Rethinking Industrial Policy

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The Question

- After the WWII, most developing countries adopted industrial policies to promote economic growth. Except for a few economies in East Asia, most developing countries failed to achieve the intended goal.

- Should developing countries today adopt industrial policies to promote economic growth again?

- The answer depends on the following:
  - Identifying what was wrong with those industrial policies in most developing countries and whether it is possible to avoid the same mistakes.
  - Determining if the industrial policies that helped successful countries can be duplicated.

Comparative Advantage Defiance and the Failure of Industrial Policies

- The industrial policies in most countries are what I call the comparative-advantage-defying (CAD) strategy. Optimal industrial strategies are comparative-advantage-following (CAF).
- The firms in the industrial policy's targeted sectors were non-viable in competitive markets and required government policy supports for their initial investment and continuous operations. Types of support:
  - Direct subsidy
  - Preferential tax treatment, trade barriers, and monopolies
  - Interest rate and foreign exchange rate distortions
- The supports were implemented through price distortions. As a result, planning and administrative allocations were required.
- This led to rent-seeking, directly unproductive profit seeking, and soft budget constraints.

Testable Hypotheses

- H1: A country that adopts a CAD strategy will see various government interventions and distortions in the economy.
- H2: Over an extended period of time, a country that adopts a CAD strategy will have poor growth performance.
- H3: Over an extended period of time, a country that adopts a CAD strategy will have a volatile economy.
- H4: Over an extended period of time, a country that adopts a CAD strategy will have less equitable income distribution.

The Proxy for Development Strategy

$$TCI_{i,t} = \frac{AVM_{i,t} / LM_{i,t}}{GDP_{i,t} / L_{i,t}}$$

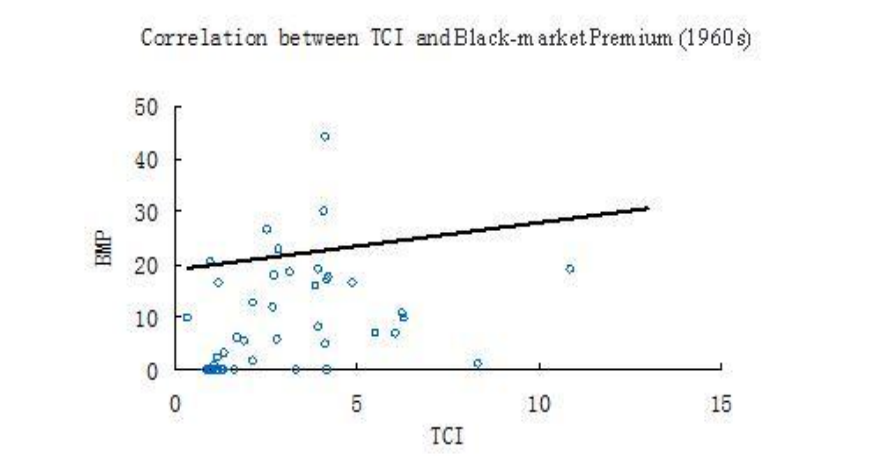
$TCI_{i,t}$ = Technology Choice Index of country i at year t.

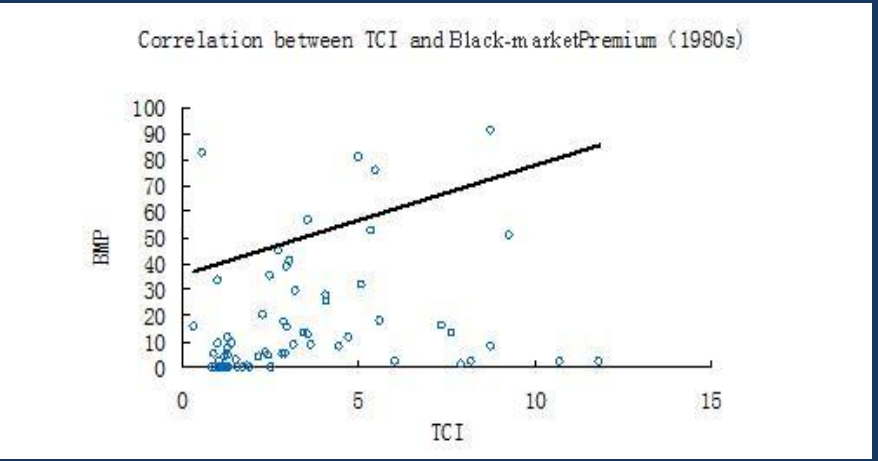
$AVM_{i,t} / LM_{i,t}$ = Added value per worker in manufacturing industries in country i at year t.

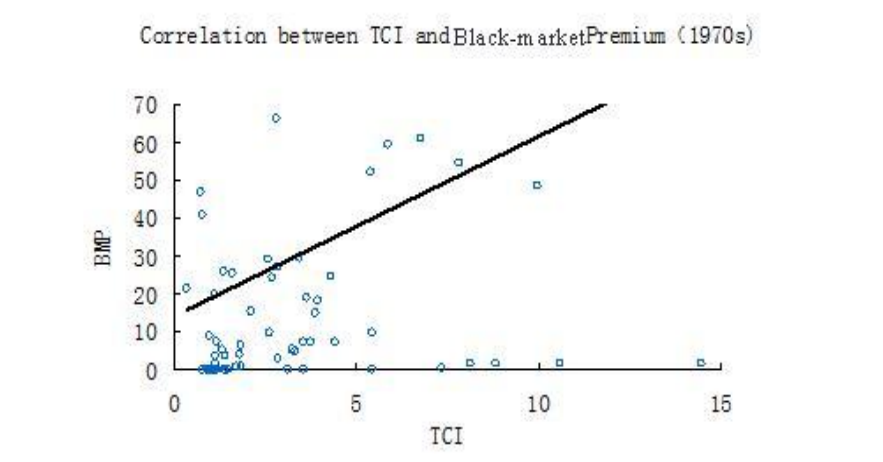
$GDP_{i,t} / L_{i,t}$ = GDP per worker in country i at year t.

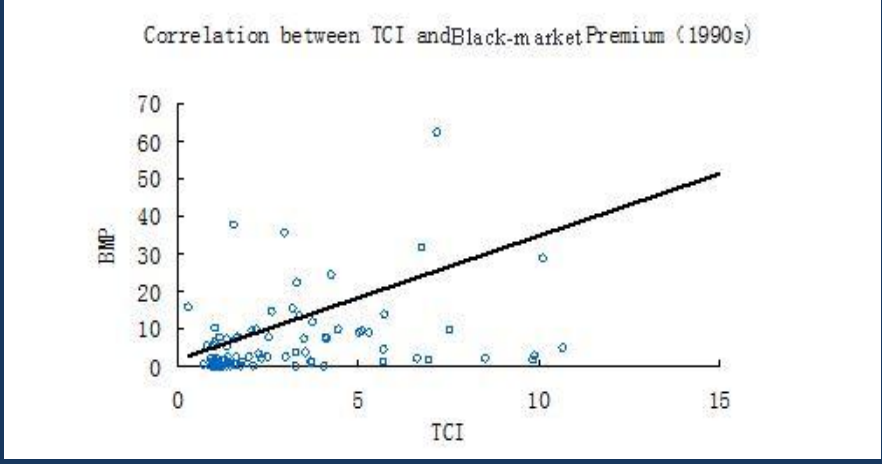
The more a country pursues a CAD strategy, the higher the TCI in the country.

H1: TCI and Black Market Premium

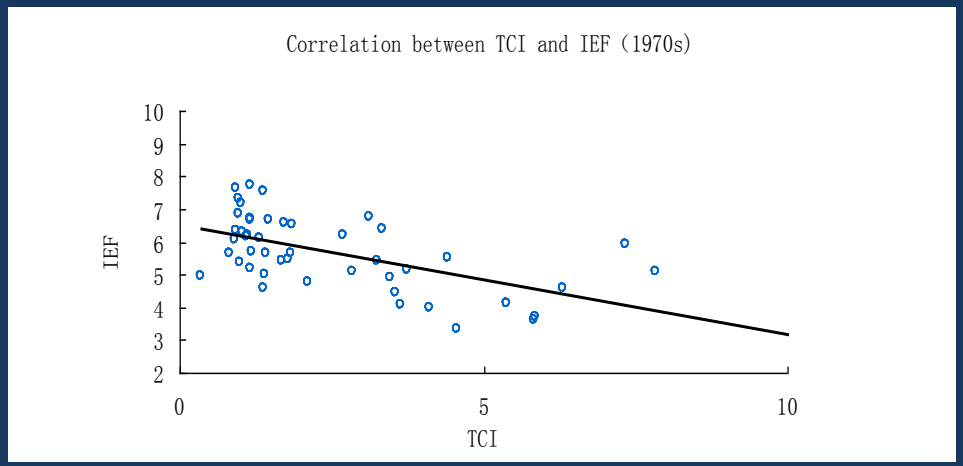


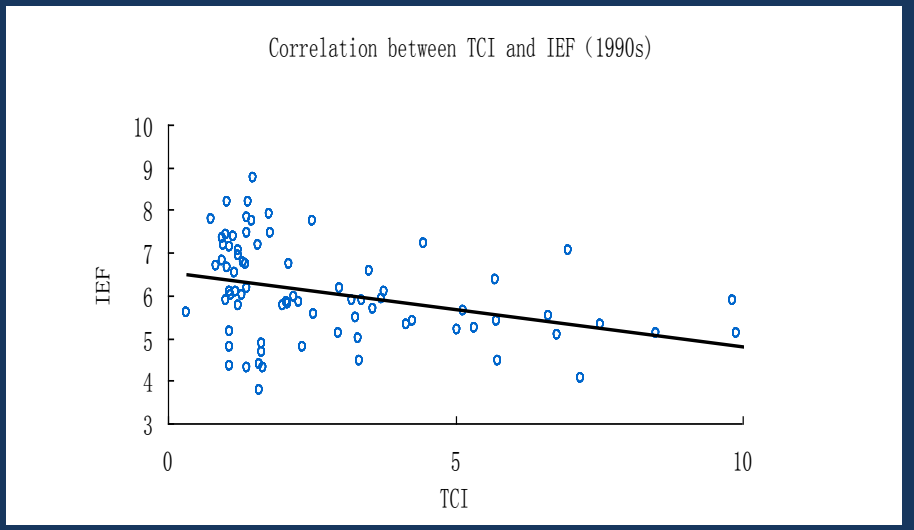


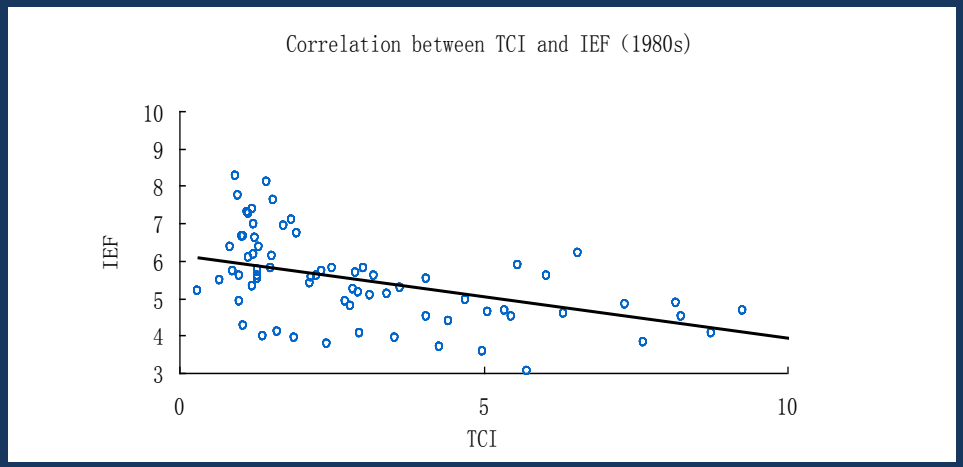




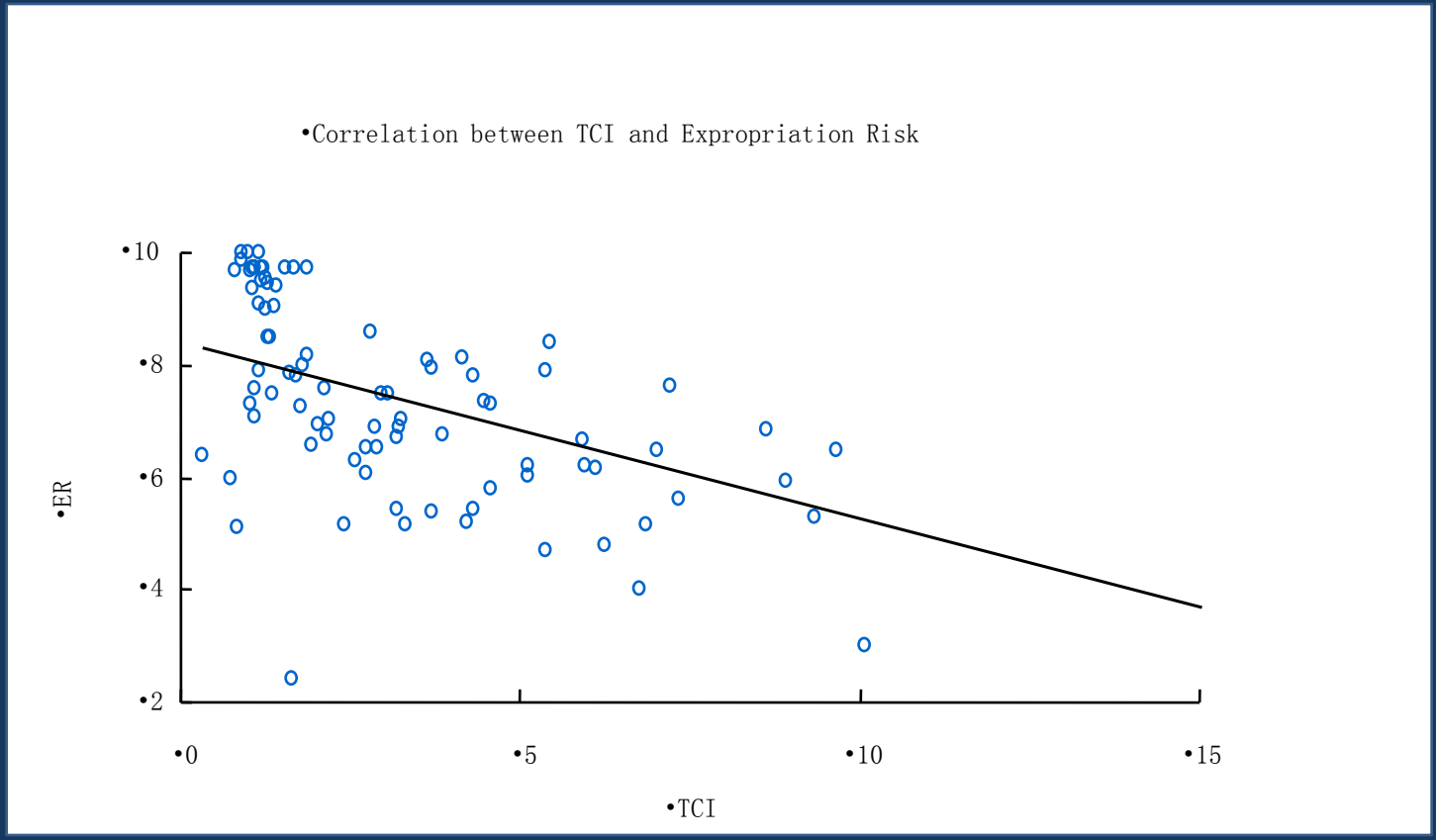
H1: TCI and Economic Freedom



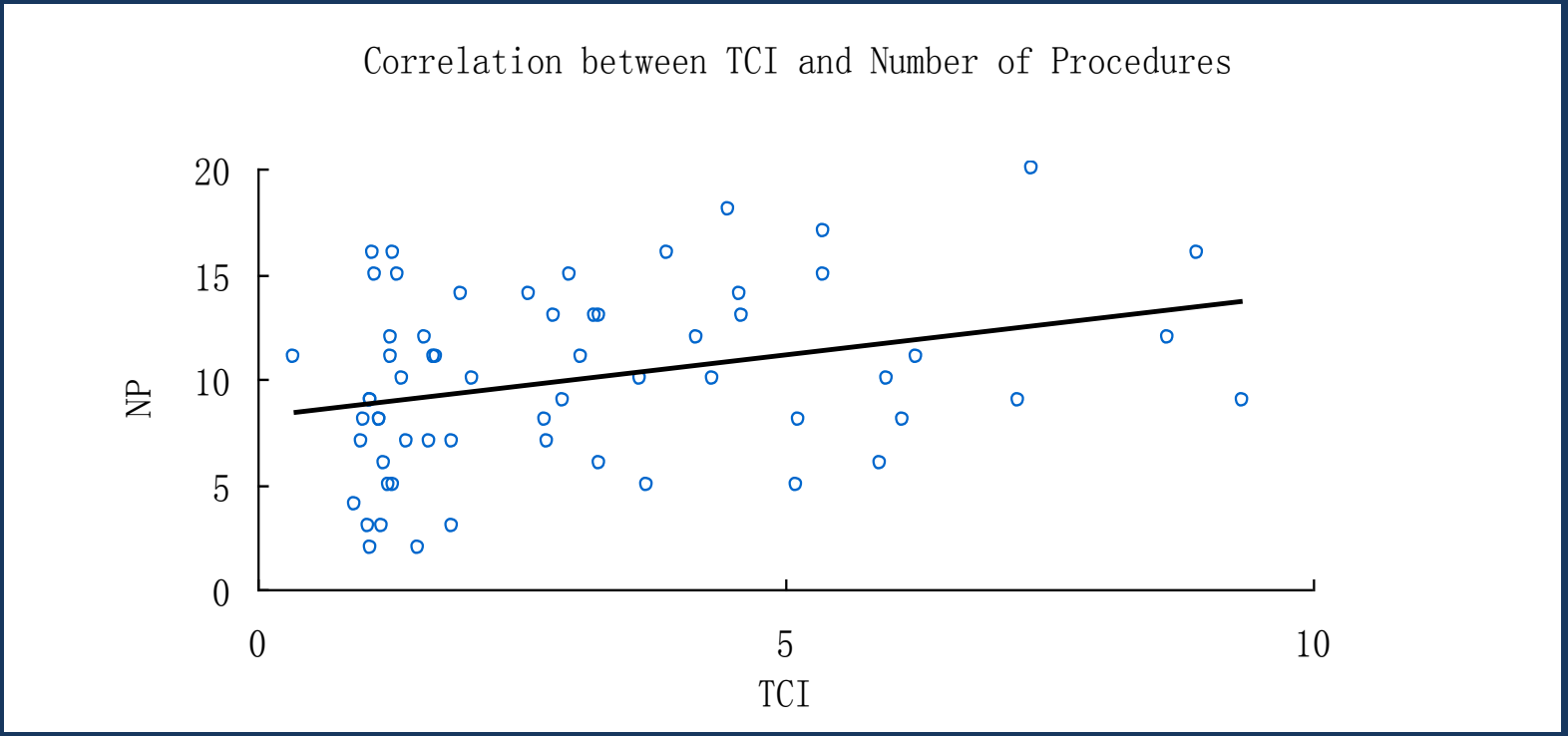




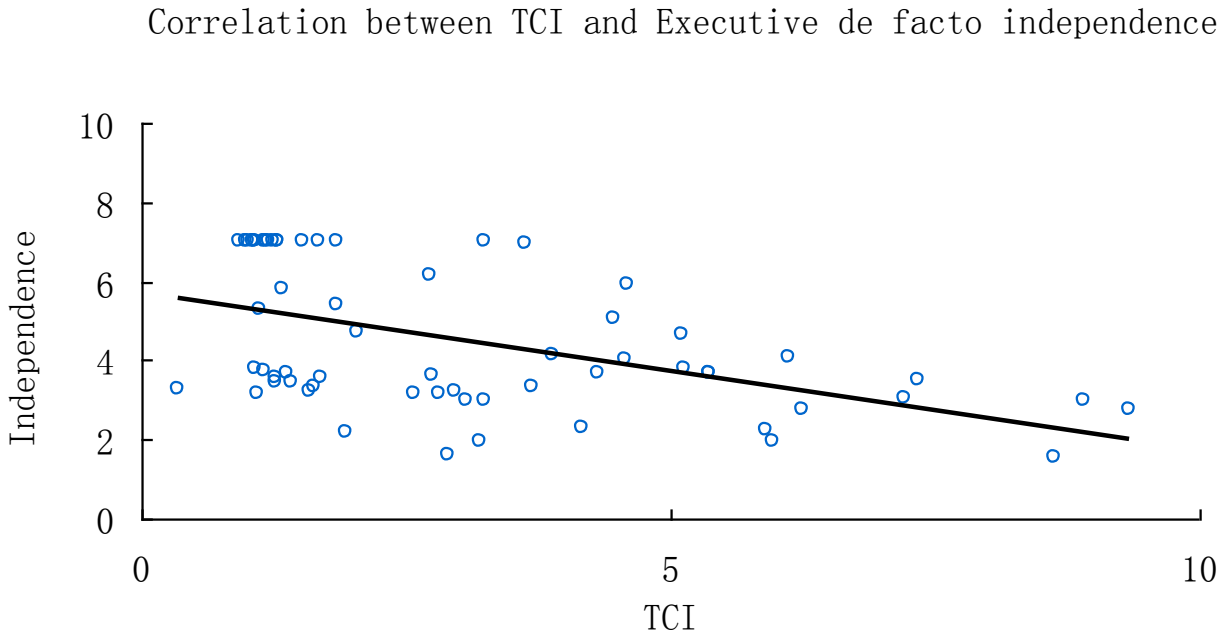
H1: TCI and Expropriation Risk



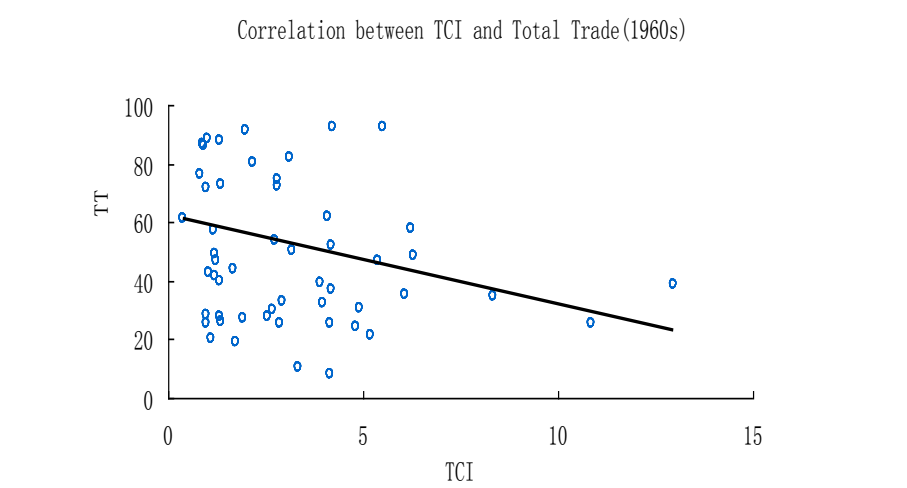
H1: TCI and Number of Procedures for Business Registration

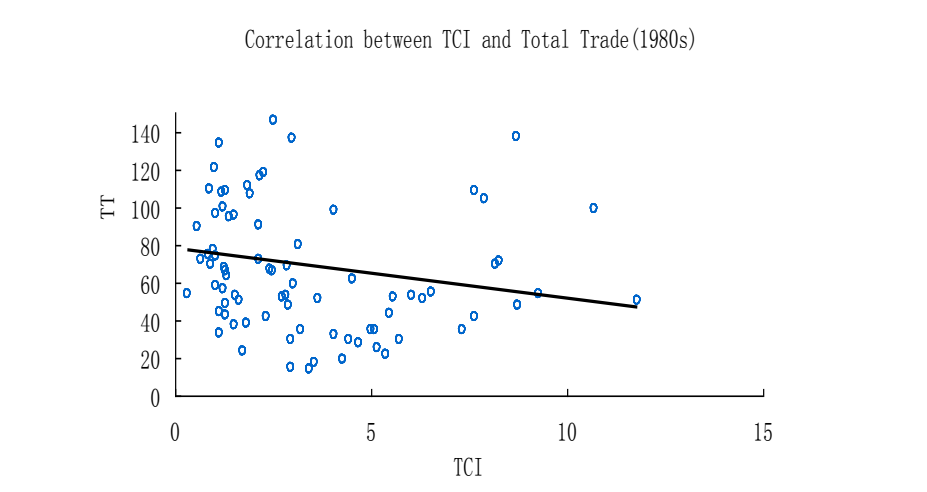


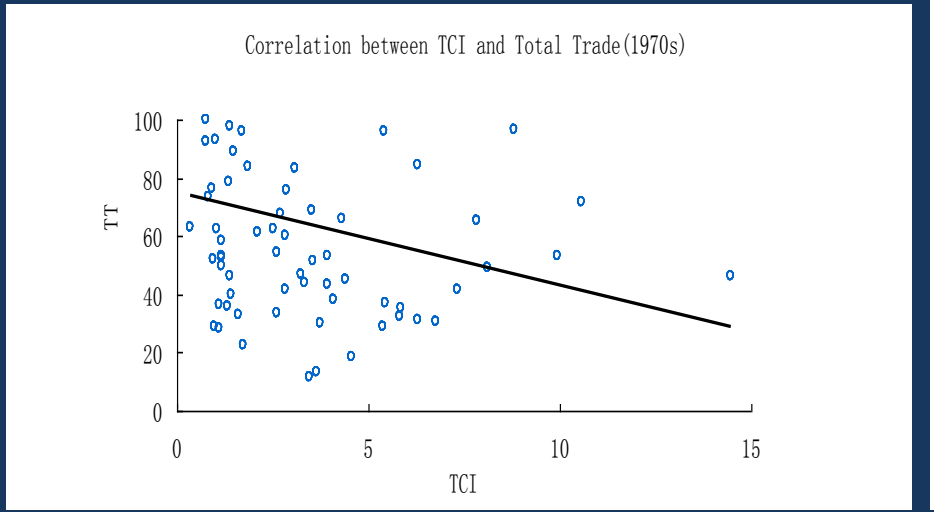
H1: TCI and Executive Independence

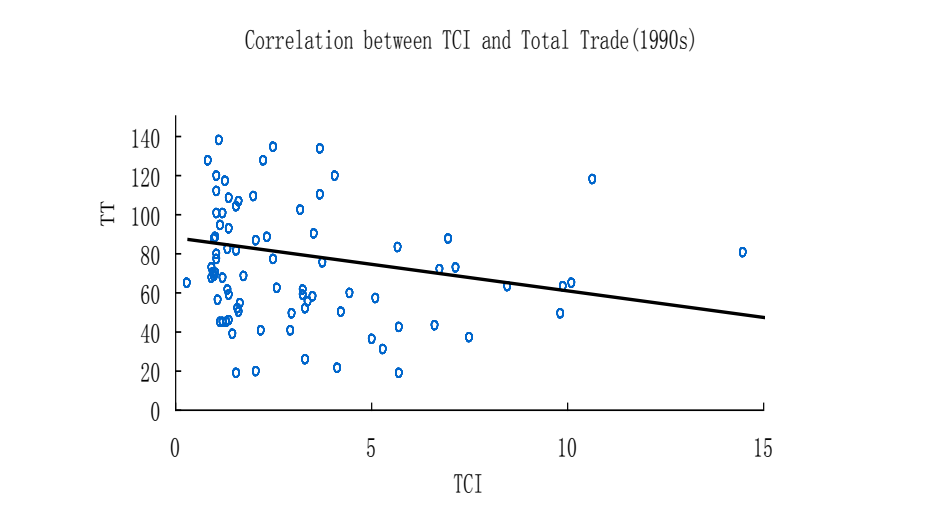


H1: TCI and Openness









H2: TCI and Growth

Dependent Variable: *Average* Per capita GDP growth rate in 1962-1999							
	Model 1.1 (OLS)	**Model 1.2 (OLS)**	**Model 1.3 (2SLS)**		**Model 1.1 (OLS)**	**Model 1.2 (OLS)**	**Model 1.3 (2SLS)**
Constant	7.32*** (1.60)	4.66** (1.87)	3.26 (2.15)	$TRADE_1$			.93** (.43)
ln TCI_1	-1.25*** (.20)	-.66*** (.18)	-.92*** (.19)	*ln* DIST		.20 (.16)	.47*** (.16)
ln GDP60	-.54*** (.20)	-.99*** (.18)	-.59*** (.21)	*ln* POP1		.33*** (.09)	.22** (.09)
RL01		.58*** (.21)		LANDLOCK		.07 (.32)	.46 (.38)
INST			.22 (.41)	Adjusted-R^2	.36	.56	.44
ln $OPEN_1$		.70*** (.22)		Observations	85	83	83

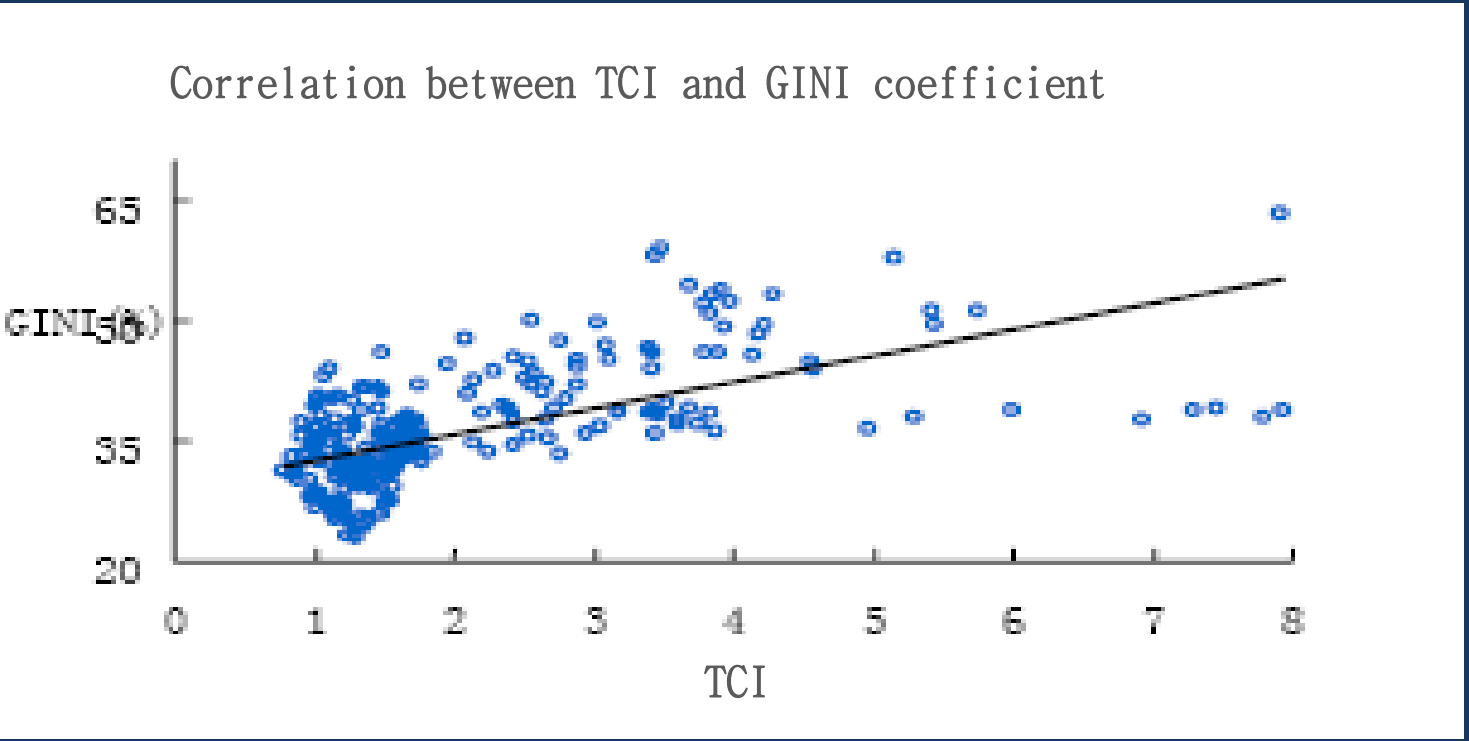
H2: TCI and Growth

Dependent Variable: Per capita GDP growth rate in 1962-1999					
	Model 2.1 (OLS)	**Model 2.2 (OLS)**	**Model 2.3 (Fixed effect)**	**Model 2.4 (2SLS)**	**Model 2.5 (2SLS, Fixed effect)**
Constant	7.15*** (1.61)	8.36*** (2.16)	3.83* (2.11)	-.74 (2.56)	-2.70 (2.37)
ln TCI_2	-1.10*** (.21)	-.69*** (.20)	-.40** (.19)	-.69*** (.24)	-.47** (.22)
ln GDP	-.54*** (.18)	-1.39*** (.23)	-.86*** (.23)	-.17 (.27)	.17 (.25)
RL01		1.45*** (.23)	1.12*** (.22)		
INST				-.38 (.42)	-.67* (.38)
ln $OPEN_2$		.24 (.23)	.35 (.22)		

H3: TCI and Volatility

Dependent Variable: Economic Volatility							
	Model 3.1 (OLS)	**Model 3.2 (OLS)**	**Model 3.3 (2SLS)**		**Model 3.1 (OLS)**	**Model 3.2 (OLS)**	**Model 3.3 (2SLS)**
Constant	.49 (1.06)	3.03** (1.44)	3.63** (1.56)	$TRADE_1$			-.53 (.33)
ln TCI_1	.64*** (.13)	.41*** (.14)	.56*** (.14)	*ln* DIST		-.003 (.11)	-.15 (.11)
ln GDP_{60}	-.04 (.13)	.17 (.14)	-.07 (.15)	*ln* POP_1		-.26*** (.06)	-.18** (.07)
RL01		-.33** (.16)		LANDLOCK		-.31 (.24)	-.53* (.28)
INST			-.20 (.29)	Adjusted-R^2	.29	.47	.37
ln $OPEN_1$		-.46*** (.17)		Observations	103	93	93

H4: TCI and Income Distribution



H4: TCI and Income Distribution

Dependent Variable: GINI coefficient Sample: 261 observations from 33 countries					
	Model 4.1r	**Model 4.2r**	**Model 4.3f**	**Model 4.4r**	**Model 4.5f**
CONSTANT	6.46 (4.72)	8.18*** (2.40)	31.5*** (1.75)	8.09*** (3.16)	32.6*** (0.97)
TCI	1.32*** (0.33)	1.35*** (0.31)	1.84*** (0.48)	1.35*** (0.32)	1.72*** (0.46)
IGINI	0.73*** (0.08)	0.71*** (0.07)		0.71*** (0.07)	
GDPPC	-0.89 (11.3)		0.43 (12.6)	0.74 (10.8)	
GDPPC_1	0.40 (1.84)		1.91 (2.11)	3.21 (16.6)	
CORR	1.03* (0.58)				
BQ	-0.84 (0.58)				
OPEN	0.12 (1.68)				
R2	0.9040	0.8941	0.5495	0.8936	0.5780
Hausman Statistics	3.32	1.19	23.91	1.99	7.98
Hausman P-value	0.19	0.28	0.00	0.37	0.00

Why Successful Countries Have the Market as Their Basic Institution

- The determinants of competitive advantage:
  - Use the economy's abundant factors in the production
  - Entrance of industries that have large domestic market
  - Industrial cluster
  - Domestic competition
- Comparative advantage and competitive advantage:
  - The first determinant in fact advises firms to follow the country's competitive advantage.
  - An industry will form a cluster only if the industry is consistent with the economy's comparative advantage.
  - An industry will have a competitive domestic market only if the industry is consistent with the economy's comparative advantage.
  - If an industry is consistent with the economy's comparative advantage, it can have the global market, so the size of domestic market is not essential for the industry.
- Firms will follow the economy's comparative advantage in choosing technology and industries only if the factor price reflects the relative abundance of each factor in the endowments.
- Competitive markets are required for relative prices to reflect the relative abundance of factors in the economy's endowments.

Why Talk about the state and industrial policy?

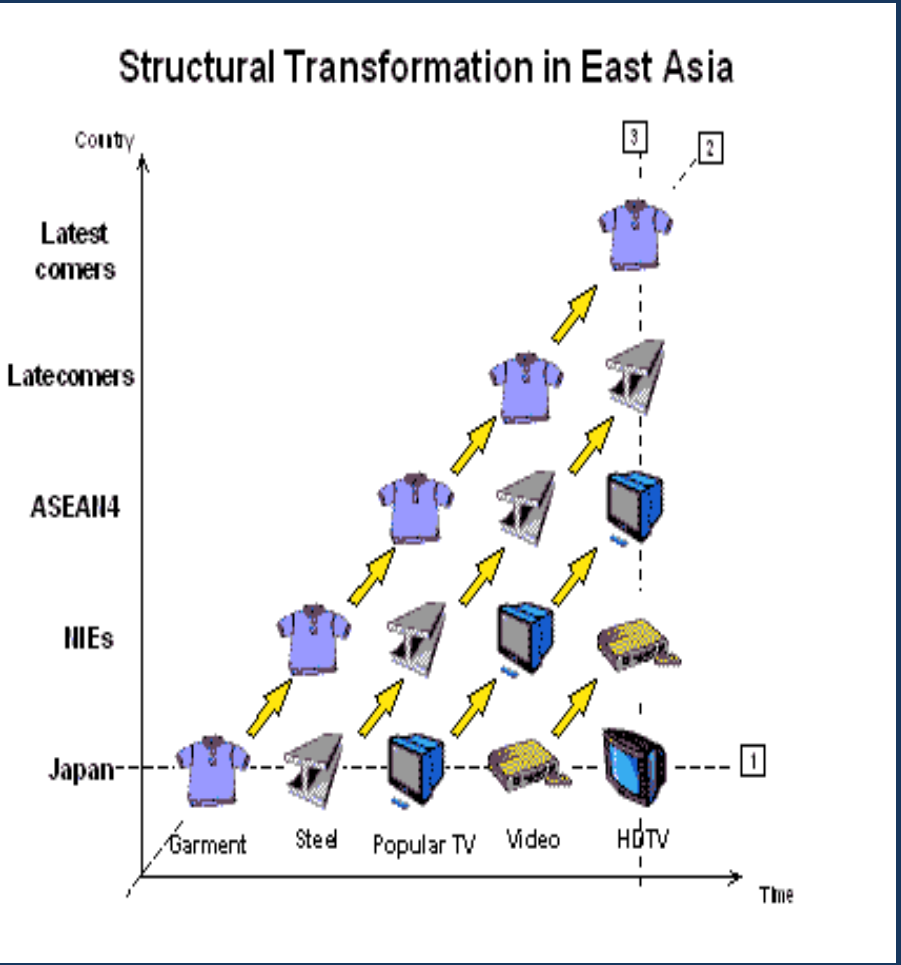
- If market is the basic institution, why do we need to talk about the state and industrial policy.
- Market is good for resource allocation when industries and technologies are given.
- Economic development is a process of technology innovation, industrial upgrading and structural change. The government needs to help enterprises overcome enternalities and coordination issues arising from that process in both developed and developing countries. For a developing country, the industrial policy can be a useful instrument for the state to play a facilitating role.

Industrial Upgrading and the Role of the State in a Developed Country

- In general, the government in a developed country does not pick the winner in the process of economic development because its industry and technology are located in the global frontier. What will be the next hit is uncertain.
- In the developed countries, the government plays an active role in facilitating private firms' innovations in the following way:
  - Support basic research in the universities which has externalities to private firms' R&D
  - Patents
  - Mandate and tax incentives
  - Defense contracts and government procurement

Should a Developing Country Adopt an Industrial Policy?

- Economic development in a developing country is a process of continuous industrial upgrading and structural change.
- The upgrading and structural change require improvements of soft and hard infrastructure to facilitate their production and market transactions. The government must play a role in these changes.
- The upgrading and change are innovations. The government can adopt an industrial policy to facilitate the innovations:
  - Information
  - Coordination
  - Externalities
  - Catalysis



Designing and Implementing CAF Industrial Policy in a Developing Country

- It is key to identify industries that have operated successfully for some time in countries that have higher-income but similar endowment structure as potential targets.
- Among those potential industries, there is the need to further analyze which industries predominantly use the country's abundant factor for their productions and choose those industries that some domestic firms have already entered and operated within for some time.
- Analysis should also identify the constraints that those domestic firms face and suggest ways to remove those constraints.
- For a completely new industries: Encourage FDIs or provide preferential arrangements such as tax breaks, subsidized loans, trade finance, technical assistance, and so on to facilitate private investment.
- In a country with poor infrastructure and inefficient bureaucracy, industrial parks or export process zones can be used to reduce the operation and transaction costs.

Yes, High Growth is a Transitory Phenomenon

- The rate of economic growth depends on the rate of technological change and industrial upgrading.
- If a low-income country finds a way to exploit the advantage of backwardness, it can grow much faster than the developed countries, which needs to invent the new technology and industries by themselves. If a developing country fails to tap into that potential, its growth rate will be low.
- Once a developing country converges to the level of a high-income country, its growth rate will also converges to that of high income countries.

But High Growth in a Developing Country Does Not Have to be a Random Event

- A developing country can have sustained high and inclusive growth if . . .
  - The country pursues a framework in which firms follow comparative advantages in their choice of technology and industries;
  - Firms tap into the potential of backwardness in their technology innovation and industrial upgrading;
  - The government plays a facilitating role in providing soft and hard infrastructures; and
  - The government pursues an industrial policy that helps the firms overcome information, coordination, and externality issues and catalyzes the development of new industries.

Thank you

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