



Rethinking Growth Policy Two Years Into the Crisis

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Introduction

- Spence report emphasized need for liberalizing trade, product and labor markets and for investing in education
- How does the recent crisis should affect our thinking on the role for government intervention in the growth process?



Introduction

- Recent crisis has shown the pitfalls of excessive de-regulation, and that State intervention cannot be dispensed with, e.g. when financial institutions are too-big-to-fail
- Should government intervention go beyond this minimum regulatory role?



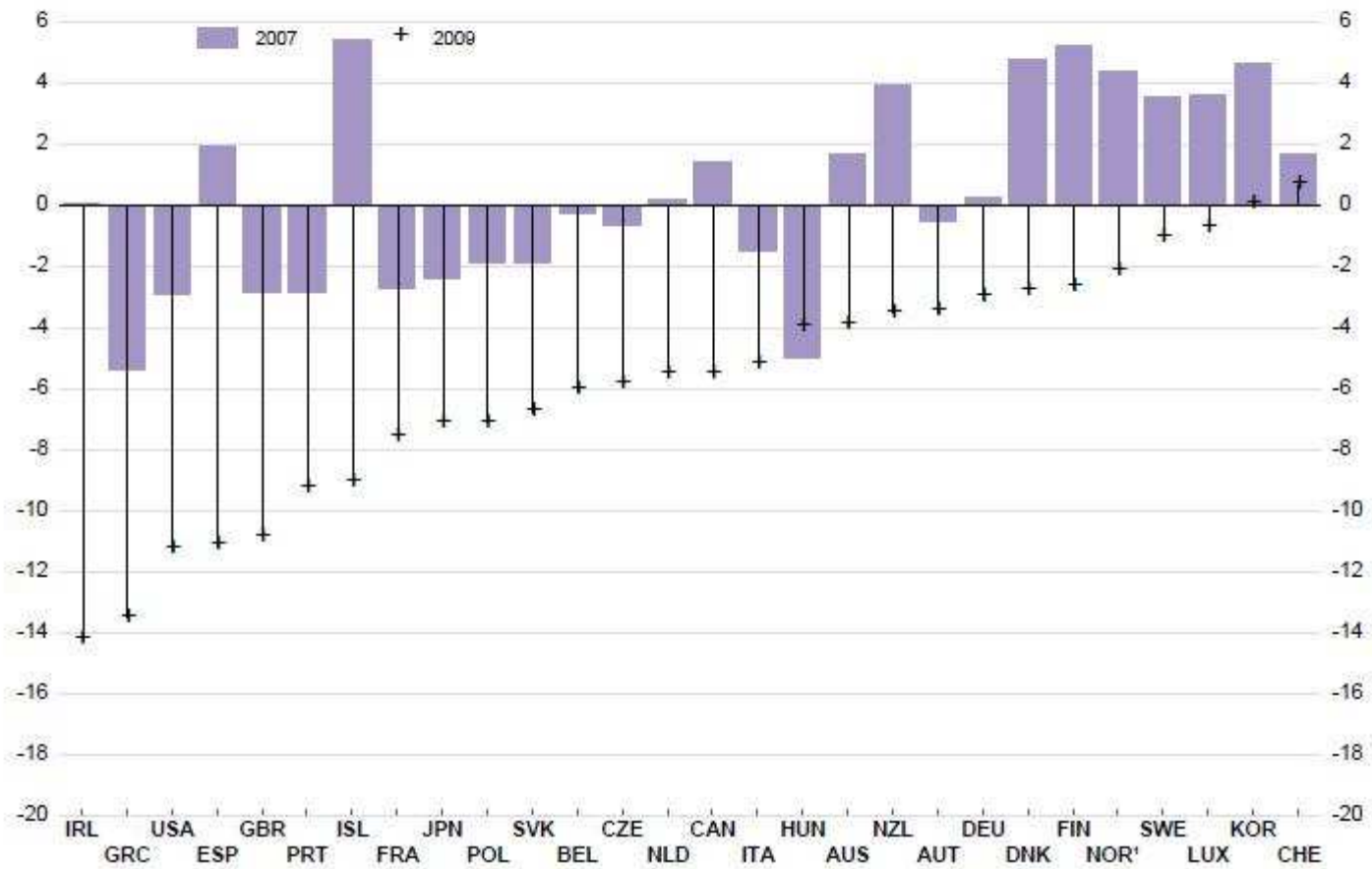
New Facts Brought About by the Recent Crisis

- Weakening of public finances
- Tightening of credit constraints
- Need to correct global imbalances

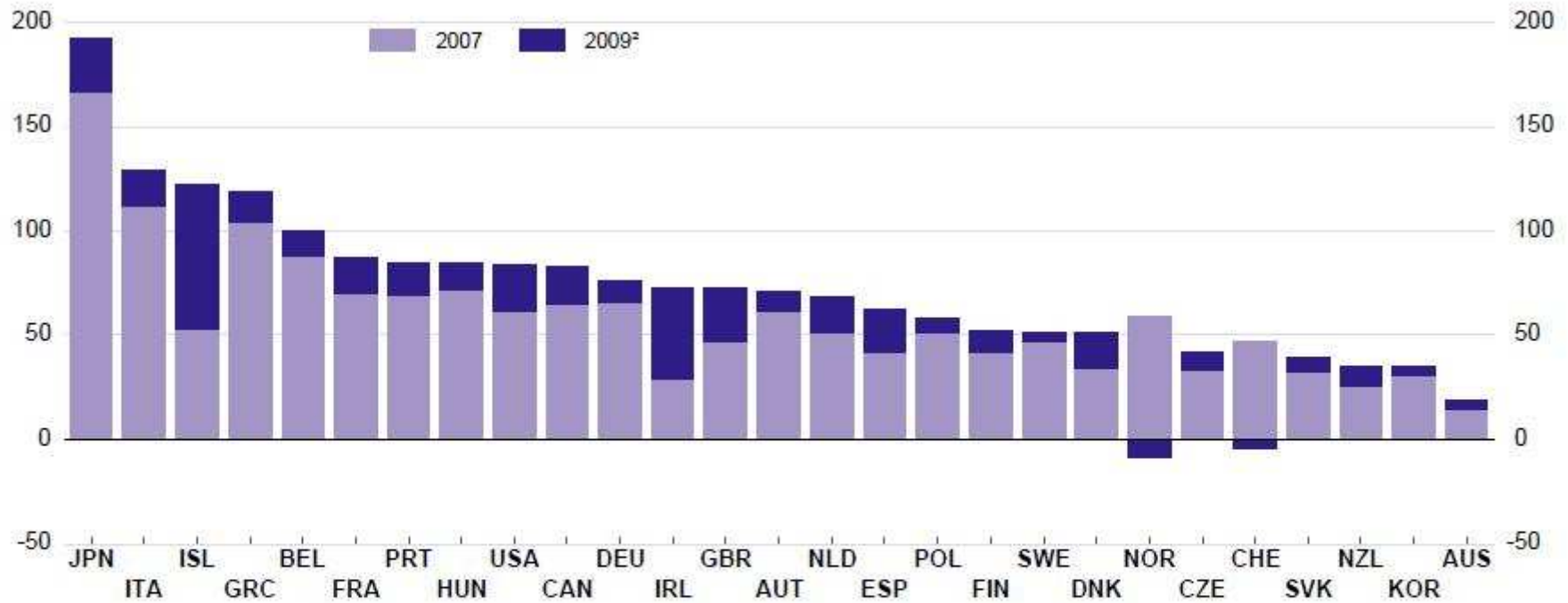


Public finances weakened significantly during the recession

General government balance, in per cent of GDP



Gross government debt, in per cent of GDP



[Click here for underlying data](#)

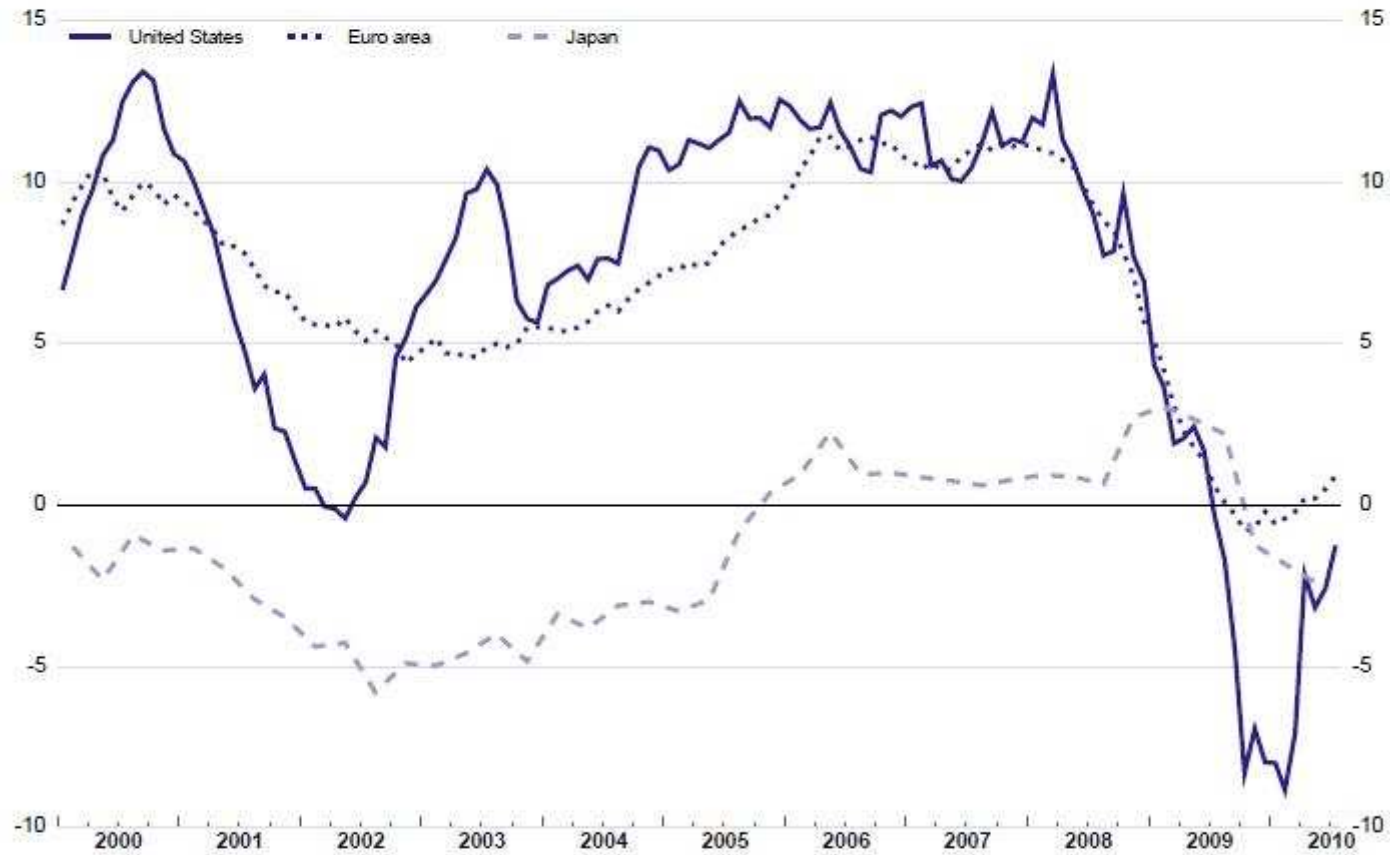
Note: Data for 2009 are estimates for some countries.

1. Mainland Norway only.
2. Change between 2007 and 2009.

Source: OECD, System of National Accounts database; and OECD Economic Outlook 87 database.

Bank lending continues to be weak

Bank loans to the non-financial private sector, year-on-year percentage changes



[Click here for underlying data](#)

Note: Data refer to all commercial banks for the United States, to monetary financial institutions (MFIs) for the euro area and to all banks for Japan. Year-on-year growth rates are calculated from end-of-period stocks. For the euro area, these are adjusted for reclassifications, exchange-rate variations and any other changes which do not arise from transactions.

Source: Datastream.



Introduction

- What does this imply for growth policy design?
- Current opinion swings in US and elsewhere shows that doubts as to the scope of government intervention...especially as people worry about mounting budget deficits
- Here we will argue that need for liberalized markets does not call for a reduced state, but rather for a "suitable" state.



Rethinking Growth and the State



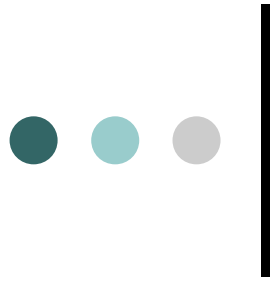
Introduction

- We will point to three main growth-enhancing functions of governments:
 - As a macroeconomic regulator
 - As an investor
 - As a guarantor of the social contract



Outline

- Schumpeterian growth paradigm
- The State as a macroeconomic regulator
- The State as an investor
- The State as a guarantor of the social contract
- Conclusion



The Schumpeterian Growth Paradigm in a Nutshell



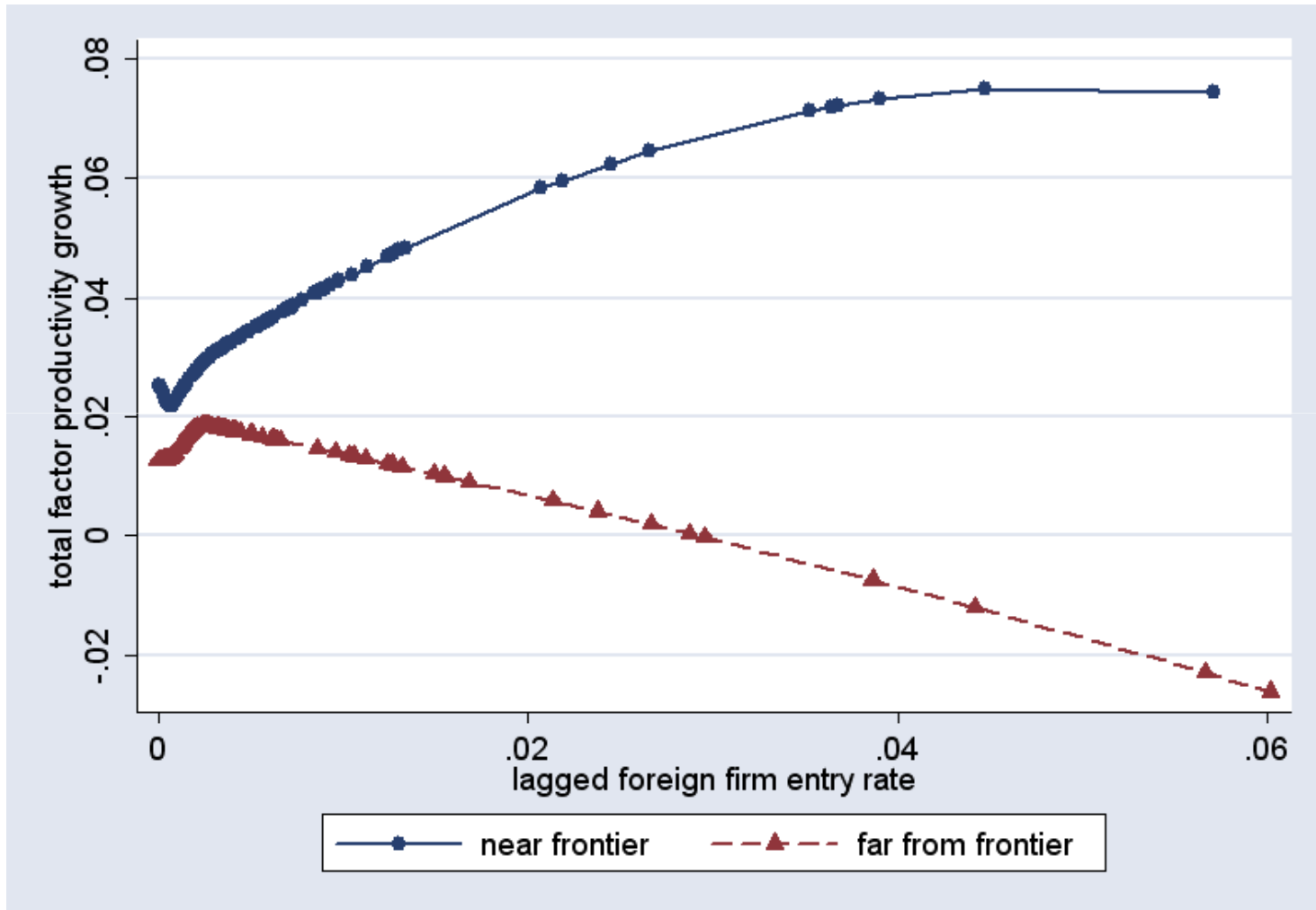
Schumpeterian Paradigm

- Innovation is driven by entrepreneurial investments (R&D...) which are themselves motivated by the prospect of monopoly rents
- The costs and benefits of entrepreneurial investments are shaped by policies and institutions
 - E.g property right protection and rule of law encourage entrepreneurship



Example: Competition & Growth

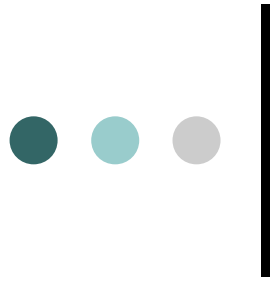
- Competition/entry tend to be growth-enhancing, the more so in countries or sectors that are more technologically advanced





Similarly

- Labor market flexibility is more growth enhancing the closer a country is to the technological frontier
- Stock markets and equity finance are more growth-enhancing closer to technological frontier



The State as Macroeconomic Regulator



Two Contrasted Views of How to React to the Crisis

- Keynesian view (non-discriminatory increase in public spending)
- Conservative view (tax and spending cuts)



However

- Keynesian multiplier might be small
- Laissez-faire policy over the cycle may harm credit-constrained firms



Keynesian Multiplier Might Be Small

- Perotti (2005): government spending multipliers larger than 1 can only be seen in the US pre-1980 period
- Cogan, Cwik, Taylor and Wieland (2009) find that permanent increase by 1% of GDP of government expenditures, increases GDP by only .44% (whereas Romer and Bernstein (2009) find a 1.57% increase).



Laissez-Faire Policy May Be Harmful

- Macroeconomic volatility has ambiguous effects on innovation
 - On the one hand, there are the “virtues of bad times” (Hall, ..)
 - On the other hand, volatility is detrimental to innovation, particularly in firms that are more credit constrained (Aghion, Angeletos, Banerjee and Manova, 2010)



A Third Way

- Previous discussion suggests a third way between keynesian and conservative approaches
 - namely, countercyclical fiscal and monetary policy to partly circumvent credit market imperfections and thereby help firms maintain their growth-enhancing investments over the cycle.



A Third Way

- While this provides some justification for stimulus packages during recessions, this justification is quite distinct from the argument based on the Keynesian multiplier
 - here we emphasize long-run growth effects working primarily through the supply side of the economy whereas the adepts of the multiplier emphasize short-run demand effects.



Fiscal Policy Over the Cycle

- 17 OECD countries, 45 manufacturing industries
- Period 1980-2005
- Countercyclical fiscal policy enhances growth more in sectors that are more dependent on external finance or in sectors with lower asset tangibility

Fiscal Policy cyclicalty and Value added growth

Table 1

Dependent variable: Real Value Added Growth								
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Log of Initial Share in Manufacturing Value Added	-0.797** (0.280)	-0.808** (0.278)	-0.809*** (0.246)	-0.811*** (0.247)	-0.528 (0.350)	-0.530 (0.350)	-0.508 (0.351)	-0.510 (0.352)
Interaction (Financial Dependence and Total Fiscal Balance to GDP Counter-Cyclicalty)	6.687*** (1.510)							
Interaction (Financial Dependence and Total Fiscal Balance to potential GDP Counter-Cyclicalty)		6.701*** (1.419)						
Interaction (Financial Dependence and Primary Fiscal Balance to GDP Counter-Cyclicalty)			4.661*** (0.878)					
Interaction (Financial Dependence and Primary Fiscal Balance to potential GDP Counter-Cyclicalty)				4.680*** (0.860)				
Interaction (Asset Tangibility and Total Fiscal Balance to GDP Counter-Cyclicalty)					-13.30*** (4.406)			
Interaction (Asset Tangibility and Total Fiscal Balance to potential GDP Counter-Cyclicalty)						-13.24*** (4.251)		
Interaction (Asset Tangibility and Primary Fiscal Balance to GDP Counter-Cyclicalty)							-8.942*** (2.895)	
Interaction (Asset Tangibility and Primary Fiscal Balance to potential GDP Counter-Cyclicalty)								-9.039*** (2.830)
Observations	528	528	528	528	528	528	528	528
R-squared	0.579	0.581	0.579	0.579	0.560	0.561	0.560	0.560

Fiscal Policy cyclicalty and Productivity growth

Table 2

Dependent variable: Labor Productivity Growth								
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Log of Initial Relative Labor Productivity	-2.549*** (0.512)	-2.541*** (0.513)	-2.539*** (0.557)	-2.537*** (0.556)	-2.512*** (0.503)	-2.510*** (0.503)	-2.505*** (0.533)	-2.502*** (0.533)
Interaction (Financial Dependence and Total Fiscal Balance to GDP Counter-Cyclicalty)	5.005*** (0.773)							
Interaction (Financial Dependence and Total Fiscal Balance to potential GDP Counter-Cyclicalty)		4.957*** (0.718)						
Interaction (Financial Dependence and Primary Fiscal Balance to GDP Counter-Cyclicalty)			3.403*** (0.498)					
Interaction (Financial Dependence and Primary Fiscal Balance to potential GDP Counter-Cyclicalty)				3.408*** (0.496)				
Interaction (Asset Tangibility and Total Fiscal Balance to GDP Counter-Cyclicalty)					-13.03*** (4.011)			
Interaction (Asset Tangibility and Total Fiscal Balance to potential GDP Counter-Cyclicalty)						-12.81*** (3.971)		
Interaction (Asset Tangibility and Primary Fiscal Balance to GDP Counter-Cyclicalty)							-8.118*** (2.656)	
Interaction (Financial Dependence and Primary Fiscal Balance to potential GDP Counter-Cyclicalty)								-8.220*** (2.642)
Observations	523	523	523	523	523	523	523	523
R-squared	0.548	0.548	0.546	0.547	0.538	0.538	0.535	0.535



Monetary Policy Over the Cycle

- 12 OECD countries, 45 manufacturing industries
- Period 1995-2005
- Countercyclical monetary policy enhances growth more in industries that are more dependent on finance and in industries that are more dependent on liquidity
- Hence counter-cyclical monetary policy and counter-cyclical fiscal policy are not substitutes

Monetary Policy cyclical, Financial Dependence and Productivity growth

Table 1

Dependent variable: Labor Productivity Growth								
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Log of Initial Relative Labor Productivity	-3.097*** (0.876)	-3.140*** (0.887)	-3.114*** (0.887)	-3.160*** (0.893)	-2.920*** (0.887)	-2.945*** (0.900)	-2.953*** (0.899)	-2.959*** (0.904)
Interaction (Financial Dependence and RSIR sensitivity to output gap)	3.471** (1.757)							
Interaction (Financial Dependence and RSIR sensitivity to output gap, controlling for lagged RSIR)		4.822* (2.531)						
Interaction (Financial Dependence and RSIR sensitivity to output gap, controlling for forward RSIR)			5.100** (2.528)					
Interaction (Financial Dependence and RSIR sensitivity to output gap, controlling for lagged and forward RSIR)				6.148** (2.996)				
Interaction (Asset Tangibility and RSIR sensitivity to output gap)					-12.71** (5.624)			
Interaction (Asset Tangibility and RSIR sensitivity to output gap, controlling for lagged RSIR)						-17.32** (7.861)		
Interaction (Asset Tangibility and RSIR sensitivity to output gap, controlling for forward RSIR)							-21.06*** (7.976)	
Interaction (Asset Tangibility and RSIR sensitivity to output gap, controlling for lagged and forward RSIR)								-22.48** (9.328)
Observations	601	601	601	601	601	601	601	601
R-squared	0.375	0.376	0.378	0.378	0.376	0.378	0.376	0.379

Monetary Policy cyclical, Liquidity Dependence and Productivity growth

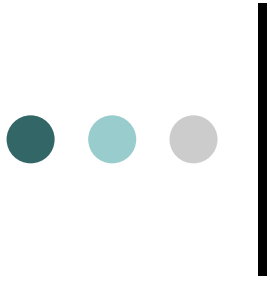
Table 2

Dependent variable: Labor Productivity Growth								
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Log of Initial Relative Labor Productivity	-3.053*** (0.917)	-3.084*** (0.936)	-3.104*** (0.935)	-3.097*** (0.941)	-3.212*** (0.890)	-3.240*** (0.888)	-3.213*** (0.899)	-3.270*** (0.897)
Interaction (Inventories to Sales and RSIR sensitivity to output gap)	32.32** (14.13)							
Interaction (Inventories to Sales and RSIR sensitivity to output gap, controlling for lagged RSIR)		46.20** (20.36)						
Interaction (Inventories to Sales and RSIR sensitivity to output gap, controlling for forward RSIR)			51.89*** (19.92)					
Interaction (Inventories to Sales and RSIR sensitivity to output gap, controlling for lagged and forward RSIR)				60.61** (24.19)				
Interaction (Labor Costs to Sales and RSIR sensitivity to output gap)					17.66*** (6.608)			
Interaction (Labor Costs to Sales and RSIR sensitivity to output gap, controlling for lagged RSIR)						25.92*** (9.206)		
Interaction (Labor Costs to Sales and RSIR sensitivity to output gap, controlling for forward RSIR)							22.96** (9.245)	
Interaction (Labor costs to sales and RSIR sensitivity to output gap, controlling for lagged and forward RSIR)								31.59*** (10.69)
Observations	601	601	601	601	601	601	601	601
R-squared	0.375	0.376	0.378	0.378	0.376	0.378	0.376	0.379



A Pledge for Targeted Horizontal Intervention

- Target tax credit to subsidizing R&D and innovation
- Labor market policies (subsidize training, provide job search assistance, subsidize part-time employment,...)
 - Example of Germany

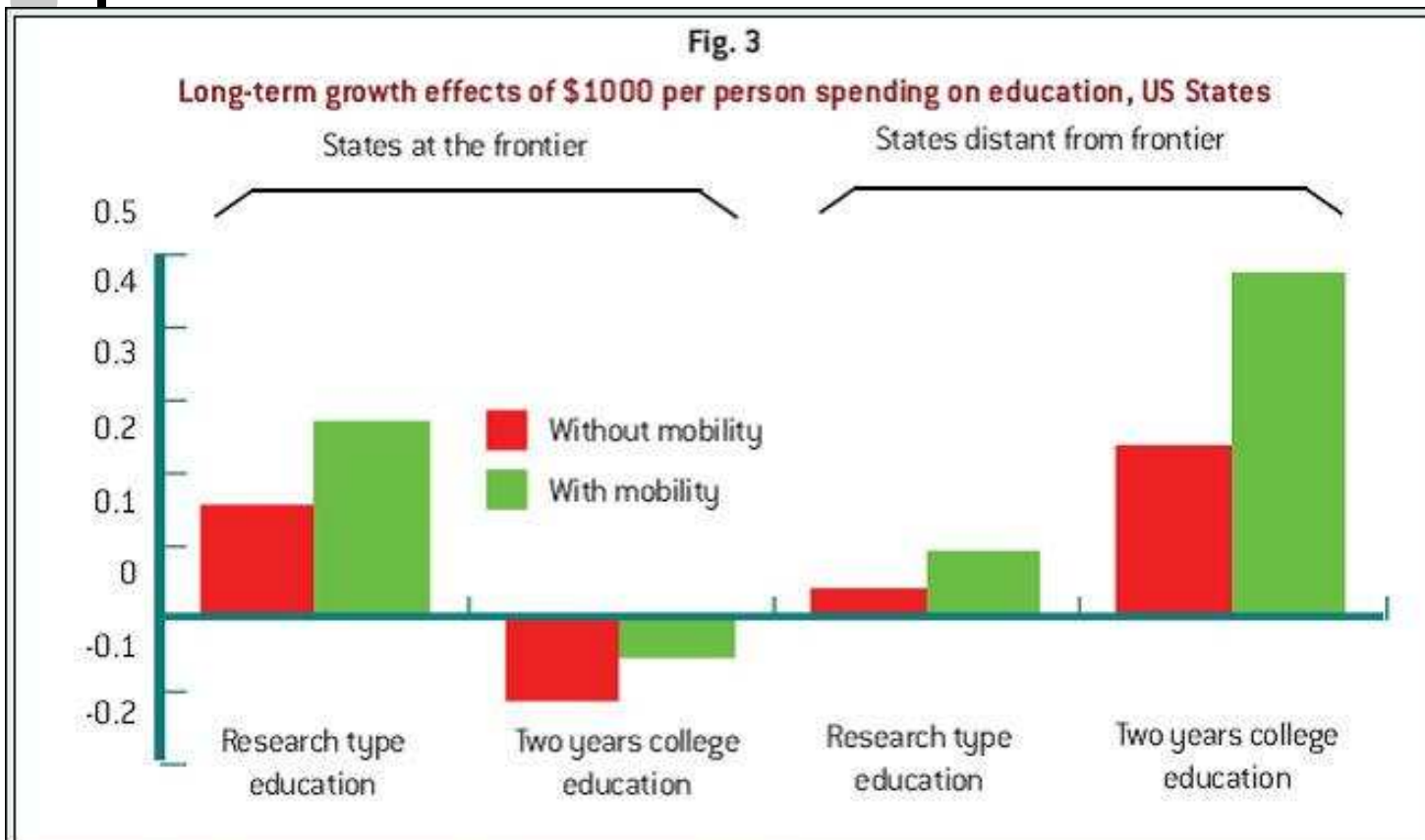


The State as Investor



Example 1: Education

- Education is growth-enhancing, and higher education is more growth-enhancing in regions or countries that are more technologically advanced
- Do not use private rates of return on education (Mincerian approach) to decide about whether State should invest in education... 😊



Source: Aghion, Boustan, Hoxby and Vandenbussche (2005)



Example 2: Sectoral Policy

- In aftermath of WWII, many developing countries have opted for trade protection and import substitution policies aimed at promoting new infant industries
- Over time, and particularly since the 1980s, economists have come to dislike sectoral (“industrial”) policy on two grounds:
 - (i) it focuses on big incumbents (‘national champions’);
 - (ii) governments are not great in ‘picking winners’.
- Current dominant view is that sectoral policy should be avoided especially when it undermines competition



Sectoral Policy

- A first argument for sectoral policy
 - Redirect technical change when there is **path-dependence** in the direction of innovation under laissez-faire (AABH)
 - Current work with Antoine Dechezlepretre, David Hemous, Ralf Martin and John Van Reenen



Sectoral Policy

- Basic idea: firms' propensity to innovate “clean” versus dirty:
 - Is positively correlated with stock of past clean innovation
 - Is negatively correlated with stock of past dirty innovation
- Hence a role for government intervention in redirecting technical change (carbon tax, research subsidies)



Sectoral Policy

- 12,000 patents in “clean” technologies
 - Electric vehicles, hybrid vehicles, fuel cells
- 36,000 patents in “dirty” technologies
 - Regular combustion engines
- Filed by 7,000 patent holders
- Between 1978 and 2007



Sectoral Policy

- Current work with Mathias Dewatripont, Luosha Du, Ann Harrison, and Patrick Legros
- Panel data of Chinese firms, 1988-2007
- Industrial firms from NBS: annual survey of all firms with more than 5 million RMB sales
- Regress TFP on:
 - Subsidies received by firm as a share of sales
 - $COMP=1 - LERNER\ INDEX$
 - Sector-level controls, firm and time fixed effects



Sectoral Policy

- Findings are that:
 - The higher competition, the more positive (or less negative) the effect of subsidies on average TFP
 - The overall effect of subsidies on TFP is positive if competition is sufficiently high and/or subsidies are not too concentrated among firms in the sector



TFP Estimation

$$\ln TFP_{ijt} = \alpha + \beta_1 Z_{ijt} + \beta_2 S_{jt} + \beta_3 SUBSIDY_{ijt} + \beta_4 COMP_{jt} + \beta_5 SUBSIDY * COMP_{jt} + \alpha_i + \alpha_t + \varepsilon_{ijt}$$

Z=Vector of firm-level controls, including state and foreign ownership

S=Vector of sector-level controls, including input and output tariffs, sectoral foreign shares.

All specifications allow for firm fixed effects and time effects.

Three Approaches: OLS, OLS with fixed effects, Olley-Pakes approach to measuring TFP in first stage

Critical question: do benefits of subsidies increase with competition? If so, coefficient $B_5 > 0$



Results

Table 1

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	lnTFP (based on Olley-Pakes regression)					
Stateshare	-0.00150 (0.00337)	-0.00144 (0.00331)	-0.00159 (0.00337)	-0.00152 (0.00331)	-0.00185 (0.00329)	-0.00179 (0.00326)
Horizontal	0.322*** (0.0756)	0.335*** (0.0793)	0.323*** (0.0755)	0.335*** (0.0793)	0.178* (0.0947)	0.198* (0.101)
Ratio_subsidy	-0.185*** (0.0279)	-0.188*** (0.0276)	-8.201*** (1.769)	-6.752*** (1.404)	-8.067*** (1.748)	-6.798*** (1.392)
Competition_lerner		0.512 (0.533)		0.482 (0.535)		0.427 (0.535)
Interaction_lerner			8.212*** (1.818)	6.724*** (1.441)	8.074*** (1.796)	6.773*** (1.429)
Backward					0.779*** (0.278)	0.762*** (0.273)
Forward					0.112 (0.0991)	0.0995 (0.0990)
LnTariff	-0.0382** (0.0162)	-0.0348** (0.0166)	-0.0380** (0.0162)	-0.0348** (0.0166)	-0.0335 (0.0214)	-0.0321 (0.0213)
LnbwTariff	-0.00764 (0.0174)	-0.00672 (0.0172)	-0.00770 (0.0174)	-0.00682 (0.0172)	-0.0223 (0.0194)	-0.0213 (0.0189)
LnfwTariff	-0.00373 (0.00260)	-0.00422 (0.00278)	-0.00379 (0.00260)	-0.00424 (0.00278)	-0.00418 (0.00544)	-0.00406 (0.00537)
Constant	1.726*** (0.0315)	1.213** (0.534)	1.725*** (0.0314)	1.242** (0.535)	1.699*** (0.0412)	1.274** (0.533)
Observations	1,072,034	1,072,034	1,072,034	1,072,034	1,072,034	1,072,034
R-squared	0.172	0.172	0.172	0.173	0.173	0.173

Notes: Robust clustered standard errors are shown in the parentheses. Firm fixed effect and time effect are included in each specification. To exclude foreign-invested and state-owned firms, we estimate the results based on the sample of domestic non-state-owned firms.



Using TFP growth as dependent variable

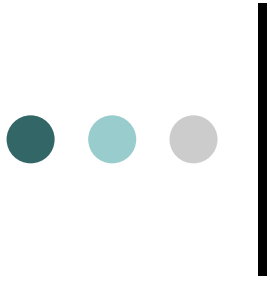
Table 5

	(1)	(2)	(3)	(4)	(5)	(6)
	lnTFP_growth					
Stateshare	-0.0109*	-0.0106*	-0.0108*	-0.0106*	-0.0108*	-0.0107*
	(0.00596)	(0.00591)	(0.00594)	(0.00591)	(0.00592)	(0.00589)
Horizontal	0.213***	0.228***	0.224***	0.228***	0.0874**	0.0952**
	(0.0414)	(0.0425)	(0.0417)	(0.0425)	(0.0405)	(0.0404)
Ratio_subsidy	-0.280***	-0.290***	-0.282***	-0.290***	-0.281***	-0.289***
	(0.0527)	(0.0512)	(0.0517)	(0.0512)	(0.0522)	(0.0517)
Competition_lerner		0.382	0.420	0.382	0.343	0.309
		(0.249)	(0.252)	(0.249)	(0.255)	(0.251)
Competition_HerfSubsidy		0.000120***		0.000120***		0.000115***
		(3.84e-05)		(3.84e-05)		(4.03e-05)
Backward					0.575***	0.561***
					(0.124)	(0.124)
Forward					0.129***	0.125***
					(0.0253)	(0.0266)
LnTariff	0.00436	0.00667	0.00733	0.00667	0.0157	0.0148
	(0.0102)	(0.0104)	(0.0107)	(0.0104)	(0.0108)	(0.0104)
LnbwTariff	0.000245	0.00210	0.000931	0.00210	-0.00873	-0.00740
	(0.00790)	(0.00807)	(0.00796)	(0.00807)	(0.00790)	(0.00781)
LnfwTariff	-0.00575**	-0.00702***	-0.00612**	-0.00702***	0.00839***	-0.00917***
	(0.00241)	(0.00250)	(0.00253)	(0.00250)	(0.00245)	(0.00248)
Constant	-0.0128	-0.407	-0.440	-0.407	-0.387	-0.357
	(0.0276)	(0.261)	(0.266)	(0.261)	(0.268)	(0.262)
Observations	739,543	739,543	739,543	739,543	739,543	739,543
R-squared	0.005	0.005	0.005	0.005	0.006	0.006



Summarizing Results

- (Vertical) Targeting has more positive effects on productivity when associated with greater competition
- Targeting has more positive effects on innovation when associated with greater competition
- Greater dispersion in allocation of subsidies results in improved performance

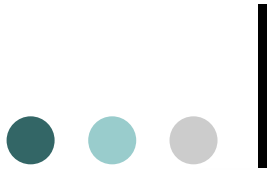


The State as Guarantor of the Social Contract

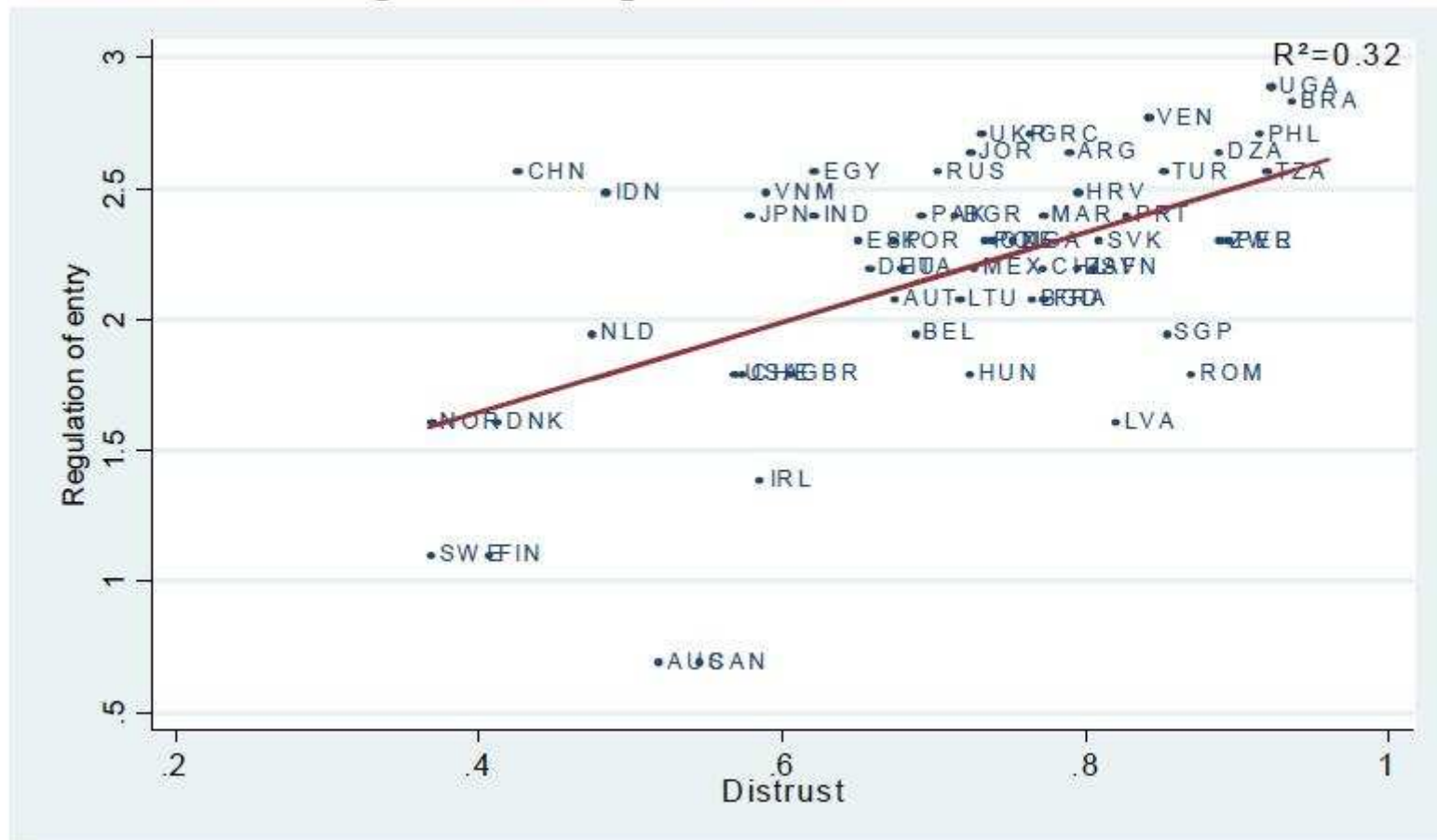


The State as Guarantor of the Social Contract

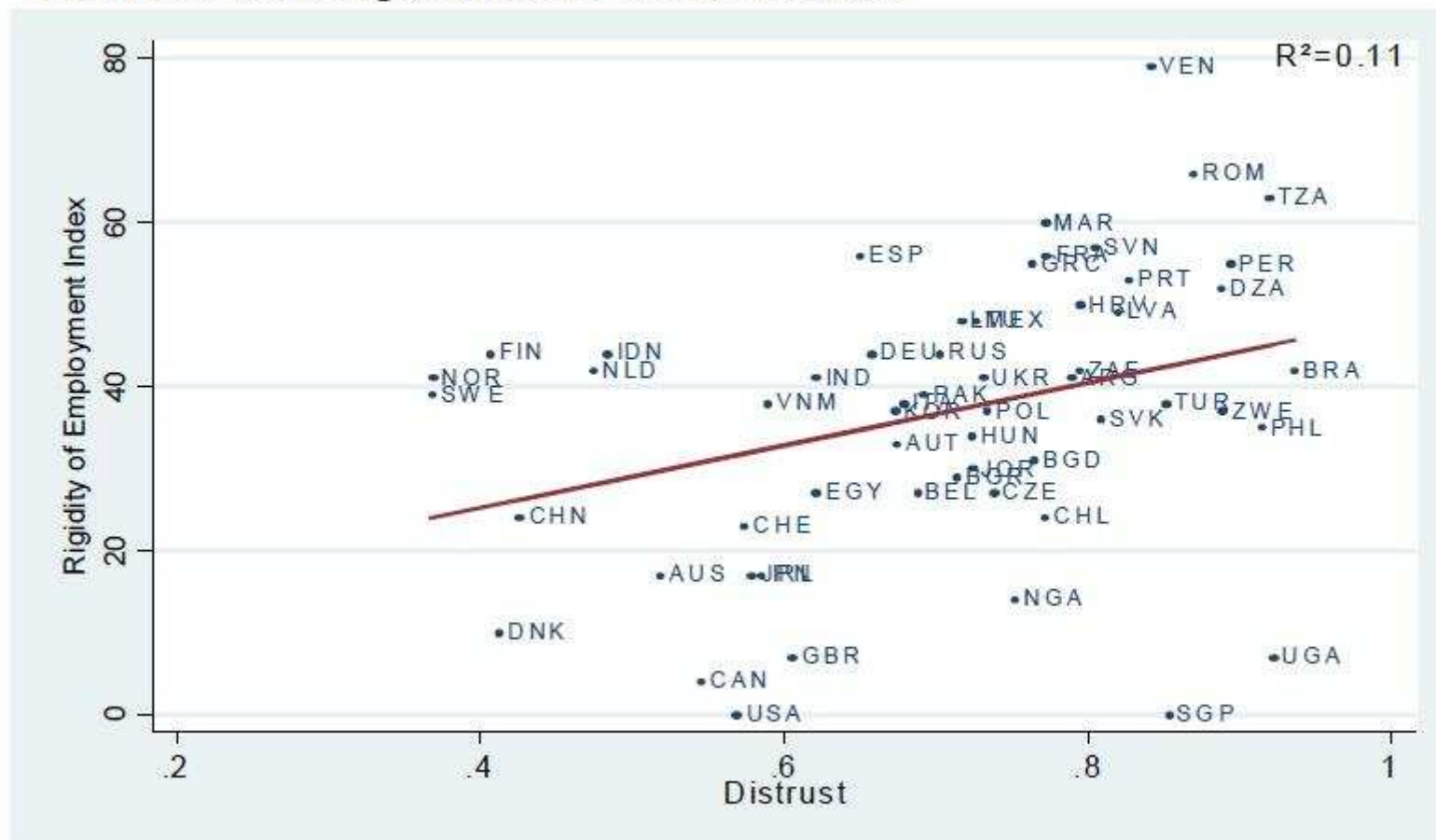
- Government should invest in trust to foster market liberalization and consolidate structural reforms



Distrust and regulation of product market



Distrust and regulation of labor market





The State as Guarantor of the Social Contract

- Hence regulation of product and labor markets, appear to be negatively correlated with trust
- This does not mean that liberalizing markets will automatically bring about trust
- What else do we need?
 - Invest in social capital....role of fiscal policy!!



The State as Guarantor of the Social Contract

- Interestingly, negative correlation between regulation and trust does not carry over to fiscal policy
 - tax ethics appears to be positively correlated with tax monitoring (current work with A. Roulet, G. Tabellini and F. Zilibotti)



Intuition

- With higher tax monitoring \Rightarrow you expect fellow citizens to evade taxes less \Rightarrow you are more likely to find it unethical not to pay taxes



Impact of Tax Staff on Tax Ethics

VARIABLES	(1) tax_ethic	(2) tax_ethic	(3) tax_ethic	(4) tax_ethic	(5) tax_ethic	(6) tax_ethic
staff_per_taxpayers	13.64*** (2.594)	14.90*** (2.924)	13.64*** (3.145)	13.69*** (3.178)	15.23*** (3.779)	13.27*** (4.179)
gdp_per_cap		1.22e-06 (1.21e-06)	1.59e-06 (1.26e-06)		1.64e-06 (1.42e-06)	1.81e-06 (1.42e-06)
tax_rate			-0.00362 (0.00216)			-0.00385* (0.00210)
Constant	0.432*** (0.0157)	0.395*** (0.0400)	0.523*** (0.0843)	0.426*** (0.0170)	0.377*** (0.0479)	0.522*** (0.0788)
Observations	57	57	55	32	32	30
R-squared	0.332	0.343	0.419	0.383	0.404	0.493

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

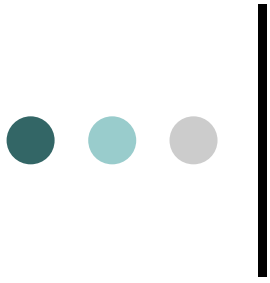


Impact of the Number of Audits on Tax Ethics

VARIABLES	(1) tax_ethic	(2) tax_ethic	(3) tax_ethic
audits_per_taxpayers	0.165*** (0.0332)	0.228*** (0.0582)	0.166*** (0.0591)
gdp_per_cap		2.82e-06 (1.66e-06)	3.13e-06 (1.84e-06)
tax_rate			-0.00389 (0.00233)
Constant	0.474*** (0.0168)	0.390*** (0.0559)	0.527*** (0.0858)
Observations	27	27	26
R-squared	0.076	0.185	0.225

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1



Conclusions



Conclusions

- State as Regulator, Investor and Guarantor of the Social Contract



Conclusion 1: State as Regulator

- A macroeconomic policy which is neither Keynesian nor Tea-Party
 - Government should pursue actively countercyclical fiscal and monetary policies, and its intervention should be targeted
 - Target SMEs, higher education, support to employment and labor reallocation



Conclusion 2: State as Investor

- Vertically) targeted, i.e sectoral, policies should not be ruled out, especially if competition-friendly



Conclusion 3: State as Guarantor of the Social Contract

- Need to add “Trust” layer to growth policy design
 - Trust and ethics bolster market flexibility
 - However
 - Market liberalization without social capital investment may undermine trust
 - Financial regulation and progressive taxation enhance trust and ethics



Wrapping-Up

- Should we all become Scandinavians?
 - Priority investments in R&D, higher education, green innovation
 - Trust and low inequality
 - All this being supported by highly progressive taxation and high tax monitoring