Political Economy of Making an Authoritarian Constitution: The Case of China

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Transformation from Totalitarianism to Authoritarianism during 1980-2012

- China's fundamental institution was transformed from regionally decentralized totalitarianism (RDT) into regionally decentralized authoritarianism (RDA)
  - The backbone of the RDA is the Communist Party (CCP)
  - The RDT-RDA transformation takes 20+ years
  - Centralized polity; decentralized economy;
- The major difference between the RDA and RDT regimes
  - RDT: entrepreneurs have no legal status; exclusion from the power
  - RDA: entrepreneurs are include into the power/benefits
- The 2002 CCP constitutional amendment codifies and facilitates this regime change from RDT to RDA

Key Questions Addressed

- The goal of the CCP in lunching the reforms since 1978 is for sustaining the regime, politically and economically
  - Privatization in any format has been banned
- Private business and private entrepreneurship were regarded as opposing the foundation of the CCP and socialism
  - 'The proletariat dictatorship will inevitably replace the dictatorship of bourgeoisie…Basically, the socialist system has incomparable superiority over the capitalist system …' *CCP Constitution (1982)*
- Questions to be addressed
  - What is the rational of this transformation?
  - What does the new regime do?
  - Is the new regime sustainable in fulfilling its goal?
  - Transformation of totalitarianism: 1/3 world population

A Grave Challenge to the Party

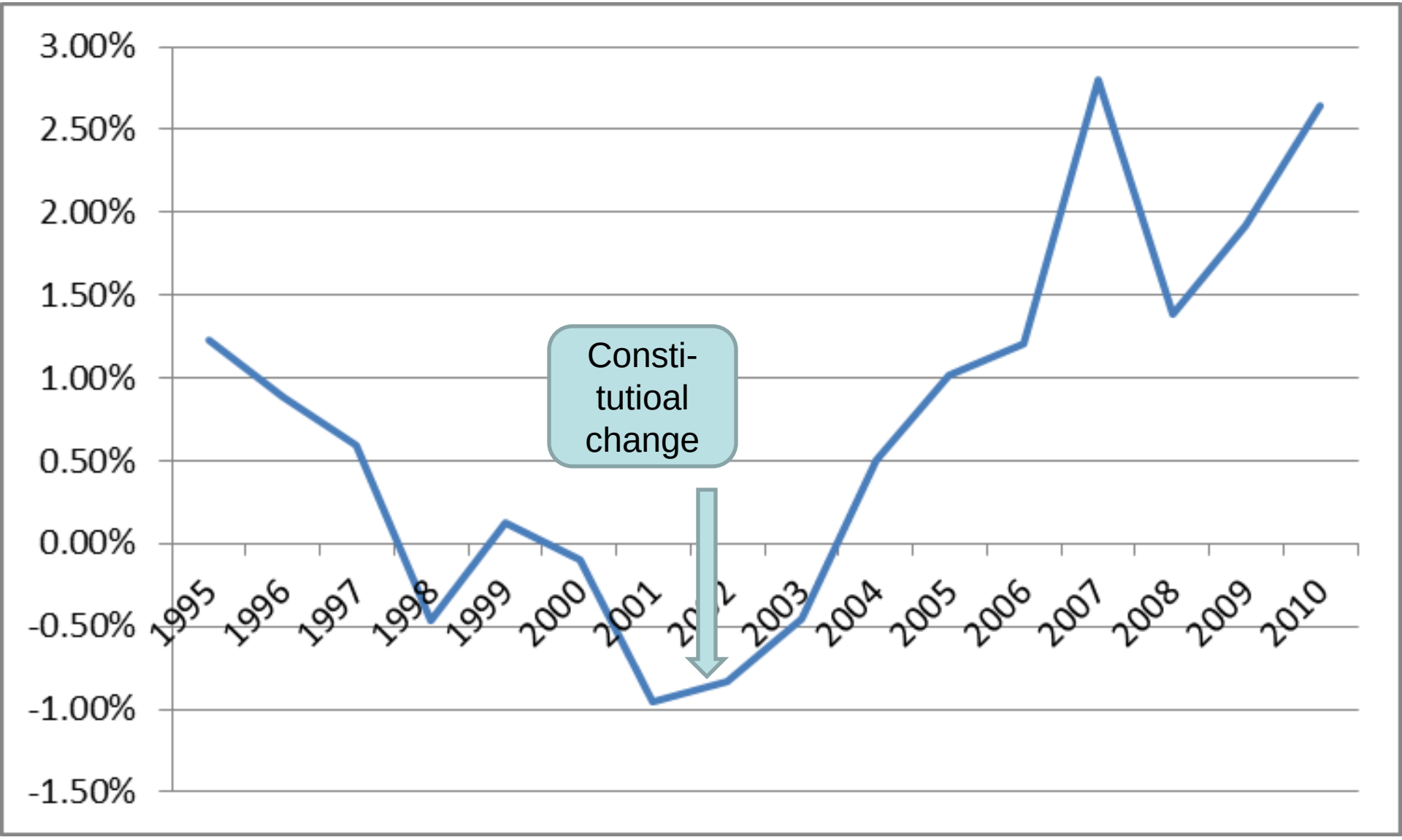
- Although not fully legal, local governments allowed private business for their own interests under competition pressures
  - Later spread out nationwide without proper legal protection
    - Competing local governments' passive protections contributed to the rise of the private sector (Xu, 2011)
  - Double digit growth rate since the late 1990s
- The rise of the private sector challenged the CCP's control
  - Most entrepreneurs have no intrinsic interests to the CCP
  - Private sector, the largest/fast-growing sector of the Chinese economy, was largely outside of the control of the party
  - The large majorities of entrepreneurs and employees of private firms were not party members; no party branches
- Nationwide recruitment of CCP member and establishment of new CCP branches declined steadily
  - Since 1950 all organizations in China had to have a CCP branch

The Paradox of the Private Sector Political power vs. Economy

- The further expansion of the private sector => could further weaken the Party's power base
  - The CCP does not allow for any political challenge/competition
- But it is not an option to nationalize the private sector
  - Private sector is the major engine of China's growth in the past nearly two decades
  - Arguably, it saved the state sector, including the banking sector
- How to control the private sector through controlling entrepreneurs is a daunting task
- No general solution as long as private business is illegal
  - Illegality of private ownership: The key of the CCP/state constitution

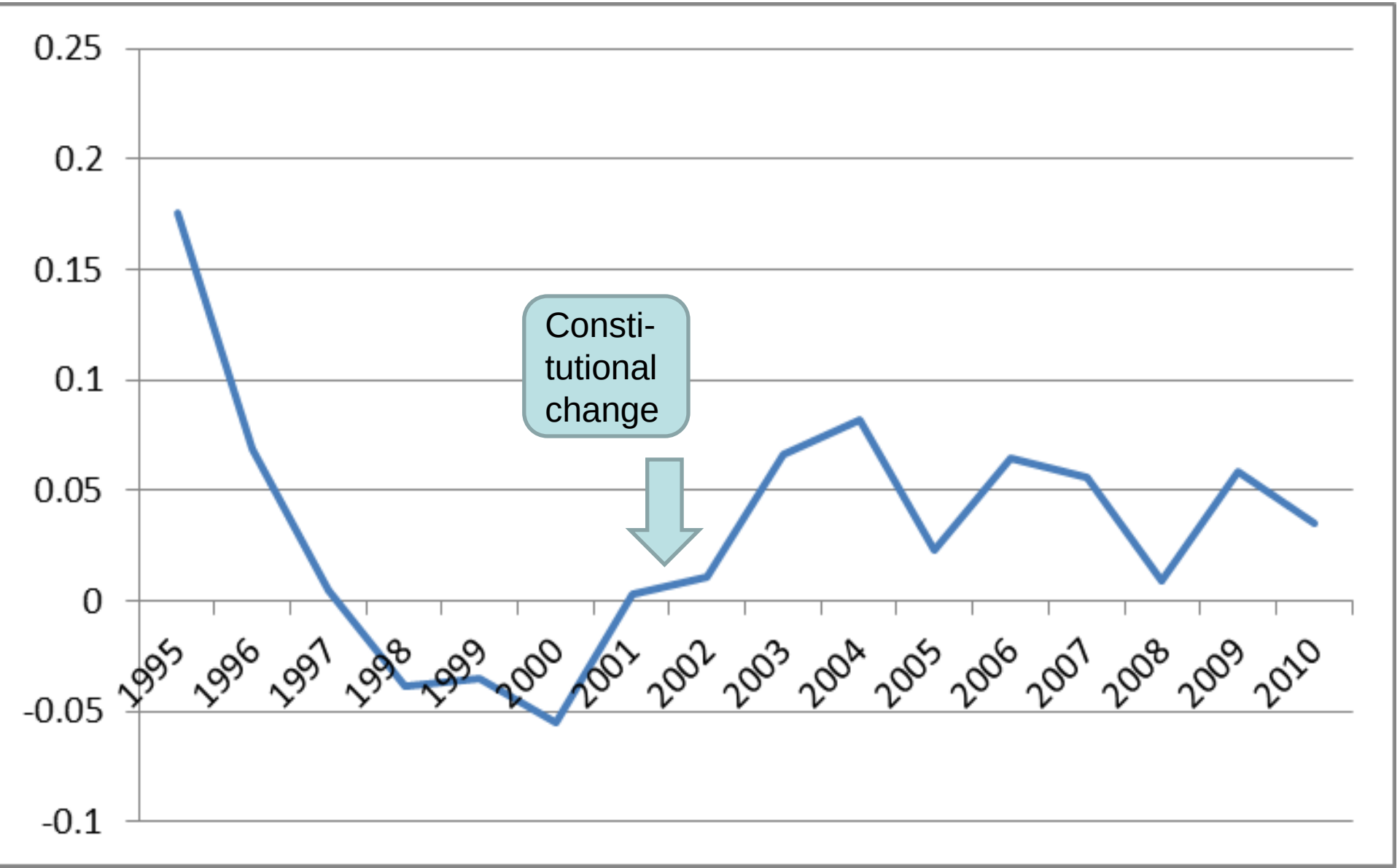
Growth of CCP Party Branches around 2002

Suggestive Evidence for Predictions 1-2



Growth of CCP New Members around 2002

Suggestive Evidence for Predictions 1-2



The Model: Two regimes

- The two regimes share common features
  - One party rule
  - Maintaining power is a major objective of the party
    - Importance in expanding party's membership/branches
    - Use both sticks and carrots for power
- Totalitarian regime: *regime-o*
  - Exclude entrepreneurs: no legitimate benefits to them
  - Rely more on coercion
- Authoritarian regime: *regime-*θ
  - Include pro-party entrepreneurs with benefit θ to exchange for their supports
  - Rely less on coercion
- Two types of players: the Party and Entrepreneurs

The Party and the regime change

- The party
  - The Party has Machiavellian preferences for power
  - Monopolizes (unchallengeable) the government: party-state
  - The party-state controls financial resources: capital (also land)
- Power requires support/execution from/at rank-&-file levels
  - Party organizations must penetration all entities in the economy
  - Entrepreneurs is the key for Party's penetration in private sector
- The Party makes regime change decisions and subsequent policy to maximize its power, subject to other players' incentive constraints & resource constraint
  - No direct political challenges from outside of the Party
- The regime change is an equilibrium outcome of the model

Entrepreneurs (private-firm owners)

- Preferences:
- Each is indexed by $i \in (0,1)$ (infinite many);
- Each has a political preference $\alpha_i \sim u(0, \alpha_o)$
  - The larger α_o, the more α_i be different from the Party's position
- Facing the regime and policy, each entrepreneur i makes a decision to join the Party or not, ℓ_i
  - Can be interpreted as loyal to the Party or pro-Party
  - If join the Party: receive benefits from the Party, at a cost to the economy, and may also at a cost to his intrinsic preferences
- Each i needs external finance of k_i to produce $y_i(k_i)$

Our Major Theoretical/Empirical Results

- The 2002 constitutional amendment is endogenized as the Party's decision to deal with the challenge of declining support
- After constitutional amendment
  - More entrepreneurs join the Party in the new regime
  - The Party provides capital subsidy to Party-member entrepreneurs who under the new regime
- Everything else being equal, the new regime equilibrium has the following properties
  - The more entrepreneurs care about their intrinsic political preferences, the more subsidies have to be paid
    - Cheaper to buy those who care more about money
  - The more the Party cares about party membership, the more they subsidize entrepreneurs

Evidence and Prediction for the Future

- Empirical evidence is consistent with our predictions
- Prediction for the long run
  - Associated with the expansion of the private sector, entrepreneurs will become more heterogeneous in their political preferences
  - Or Entrepreneurs may care their political preferences more
  - Any of these two trends will increase the cost of buying loyalties from entrepreneurs
  - This trend will destabilize the authoritarian regime
- Reactions of a destabilized authoritarian regime
  - Go backward to totalitarian regime
    - Increase coercion, i.e. parameter c becomes a control variable
    - Brainwash + censorship to reduce α_o
  - Go forward, change in the direction of democracy

The Party's Preference & Strategy

- The party's preference: $U(\pi(c,\lambda,Y_G),tY)$, strictly concave
  - The party's power $\pi(\cdot)$ (strictly concave) depends on
    - c: the coercion power to the society
    - λ: The proportion of entrepreneurs who are with the party
      - The importance of political representation of entrepreneurs in the power
    - The aggregate output produced by all the party-member entrepreneurs, i.e. controlled by the party, Y_G
      - The importance of directly controlling production in the power
  - The tax revenue of the party-state, tY
    - Y: the aggregate output produced by all the entrepreneurs ·
- The party's strategies
  - $q = 0$: keep totalitarianism; $q = 1$: change to authoritarianism
  - θ: inclusion benefits for pro-party entrepreneurs if regime is changed to authoritarianism

Party's utility function

- Leontief utility function for the party

$$U=min(c\lambda^{\beta}Y_G\ ,\ \delta tY)$$

  - δ: the relative weight between political power and fiscal revenue -
  - $\beta \in (0,1)$: elasticity of political support: the weight for the party's political power from political representation
- To focus on the transformation from totalitarianism to authoritarianism, we keep coercion power c constant and normalize it as 1

The Party's Decision on Constitutional Amendment

- The Party makes a decision q on constitutional amendment to maximize its utility
  - Chooses between regime o utility U_o (status quo) and regime θ utility U_θ
  - Regime change will inure an exogenous cost ψ

$$Max_q \{(1-q)U_o, q(U_\theta-\psi)\}$$

- Regime θ utility U_θ level: the optimal level achieved by choosing θ
- The *status quo* regime o utility U_o level: the level achieved by the given rule (constitution) in regime o

Entrepreneurs' Preference & Strategy

- Entrepreneur's preference: $v_i((1-t)y_i(k_i)),\rho_i)$, strictly concave
  - Each i cares his after tax income $(1-t)y_i(k_i)$
  - Entrepreneur i's political return $\rho_i(\ell_i;\alpha_i, p)$
    - $p \in R^+$ is the government's political position
    - Entrepreneur i's political preference $\alpha_i \sim u(0, \alpha_o)$ *
    - $\rho_\{i\}$ is jointly determined by his strategy ℓ_i; and the distance between his intrinsic political preference α_i and the party's position p, which are exogenous parameters
- Entrepreneur i's strategy ℓ_i : on Party membership
  - ℓ_i =1: joining the party
  - ℓ_i = 0: not joining the party

Entrepreneurs' utility function

$$v_i = ((1-t)y_i((1 + \ell_i \theta)k_i))^{\mu} \rho_i^{1-\mu}$$

- $\rho_i = 1$, *if* $\ell_i = 0$
- $\rho_i = 1/|\alpha_i - p|$, *if* $\ell_i = 1$
- $\rho_i = M$, *if* $1/|\alpha_i - p| \geq M$

- $1/|\alpha_i - p|$: political reward/punishment when entrepreneur joins the Party
  - the closer α_i *to* p, the higher the reward is when $\ell_i = 1$
  - Join the party is intrinsically beneficial to those who truly shares a similar political position of the party
  - but $\ell_i = 1$ will incur costs for those who's intrinsic political preferences are sufficiently different p
- Production function; $y_i(k_i) = A_i k_i^{\varphi}$, $\varphi \in (0,1)$

Entrepreneur *i*′s optimal strategy

- Entrepreneur *i*′s optimal strategy ℓ_i^*

  $\ell_i^* = argmax_{\ell i}\, v_i((1-t)y_i((1+\ell_i^{'}\theta)k_i)), \rho_i(\ell_i^{'};\alpha_i, p))$

  – Thus,

  $\ell_i^* = 1$, *if* $v_i((1-t)y_i((1+\ell_i^{'}\theta)k_i)), \rho_i(1;\alpha_i, p)) \geq v_i((1-t)y_i(k_i)), \rho_i(0;\alpha_i, p))$

  $\ell_i^* = 0$, *otherwise*

- The total of the entrepreneurs who choose $\ell_i^* = 1$ is

$$\lambda = \int_o^1 \ell_i^* di$$

- The total output of the economy $Y^* = \int_o^1 y_i((1+\ell_i^*\theta)k_i))di$
- The output directly controlled by the party

$$Y_G^* = \int_o^1 \ell_i^* y_i((1+\ell_i^*\theta)k_i))di$$

Timing of the game

- Time 0: the with political position p
  - The party chooses if to change the constitution, $q=1$, or not, $q=0$
  - If $q=0$, $\theta = \theta_o$ which is exogenous
  - If $q=1$, the party chooses rate of subsidy to capital, θ, to attract entrepreneurs to join the Party;
    - subject to entrepreneurs' incentive compatibility constraint: their strategy $\ell_i, \forall i$ as reactions to θ
    - and the economy's resource constraint
- Time 1: given the party's strategy q and θ, entrepreneur i chooses Party membership strategy $\ell_i, \forall i$
  - Strategy ℓ_i determines capital subsidy
- Time 2: the game is finished
  - entrepreneurs produce outputs; λ entrepreneurs support the party;
  - the party collects tax revenue tY

The Party's Constitutional Choice

- The Party chooses constitutional amendment q, and capital subsidy θ if $q=1$, to maximize Party's utility subject to entrepreneurs' incentive and other constraints

$$Max_{q,\theta}\ \{(1-q)U_o,\ q(U_\theta - \psi)\}$$

$$s.t.\quad \ell_i = argmax_{\ell_i'}\ ((1-t)y_i((1+\ell_i'\theta)k_i))^{\mu}\rho_i^{1-\mu}(\ell_i') \qquad (IC)$$

$$\lambda = \int_o^1 \ell_i^*\, di \qquad (Party\ membership)$$

$$Y_G^* = \int_o^1 \ell_i^* y_i((1+\ell_i^*\theta)k_i))di \qquad (Controlled\ Sect)$$

$$Y^* = \int_o^1 y_i((1+\ell_i^*\theta)k_i))di \qquad (Output)$$

$$K = \int_o^1 (1+\ell_i^*\theta)k_i di \qquad (Resouce)$$

Equilibrium under the Regime θ

Proposition 1. there exists an unique equilibrium $\{\theta^*, U_\theta\}$, if $\alpha_0 \in (\alpha_{min}, \alpha']$, or if $\alpha_0 > \alpha'$, $\alpha_0 \in (\alpha_{min}, \alpha_{max})$ and $\mu+\beta<1$.

$$\alpha_{min} = 2\left(\frac{1}{\delta t}\right)^{\frac{1}{\beta+1}};\ \alpha' = 2\left(\frac{\beta(\beta\mu+1)}{(1-\mu)\delta t}\right)^{\frac{1}{\beta}};\ \alpha_{max} = 2\left(\frac{\beta\mu+1}{\delta t}\right)^{\frac{1}{\beta}}$$

Remind notations:

- Utility function for the party: $U=min(\lambda^{\beta} Y_G , \delta t Y)$
  - δ: the weight between political power and revenue
  - β: *membership* elasticity for the party's political power
- Entrepreneur's utility function: $v_i = ((1-t)y_i)^{\mu} \rho_i^{1-\mu}$

Interpretations of this equilibrium

α_o : heterogeneity of entrepreneurs' political preferences

Each entrepreneur *i*'s political preference $\alpha_i \sim u(0, \alpha_o)$

- If entrepreneurs are too homogeneous in their political preferences, i.e. $\alpha_o \leq \alpha_{min} = 2\left(\frac{1}{\delta t}\right)^{\frac{1}{\beta+1}}$, θ is a waste
  - Entrepreneurs are intrinsically with the Party anyway
- If entrepreneurs' preferences are too heterogeneous θ becomes useless: too costly to compensate
  - $\alpha_o > \alpha' = 2\left(\frac{\beta(\beta\mu+1)}{(1-\mu)\delta t}\right)^{\frac{1}{\beta}}$ if $\mu+\beta>1$; *or*
  - $\alpha_o \geq \alpha_{max} = 2\left(\frac{\beta\mu+1}{\delta t}\right)^{\frac{1}{\beta}}$ if $\mu+\beta<1$

Equilibrium under the Old Regime

Proposition 2. $U_o \leq U_\theta$. *And* λ *decrease in* α_o.

- Under the old constitution it is not legitimate for the Party to subsidize private entrepreneurs: $\theta = \theta_o$
  - U_o: θ_o *is exogenous*
- *If* $\theta_o = 0$, λ includes only the entrepreneurs who‘s intrinsic preferences are close to the Party’s position, thus $U_o \leq U_\theta$
- When entrepreneurs' political preferences become more heterogeneous, *i.e.* α_o is larger, less entrepreneurs share intrinsic preferences with the Party. Thus λ decrease

Constitutional Amendment as an Equilibrium Outcome

Proposition 3. There exists an increasing function $\psi^*(\alpha_o)$ such that when $\psi < \psi^*(\alpha_o)$, for $\alpha_o \in (\alpha_{min}, \alpha']$, or $\alpha_o \in (\alpha_{min}, \alpha_{max})$ *if* $\alpha_o > \alpha'$, and $\mu+\beta<1$, the Party will change the constitution. In the new regime the Party will subsidize entrepreneurs and more entrepreneurs will join the Party.

- 2 Conditions of regime change (can happen together)
  - When α_o becomes larger such that $\psi < \psi^*(\alpha_o)$, and $\alpha_o > \alpha_{min}$, but not too large, i.e. $\alpha_o \leq \alpha'$, *or* $\alpha_o < \alpha_{max}$
  - For given $\alpha_o \in (\alpha_{min}, \alpha']$, or $\alpha_o \in (\alpha_{min}, \alpha_{max})$ *if* $\alpha_o > \alpha'$, and $\mu+\beta<1$, when ψ becomes smaller such that $\psi < \psi^*(\alpha_o)$
    - $\psi \downarrow$: within the party resistance to the change becomes smaller

Testable Predictions of Props 1-3

- Prediction 1: λ_o declines substantially before the regime change.
  - Derived from Proposition 3
- Prediction 2: more entrepreneurs join the Party under the regime-θ than under the regime-o, i.e. $\lambda^* > \lambda_o$.
  - Derived from Propositions 1-3
- Prediction 3: capital subsidy to Party-member entrepreneurs under the regime-θ, θ^*, is higher than that under the *status quo* regime, θ_o.
  - Derived from Propositions 1-3.

Comparative Statics in the New Regime

Proposition 4. At the new regime equilibrium, *ceteris paribus*, the equilibrium θ^* has the following properties: $\partial\theta^*/\partial\mu < 0$; *and* $\partial\theta^*/\partial\beta > 0$

- Testable predictions
  - $\partial\theta^*/\partial\mu < 0$*:* the more entrepreneurs care about their income relative to their political preferences, the less the subsidies to them
    - Cheaper to buy those entrepreneurs who care more about money
  - $\partial\theta^*/\partial\beta > 0$ *:* the more the Party cares about power generated from Party-member entrepreneurs, the more they subsidize entrepreneurs

Comparative Statics in the New Regime

Proposition 5. At the new regime equilibrium, *ceteris paribus*, at equilibrium λ^* has the following properties: $\partial\lambda^*/\partial\mu > 0$; $\partial\lambda^*/\partial\beta > 0$

- Testable predictions
  - $\partial\lambda^*/\partial\mu > 0$: the more entrepreneurs care about their income relative to their political preferences, the more entrepreneurs will join the Party in the new regime
  - $\partial\lambda^*/\partial\beta > 0$: the more the Party care about power relative to their political preferences, the more entrepreneurs will join the Party in the new regime

Predictions on potential future (testable by future data)

Proposition 6. Inducing entrepreneurs to join the Party by providing subsided capital will become too expensive for the regime such that the equilibrium may not exist if one of the following conditions is satisfied

1. If entrepreneurs' political preferences become sufficiently heterogeneous such that $\alpha_o > \alpha' = 2\left(\frac{\beta(\beta\mu+1)}{(1-\mu)\delta t}\right)^{\frac{1}{\beta}}$ if $\mu+\beta>1$; *or* $\alpha_o \geq \alpha_{max} = 2\left(\frac{\beta\mu+1}{\delta t}\right)^{\frac{1}{\beta}}$ if $\mu+\beta<1$
2. If entrepreneurs' weight on their political preference increases sufficiently, i.e. μ declines sufficiently, s.t. both α_{max} and α' decline such that $\alpha_o > \alpha_{max}$ and $\alpha_o > \alpha'$

The Data: Provincial-level CCP Data

- Source: *CCP Construction Yearbook* (2012)
  - Provincial level panel: 1921-2010
    - Every five year except 2007-2010
- Provincial data used for this study: 1992, 1997, 2002, 2007, 2010
- CCP recruitment and party branches
  - ***CCP_de***: Newly recruited CCP members in each province
  - ***PB_de***: Newly established CCP Party Branches in each province
- Source: *Database of CCP Construction Periodicals*
  - 215 CCP periodicals run by central (20) and local CCP since 1994
  - ***CVRG***: the frequency of 'Non-Public Economy + the name of a given province' shown in the periodicals in in a given year

Provincial-level Private Sector Data and major variables

- Source: *China Statistical Yearbook*: 1992-2010 (yearly)
- Private sector development
  - ***Pri_E***: total number of private employees
  - ***Pri_I***: total number of private firm investors
- Period effect: ***Post*** *= 1 if t >2002 (the year of the amendment); = 0, otherwise*
- Control variables
  - ***GDP***
  - ***Population*** (total population)
  - ***Non-Agr*** (non-agricultural population)
  - ***Higher_Edu*** (population with higher education)
  - ***Minority*** (Autonomous Regions by ethnic groups)

The Data: Firm-level Data

- 8 cross-sectional nationwide surveys on private sector in 1995, 1997, 2000, 2002, 2004, 2006, 2008, 2010
  - Each survey covers 3,000+ firms (entrepreneurs) from about 150 cities
  - e.g. 2010 Survey: 4624 firms from 158 cities
- Collected by The United Front Work Department of CCP Central Committee, The National Association of Industry and Commerce, and The State Administration for Industry and Commerce
- Data collection: face-to-face questionnaire random sampling survey
- Stratified in rural/urban, location, development and industry

Major Variables: Firm-Level

- ***CCP***: *CCP=1 if the entrepreneur is a CCP; =0, otherwise*
- ***Post***: *Post = 1 if t >2002; = 0, otherwise*
- The following data reflect the reality one year before the survey year
  - ***Levy***: total levy charged by the government
  - ***PR_cost***: total costs spent on public relation
  - ***Profit***: net profit of the firm
  - ***Bank loan/equity***: ratio of total bank loan over total equity of the firm
- ***Econ_stts***, ***Scl_stts***, ***Pltc_stts:*** Entrepreneurs' subjective perspectives in his/her economic, social and political status
  - 1-10 scale (1 is the highest, 10 is the lowest)
- Control variables
  - Entrepreneur personal Characteristics: ***CEO_age***, ***CEO_gender***, ***CEO_edu*** (higher education), ***CEO_exp*** (experience before startup)
  - Firm characteristics: ***Firm_age***, ***Firm_size*** (total sales, total number of employees)

Suggestive Evidence for Predictions 1-2
Party building before/after amendment

- "Party building (党建)" is CCP's central task for maintaining its power: Party branches; recruitments
- Before 2002 amendment Party building declines
- The declining trend in the Party building is reversed after the amendment
- The direct control of the CCP over the private sector via membership and party branches have increased substantially
  - The share of party members among entrepreneurs was increased from 18% in 1997 to 41% in 2010 (in our nationwide random sampling survey sample)

Systematic evidence for prediction 2 Regime change leads CCP recruitment

- We construct a variable *pb* to proxy Party building
  - *pb* includes member recruitment and setting up new party branches
    - The CCP's "3 Represents Theory" is designed to address this
- Impacts of the regime change to the party building:

$$PB_{it} = c + \gamma\, Post + \eta\, Pri_E_{it} + \varsigma\, Pri_E_{it}\, Post + \varphi X_{it} + \varepsilon_{it}\,, (1)$$

  - PB_{it} *: new recruits or new party branches in province i in year t*
  - *Post = 1 if t ≥ 2002 (the year of the amendment); = 0, otherwise*
  - Pri_E_{it} *: employment in private sector*
  - X_{it}*: GDP, non-agriculture population, population with higher education, total population, ethnic minority in province i in year t*

T4a. Determinants of New Party Branches

[*Pri_E* : private sector employment development]

(Insignificant control variables, e.g. non-ag, minority, populationn, not shown)

Dependent Variable: *PB_De*						
	(1)	(2)	(3)	(4)	(5)	(6)
Post	6170.0***			3621.7***	5868.7***	
	(860.4)			(809.1)	(848.4)	
Pri_E		-7.013*		-35.91***		-45.40***
		(3.925)		(5.237)		(5.091)
Post*Pri_E			12.10***	38.27***	9.173***	47.48***
			(3.765)	(5.130)	(3.306)	(4.997)
GDP	0.321***	0.733***	0.139	0.0973	0.0245	0.176
	(0.119)	(0.169)	(0.180)	(0.138)	(0.158)	(0.145)
Higher_Edu	-2.595***	-1.849***	-1.655***	-1.776***	-2.421***	-1.210***
	(0.501)	(0.562)	(0.552)	(0.441)	(0.494)	(0.449)
_cons	4049.7***	6231.6***	5576.1***	4853.2***	3837.4***	6018.8***
	(871.4)	(962.9)	(939.2)	(760.6)	(855.6)	(759.9)
N	154	154	154	154	154	154
R-sq	0.335	0.122	0.162	0.523	0.369	0.457
p	3.07e-11	0.00362	0.000199	4.88e-20	3.36e-12	8.95e-17

T4b. Determinants of New CCP Members

[*Pri_E* : private sector employment development]

(insignificant control variables, e.g. GDP, non-ag, minority are not shown)

Dependent Var: Newly Recruited CCP Members						
	(1)	(2)	(3)	(4)	(5)	(6)
Post	11075.4***			8539.1**	10611.9***	
	(3379.8)			(3714.2)	(3406.4)	
Pri_E		-4.847		-33.13		-55.51**
		(13.89)		(24.04)		(22.30)
Post*Pri_E			19.40	40.95*	14.11	62.65***
			(13.55)	(23.55)	(13.27)	(21.89)
Higher_Edu	7.720***	9.074***	9.374***	8.584***	7.988***	9.918***
	(1.966)	(1.990)	(1.987)	(2.022)	(1.982)	(1.965)
Population	11.29***	10.93***	11.12***	11.31***	11.39***	11.08***
	(0.848)	(0.878)	(0.873)	(0.852)	(0.853)	(0.859)
_cons	4090.9	7730.4**	6908.3**	4701.4	3764.3	7449.5**
	(3423.3)	(3407.7)	(3379.8)	(3491.9)	(3435.5)	(3328.7)
N	154	154	154	154	154	154
R-sq	0.882	0.874	0.875	0.885	0.883	0.880
p	1.19e-65	1.96e-63	7.55e-64	4.92e-64	9.64e-65	5.05e-64

Imputation & fixed effects: Robustness test

- The limitation of the party data prevents us from doing fixed effects
- In addressing this, we impute the missing data for each 5 year's period
  - Linea growth model

$$g_i = \frac{(y_{i,T+5} - y_{i,T})}{5 * y_{i,T}}, \qquad T = 1992, 1997, 2002, 2007$$

$$y_{i,T+t} = (1 + t * g_i) * y_{i,T}, 1 < t < 5$$

  - Non-Linea regression model

$$y_{i,T} = \alpha + \beta_1 t + \beta_2 t^2 + \varepsilon_i, \qquad T = 1992, 1997, 2002, 2007, 2010$$

$$y_{i,t} = \hat{\alpha} + \widehat{\beta_1} t + \widehat{\beta_2} t^2, \qquad t \neq 1992, 1997, 2002, 2007, 2010$$

  - Stochastic regression model

$$y_{i,t} = \hat{\alpha} + \widehat{\beta_1} t + \widehat{\beta_2} t^2 + e_i, \qquad t \neq 1992, 1997, 2002, 2007, 2010$$

  - After the imputation, we extended the observation number into 500+ and we controlled the province fixed effects
  - The results stay
- With imputed data and fixed effects, all the major results remain

T5a. Determinants of New Party Branches

	Dependent Variable: *PB_De* ; Imputation with normal distribution					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	1621.3***			688.5**	1491.0***	
	(277.9)			(300.6)	(312.5)	
Pri_E		-1.831		-28.67***		-30.78***
		(2.066)		(3.147)		(3.023)
Post**Pri_E*			8.956***	26.03***	6.620***	28.45***
			(1.575)	(2.597)	(1.615)	(2.385)
GDP	0.284***	0.370***	0.134**	0.267***	0.167***	0.260***
	(0.0508)	(0.0680)	(0.0650)	(0.0598)	(0.0639)	(0.0600)
Nonarg	-2.134***	-1.439*	-2.094**	-2.477***	-2.557***	-2.276***
	(0.765)	(0.848)	(0.824)	(0.745)	(0.810)	(0.744)
Minority	8130.4***	8580.5***	7885.2***	4394.6**	6862.3***	4644.6**
	(2350.7)	(2439.4)	(2360.5)	(2146.7)	(2315.5)	(2154.0)
Higher_edu	-0.587***	-0.390**	-0.531***	-0.470***	-0.735***	-0.364**
	(0.161)	(0.180)	(0.173)	(0.163)	(0.174)	(0.157)
Population	-2.754***	-3.180***	-3.104***	-1.980***	-3.006***	-1.945***
	(0.659)	(0.755)	(0.728)	(0.664)	(0.711)	(0.666)
_cons	9778.4***	9593.2***	10506.1***	9713.4***	10932.3***	9443.7***
	(994.4)	(1133.2)	(1089.6)	(991.3)	(1068.0)	(988.9)
N	536	487	487	487	487	487
R-sq	0.144	0.092	0.152	0.319	0.193	0.311

T5b. Determinants of Party Recruits

	Dependent Var: Newly Recruited CCP Members; Imputation with normal distribution					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	6089.8***			6975.6***	6479.8***	
	(1051.1)			(1221.8)	(1169.4)	
Pri_E		5.906		17.72		-3.677
		(7.543)		(12.79)		(12.65)
Post*Pri_E			7.089	-15.06	-3.064	9.417
			(5.945)	(10.56)	(6.043)	(9.980)
GDP	1.268***	1.302***	1.251***	1.333***	1.395***	1.266***
	(0.192)	(0.248)	(0.245)	(0.243)	(0.239)	(0.251)
Nonarg	13.53***	16.29***	16.03***	13.97***	14.02***	16.01***
	(2.893)	(3.098)	(3.108)	(3.029)	(3.032)	(3.112)
Minority	44778.1***	64074.0***	63158.3***	60237.8***	58712.8***	62771.2***
	(8892.8)	(8907.7)	(8907.2)	(8725.7)	(8664.8)	(9015.2)
Higher_edu	2.789***	3.372***	3.361***	2.312***	2.476***	3.381***
	(0.610)	(0.658)	(0.653)	(0.663)	(0.653)	(0.658)
Popula_tion	-7.608***	-9.592***	-9.322***	-9.532***	-8.898***	-9.184***
	(2.495)	(2.755)	(2.746)	(2.697)	(2.661)	(2.789)
_cons	29129.4***	29312.4***	29389.8***	31995.2***	31241.9***	29262.9***
	(3761.8)	(4138.1)	(4111.7)	(4029.4)	(3996.6)	(4139.0)
N	536	487	487	487	487	487
R-sq	0.952	0.949	0.949	0.953	0.952	0.949
p	0	1.91e-267	1.28e-267	4.61e-272	7.51e-273	1.91e-266

Addressing identification issue further

- The timing of constitutional amendments might be correlated with other events which contributes to the results
- To address this issue, we replace *Post* (a time variable) in Eq (1) by policy variables implied by the amendments
  - ***Thr_rep_CVRG***: the frequency of 'Three Represents Theory + the name of a given province' shown in the CCP periodicals in a given year
  - ***Nonpub_CVRG***: the frequency of 'Non-Public Economy + the name of a given province' shown in the CCP periodicals in a given year
- This approach also captures regional variations in policy implementation of the constitutional amendments
  - A few provinces resisted the amendments in different ways

Policy Implementation vs. CCP Recruitment

Dependent Variable: CCP recruits				
	Pooled 2002, 2007, 2010		Imputed panel data: 2002-2010	
	(1)	(2)	(3)	(4)
nonpub_cvrg	56.60***		117.0***	
	-15.05		-13.7	
thr_rep_cvrg		432.3***		708.6***
		-101.4		-125.2
gdp	0.432***	0.591***	0.174**	0.475***
	-0.0854	-0.0713	-0.0829	-0.0843
nonarg	-1.112	-2.067***	0.597	-0.986
	-0.796	-0.714	-0.841	-0.864
_Iminority_1	-679.1	-487.6	-604.4	-271.9
	-650.2	-620	-740.1	-775.1
college	-0.737**	-0.763**	-0.268	-0.191
	-0.336	-0.319	-0.373	-0.391
population	0.396**	0.455***	0.225	0.429**
	-0.181	-0.172	-0.208	-0.217
_cons	-369.1	32.31	-1997.7**	-795.8
	-745.3	-644.2	-800.8	-798.1
N	90	93	252	261
R-sq	0.742	0.752	0.519	0.446
p	1.83E-22	5.32E-24	2.16E-36	4.95E-30

Evidence for Prediction 3
Mechanism of the regime change
Party-members' access to bank loans

- Bank loans = subsidy, since lending rates are set at below market clearing levels (Lardy, 2012)
  - Obtaining more bank loans = acquiring rents
- *ceteris paribus* CCP members (and the loyaltists) obtain significantly more bank loans than others since 2002
- Before the amendments (1995, 1997, 2000, 2002 (for 2001)) no observable rents for CCP member entrepreneurs
- After the amendments (2004 (for 2003), 2006, 2008, 2010) CCP members enjoyed substantial rents
  - Firms owned by CCP members borrowed significantly *more bank loans* than others

Amendment effect on Bank Loan Ratio

(**CCP mbr entrepreneurs**; with industry, location fixed effects)

Dependent Variable: Bank Loan/equity

Post	253.7***
	(82.45)
CCP*Post	356.0***
	(86.72)
CEO_age	11.81***
	(4.346)
CEO_Edu	53.69
	(86.47)
CEO_Exp	194.1**
	(75.48)
Firm_age	57.20***
	(7.808)
Firm_Size	0.0000114***
	(0.00000132)
_cons	-739.8***
	(211.5)
N	18357
R-sq	0.012
p	1.24e-45

Bank Loan Ratio before/after Amendments

(with industry, location and year fixed effects)

Dependent Variable: Bank Loan/equity		
	Before Amendments	After Amendments
CCP	-1.649	322.5***
	(54.50)	(102.7)
CEO_age	2.768	14.32**
	(2.982)	(5.952)
CEO_Edu	118.1**	-74.90
	(57.31)	(123.8)
CEO_Exp	122.1**	239.3**
	(50.25)	(105.6)
Firm_age	0.867	72.70***
	(5.552)	(10.63)
Firm_Size	0.0262***	0.0000114***
	(0.00130)	(0.00000153)
_cons	-89.19	-685.0**
	(148.2)	(291.4)
N	5259	13098
R-sq	0.075	0.013
p	1.65e-84	4.16e-31

Identification Concerns: IVs for CCP-member entrepreneurs

- Omitted variable concerns
  - capability of the entrepreneurs, other institutional changes like WTO, open stock market to Non-SOEs etc.
- We use two IVs to identify the effects of CCP-member entrepreneurs
  - ***Union***: a dummy variable that equals to one if the firm has a labor union and zero otherwise.
    - Labor Union Law (2001): every firm should establish a union
    - By the end of 2009, only 53 % of urban workers are union members
    - CCP-member entrepreneurs more likely to follow the law
  - ***Self-perception:*** how entrepreneurs see themselves in their political status (1-10 scores): CCP-member entrepreneurs likely report higher
- Over-identification estimations suggest the relevancy and exogeneity of the two IVs. All basic results remain the same

2SLS: Regime Change's Effects on Bank loan

The Second Stage: The First Stage: Dependent Variable: Bank_loan	
	Bank_loan
CCP	10897.7***
	(1300.477)
N	12625
P	0.0000
The First Stage: Dependent Variable: CCP	
	CCP
Union	.281***
	(.055)
Self-perception	.434***
	(.042)
Sargan Statistic	0.936
P-value of Sargan Statistic	0.3333
Pseudo R-sq	0.1292

Evidence for Comparative Statics (Prop. 4)

- θ is measured by bank loans at firm level
- $\partial\theta^*/\partial\mu < 0$: the more entrepreneurs care about their income relative to their political preferences, the less the subsidies to them
  - μ is measured by entrepreneurs' answers to a survey question: "how important income is for you in running business"
- $\partial\theta^*/\partial\beta > 0$: the more the Party cares about its power backed by party membership, the more they subsidize entrepreneurs
  - β is measured by the strength of local governments in propaganda and implementing "3 Represent Thy" and "Non Public" policies

Entrepreneurs' μ vs. bank loan

	bank_loan	bank_loan	bank loan dumy	bank loan dumy
CCP	1205.3***	347.5***	2.219***	0.711***
	(162.8)	(51.34)	(0.191)	(0.0591)
CCP*money importnc_ratio	-2481.7***		-4.499***	
	(397.1)		(0.466)	
CCP*money importnc_rank		-228.1***		-0.496***
		(58.16)		(0.0666)
ceo_age_abs	6.337***	6.219***	0.00390	0.00368
	(2.248)	(2.251)	(0.00260)	(0.00260)
_Iedu_1	-136.2***	-133.9***	-0.00323	0.00167
	(46.66)	(46.72)	(0.0541)	(0.0539)
_Iexperienc_1	227.7***	216.9***	0.201***	0.183***
	(41.03)	(41.02)	(0.0471)	(0.0469)
firm_age_abs	46.87***	47.87***	0.0556***	0.0570***
	(3.980)	(3.980)	(0.00466)	(0.00465)
sales	0.00000287***	0.00000288***	0.00000997***	0.0000104***
	(0.000000512)	(0.000000513)	(0.00000145)	(0.00000146)
_cons	9.024	5.193	-0.930***	-0.932***
	(110.2)	(110.4)	(0.126)	(0.126)
N	10078	10078	10078	10078
R-sq	0.040	0.037		
pseudo R-sq			0.045	0.043
Chi2			626.0	589.6
P	6.89e-82	7.51e-77	5.38e-129	3.57e-121

Entrepreneurs'α vs. bank loan

	Bank_loan	Bank_loan_Dummy
CCP	94.00***	.237***
	(37.21)	(0.05)
CCP* Christian Church	0.03***	6.09E-06***
	(0.008)	(1.06E-06)
CEO_Age	1.59	-.002
	(1.90)	(.002)
CEO_Edu	-36.13	.023
	(37.97)	(.046)
CEO_Experience	111.26***	.139
	(33.59)	(.041)
Firm_age	55.22***	.060
	(3.35)	(.004)
Firm_Size	2.84E-06***	1.06E-06
	(4.85E-07)	(1.39E-06)
Privatization	509.9476***	.529
	(40.81)	.050
Constant	-115.26	-.992
	(88.53)	(.109)
N	13097	13097
R-sq	0.045	
pseudo R-sq		0.0435
p	0	0

Party's β vs. bank loan

	bank_loan	bank_loan	bank loan dummy	bank loan dummy
CCP	-33.19	81.62*	-0.0903	0.168***
	(66.61)	(46.85)	(0.0767)	(0.0531)
CCP* nonpublic sector	4.925***		0.00965***	
	(0.977)		(0.00116)	
CCP*three_representative		71.96***		0.118***
		(12.11)		(0.0142)
ceo_age_abs	6.351***	6.493***	0.00285	0.00386
	(2.284)	(2.254)	(0.00261)	(0.00257)
_Iedu_1	-132.1***	-127.6***	-0.0113	-0.00813
	(47.31)	(46.61)	(0.0541)	(0.0533)
_Iexperienc_1	206.9***	197.2***	0.185***	0.181***
	(41.59)	(40.95)	(0.0471)	(0.0464)
firm_age_abs	48.27***	49.00***	0.0579***	0.0582***
	(4.030)	(3.979)	(0.00466)	(0.00460)
sales	0.00000293***	0.00000295***	0.0000118***	0.0000102***
	(0.000000520)	(0.000000519)	(0.00000156)	(0.00000145)
_cons	-260.0**	-193.6*	-0.936***	-1.008***
	(110.2)	(105.7)	(0.126)	(0.125)
N	10051	10306	10051	10306
R-sq	0.039	0.040		
pseudo R-sq			0.048	0.044
chi2			654.6	627.0
p	4.62e-81	1.04e-84	3.93e-135	3.30e-129

High tax rate (provincial level) *t* vs. bank loan

	Bank_loan	Bank_loan_Dummy
CCP	117.1***	0.431***
	(37.86)	(0.111)
CCP* High tax rate dummy	86.51*	-0.188
	(50.11)	(0.236)
CEO_Age	1.330	-0.00210
	(1.902)	(0.00346)
CEO_Edu	-35.39	0.0192
	(37.98)	(0.0570)
CEO_Experience	108.7***	0.131*
	(33.59)	(0.0725)
Firm_age	55.17***	0.0614***
	(3.359)	(0.0109)
Firm_Size	0.00000284***	0.0000108
	(0.000000485)	(0.00000756)
Privatization	514.4***	0.536***
	(40.80)	(0.0825)
Constant	-104.1	-0.982***
	(88.54)	(0.195)
N	13098	13097
R-sq	0.044	
pseudo R-sq		0.042
p	0	0

Concluding Remarks

- We endogenize the CCP's constitutional amendment decision as its goal of sustaining its ruling power
  - The constitutional change turned on green lights to "optimal policies" to lure entrepreneurs into the Party
- Our theoretical prediction and evidence indicates
  - The new regime offers subsidies of capital to Party-member entrepreneurs
  - This increased party recruits and new party branches
- Our theoretical predictions for the long run future
  - Associated with the expansion of the private sector, entrepreneurs may become more heterogeneous in their political preferences
  - Entrepreneurs may care their political preferences more
  - These factors will increase the cost of buying entrepreneurs
  - With a continuation of this trend, this regime will be destabilized

Thank you!