

# How Costly is the Tax Bias Toward Debt in the Global Economy?



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Keynote Lecture  
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# The Plan



- Taxes and debt – The issue(s)
- Should we care? – Welfare costs
- Stability concerns – The real issue?
- Tax bias & financial sector – Real costs?
- Lessons from recent reforms; looking forward



# The Issue...

*“Companies are taxed heavily for making investments with equity; yet the tax code actually pays companies to invest using leverage”*

(Barack Obama, 2011)

# In fact, two distinct issues



**Debt Bias** – firms being too highly leveraged due to tax

**Debt Shifting** – location of a firms' debt being affected by tax differentials

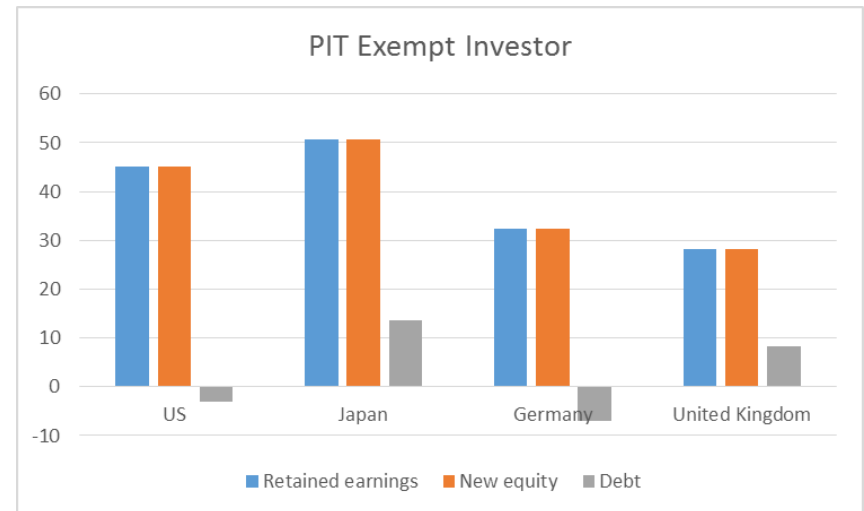
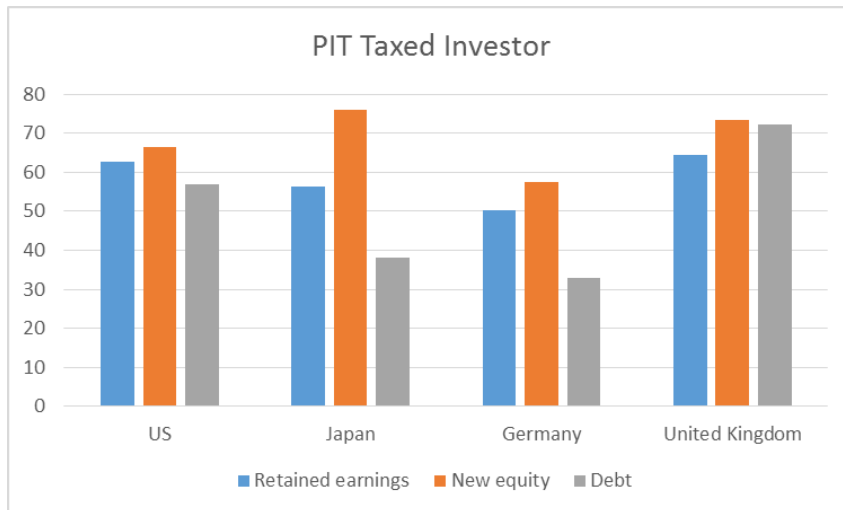
- With quite different welfare implications
- With possible interactions

# (1) Debt Bias ...



	Corporate level	Personal level
Debt	Deductible for CIT	Exempt, or taxable at PIT
Equity	Not deductible for CIT	Exempt, or taxable at PIT - Dividend Tax - Cap Gains Tax

# ... can be (very) large



Marginal Effective Tax Rate on Investment under alternative sources of finance

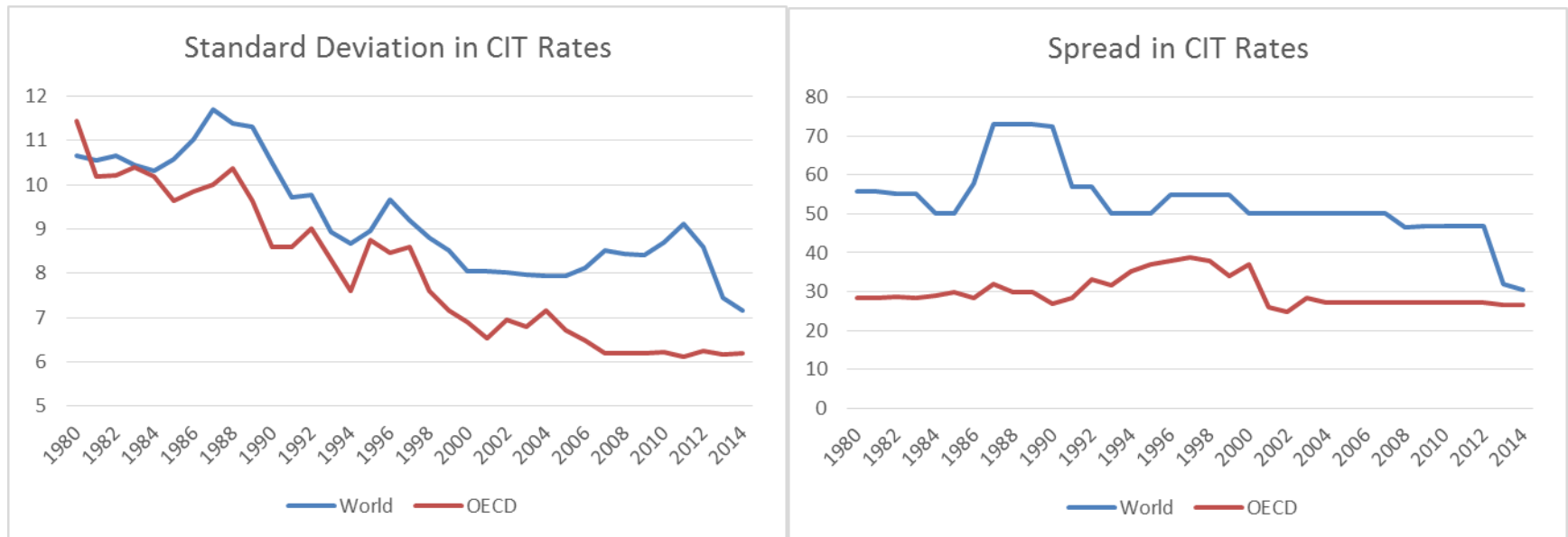
Source: ZEW (2012)

## (2) Multinational Debt Shifting ...



	Parent (home)	Subsidiary (host)
Debt	Interest taxable at home-country CIT	Interest deductible (perhaps subject to WHT)
Equity	Dividend exempt (in most advanced countries)	Profit taxable at host-country CIT (and perhaps WHT)

# ... remains a relevant concern



Source: FAD Tax Database



## Popular topic in public finance ...



Meta studies find nearly 50 empirical studies

- Providing broad support for both bias and shifting
- Average ('consensus') impact coefficient  $\approx 0.3$  – i.e. 10 pp higher CIT rate raises debt-asset ratio by 3 pp
- E.g. US corporate debt ratio could be 12 pt higher due to bias; in France 10 pt higher



# Should we care?

*“It is a historical accident that interest is deductible from corporate tax”*

(Financial Times, 2010)

# What's the distortion like?



## Modigliani-Miller – 1958 & 1963

1958 – firm value independent of debt ratio – no optimal ratio

1963 (correction article) – tax matters → arbitrage

## Imperfect financial markets – debt has real implications

Agency theories show debt has non-tax ...

... benefits: cheaper; incentive effects; signaling value

... costs: bankruptcy, excess risk taking

# Welfare costs seem small



Unique privately optimal debt ratio absent tax bias

Assume this ratio is also socially efficient

Debt bias causes DWL – real agency / bankruptcy costs

E.g. excess risk premiums that companies must pay

## Estimates of DWL

- Weichenrieder-Klautke (2008) – DWL GER  $\approx$  0.15 pct GDP
- Sørensen (2014) – DWL in NOR  $\approx$  2.5 pct CIT (0.1 pct GDP)
- Gordon (2010) – DWL in US  $<$  1 pct CIT

... although could be larger



## Overborrowing

- Dilution (Tirole)
- Signaling good health (Meza-Webb)

## Underborrowing

- Debt as a signal of bad health – Gordon



# Or distortions in contract terms?

## Debt ...

- ... yields fixed return
- ... has limited maturity
- ... has prior claim
- ... no voting right

## Equity ...

- ... yields variable return
- ... has unlimited maturity
- ... has residual claim
- ... gives voting right

## Hybrids ...

- ... convertible debt; preference shares; etc.
- ... no dichotomy debt/equity
- ... distortions occur at the margin of contract terms

# Debt maturity distortions



- Small literature on tax and debt maturity
  - ✓ Parallel with MM - irrelevance & relevance theorems (Stiglitz '74) – externalities
  - ✓ Theory ambiguous on impact of tax
  - ✓ Some empirics pointing to both directions
- Relevant in light of stability concerns (later)

# What about debt shifting?



Assume a wholly-owned subsidiary – parent debt ...

... yields fixed returns, but parent also gets variable returns

... implies prior claim, but parent gets all residual claims

... parent has all voting rights

Does intracompany debt have implications for the MNC group's value?

Welfare effect of debt shifting might be much smaller

Raises question why governments allow MNCs to choose





# Macro Stability Concerns

*“In a crisis, equity bends while debt breaks”*

(The Economist, 2015)

# The Economist

MAY 16TH–22ND 2015

Economist.com

Paternity leave: why everyone wins

China's misguided grain obsession

Britain and Europe: the next chapter

How to get a job at McKinsey

Limp handshake—start worrying

# The great distortion

A dangerous flaw at the heart of the world economy



# High corporate debt threatens stability



Imperfect capital markets: shock may cause solvent companies to default if debt ratio higher / shorter

- Liquidity – rollover risk, debt overhang
- Spread via networks - Acemoglu, Kiyotaki-Moore

Are corporate debt levels too high?

- E.g. externalities from default
- Possible contagion to banks

# Empirics that corporate leverage matters



Firms with high leverage (and short maturity) ...

- ... lay off more employees during recessions (Giroud cs)
- ... reduce investment more (Almeida cs)

Aggregate corporate debt ...

- ... magnifies the deepness of a recession (Jorda cs)

Special concern about financial sector, as ...

- ... sector gets too big (see BIS, IMF, OECD)
- ... high leverage particularly worrisome



# Debt bias in the financial sector

# Financial sector is special



Externalities from excess leverage (contagion, TBTF)

Scope for Pigovian bank levies

Special concern of debt bias

Keen & De Mooij (2015): Same tax incentives, but banks ...

... face regulatory capital requirement – yet generally also hold buffers above that (with room for tax bias)

... have ample access to hybrids

... enjoy special insurance – TBTF, Deposit Insurance

# Taxes do matter for banks

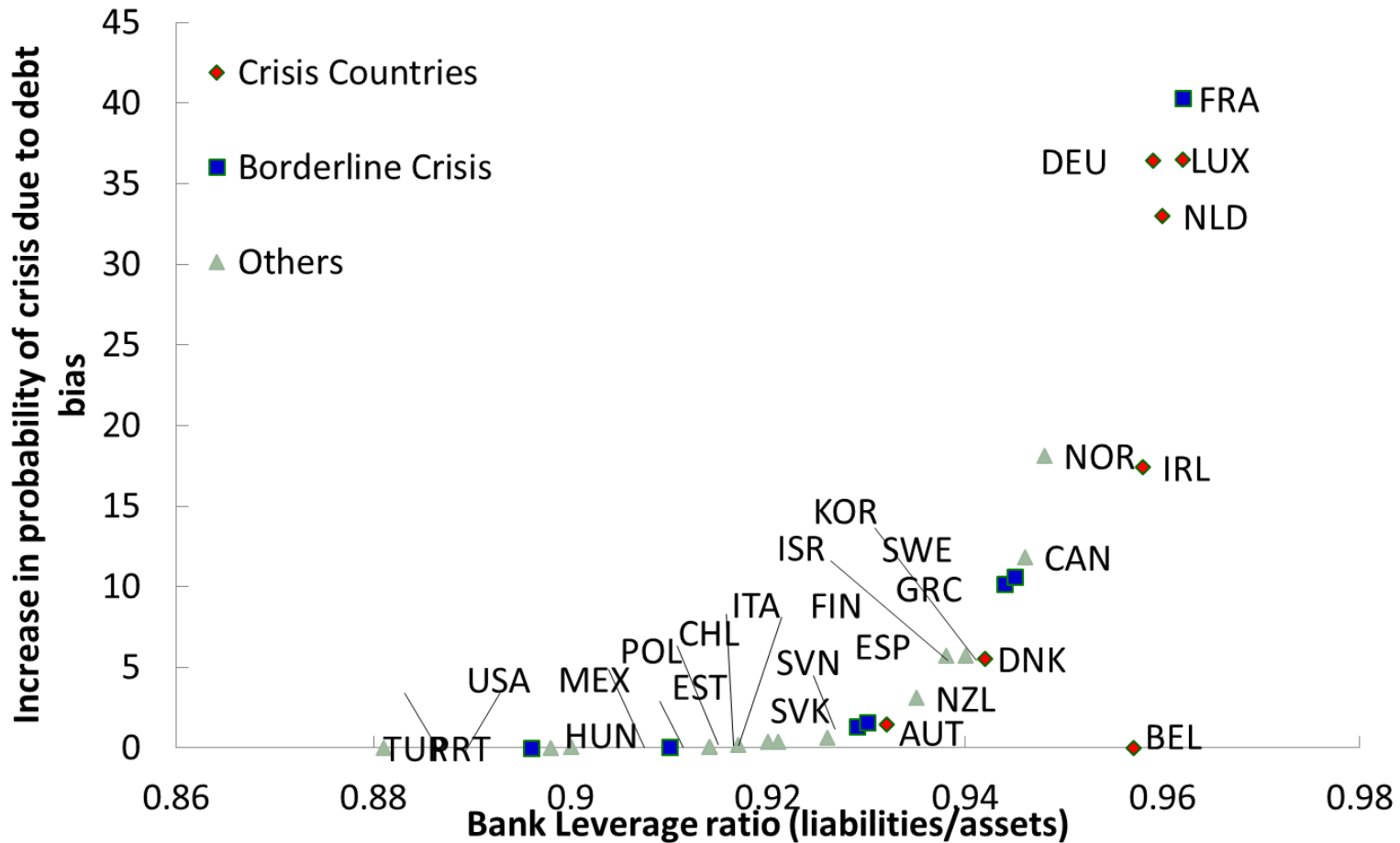


- Average long-run effect similar as non-financial
- Hybrids non-responsive
- Only banks with a capital buffer respond
- Large banks possibly less responsive

	Short-run	Long-run
All Banks		
Debt	.14**	.25**
Hybrids	-.001	-.003
Banks differentiated by capital		
Abundant	.14**	.25**
Tight	-.01	-.03
Banks differentiated by size		
> Median	.11**	.18**
> Q90	.04	.28

Source: Keen & De Mooij (2015)

# Largest banks – biggest concern



Source: De Mooij, Keen and Orihara (2014)



Many more questions, e.g.



On the interaction with regulation

Shift to shadow banking

International spillovers

MNC bank choice of subsidiary vs branch

Effects on asset side risks

KM still find sign. effect on risk-weighted buffer



# Lessons from policy reforms

*“They are a man-made distortion and they need to be fixed”*

# Restricting interest deductibility



## Denying deductibility of certain types of interest

- Group-wide allocation; Fixed ratio
- > 60 countries have such rules in place
- Action 4 of BEPS agenda

Empirics: significant effects on debt ratios  
(typically for affiliates)



## Yet, don't generally address debt bias

- 2/3 of rules for intra-company debt only
  - Focus is on debt shifting, not debt bias
- Mostly not for financial sector
  - Where stability risks seem largest
- Usually high threshold on interest
  - Only largest companies targeted

# Deeper issues underexplored ...



## Welfare effects – Sørensen (2014)

Trade off lower DWL of debt bias with higher DWL from distortion in investment

## Uniform cap might cause own distortions

Firms are heterogeneous (collateral, diversification)

## Discrimination against low-income firms

Could it magnifying stability risk?

# ACE – the love baby in public finance



ACE: adds deduction for normal equity return

- Revenue cost – BEL (> 30%); ITA (< 3% CIT)
  - Static estimates overstate true revenue loss
  - Now cheaper
- Debt ratios – strong empirical support (ITA; BEL)
- Investment – scarce and inconclusive (BEL)

Design matters (ITA, BEL, TUR, ...) (Zangari, 2014)

More evaluations needed

# Bank levies



- Pigovian principle cf. IMF 2010 report
  - 11 EU countries + some non-EU – vary by design
- Devereux-Johannesen-Vella (2014)
  - Reduced leverage; yet more risky assets
- New EU levy part of BRR Directive 2014
  - Compulsory for MS – varies by asset-side risk



# Looking forward