

# Same or Different? The CEO Labour Market in China's Public Listed Companies

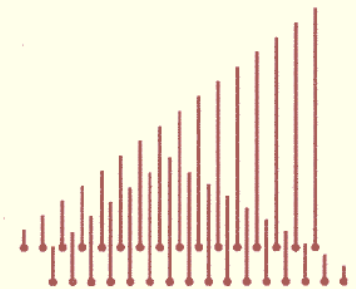
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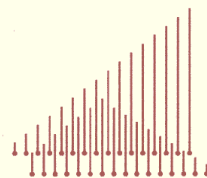
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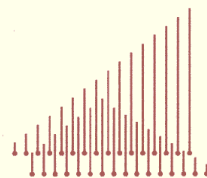
# Motivation

- A market for executives in China's public listed sector
- What has happened to compensation methods and levels?
- What is driving exec compensation?
  - Firm size/growth
  - Sensitivity to firm performance
  - Tournament pay
  - Role of the state/privatization
  - Corporate governance and skimming



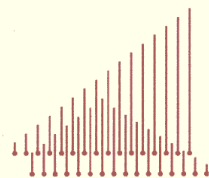
# Background

- A market for executives in China?
- The role of the state
  - Links between government and business
  - Regional decentralization (Xu, 2011)
  - Local experimentation
- Privatization
  - Township-village enterprises
  - Local government picking winners among SoEs
- State sector restructured in 90s via bankruptcy and layoffs
- Experimentation with managerial incentives and auctions
- Adopted if experiments prove successful



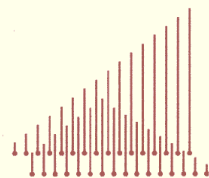
# Ways to Incentivize Executives

- Rewarding desirable behaviour
  - Elasticity of pay WRT firm performance (bonuses)
  - Stock holding
  - Stock options
  - Long-term investment Plans (LTIPs)
  - Tournaments
- Penalising unwanted behaviour
  - Dismissal threat
  - Merger/acquisition (leading to job loss)
  - Performance bonds (Bryson et al 2012)
- China's compensation mix different from West



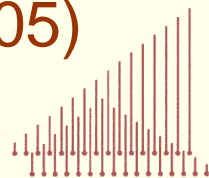
# China: Different

- State ownership: different principal
  - Political objectives eg. Employment, worker welfare
- State role in SoE corporate decision-making
  - Recruitment, promotion, pay setting
- Executive careers
  - Parallel CP career (Li et al., 2007; Cao et al., 2012)
- Compensation mix
  - Cash/bonuses
  - Stock holding: trading tightly restricted until 2000s.
  - Few stock options
- Corporate governance: few independents

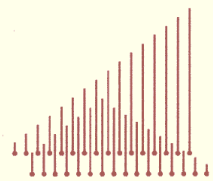


# China: Similar (or at least converging)

- Large-scale Privatisation
  - Divesting ownership in current firms
  - Private ownership in new firms
- State encouragement of incentive contracts for executives
  - Began in 1980s in SoE's (Xu, 2011)
  - “directed at improving the efficiency of enterprises by replacing direct control from above with managerial incentives” (Groves et al: 1995)
- Regulation for good corporate governance and incentives in public listed sector
  - Board must be 1/3 independent
  - Disclosure of top 3 exec pay (2001) and all (2005)
  - Stock options from 2006

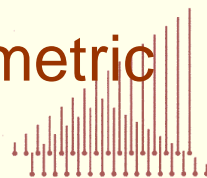


# HYPOTHESES



# Hypothesis 1

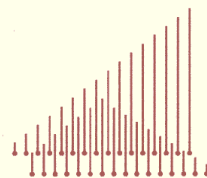
- **H1: Exec comp highly correlated with firm size/growth**
- Markets allocate most talented execs to highest positions in largest firms (Rosen 1990)
- Cash/bonus to sales elasticity of 0.2-0.25
- “the best documented empirical regularity regarding levels of executive compensation” Baker Jensen and Murphy (1988)
- Recent evidence in support in both US and internationally: Gabaix and Landier, 2008; Gabaix et al, 2013; Kaplan, 2012)
- Though note debate regarding correct performance metric
  - Market cap particularly noisy in China





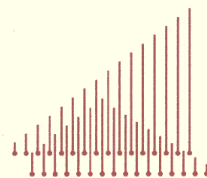
# Hypothesis 2

- **H2: exec comp is sensitive to firm performance**
- Principal-agent: need exec incentives to ensure execs maximise shareholder returns rather than own career gains
  - Bandiera et al. 2012: what do CEO's do?
- Plenty of evidence though debate over luck (Bertrand/Mullainathan, 2001)
- Perhaps smaller pay-performance elasticity in China
  - State's welfare objectives
  - CP alternative career path
  - Tradition of rigid pay scales (industry, region)
- Appropriate metric for performance?
  - Absolute versus relative performance
  - Market cap versus ROA etc



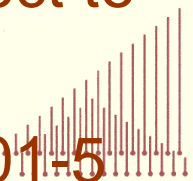
# Hypothesis 3

- **H3: Firms use tournament pay structures**
- Nurturing of talent through tournament-like promotion (Lazear and Rosen, 1981)
- Prediction 1: convexity
  - driven by option values lower down hierarchy (Rosen, 1990)
- Prediction 2: higher CEO pay where exec pool is larger
  - degree of competition for top job
- Evidence in the West (Eriksson, 1999)
- CP taste for greater equity?
- But evidence of growing talent from within
  - Similar exec T/O rates
  - Similar rates of CEO appointment from within



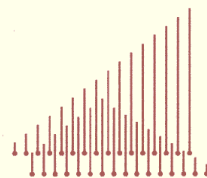
# Hypothesis 4

- **H4: Privatisation increases growth rate of exec comp**
- Full or partial privatisation increases room for market forces to operate (Wolfram, 1998 for the UK)
- But State influence not solely reliant on ownership
  - Role in appointments, promotions, pay
- Evidence to 2002:
  - pay/performance elasticity rises with falling state ownership in China's public listed sector (Kato and Long, 2006)
  - Pay/perf elasticities greater in private than SOE (Firth et al. 2006)
- We consider pay response to performance with respect to changes in state ownership
  - Conyon and He's (2011) surprise finding for 2001-5



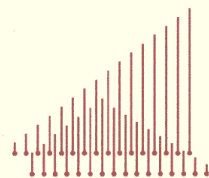
# Hypothesis 5

- **H5: Poor corporate governance permits skimming**
- CEO's exploit managerial power to extract rents
  - **Controversial** (Bebchuk and Fried, 2004 versus Gabaix and Landier, 2008 and Gabaix et al., 2013)
- **Weak corporate governance in China**
  - Low N independents, CEO duality high
- **Implication -> potential to skim profits in good times** (Bertrand and Mullainathan, 2001)
- **But growth of Compensation Committees**
  - <1% in 2001, now nearly universal
  - However, CEO's sit on Compensation Committee in 1/4 of cases

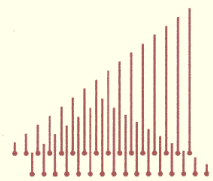
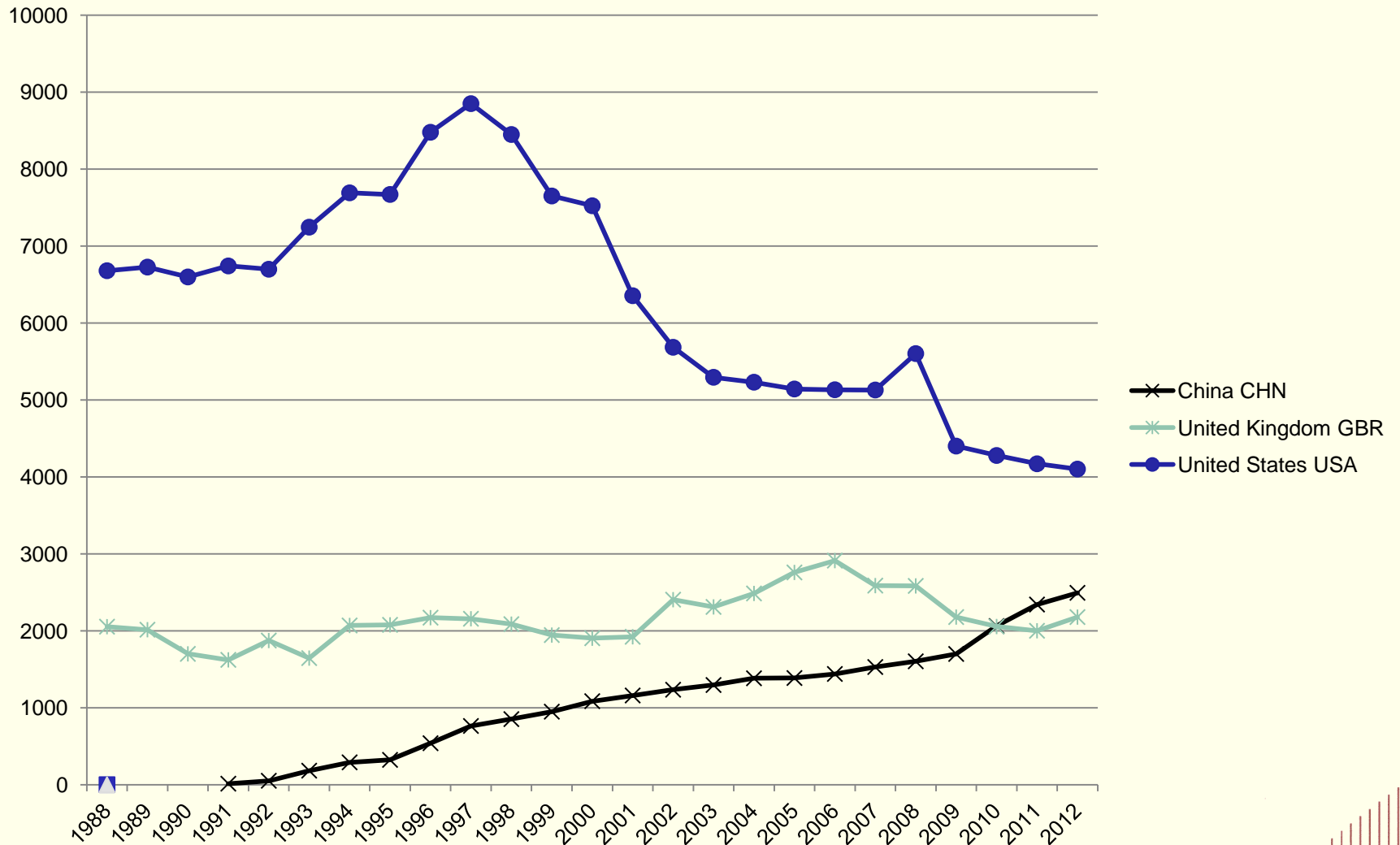


# Data

- CSMAR 2001-2010: all publicly listed companies
  - Census of Shanghai and Shenzhen A-share listed companies
- 14,987 firm\*year observations for N=2197 firms
- 92,949 exec\*firm\*year obs from 26,667 executives
- Exec characteristics (age, sex, education, tenure, etc)
- Firm accounting data plus ownership, size, age etc
- Compensation of top 3 execs together
- Individual exec comp (inc CEO) from 2005 only
- Compensation components:
  - Cash and bonuses, shareholding
  - 2005/6 on: stock options, restricted stock, stock appreciation
- Corporate governance:
  - board size, CEO/Chair duality, % independents



# N public listed companies: USA, UK, China



# Size and Characteristics of Chinese Public Listed Sector, 2001-2010

	2001	2010	Ratio 2010:2001
China GDP (RMB, billions, 2001 prices)	10,966	27,409	2.5
Market capitalisation of listed sector as % of GDP	40	81	2.1
<i>All listed firms:</i>			
Number of firms	1,163	2,126	1.83
Total output (RMB, billions, 2001 prices)	1,543	11,860	7.68
Output as % of GDP	14	43	3.07
Percentage of firms majority owned by state	84	45	0.53
Percentage of output accounted for by state-owned firms	92	82	0.89
Percentage of employment accounted for by state-owned firms	91	73	0.80
<i>Ever-present firms:</i>			
Number of firms	1,097	1,097	1.0
Total output (RMB, billions, 2001 prices)	1,460	5,808	3.98
Output as % of GDP	13	21	1.59
Percentage of firms majority owned by state	85	61	0.71
Percentage of output accounted for by state-owned firms	92	82	0.89
Percentage of employment accounted for by state-owned firms	91	70	0.77
<i>Entrants which are present in 2010:</i>			
Number of firms	-	1,029	
Total output (RMB, billions, 2001 prices)	-	6,052	
Percentage of firms majority owned by state	-	28	
Percentage of output accounted for by state-owned firms	-	81	
Percentage of employment accounted for by state-owned firms	-	75	

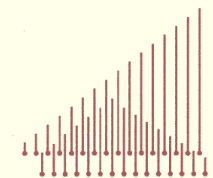
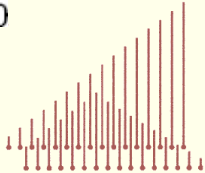
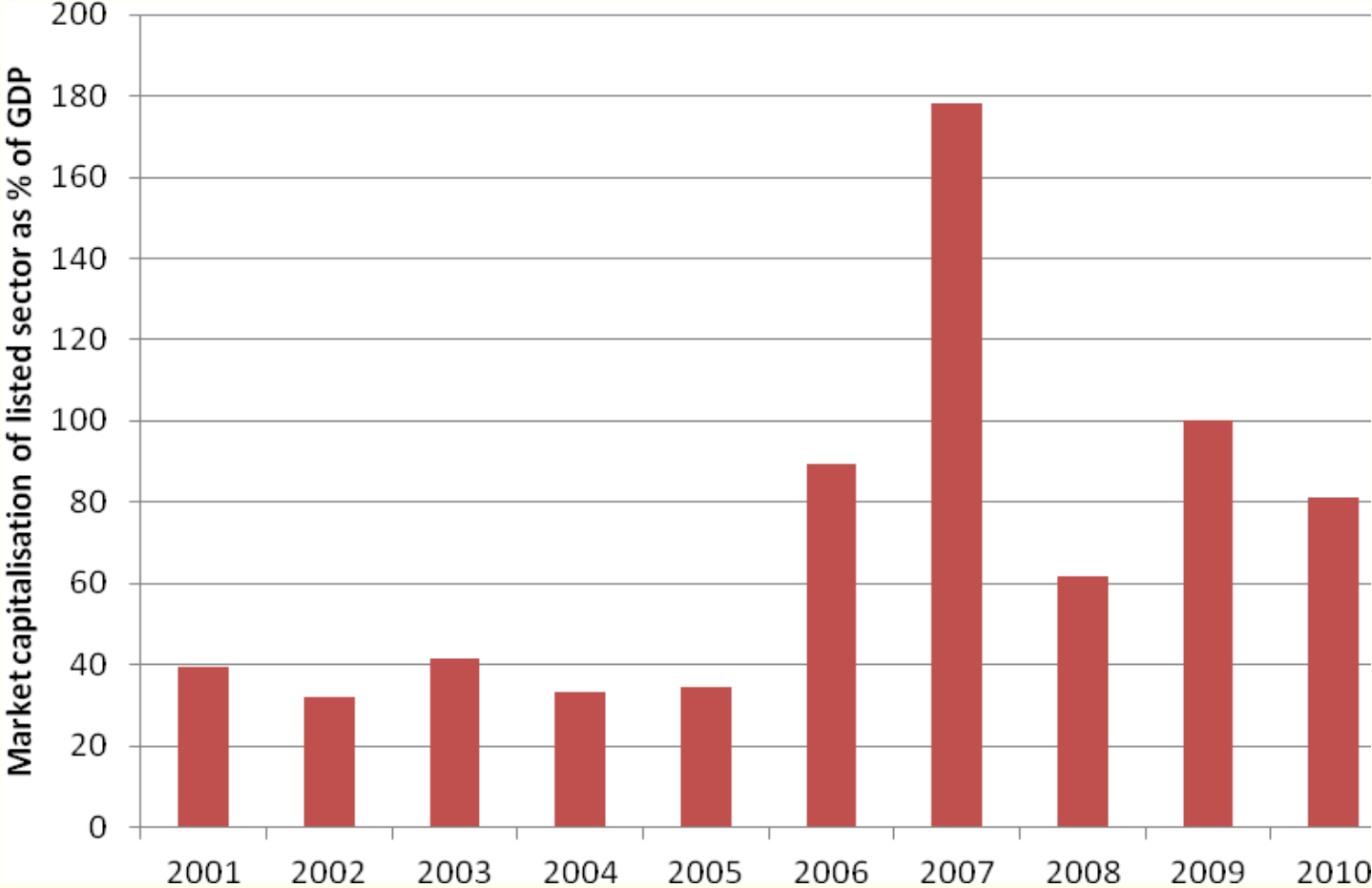


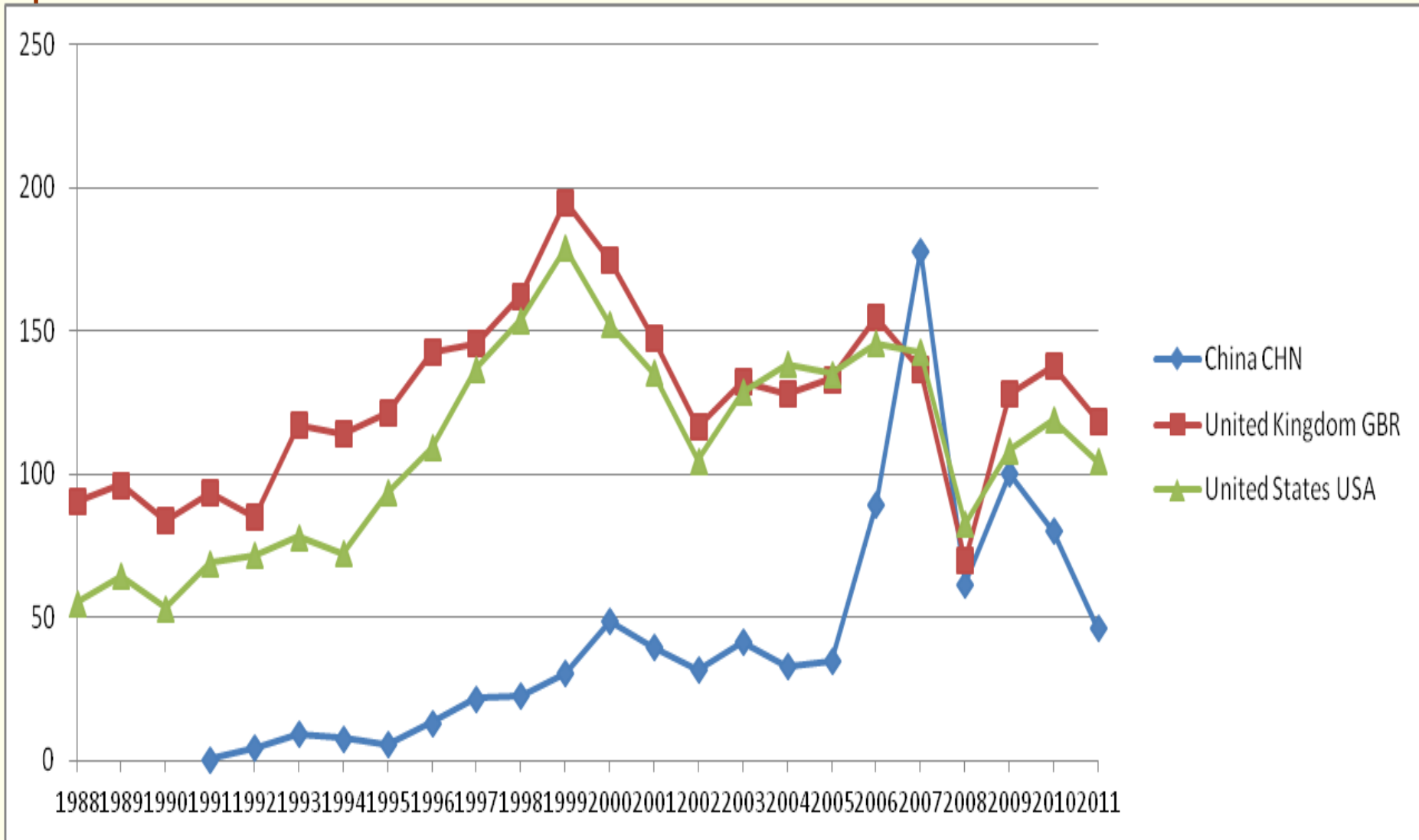
Figure 1: Market capitalisation in China, 2001-2010





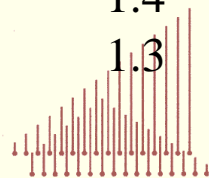
# Market capitalisation as % GDP in China, USA and UK

Source: World Bank



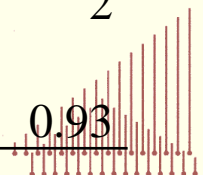
# Performance of Listed Firms in China, 2001-2010

	2001	2010	Ratio 2010:2001
<b>Output (RMB, millions, 2001 prices):</b>			
Mean	1028	3683	3.6
Median	508	854	1.7
<b>Firm size (number of employees):</b>			
Mean	3119	5942	1.9
Median	1620	1608	1.0
<b>Gross value-added per employee (RMB, 2001 prices):</b>			
Mean	134701	179146	1.3
Median	50462	74546	1.5
<b>Labour compensation per employee (RMB, 2001 prices):</b>			
Mean	8395	15552	1.9
Median	3877	6293	1.6
<b>Return on assets (%):</b>			
Mean	6.3%	8.7%	1.4
Median	5.9%	7.5%	1.3



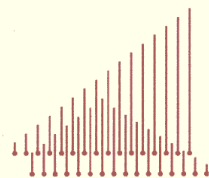
# Corporate Governance in China's Listed Firms, 2001-2010

	2001	2005	2010
<b>Ownership concentration:</b>			
Proportion of shares owned by largest shareholder*	na	0.40	0.37
<b>CEO/Chair duality:</b>			
Proportion of firms	0.12	0.12	0.22
<b>Size of board of directors:</b>			
Mean	9	10	9
Median	9	9	9
Interquartile range	4	2	1
<b>Proportion of board members who are independent:</b>			
Mean	0.06	0.35	0.37
Median	0.00	0.33	0.33
<b>Size of board of supervisors:</b>			
Mean	4	4	4
Median	5	3	3
Interquartile range	2	2	2
<b>Compensation committee:</b>			
Proportion of firms	0.00	0.44	0.93

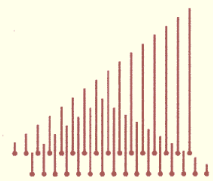


# Estimation

- Two dependent variables
  - Average of top 3 exec cash compensation, 2001-2010
  - CEO cash compensation, 2005-2010
- OLS models standard in literature
  - Pay/firm size elasticities
- Difference estimators
  - Pay-performance elasticities
- Parsimonious models then extended models with corporate governance indicators, exec characteristics, firm characteristics
- Firm FE models

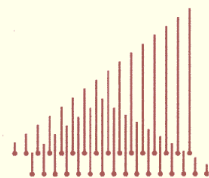


# RESULTS



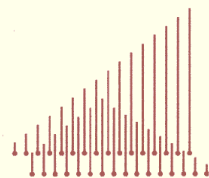
# H1: Pay-firm size elasticities for CEO's in 2008

	<b>Estimated pay-size elasticity</b>	<b>Number of firms</b>
France	0.412	156
Germany	0.333	80
Netherlands	0.243	60
Sweden	0.346	51
United Kingdom	0.398	419
All Europe	0.348	892
United States	0.377	1,426
China	0.230	1,614



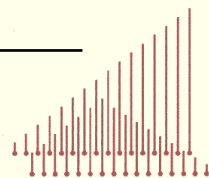
# H1: Exec Pay-firm size, 2005-2010

- Average CEO pay rose by factor of 1.94
- Average firm sales rose by factor of 1.93
- Ever present firms: CEO pay up 1.9, firm sales up 1.6



## H2: Pay-performance elasticities, CEO pay

	Pay-performance elasticities from separate regressions for each performance measure			Pay-performance elasticities from a single regression including all three performance measures		
	Stock returns	Sales	ROA	Stock returns	Sales	ROA
France	0.111	0.151	1.045***	0.074	0.188	1.025***
Germany	0.314**	0.590***	2.136**	0.265**	0.600***	1.498*
Netherlands	0.120	0.225*	0.414	0.122	0.226*	0.347
Sweden	-0.107	0.448***	0.507	-0.193	0.464***	0.272
United Kingdom	0.096***	0.137***	0.641***	0.068***	0.134***	0.619***
All Europe	0.117***	0.067	0.651***	0.100***	0.046	0.602***
United States	0.405***	0.363***	0.784***	0.358***	0.203***	0.506***
China	0.080***	0.112***	0.468	0.058*	0.102**	0.126

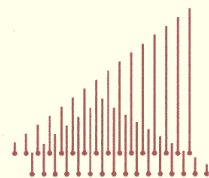




## H2: pay/perf elasticities, 3 top execs

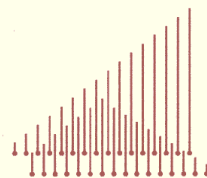
- Dependent variable is average of top 3 exec cash/bonus compensation
- Stock returns coefficient is zero post-Crash

Years	N	Stock returns	Sales	ROA
2002-2005	2,584	0.119***	0.068**	0.045**
2007-2010	4719	-0.006	0.086***	0.036***



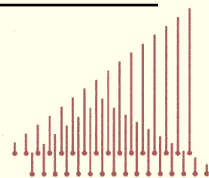
# H3: Tournaments

- Sizeable gap between top 3 execs and other disclosed execs in the firm
- And sizeable gap between CEO and others, esp. when CEO is highest paid in firm
- Ratios between top 3 and others, and CEO and other top 3, constant over time
- Ratios are nowhere near those anticipated in tournament theory (Rosen, 1990)
- Nor those reported in literature eg. Eriksson 1999 for Denmark
- Ratio of CEO pay to others and top 3 exec pay relative to other execs rises with size of exec pool, as tournament theory predicts



# H3: Firms use tournament pay structures

	2005	2010	Ratio 2010:2005
<b>Average compensation of Top 3 executives within the firm (RMB, 2001 prices):</b>			
Mean	197504	368110	1.9
Median	150155	268867	1.8
<b>CEO cash compensation (RMB, 2001 prices):</b>			
Mean	218548	412387	1.9
Median	170243	305564	1.8
<b>Average compensation of disclosed executives outside Top 3 (RMB, 2001 prices):</b>			
Mean	147196	286934	1.9
Median	108103	199410	1.8
<b>Ratio of average top 3 pay to average pay of all other disclosed executives in the firm:</b>			
Mean	1.8	1.9	
Median	1.5	1.6	

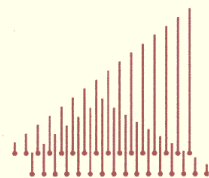


# H3: Tournaments

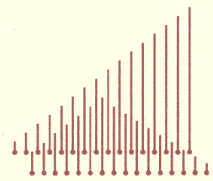
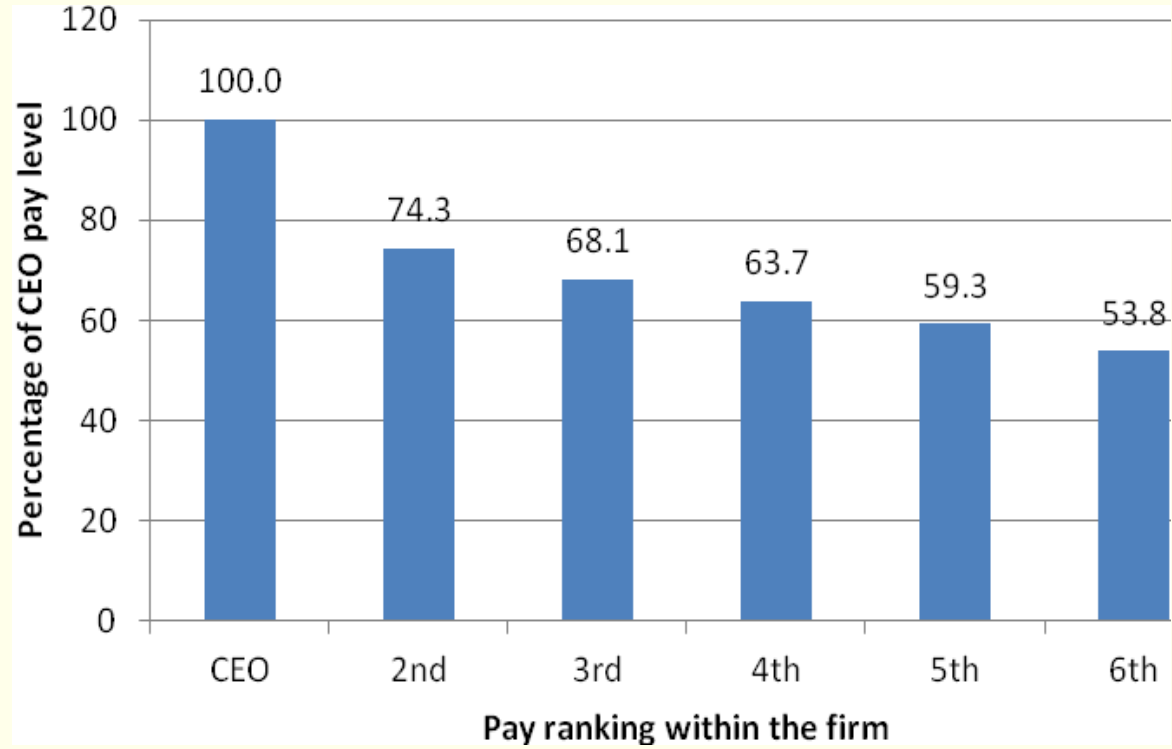
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	2005	2010
<b>Proportion of CEOs who are the highest paid executive</b>	0.78	0.74
<i>Where the CEO is the highest paid executive:</i>		
<b>Ratio of CEO pay to average pay of other executives within Top 3:</b>		
Mean	1.4	1.5
Median	1.3	1.3
<b>Ratio of CEO pay to average pay of all other disclosed executives in the firm:</b>		
Mean	1.6	1.7
Median	1.5	1.5

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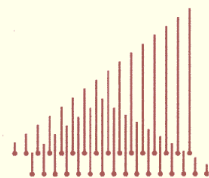


# H3: Tournament Pay Profile, 2005-2010



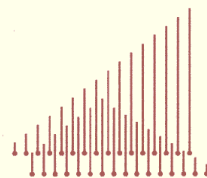
# H4: Privatisation increases growth rate of executive compensation

- Log average top 3 exec pay, 2001-10
- Relative to always State owned, pooled OLS:
  - Always private 0.13\*\*\*
  - State to private ns
  - Private to state 0.20\*\*\*
- Firm FE panel:
  - Increase in private ownership: 0.05-0.06\*\*
- So different associations with privatisation across OLS and firm FE models



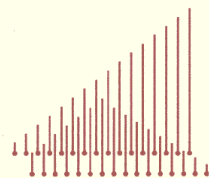
# H5: Skimming and corporate governance

- In firm FE models top 3 exec comp rises when:
  - CEO takes on role of Chair (3-5%)
  - Increase in size of board of directors
  - Increase in size of board of supervisors
  - Increase in % independents on board
  - Compensation Committee introduced (4%)
  - CEO starts to sit on Compensation Committee (9%)
- In firm FE models CEO compensation rises when:
  - Increase in size of board of directors
  - CEO starts to sit on Compensation Committee
    - 11-12% increase but ns if CEO does not sit on new CC
  - Managerial power?



# Summary

- Importance of public listed sector to China's growth
- Importance of CEO talent for China's economy
- Exec comp elasticity wrt size as per literature
- Exec comp elasticity wrt firm performance similar to literature
  - Stock market crash had notable impact
- Tournaments used for promoting talent. Sizeable differentials as move up corporate hierarchy, with pay rising with size of pool. But differentials not as large as literature
- Exec pay in firm rises with increased private ownership
- Some evidence consistent with managerial power





# Hypothesis for future work

- **H6: growth in within-firm wage dispersion driven by growth in exec compensation**
- Growth in wage dispersion in West due to growth at top of wage distribution (Atkinson et al., 2011)
- Also within firms: top execs have most rapid wage growth sharing firm rents via bonuses (Bell and Van Reenen, 2012, 2013)
- Same market forces as for other superstars (Kaplan, 2012)
- In China state plays role in regulating within-firm pay ratios
  - CP preferences for equity

