax savings
  - We find managers willing to make many potentially costly corporate policy changes to access a tax benefit
- Suggests value to studies looking at dynamic changes, looking at larger range of corporate policies

Outline

- Context
  - The Canadian Income Trust Market and the surprise “Tax Fairness Plan” (TFP)
- Theory
  - A framework for assessing potential impact of trusts and the TFP
- Event Study Results
  - Value of Tax Shields, Impact of Personal Taxes
- Time Series Results
  - Tax shields
  - Payout, Cash Holdings, and Investment

What is an income trust?



- A flow-through entity that can effectively eliminate corporate income tax

The income trust market: October 2006

- A well-established structure
  - Worth ~$254b or, **~13% of the market cap** of the TSX
  - Substantial growth prior to tax change
  - Heterogeneity in ownership
  - Broad cross-section of industries
- Widely held view → tax advantaged status to stay

"A Conservative government will... Stop the Liberal attack on retirement savings and preserve income trusts by not imposing any new taxes on them"

–Conservative party platform, Jan 31, 2006

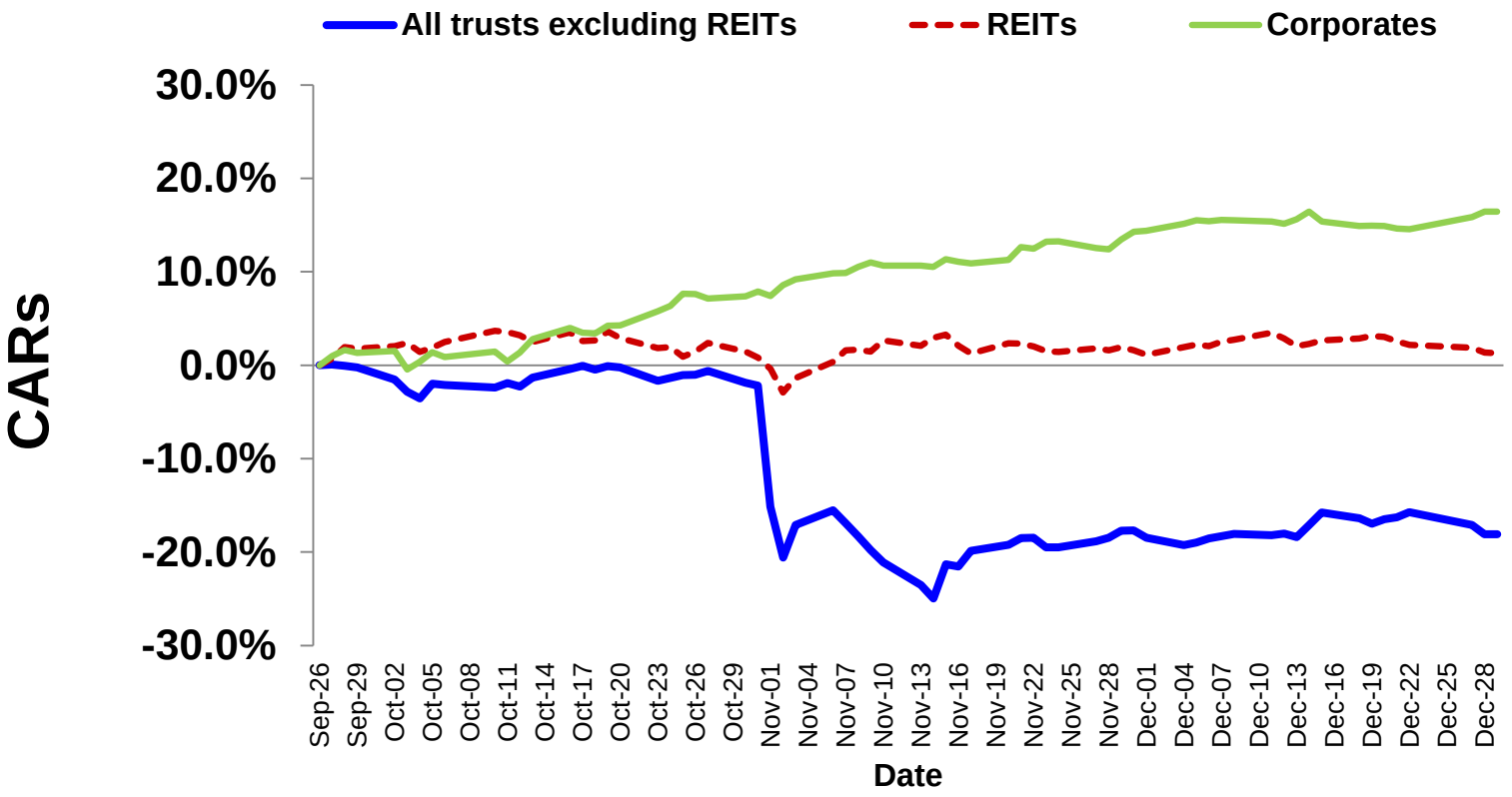
The surprise Tax Fairness Plan (TFP): October 31, 2006

- After market closed
- Announce tax on distributions of income trusts
  - 4 year transition period
- Tax rate will be the same on trusts as on corporates at 31.5%
- *"We see them converting solely to **avoid paying corporate taxes…** "*

  – Jim Flaherty, Finance Minister

The surprise Tax Fairness Plan (TFP): October 31, 2006

"In the final hour before markets closed, a group of bureaucrats were glued to their computer screens, scanning stocks for any telltale signs that word had leaked out... **the markets never suspected a thing…"** – *The G&M*, Nov 2, 2006



Tax policy associated with capital flows and organizational choices

Capital flows to trust sector

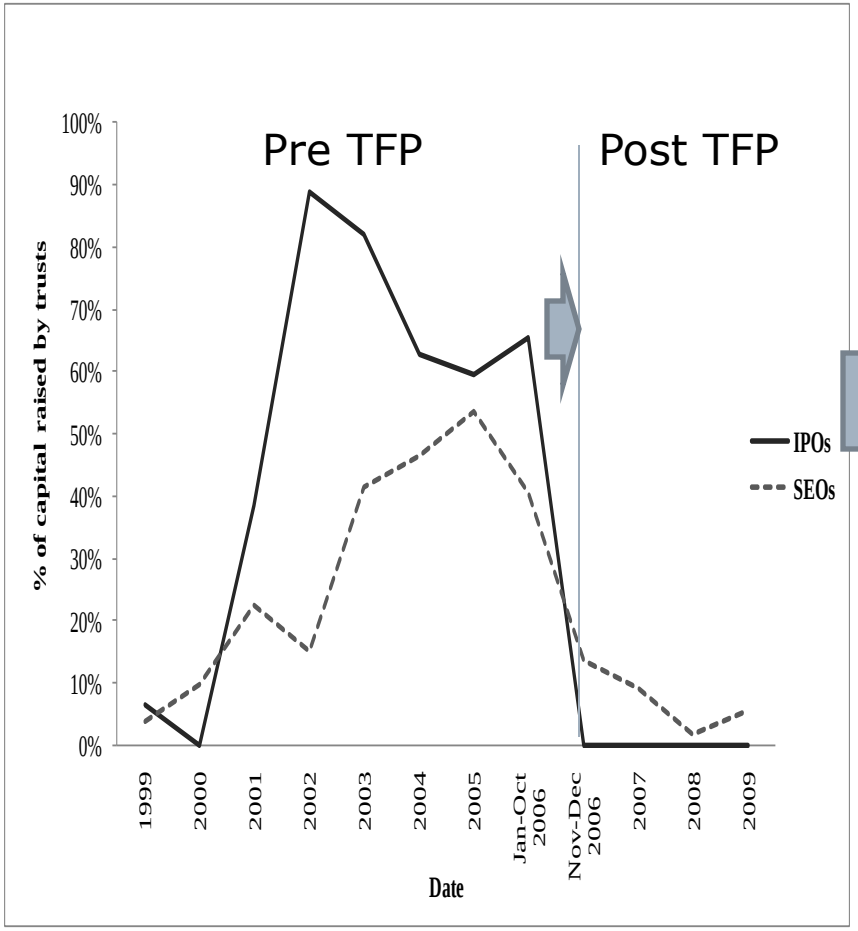
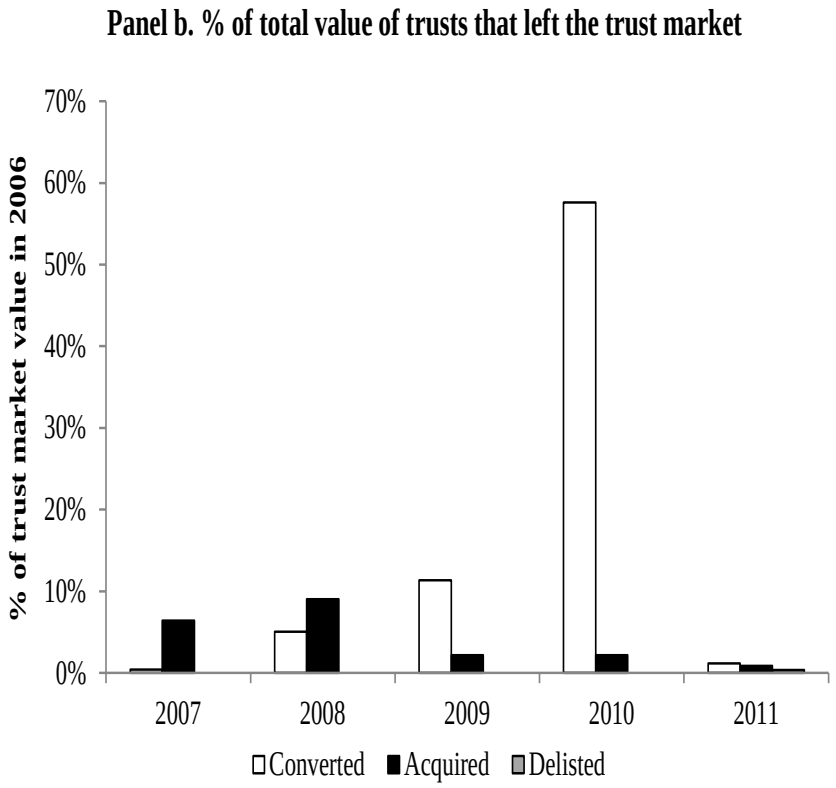


Fig 2 Value of trusts that left trust market after TFP



Do changes in tax incentives affect corporate policy choices? - Theory

- With taxes, incentive to adopt corporate policies that can mitigate impact
- Important to distinguish between gross and net benefits of policies to address
  - Gross benefit focuses just on major policy choice (e.g., to build leverage as tax shield to offset corp taxes)
  - Net benefit considers larger range of policy choices and impacts (e.g., heightened potential bankruptcy costs)
- Another example: Multinationals
    - Gross benefit from arbitraging differences in tax rates across jurisdictions
    - Net benefit takes into account costs arising from incentive to delay repatriation that affects payout, cash, investment

Does tax policy affect corporate choices? Theory on leverage

Do Corporate policies mitigate the impact of taxes?

- Corporate taxes reduce the value of an unlevered firm by the full corporate tax rate
- Tax impact can be reduced by financing choices
  - MM (1963): $V_L = V_U + \mathbf{T_C \times D}$ → what we teach
  - With personal taxes (Miller (1977))→ $\left[1 - \frac{(1-T_c)(1-T_e)}{(1-T_p)}\right] \times D,$
- But are tax shields really worth this much?
  - Additional costs include financial distress costs, non-taxable states of the world, tax shield substitutes, etc.
- Key empirical issue: extent and value of tax shields

Tradeoff view also predicts dynamic response to changes in tax policies

- Tax policy changes require rebalancing benefits and costs and predict changes across range of actions
- Predictions for dynamic tax shields
  - Predict trusts will rebuild tax shields post TFP
- Predictions for other corporate policies that change to exploit tax advantaged status
  - To take advantage of trust structure have to increase payout & reduce cash
  - With costs of external finance, also creates incentive to lower investment
  - Post-TFP predict reduced payout, increased cash and investment

Paper builds on existing literature on trusts and tax shields

- Trust literature
  - Findings on the price drop around announcement and the existence of tax clienteles echo the findings in prior papers (e.g. Elayan et al. (2009), Edwards and Shevlin (2011)) that focus on these dimensions of the tax policy change
- Voluminous literature on taxes and corporate finance
  - e.g. summaries in Graham (2003, 2008), Graham and Leary (2011), Hanlon and Heitzman (2010), etc.

What we find? #1: Prospective tax shields are valuable (Table III)

Cross sectional regressions of the abnormal return on the announcement,

- Capture *prospective* tax shields by industry average tax shield of non-trusts
- Control for existing tax shields
- Control for phase in of tax change
- Other controls
- Robustness tests

Dependent variable

Average value drop = 0.1528

Prospective tax shields mitigate the impact of the tax change

→ 4.6% of firm value

Benchmarks:

MM: 9.7%

Recent study: 3.5%,Van Binsbergen, Graham, and Yang (2010)

What we find? #2: Value of tax shield depends on tax status of marginal investor (Table III)

- Tax benefits are greatest for tax exempt and foreign investors. Impact of the TFP and the value of tax shields should depend on the tax status of the clienteles
- We identify tax status of marginal investor using Elton and Gruber (1970) ex-dividend response
  - Equals 1 for firms with tax exempt marginal investor
  - Mean = 0.67; median = 0.68

- Tax clienteles are priced
- Taking into account personal taxes reduces (but does not eliminate) the value of tax shields
- Average value of tax shields is 3.8%
- Tax shields are worth more when marginal investor has lower T_P

Next, test impact on corporate policies using time series evidence post-TFP

- Pre-TFP test whether corporates that become trusts respond to tax incentives by changing policies:
  - lower leverage, raise payout, lower cash, and investment*
  - Investment particularly interesting – efficiency costs
- Test whether post-TFP trusts are more likely than corporates to make policy changes -- predict
  - Raise leverage to build tax shields
  - Reduce payout
  - Raise cash holdings
  - Raise investment
- Very few tests in literature of dynamic changes in policy around (unanticipated) changes in tax policy

What we find? # 3: Pre-TFP tests on leverage (Table IV)

No tax advantage to debt, predict lower leverage

- Firm fixed effects (estimate from corporates that change to trust)
- Year fixed effects
- Additional controls suggested by literature
- Use corporate and trusts 2001-2006

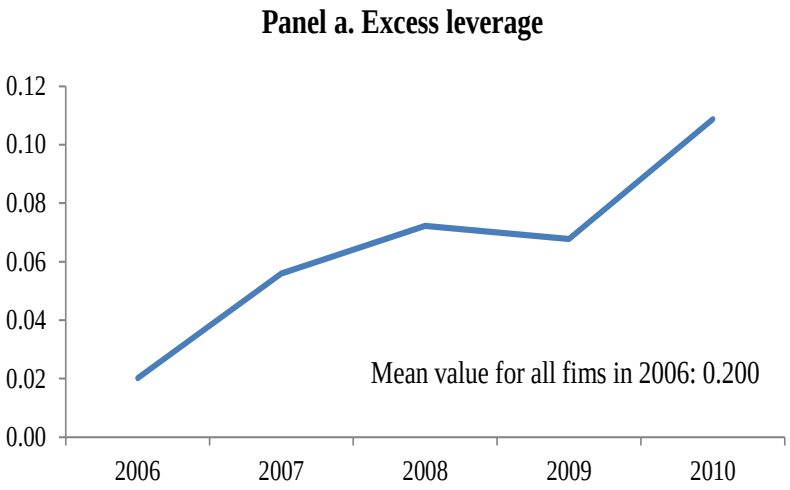
	Leverage	
Constant	0.006	-0.101
	-0.07	(-1.21)
Trust dummy	-0.033**	-0.026*
	(-2.30)	(-1.87)
Log assets$_{t-1}$	0.019***	0.021***
	-2.78	-3.19
Firm fixed effects	yes	yes
Year fixed effects	yes	yes
Additional controls	no	yes
Number of observations	4888	4888
Adjusted R^2	0.7789	0.7848

Pre-TFP tests on other policy variables (Table IV)

	Payout		Cash holdings		Investment	
Constant	0.024	0.027	0.477***	0.440***	0.932***	0.926***
	-1.56	-1.55	-6.6	-5.86	-9.44	-9.54
Trust dummy	**0.074*** **	**0.073*** **	**-0.01**	**-0.016** **	**-0.045** **	**-0.062*** **
	-10.24	**-10.21**	**(-1.32)**	**(-2.01)**	**(-2.36)**	**(-3.15)**
Log assets$_{t-1}$	-0.001	-0.002	-0.030***	-0.027***	-0.066***	-0.067***
	(-1.05)	(-1.04)	(-5.00)	(-4.24)	(-8.10)	(-8.26)
Firm fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Additional controls	no	yes	no	yes	no	yes
Number of observations	5088	5088	4297	4297	4729	4729
Adjusted R^2	0.7352	0.736	0.7673	0.7693	0.7549	0.7651

What we find? #4: Significant build-up of tax shields post-TFP (Table V)

Trust Book Leverage relative to corporates



Stronger identification in Leverage Regressions

- Industry fixed effects
- Year fixed effects
- Other controls
- Focus on dummy variable, whether firm was a trust at time of TFP

$$\frac{D_{it}}{A_{it}} - \frac{D_{it-1}}{A_{it-1}} = \alpha + \delta\, Trust_i + \gamma' \Delta X_{it} + \lambda' Z_{it-1} + \eta_i + \nu_t + e_{it}$$

What we find? #4: Significant build-up of tax shields post-TFP (Table V)

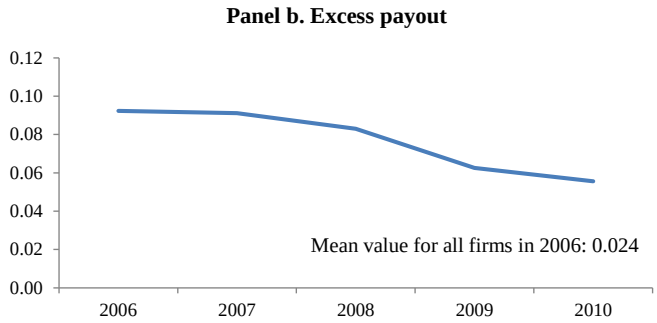
	Full sample		Income trusts only	
Constant	0.029**	0.059***	0.052	0.05
	(2.00)	(3.62)	(1.45)	(1.39)
Trust dummy	0.010***	0.015***		
	(2.76)	(3.54)		
Trust tax shields in 2006			-0.084***	-0.089***
			(4.27)	(4.20)
Log(Total assets)$_{t-1}$	-0.002**	-0.001	0.002	0.002
	(2.54)	(0.67)	(0.69)	(0.71)
Industry fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Controls	no	yes	no	yes
Number of observations	3716	3716	619	619
Adjusted R^2	0.0094	0.0956	0.1046	0.1045

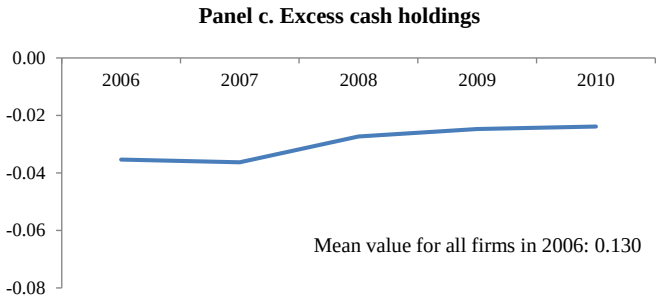
- Annual *change* in leverage of trusts relative to corporates of **1.5% per year** with full controls. Over 4 year transition period implies 6% increase in leverage.
- Within trusts, firms that had highest leverage at time of TFP lower change in leverage.

What we find #4: Lower payout, higher cash post-TFP (Table VI)

Difference between payout/assets of trusts and corporates

Difference between cash/assets by trusts and corporates

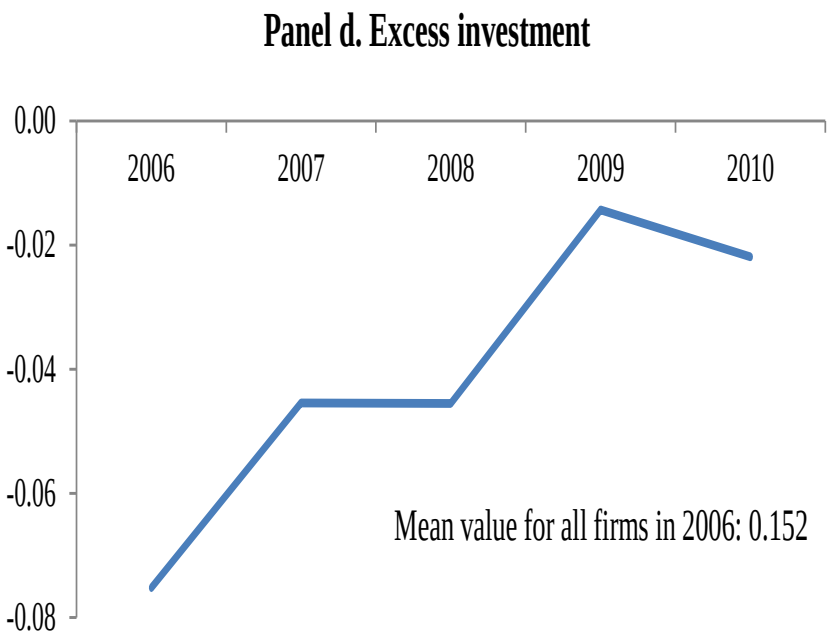




Regression evidence, similar to leverage approach, focuses on *changes* relative to corporates with controls

- → Results statistically significant and economically meaningful and similar to these patterns in levels

Post-TFP increase in investment relative to corporates (Table VI)



	Change in investment	
	-7	-8
Constant	0.017	0.023
	(1.19)	(1.54)
Trust dummy	**0.016*** **	**0.015*** **
	(3.32)	**(3.19)**
Log(Total assets)$_{t-1}$	-0.003***	-0.003***
	(2.75)	(2.93)
Industry fixed effects	yes	yes
Year fixed effects	yes	yes
Other controls	no	yes
Number of observations	3631	3631
Adjusted R^2	0.0472	0.1026

What we find #5: Impact on acquisitions (Table VII)

	Target regressions		Acquirer regressions	
Constant	0.03	0.073***	-0.103	-0.064
	(1.23)	(2.66)	(1.21)	(0.76)
Post-TFP dummy	0.005	0.004	0.007	0.012
	-1.04	-0.79	-0.83	-1.4
Trust dummy	**-0.030*** **	**-0.036*** **	**0.066*** **	**0.053** **
	(3.86)	**(4.56)**	**(2.79)**	**(2.23)**
Post-TFP × Trust dummy	**0.057*** **	**0.058*** **	**-0.025**	**-0.016**
	(4.33)	**(4.47)**	**(0.96)**	**(0.60)**
Industry fixed effects	yes	yes	yes	yes
Other controls	no	yes	no	yes
Number of observations	7323	7323	7323	7323
Adjusted R^2	0.0108	0.0164	0.0312	0.0378

Tax incentives affect likelihood of being acquirer and target

- More likely to be target post-TFP
- Trusts more likely to be an acquirer

Lots of robustness checks (Table VIII)

Event-study tests

Concern: Anticipation that costly corporate policies would be adjusted post-TFP may have affected market response

- Only important if different cross-sectionally
- Robust to controls for anticipated change in investment, takeover intensity, governance,
- Use equity value, errors-in-variables

Time series tests

- Use true diff-in-diff specification, similar results
- Constant sample
- Etc.

Conclusions and contribution

- Scepticism about importance of taxes for corporate policy: Myers (1998) suggests taxes “third order”.
- In contrast, we find:
  - *Market evidence that* Prospective tax shields add value
    - 4.6% without personal taxes
  - *New evidence, consistent with Miller, that p*ersonal tax status affects value of tax shields
    - 3.8% on average
  - Significant impact of taxes on value
    - 21% impact on equity value, 18% on firm value

Conclusions and contribution

Exploit unanticipated event, with differential impact on affected and unaffected group, can identify impact of taxes on corporate policies by also looking at time series of changes

a) Build leverage to create tax shield
b) Alter range of additional corporate policies
   - Payout shrinks, and both cash and investment increase

Collectively, suggests significant impact of taxes on value and corporate policies

Tradeoffs can be significant and involve many policies

Thank you!

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