A Model of China’s State Capitalism

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State capitalism as alternative growth model
US Congress blame SOE subsidies to POEs for China’s CA surplus

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An Analysis of State-owned Enterprises and State Capitalism in China
The State-Owned Enterprises (SOEs) have outperformed the private firms in the past decade while the opposite was true in the 1990s, although the GDP growth rates were stably high during the whole period.
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The labor income share in total GDP is persistently declining in the past two decades.
Puzzling Fact 1: SOEs Outperformed POEs

Figure 1: Total profit to sales revenues of Chinese enterprises in the industrial sector. We use CEIC (Table CN.BF: Industrial Financial Data: By Enterprise Type) to obtain Total profit to Sales Revenue. In this table, CEIC categorizes industrial enterprises into: state owned & holding, private, HMT & foreign, collective owned, shareholding corporations, foreign funded, and Hong Kong, Macau & Taiwan funded. We divide all the industrial enterprises into state owned & holding and the rest. The right axis shows the ratio of export to GDP, also obtained from CEIC.
Puzzling Fact 1: SOEs Outperformed POEs

Figure 2a: Average Profit per Industrial Enterprise (by Different Ownership Structure): 1998-2010
Figure 2b: Average Profit per Employee for Industrial Enterprise (by Different Ownership Structure): 1998-2010
Puzzling Fact 2: Low and Declining Labor Income Share

Figure 10: China’s Labor Income Share (replicated from Bai and Qian, 2010)
**Vertical Structure:** SOEs monopolize key upstream industries while the downstream industries are largely open for private competition.
Key Characteristics of China’s State Capitalism

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- **Dual Labor Market and Structural Change**: A huge labor supply in the process of industrialization.
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- **Dual Labor Market and Structural Change:** A huge labor supply in the process of industrialization.

- **Trade Liberalization:** Entering WTO in 2001, export-promoted strategies.
Key Mechanisms

- **Key Story:** Upstream SOEs extract monopoly rents from expanding downstream private sectors, especially after China’s entry to WTO in 2001.

Without Openness, SOEs in the downstream industries could not exit so fast; Demand for downstream goods and services would be small, hence the profits of upstream SOEs would be small.

Without Labor Abundance, wage will increase fast as export increases, which limits the room for the monopoly pricing charged by the upstream SOEs.

Without Strong Government and Political Centralization, SOEs would not be able to maintain the monopoly position in the upstream industries for so long.
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**Road Map**

- Documenting the vertical structure
- A Model of State Capitalism: Autarky, Trade
- Sustainability of this State Capitalism
- Emergence of State Capitalism
- Dynamic Extensions and Implications on China’s high saving rate and global imbalance
Figure 5a: Share of state enterprises in industrial value-added.
Figure 5b: Share of state enterprises in value-added as a percentage of its 1995 value.
Figure 4: Investments in fixed assets in urban area by ownership for all sectors. The data are from the following tables of National Bureau of Statistics (NBS) of China: Investment in Urban Area by Sector, Source of Funds, Jurisdiction of Management and Registration Status. Note that NBS has changed the column title of state related ownership over time.
Table 2. Chinese firms in 2011 Fortune Global 500

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Fortune Rank</th>
<th>Revenues ($millions)</th>
<th>Headquarter</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinopec Group</td>
<td>5</td>
<td>273422</td>
<td>Beijing</td>
<td>Oil and Refinery</td>
</tr>
<tr>
<td>China National Petroleum</td>
<td>6</td>
<td>240192</td>
<td>Beijing</td>
<td>Oil and Refinery</td>
</tr>
<tr>
<td>State Grid</td>
<td>7</td>
<td>226294</td>
<td>Beijing</td>
<td>Electricity Power</td>
</tr>
<tr>
<td>Industrial &amp; Commercial Bank of China</td>
<td>77</td>
<td>80501</td>
<td>Beijing</td>
<td>Banking</td>
</tr>
<tr>
<td>China Mobile Communications</td>
<td>87</td>
<td>76673</td>
<td>Beijing</td>
<td>Telecom</td>
</tr>
<tr>
<td>China Railway Group</td>
<td>95</td>
<td>69973</td>
<td>Beijing</td>
<td>Construction and Infrastructure</td>
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<td>China Railway Construction</td>
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<td>Beijing</td>
<td>Construction and Infrastructure</td>
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<td>China Construction Bank</td>
<td>108</td>
<td>67081</td>
<td>Beijing</td>
<td>Banking</td>
</tr>
<tr>
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<td>64635</td>
<td>Beijing</td>
<td>Insurance</td>
</tr>
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<td>Agricultural Bank of China</td>
<td>127</td>
<td>60536</td>
<td>Beijing</td>
<td>Banking</td>
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<td>Bank of China</td>
<td>132</td>
<td>59212</td>
<td>Beijing</td>
<td>Banking</td>
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<tr>
<td>Dongfeng Motor</td>
<td>145</td>
<td>55748</td>
<td>Wuhan</td>
<td>Automobile</td>
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<tr>
<td>China State Construction Engineering</td>
<td>147</td>
<td>54721</td>
<td>Beijing</td>
<td>Construction and Infrastructure</td>
</tr>
<tr>
<td>China Southern Power Grid</td>
<td>149</td>
<td>54449</td>
<td>Guangzhou</td>
<td>Electricity Power</td>
</tr>
</tbody>
</table>
Facts about Vertical Structure [5]

Figure 3: Share of industrial output value from state enterprises in the industrial sector.
Model
a continuum of households with measure unity: $\theta$ elite group, $1 - \theta$ grassroot.
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• Preference

$$u(c) = c_n + \frac{\epsilon}{\epsilon - 1} \left[ \left( \int_0^1 c(i) \frac{\eta - 1}{\eta} di \right)^{\frac{\eta}{\eta - 1}} \right]^{\frac{\epsilon - 1}{\epsilon}}, \quad \epsilon > 1, \eta > 1,$$
• A continuum of households with measure unity: \( \theta \) elite group, \( 1 - \theta \) grassroots.

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• Technology

1. one unit of labor produces one unit of numerare good $n$
2. differentiated consumption good:
   $$F_i(k, l, m) = Ak^\alpha l^\beta m^{1-\alpha-\beta}, \forall i \in [0, 1]$$
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\]

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1. one unit of labor produces one unit of numerare good \( n \)
2. differentiated consumption good:
   \[
   F_i(k, l, m) = Ak^\alpha l^\beta m^{1-\alpha-\beta}, \quad \forall i \in [0, 1]
   \]
3. Intermediate good: \( F_m(k, l) = A_m k^\gamma l^{1-\gamma} \)
Endowment:

Each household, elite or grass root, is endowed with $L$ units of time (labor) and $K$ units of capital.

The profits of all the state-owned enterprises are equally shared by the elite class.

All the private firms are owned by the grassroot.

Market Structure:

- Intermediate good market monopoly
- All other markets are perfectly competitive
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Market Structure:

1. Intermediate good market monopoly
2. all the other markets are perfectly competitive
Household Wealth: \[ I_e = WL + RK + \frac{\Pi_m}{\theta}; \quad I_g = WL + RK \]

BC: \[ W_{cn} + \int_0^1 p(i)c(i)\,di \leq I, \text{ where } I \in \{I_e, I_g\} \]

Price: \[ p(i) = \frac{R^\alpha W^\beta p_m^{1-\alpha-\beta}}{A^\alpha \beta^\beta (1-\alpha-\beta)^{1-\alpha-\beta}}; \]

Upstream SOE: \[ \Pi_m = \max_{p_m} D_m(p_m) \cdot \left[ p_m - \frac{R^\gamma W^{1-\gamma}}{A_m \gamma^\gamma (1-\gamma)^{1-\gamma}} \right] \]

\[ p_m = \mu \frac{R^\gamma W^{1-\gamma}}{A_m \gamma^\gamma (1-\gamma)^{1-\gamma}}; \quad \mu \equiv \frac{(1-\alpha-\beta)(\epsilon - 1) + 1}{(1-\alpha-\beta)(\epsilon - 1)}. \]
Factor Markets Clear

\[
L = D_m \frac{\partial}{\partial W} \left( \frac{R^\gamma W^{1-\gamma}}{A_m \gamma (1-\gamma)^{1-\gamma}} \right) 
+ \int_0^1 D(i) \frac{\partial p(i)}{\partial W} di
\]

by producer of intermediate good \( m \)

\[
K = D_m \frac{\partial}{\partial R} \left( \frac{R^\gamma W^{1-\gamma}}{A_m \gamma (1-\gamma)^{1-\gamma}} \right) 
+ \int_0^1 D(i) \frac{\partial p(i)}{\partial R} di
\]

by producer of intermediate good \( m \)
Lemma

Suppose $L$ is sufficiently large. The autarky model has a unique equilibrium, in which all the prices $(R, p_m, p(i), W)$ are explicitly solved.

- $\frac{\partial R}{\partial K} < 0$, $\frac{\partial R}{\partial A_m} > 0$, $\frac{\partial R}{\partial A} > 0$, $\frac{\partial R}{\partial L} = 0$. 
Lemma

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- \(\frac{\partial R}{\partial K} < 0, \frac{\partial R}{\partial A_m} > 0, \frac{\partial R}{\partial A} > 0, \frac{\partial R}{\partial L} = 0.\)
- \(\frac{\partial p_m}{\partial K} < 0, \frac{\partial p_m}{\partial A_m} < 0, \frac{\partial p_m}{\partial A} > 0, \frac{\partial p_m}{\partial L} = 0.\)
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\[
\begin{align*}
\frac{\partial R}{\partial K} &< 0, \quad \frac{\partial R}{\partial A_m} > 0, \quad \frac{\partial R}{\partial A} > 0, \quad \frac{\partial R}{\partial L} = 0. \\
\frac{\partial p_m}{\partial K} &< 0, \quad \frac{\partial p_m}{\partial A_m} < 0, \quad \frac{\partial p_m}{\partial A} > 0, \quad \frac{\partial p_m}{\partial L} = 0. \\
\frac{\partial p(i)}{\partial K} &< 0, \quad \frac{\partial p(i)}{\partial A_m} < 0, \quad \frac{\partial p(i)}{\partial A} < 0, \quad \frac{\partial p(i)}{\partial L} = 0.
\end{align*}
\]
Lemma

Suppose \( L > \frac{\mu - \gamma (1 - \alpha - \beta) - \alpha \mu}{(1 - \gamma) (1 - \alpha - \beta) + \beta \mu} \bar{L}(A, A_m, K) \). In the autarky equilibrium,

\[
\Pi_m = \frac{(1 - \alpha - \beta) (\mu - 1)}{(1 - \gamma) (1 - \alpha - \beta) + \beta \mu} \bar{L}(A, A_m, K),
\]

\[
Y = \left[ L + \frac{\alpha \mu + (1 - \alpha - \beta) (\gamma + \mu - 1)}{(1 - \gamma) (1 - \alpha - \beta) + \beta \mu} \bar{L}(A, A_m, K) \right],
\]

\[
\theta_L = \frac{L}{L + \frac{\alpha \mu + (1 - \alpha - \beta) (\gamma + \mu - 1)}{(1 - \gamma) (1 - \alpha - \beta) + \beta \mu} \bar{L}(A, A_m, K)},
\]

\[
\bar{L}(A, A_m, K) \equiv \left[ A_m^{(1 - \alpha - \beta)} A \right]^{\frac{1}{1 + \alpha (e - 1) + \gamma (1 - \alpha - \beta) (e - 1)}} \frac{(1 - \gamma) (1 - \alpha - \beta) + \beta \mu}{\gamma (1 - \alpha - \beta) + \alpha \mu} \cdot \left[ A_m^{(1 - \alpha - \beta)} A \right]^{\frac{e - 1}{1 + \alpha (e - 1) + \gamma (1 - \alpha - \beta) (e - 1)}} \frac{\alpha (e - 1) + \gamma (1 - \alpha - \beta) (e - 1)}{1 + \alpha (e - 1) + \gamma (1 - \alpha - \beta) (e - 1)} K.
\]
Proposition

Suppose \( L > \frac{\mu - \gamma(1 - \alpha - \beta) - \alpha \mu}{(1 - \gamma)(1 - \alpha - \beta) + \beta \mu} \bar{L}(A, A_m, K) \). In the autarky equilibrium,

\[
\frac{\partial \Pi_m}{\partial A} > 0, \quad \frac{\partial \Pi_m}{\partial A_m} > 0, \quad \frac{\partial \Pi_m}{\partial K} > 0; \quad \frac{\partial \theta_L}{\partial A} < 0, \quad \frac{\partial \theta_L}{\partial A_m} < 0, \quad \frac{\partial \theta_L}{\partial K} < 0.
\]
Proposition

*In the social optimal equilibrium (liberalization of the upstream SOE), the wage is still equal to the numeraire good price, the rental price of capital becomes larger, both the intermediate good and the differentiated goods become cheaper, the total non-numeraire employment and the GDP both become larger, and the labor income share becomes smaller.*
Country H is same as the static autarky.
Open Economy

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- Country F: $L^*$ units of labor and same utility function
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- All the firms are private in country F, and have exclusive technology:
  \[ F^*_i(l) = l, \text{for } \forall i \in [0, 1]. \]
- One unit of foreign labor producing $A^*$ units of numeraire good
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- One unit of foreign labor producing $A^*$ units of numeraire good
- $p^*_n = \frac{W^*}{A^*}$, $p^*(i) = W^*$, $\forall i \in [0, 1]$. 
Country H is same as the static autarky.

Country F: $L^*$ units of labor and same utility function

All the firms are private in country F, and have exclusive technology: $F_i^*(l) = l$, for $\forall i \in [0, 1]$.

One unit of foreign labor producing $A^*$ units of numeraire good

$p_n^* = \frac{W^*}{A^*}$, $p^*(i) = W^*$, $\forall i \in [0, 1]$.

Assume $L^* < \frac{1}{A^*}$ so in the autarky equilibrium $c_n^* = 0$. 
Assume

\[ A^{1-\epsilon} < \frac{\mu}{2 \left[ (1 - \gamma)(1 - \alpha - \beta) + \beta \mu \right]} \overline{L}(A, A_m, K), \]

\[ \frac{\mu}{2 \left[ (1 - \gamma)(1 - \alpha - \beta) + \beta \mu \right]} \overline{L}(A, A_m, K) < A^* A^*, \]

and

\[ L > \frac{\mu}{2 - \gamma (1 - \alpha - \beta) - \alpha \mu} \overline{L}(A, A_m, K), \]

where \( \overline{L}(A, A_m, K) \) is total employment in the non-numeraire sectors in country H.

\[ (\epsilon - 3)(1 - \alpha - \beta) + 1 < 0 \]
Trade Equilibrium

**Lemma**

In the free trade equilibrium,

\[
\Pi_m = \frac{(1 - \alpha - \beta)(\mu - 1)}{(1 - \gamma)(1 - \alpha - \beta) + \beta \mu} \overline{L}(A, A_m, K)p_n.
\]

\[
Y = \left[ L + \frac{\alpha \mu + (1 - \alpha - \beta)(\gamma + \mu - 1)}{(1 - \gamma)(1 - \alpha - \beta) + \beta \mu} \overline{L}(A, A_m, K) \right] p_n
\]

\[
\theta_L = \frac{L}{L + \frac{\alpha \mu + (1 - \alpha - \beta)(\gamma + \mu - 1)}{(1 - \gamma)(1 - \alpha - \beta) + \beta \mu} \overline{L}(A, A_m, K)},
\]

\[
\overline{L}(A, A_m, K) \equiv 2^{\frac{1}{1 + \alpha(\epsilon - 1) + \gamma(1 - \alpha - \beta)(\epsilon - 1)}} \overline{L}(A, A_m, K).
\]
Proposition

The monopoly profit of the upstream SOE and the GDP in country H are larger in the free trade equilibrium than in the autarky, but the labor income share in total GDP is smaller in the trade equilibrium.

- Export Promotion Policies
Proposition

The monopoly profit of the upstream SOE and the GDP in country H are larger in the free trade equilibrium than in the autarky, but the labor income share in total GDP is smaller in the trade equilibrium.

- Export Promotion Policies
- Domestic Labor Market Integration (\( \omega L < \bar{L}(A, A_m, K) \))
Sustainability
Sustainability Issues

- Rise of Wage (due to capital accumulation or productivity increase)
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- Rise of Wage (due to capital accumulation or productivity increase)
- Export Competition
Sustainability Issues

- Rise of Wage (due to capital accumulation or productivity increase)
- Export Competition
- Change in External Demand
\[ L < \bar{L}(A, A_m, K), \]

**Proposition**

Suppose capital \( K \) in country \( H \) is moderately high. GDP in country \( H \) is

\[
Y = B \cdot \left( A_m^{1-\alpha-\beta} A \right)^{\frac{\epsilon-1}{\epsilon}} K^{\frac{\alpha(\epsilon-1)+\gamma(1-\alpha-\beta)(\epsilon-1)}{\epsilon}} L^{\frac{(\epsilon-1)\{\gamma\beta+(1-\alpha)(1-\gamma)\}}{\epsilon}} p_n, \tag{1}
\]

where \( B \) is a constant. Moreover,

\[
\frac{WL}{Y} = \frac{(1-\gamma)(1-\alpha-\beta) + \beta \mu}{\mu}, \tag{2}
\]

\[
\frac{RK}{Y} = \frac{\gamma (1-\alpha-\beta) + \alpha \mu}{\mu},
\]

\[
\frac{\Pi_m}{Y} = \frac{(\mu-1)(1-\alpha-\beta)}{\mu}.
\]
Rise of Wage

\[
\frac{\partial W}{\partial L} < 0; \frac{\partial W}{\partial A} > 0; \frac{\partial W}{\partial A_m} > 0; \frac{\partial W}{\partial K} > 0.
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Rise of Wage

\[ \frac{\partial W}{\partial L} < 0; \frac{\partial W}{\partial A} > 0; \frac{\partial W}{\partial A_m} > 0; \frac{\partial W}{\partial K} > 0. \]

\[ \frac{\partial \Pi_m}{\partial A} > 0; \frac{\partial \Pi_m}{\partial A_m} > 0; \frac{\partial \Pi_m}{\partial L} > 0; \frac{\partial \Pi_m}{\partial K} > 0 \]
Suppose capital $K$ is sufficiently high. $H$ and $F$ completely specializes. $H$ consumes both while $F$ only consumes the differentiated goods. GDP of $H$ is given by

$$
Y = \left[ \frac{1}{(\tilde{\mu} - \mu)(1 - \alpha - \beta)(\epsilon - 1)} + 1 \right] A^* L^* p_n, \tag{3}
$$

and the factor income shares:

$$
\frac{W_L}{Y} = \beta + (1 - \alpha - \beta) \frac{1 - \gamma}{\tilde{\mu}},
$$

$$
\frac{R_K}{Y} = \alpha + (1 - \alpha - \beta) \frac{\gamma}{\tilde{\mu}},
$$

$$
\frac{\Pi_m}{Y} = (1 - \alpha - \beta) \frac{\tilde{\mu} - 1}{\tilde{\mu}}.
$$
GDP of country H now depends explicitly on foreign variables ($A^*$ and $L^*$).
Further Rise of Wage

1. GDP of country H now depends explicitly on foreign variables ($A^*$ and $L^*$).

2. Markup $\tilde{\mu}$ has the following properties:

$$\frac{\partial \tilde{\mu}}{\partial A^*} > 0; \quad \frac{\partial \tilde{\mu}}{\partial L^*} > 0; \quad \frac{\partial \tilde{\mu}}{\partial K} < 0; \quad \frac{\partial \tilde{\mu}}{\partial L} < 0; \quad \frac{\partial \tilde{\mu}}{\partial A} < 0; \quad \frac{\partial \tilde{\mu}}{\partial A_m} < 0. \quad (4)$$
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3. The share of SOE profit in GDP in country H is larger than in the previous equilibrium, but it decreases when $K$, $L$, $A$ or $A_m$ increases.
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3 The share of SOE profit in GDP in country H is larger than in the previous equilibrium, but it decreases when $K$, $L$, $A$ or $A_m$ increases.

4 Labor income share in country H increases as domestic productivities or factor endowments increase.
Export Competition

\[ p(i) = \Gamma(\mu) \cdot p_n, \forall i \in [0, 1], \]
where function \( \Gamma(\cdot) \) satisfies

\[ \Gamma(\omega) \propto \left[ A_m^{(1-\alpha-\beta)} A \right]^{-\frac{1}{e}} K^{-\frac{[\alpha+\gamma(1-\alpha-\beta)]}{e}} L^{-\frac{(1-\gamma)(1-\alpha-\beta)+\beta}{e}}. \quad (5) \]

\[ \Gamma(\hat{\mu}) = T. \quad (6) \]

**Proposition**

When \( T \cdot p_n \), the price of the differentiated goods charged by a potential competitor, is sufficiently high (\( T > \Gamma(\mu) \)), the upstream industry in country H charges monopoly price markup equal to \( \mu \); When \( T \in [\Gamma(1), \Gamma(\mu)) \), the SOE lowers the price markup to \( \hat{\mu} \), determined by (6); When \( T < \Gamma(1) \), the upstream SOE in country H has to improve its productivity \( A_m \) if it wants to maintain its international competitiveness of the differentiated goods.
A decline in $A^*$ (or $L^*$) leads to

- a decrease in both the monopoly profit $\Pi_m$ and GDP (i.e., $\frac{\partial \Pi_m}{\partial A^*} > 0$ and $\frac{\partial Y}{\partial A^*} > 0$; $\frac{\partial \Pi_m}{\partial L^*} > 0$ and $\frac{\partial Y}{\partial L^*} > 0$).

- an increase in labor income share, mainly due to the shrinkage of GDP, even though the wage also decreases.
Change in External Demand

Figure 1: Total profit to sales revenues of Chinese enterprises in the industrial sector. We use CEIC (Table CN.BF: Industrial Financial Data: By Enterprise Type) to obtain Total profit to Sales Revenue. In this table, CEIC categorizes industrial enterprises into: state owned & holding, private, HMT & foreign funded, collective owned, shareholding corporations, and Hong Kong, Macau & Taiwan funded. We divide all the industrial enterprises into state owned & holding and the rest. The right axis shows the ratio of export to GDP, also obtained from CEIC.

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### Table 1. Chinese Exports by Enterprise Ownership

Exports are in billions of US dollars. The data are from China Custom. Some missing.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Exports</th>
<th>Exports by Ownership</th>
<th>% of export from SOEs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SOEs</td>
<td>non-SOE</td>
</tr>
<tr>
<td>1994</td>
<td>121.01</td>
<td>84.94</td>
<td>36.06</td>
</tr>
<tr>
<td>1995</td>
<td>148.78</td>
<td>99.25</td>
<td>49.53</td>
</tr>
<tr>
<td>1996</td>
<td>151.05</td>
<td>86.04</td>
<td>65.01</td>
</tr>
<tr>
<td>1997</td>
<td>182.79</td>
<td>102.74</td>
<td>80.05</td>
</tr>
<tr>
<td>1998</td>
<td>183.81</td>
<td>96.85</td>
<td>86.96</td>
</tr>
<tr>
<td>2000</td>
<td>249.20</td>
<td>116.45</td>
<td>132.76</td>
</tr>
<tr>
<td>2002</td>
<td>325.60</td>
<td>122.85</td>
<td>202.75</td>
</tr>
<tr>
<td>2004</td>
<td>593.33</td>
<td>153.58</td>
<td>439.75</td>
</tr>
<tr>
<td>2006</td>
<td>968.94</td>
<td>191.33</td>
<td>777.60</td>
</tr>
<tr>
<td>2008</td>
<td>1430.69</td>
<td>257.48</td>
<td>1173.21</td>
</tr>
<tr>
<td>2010</td>
<td>1577.75</td>
<td>234.30</td>
<td>1343.45</td>
</tr>
</tbody>
</table>
$\phi$ : the fraction of downstream industries that are liberalized ($\phi = 0$ at the beginning)
- $\phi$: the fraction of downstream industries that are liberalized ($\phi = 0$ at the beginning)
- SOEs and non-SOEs are engaged in perfect competition in each liberalized industry in the downstream.

Key Result:
When $A_p A_s$ is sufficiently large, the total profit of SOEs is maximized when $\phi = 1$.
To compete with private firms in the liberalized industries, a downstream SOE needs a subsidy equal to $R^\alpha W^\beta p^m 1^{\alpha \beta} (1^{\alpha \beta})^{1 A_s} 1 A_p$ per unit of output.
Emergence of China’s State Capitalism

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Emergence of China’s State Capitalism

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Emergence of China’s State Capitalism

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Emergence of China’s State Capitalism

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  \[
  \frac{R^\alpha W^\beta p_m^{1-\alpha-\beta}}{\alpha^\alpha \beta^\beta (1-\alpha-\beta)^{1-\alpha-\beta}} \left( \frac{1}{A_s} - \frac{1}{A_p} \right) \text{ per unit of output.}
  \]
We provide a simple model of China’s state capitalism that highlights a **vertical structure, international trade, and industrialization**.

We explain why SOEs outperformed POEs in the last decade while the opposite was true in the 1990s.

Our framework also explains the persistently low and declining labor income share in China’s GDP in the past two decades.

Our theory points to the **incompleteness of the market-oriented reforms** as a plausible fundamental cause for the recent unusual prosperity of China’s SOEs.

We show how this development model of state capitalism emerges and why it may not be sustainable.
Dynamic Extensions

- **Dynamic Autarky:** Investment demand increases demand for the downstream goods and hence increases upstream SOE profit.
- **Dynamic Balanced Trade:**
- **Dynamic Unbalanced Trade:** International lending to foreign consumers $\Rightarrow$ more exporting $\Rightarrow$ upstream SOEs benefit most.
Puzzling Fact 3: Low Consumption GDP Ratio

China’s state capitalism and the extreme & unsustainable imbalance

China’s Labor Income Share & Consumption / GDP

- Labor Income Share in GDP
- Labor Income Share in GDP net of indirect tax
- Consumption/GDP

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Income Inequality increases between the Elite group and the grassroot group.
Possible Explanation

- Income Inequality increases between the Elite group and the grassroot group
- Poor people’s purchase power is low while the rich people have a higher investment propensity, which contributes to a high saving and low private consumption

Vicious cycle: export income inequality weak domestic private consumption have to export and invest more
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- Vicious cycle: export $\Rightarrow$ income inequality $\Rightarrow$ weak domestic private consumption $\Rightarrow$ have to export and invest more
China’s High Saving Rate

A. China vs. Major Country Groups by Income

Source: Yang, Zhang, Zhou (2011)
Composition of China’s Saving

Source: Yang, Zhang, Zhou (2011)
Source: Huang et al (2010); Units: Billion USD