

Competitiveness of Thailand's Manufacturing Sector

Bhanupong

Lecture 13

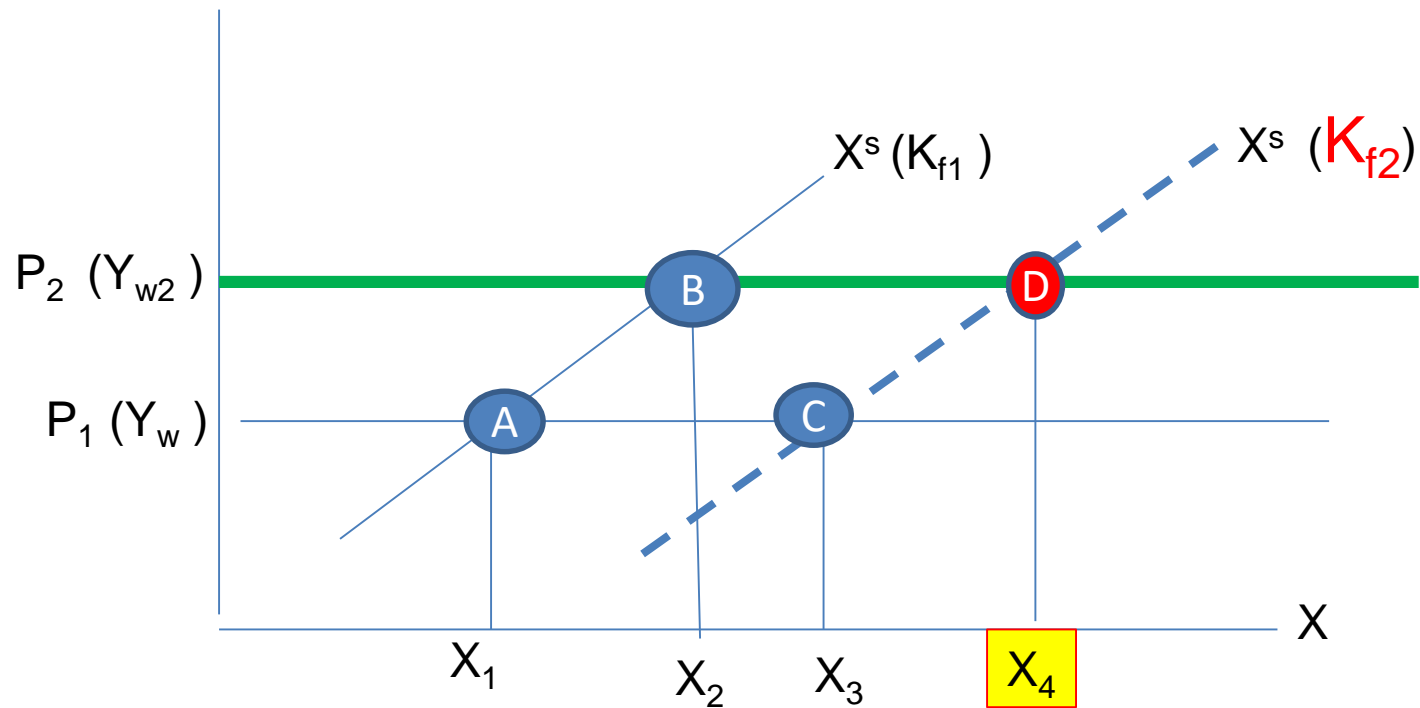
Key issues

1. FDI and lessons from China
2. Global competitiveness
3. BCG model
4. The competitive advantages of nations

1. Overview of Thailand's industries

- The growth of Thailand's industry is largely determined by external demand. The world business cycles are responsible for fluctuations in Thailand's manufactured exports.
- Thailand is a price taker in the world markets.
- On the supply side, capital stock of the industry accumulated from substantial flows of foreign direct investment contributed to spectacular export performance in the past.

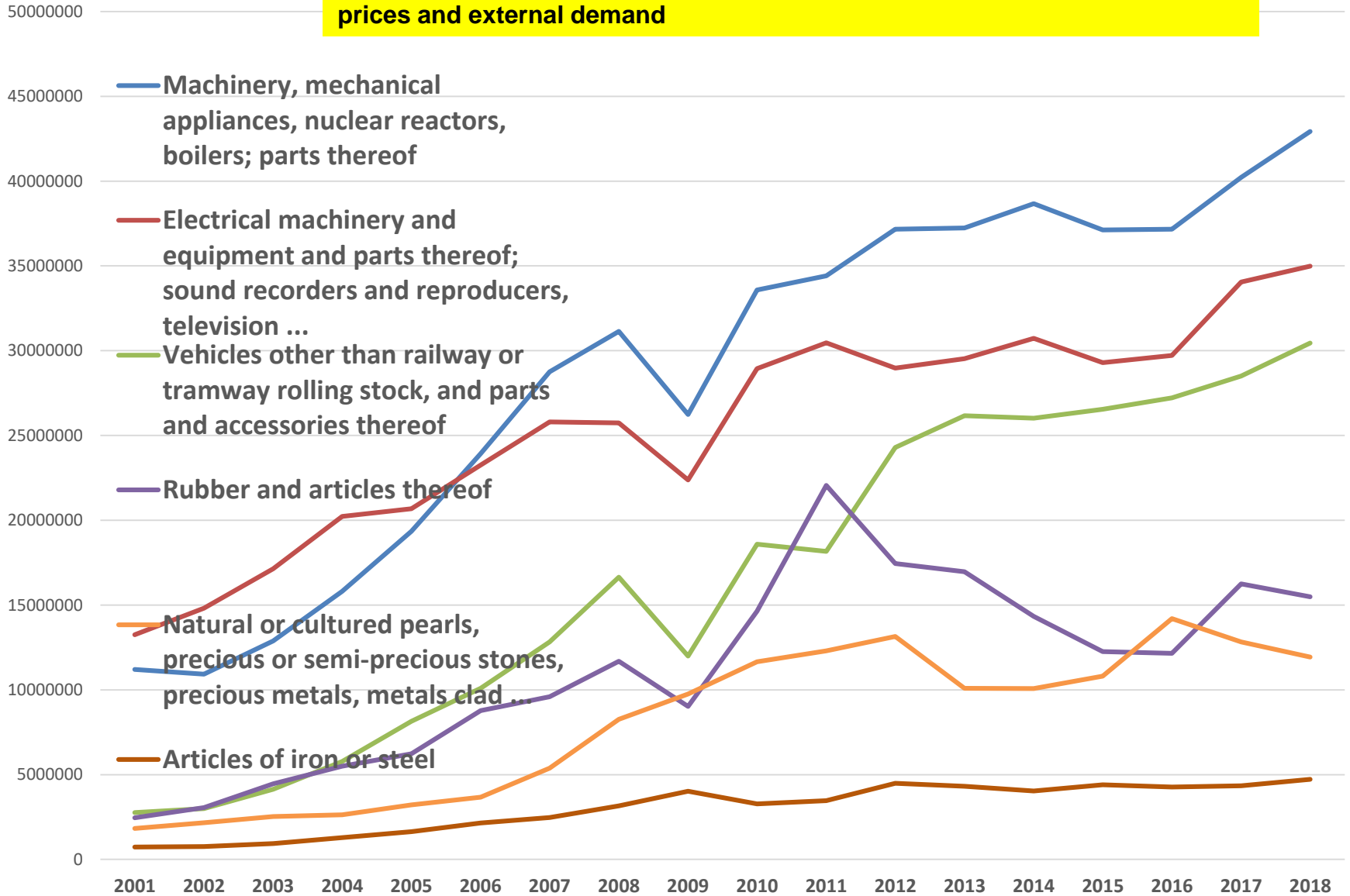
Increased FDI stock (K_2) and rising world output level (Y_{w2}) led to booming exports (X_4)



Thailand's major export commodities (2000-2018)

(million usd)

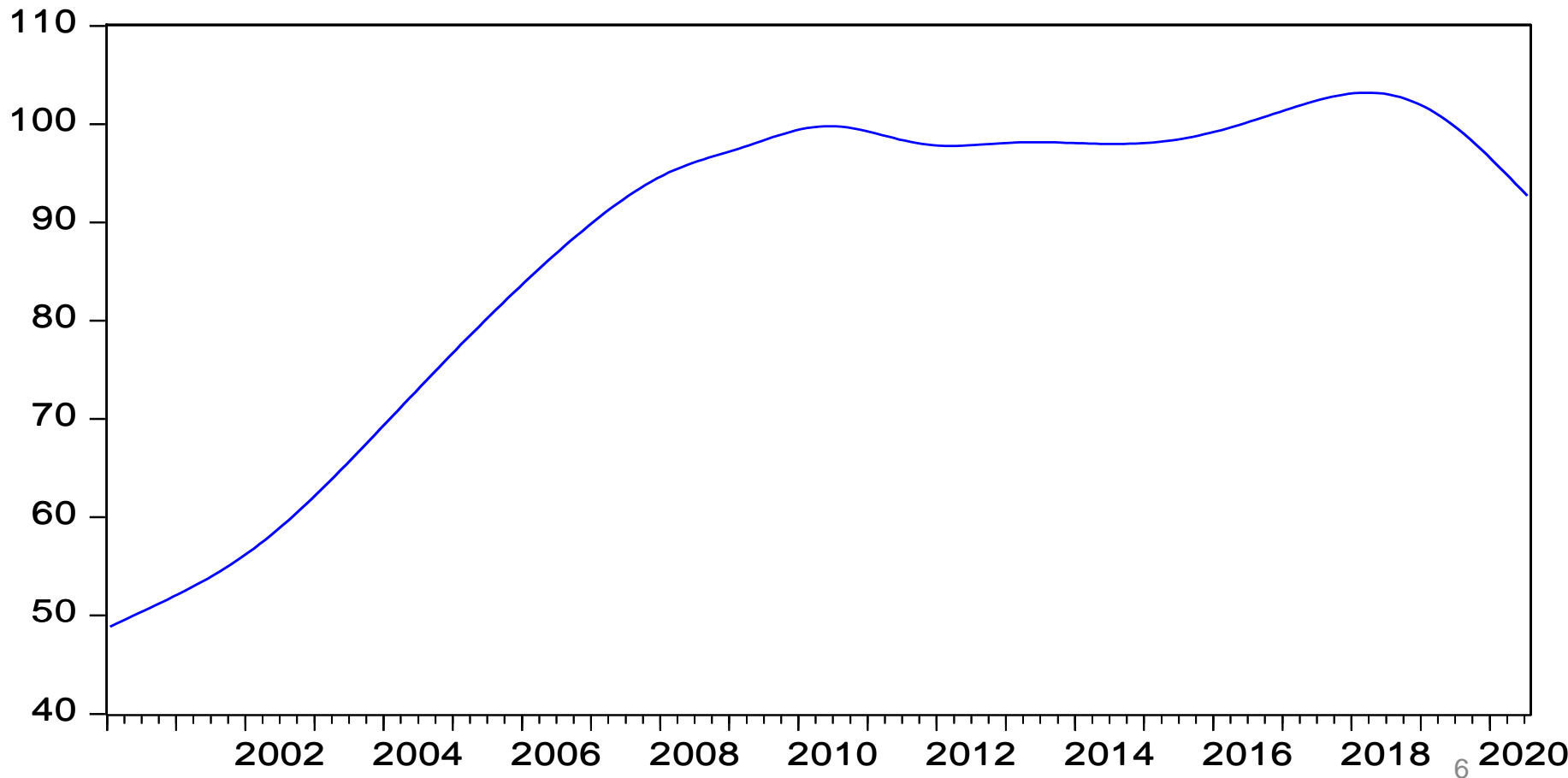
Export supply is determined by capital stock, export demand by world prices and external demand



Manufacturing Production Index (MPI)

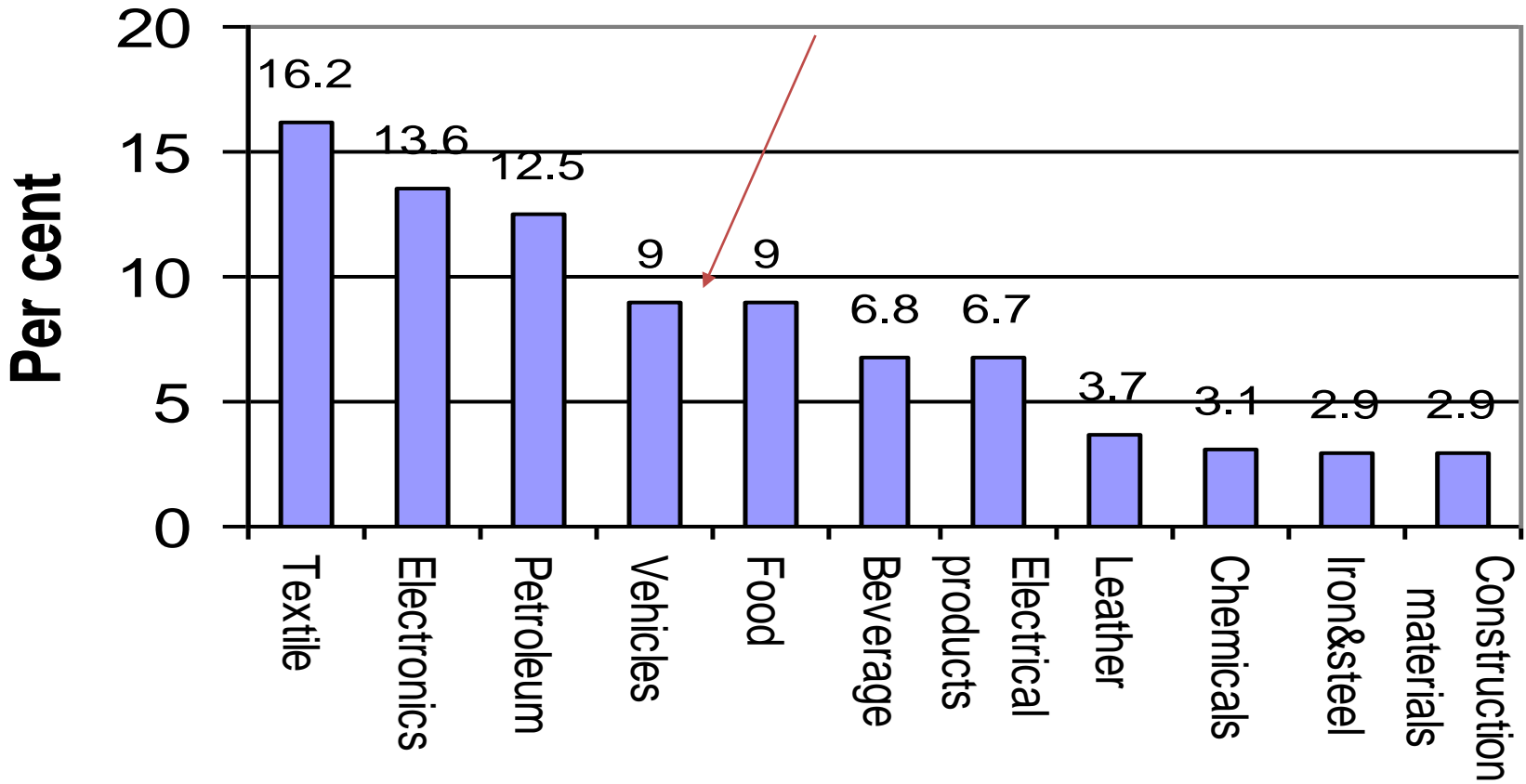
Jan 2000-July 2020

Trend of Manufacturing Production Index (MPI)



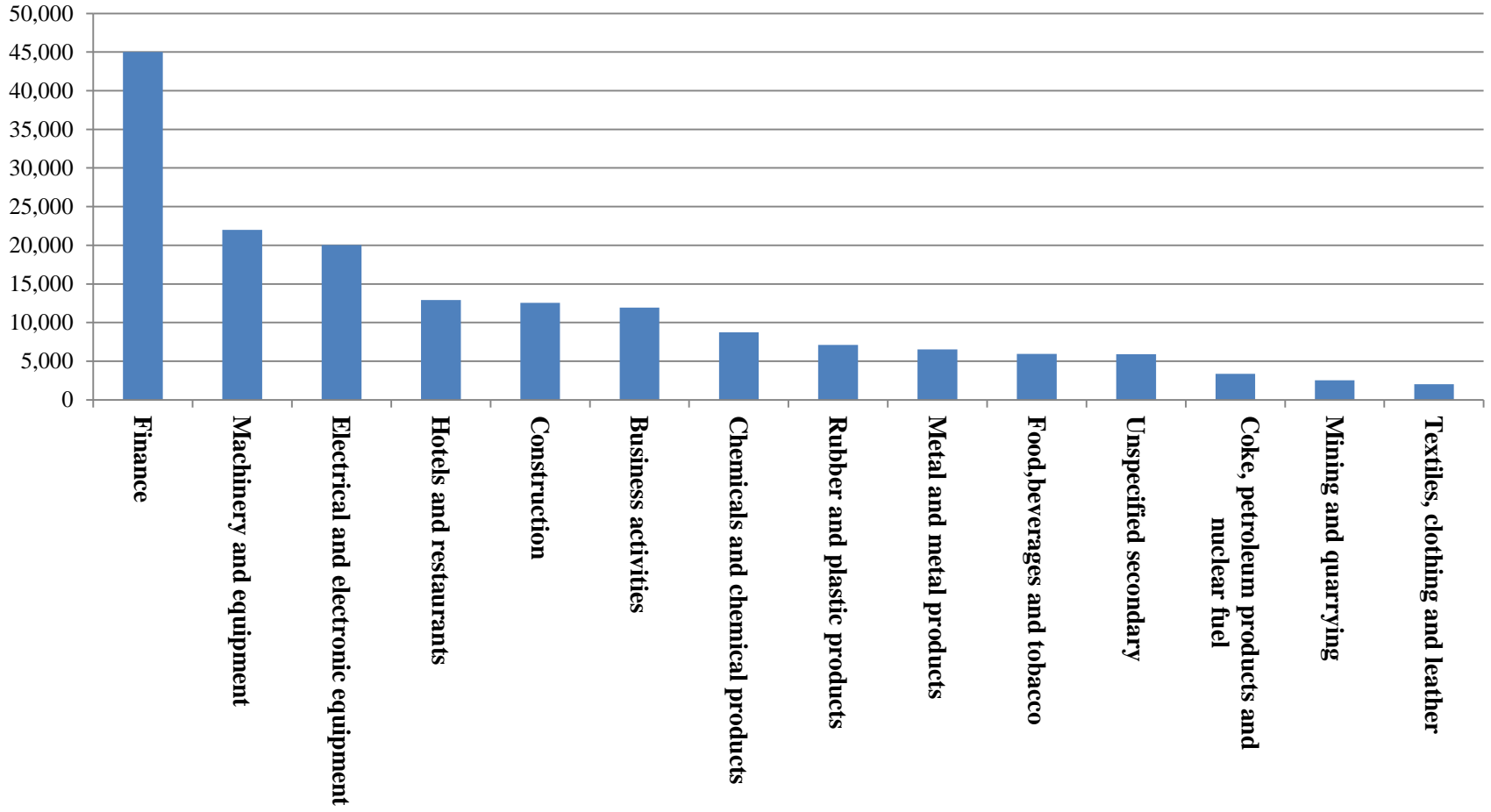
Thailand's major Industries

Weight in MPI



Thailand's FDI stock (2012)

USD million



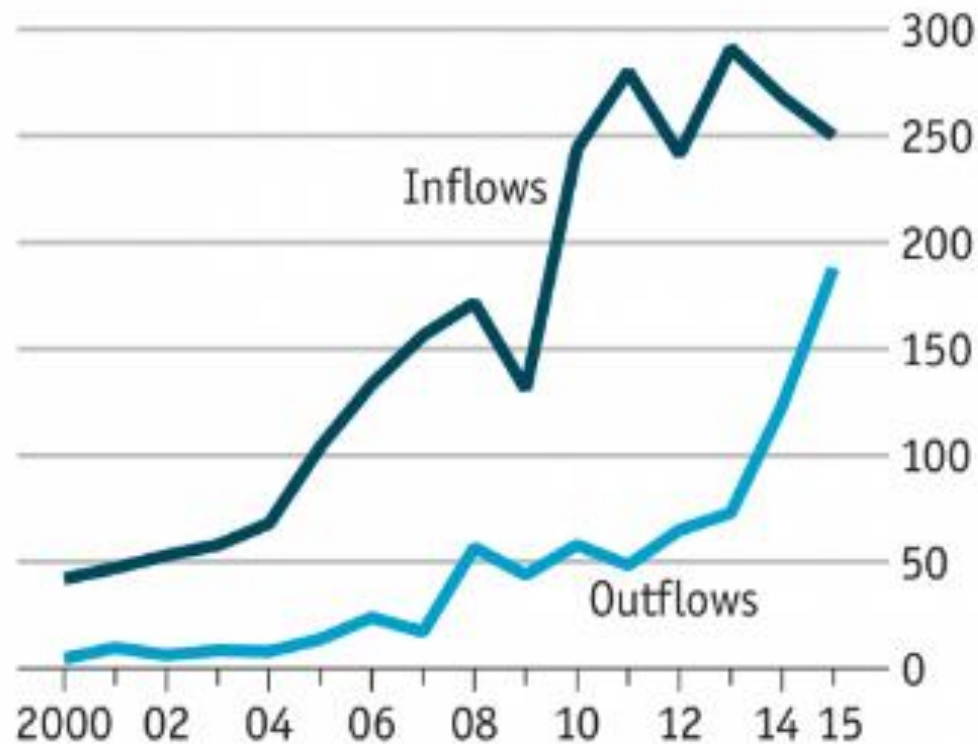
FDI-driven growth

- FDI has always been the lifeline to Thailand's industrial development.
- With strong value of the baht, rising wages, and political uncertainty, foreign direct investment has been directed to other countries in the region; thereby constraining capacity output growth and competitiveness of the industries.

China's inflows of foreign investment

Not so hot

China, foreign direct investment, \$bn



Source: World Bank

China's eight emerging industries

- China's emerging industries have a great need for development in terms of technological innovation and national development and play a leading role in the long-term development of the society as a whole.
- The emerging industries announced last year by China's National Bureau of Statistics include **eight** major industries:
- *Energy-efficient and environmental technologies, next-generation information technology (IT), biotechnology, high-end equipment manufacturing, new energy, new materials, **new energy vehicles**, and digital technology.*

China's Industry Development Strategy

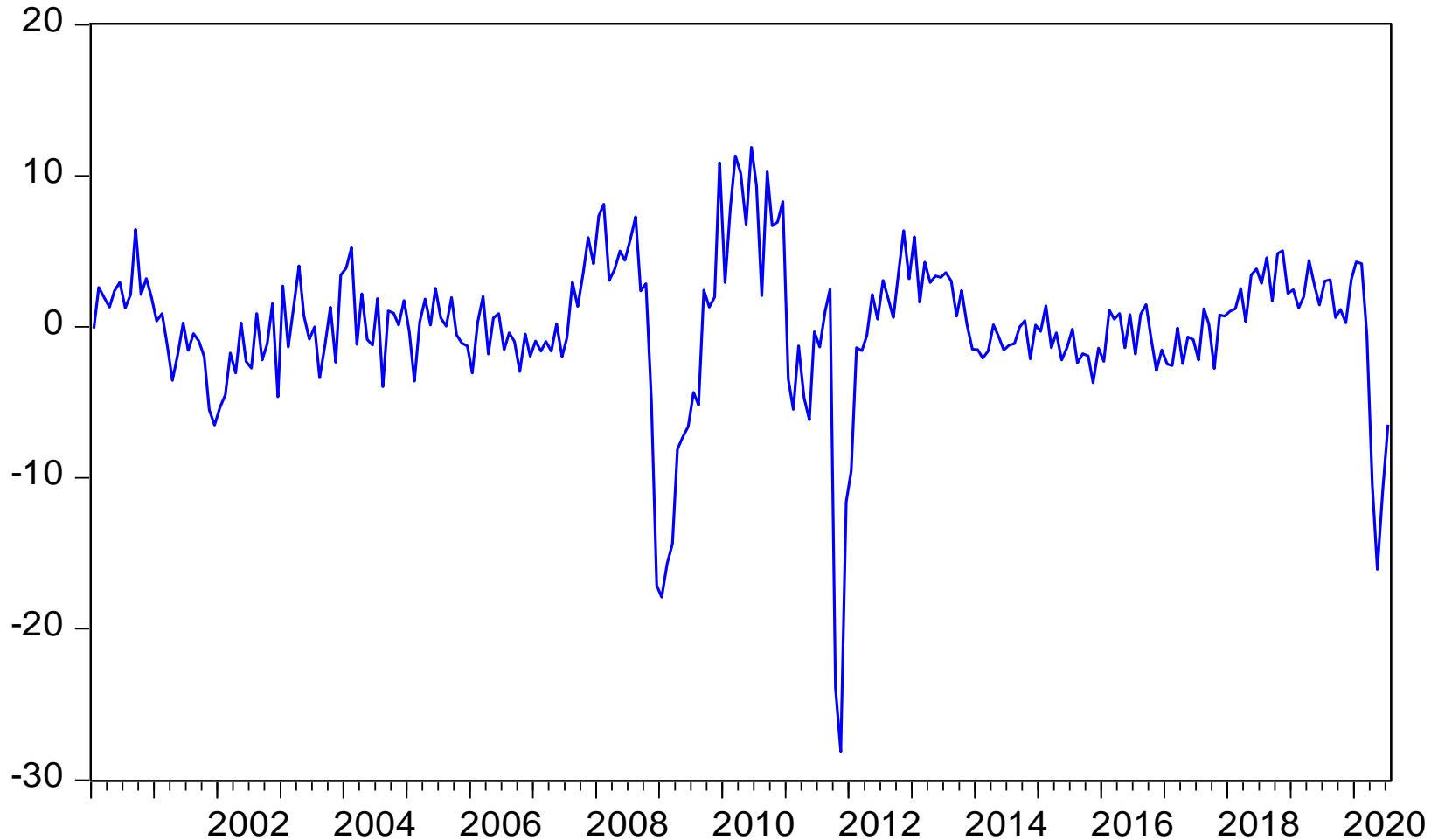
- The Chinese government has established **long-term goals** at the national level to foster emerging industries and is implementing national strategies to achieve them.
- First, through participation in *the international technology standardization process*, China is aiming to enhance its competitiveness.

China's Industry Development Strategy

- Second, China is *jointly conducting R&D* by providing an *infrastructure* and development environment favorable to *overseas companies*.
- Third, the Chinese government is striving **to maximize synergies** among industries.
- Fourth, the government aims to enhance competitiveness through a strategy that **reduces market intervention** and creates sound market order.

Shocks to Thailand's manufacturing production

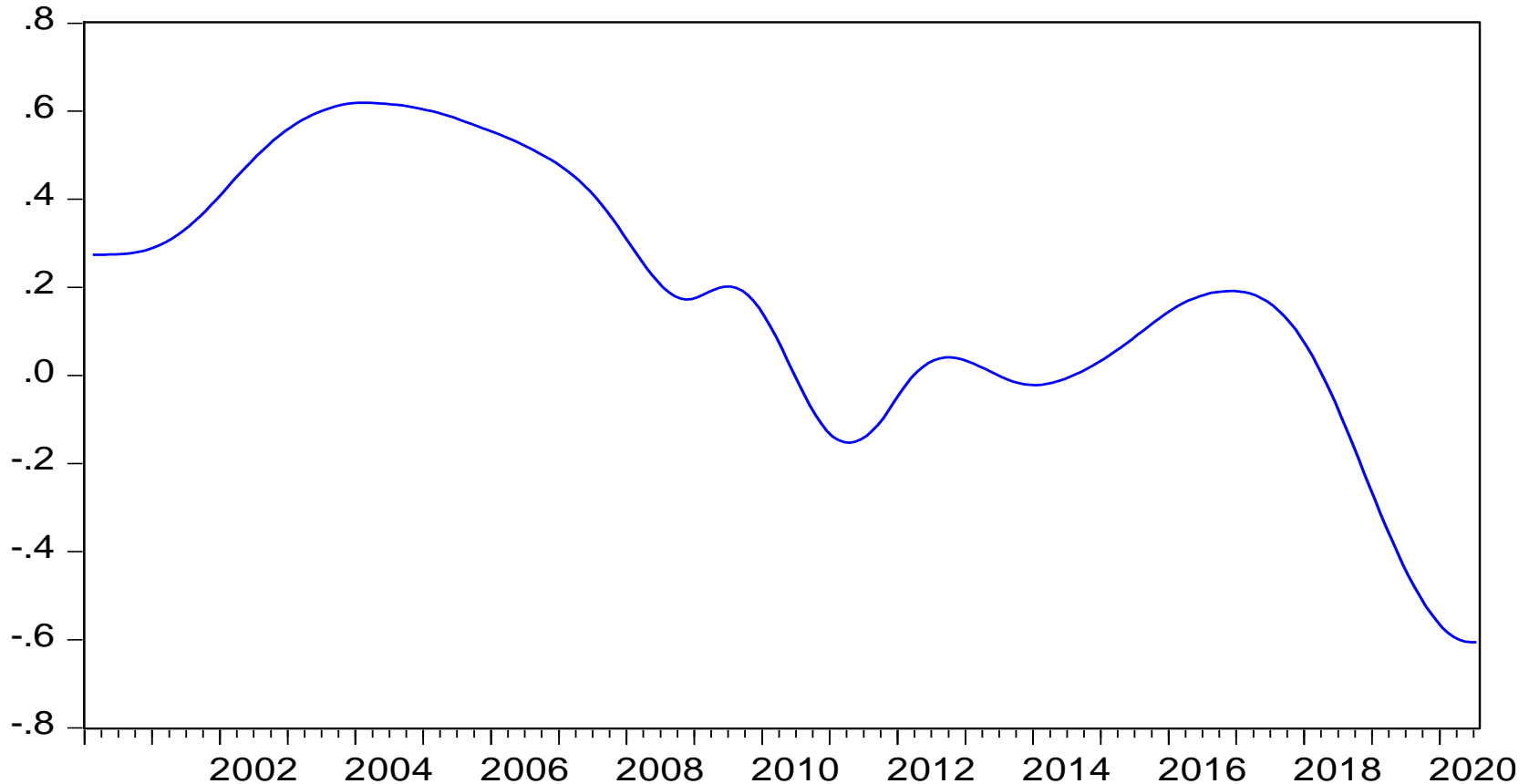
Deviation from Trend Path (percentage)



Claiming hills and falling off cliffs

Dynamism of long-term MPI

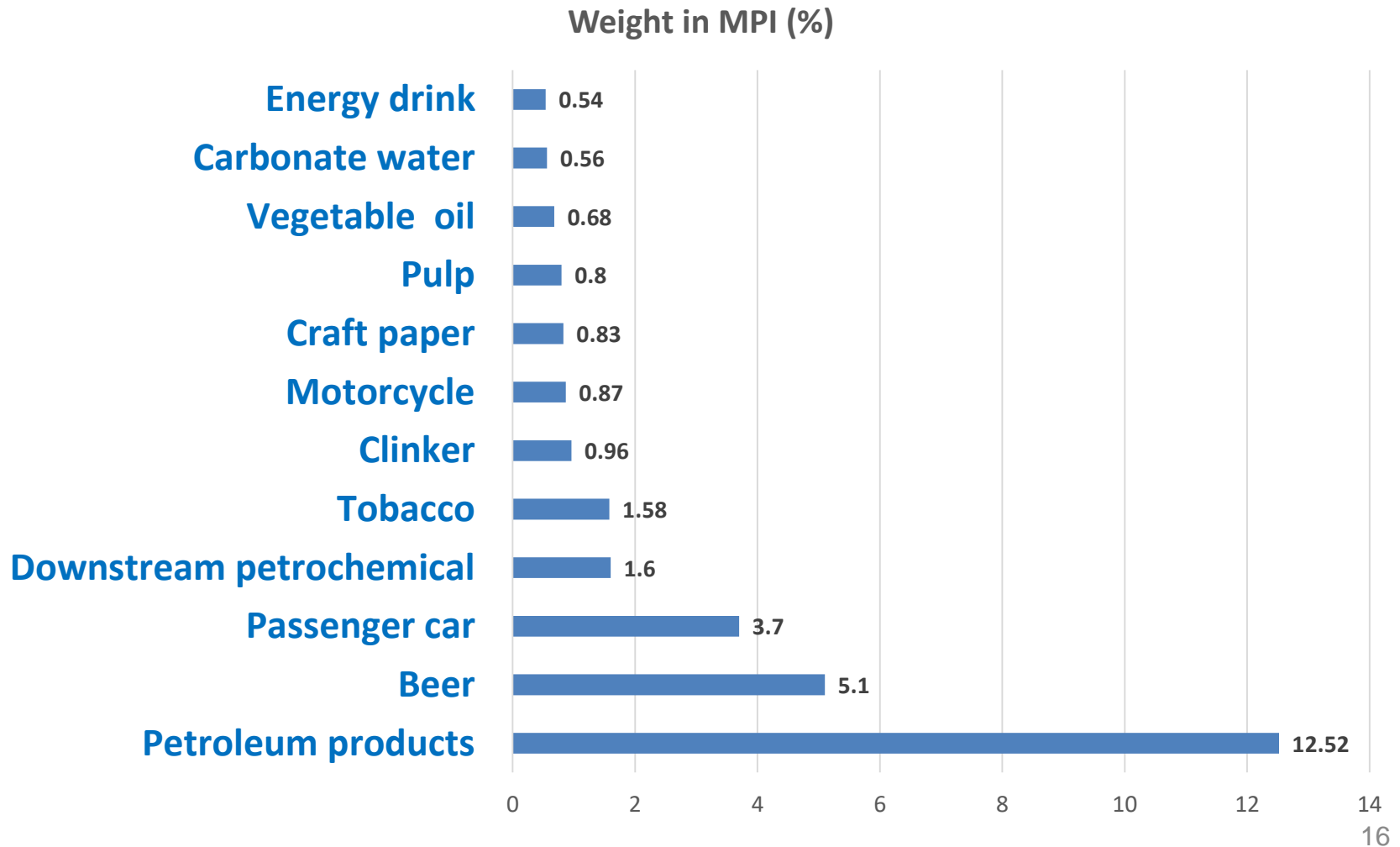
D(TREND)



Different industries were hit by different degrees, according to their global market exposures

Domestic market-oriented Industry and its significance

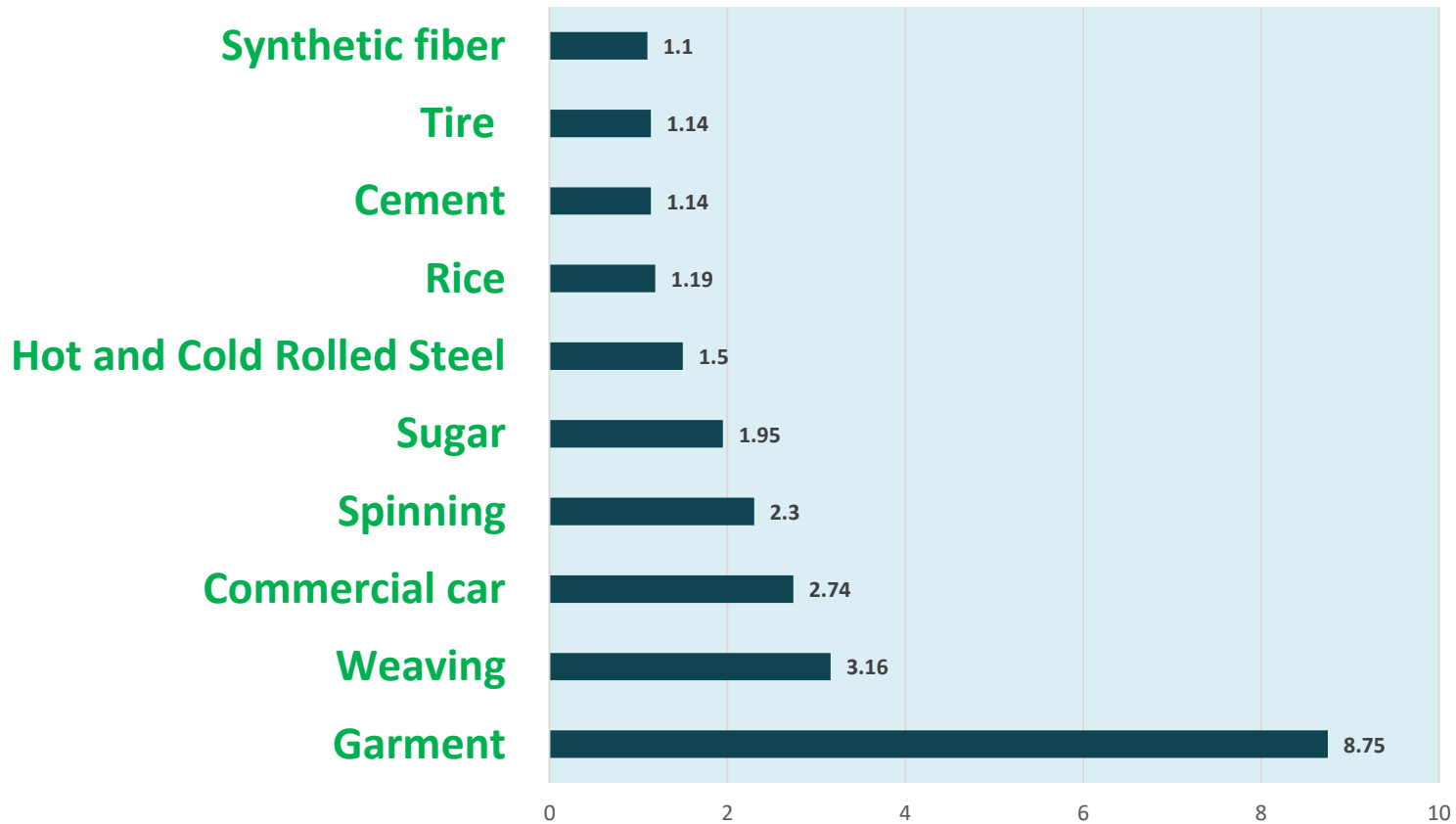
(Export-output ratio < 0.3)



Export market-oriented Industry and its importance:

$$0.3 < (X/Q) < 0.6$$

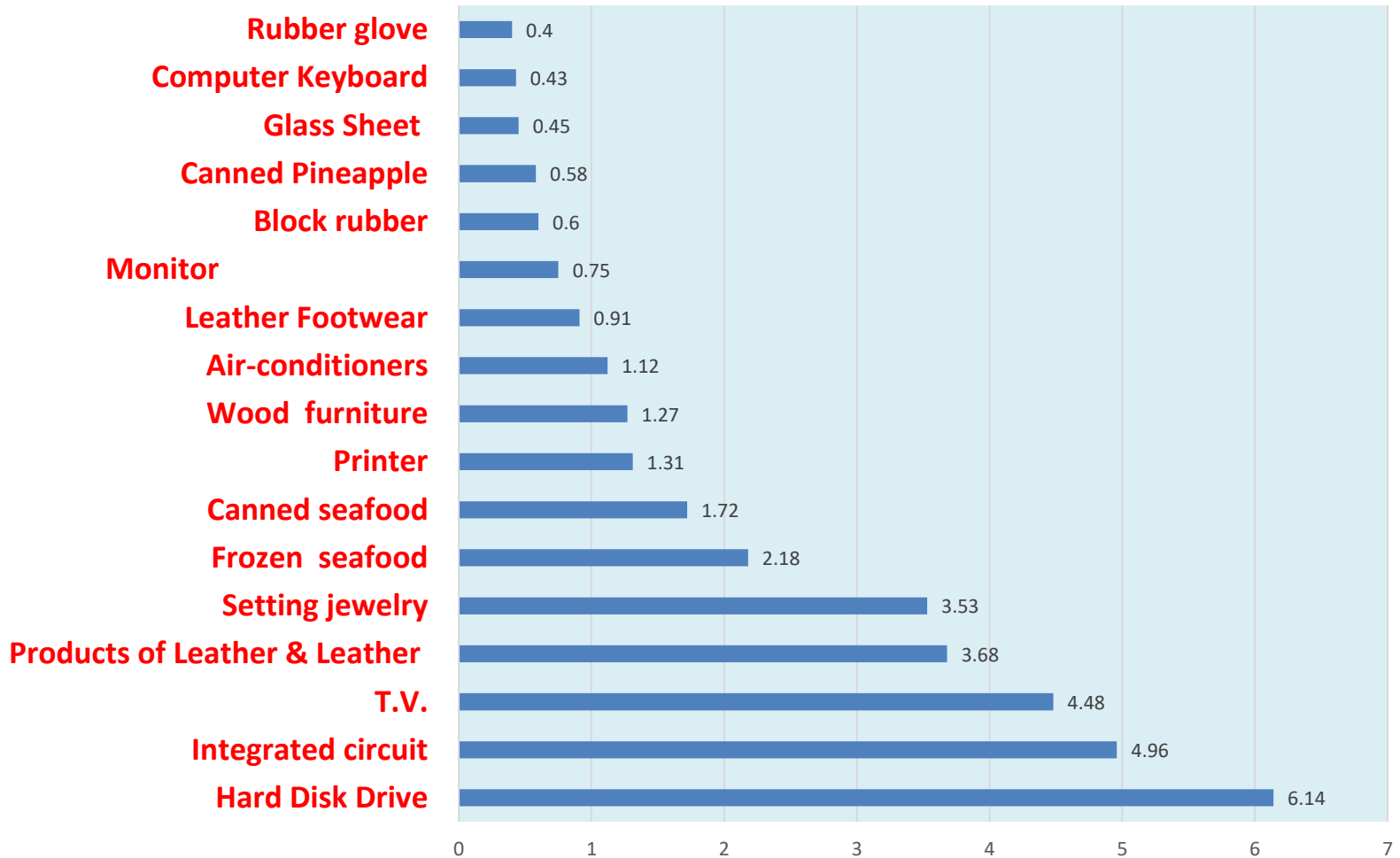
Weight in MPI (%)



Ultra export market-oriented Industry:

$X/Q > 0.6$

Weight in MPI (%)



2. Global Competitiveness

- A country's future prosperity depends on its **growth in productivity**, on which government policies can influence.
- Nations compete to choose policies to promote higher living standards.
- International Institute for Management Development (IMD) and **World Economic Forum (WEF)** have their own ways of measuring competitiveness.

Paul Krugman

"Competitiveness: a dangerous obsession."

Foreign affairs (1994): 28-44.

- International trade is **not** a zero-sum game.
- Countries do not compete in the same way as companies.
- When two countries compete through trade, they both win, either experience trade deficit or surplus.
- Recall Adam Smith's gains from exchange and specialization

Paul Krugman

different in principle from asking whether General Motors is competitive in the North American minivan market.

In fact, however, trying to define the competitiveness of a nation is much more problematic than defining that of a corporation. The bottom line for a corporation is literally its bottom line: if a corporation cannot afford to pay its workers, suppliers, and bondholders,

it will go out of business. So when we say that a corporation is uncompetitive, we mean that its market position is unsustainable—that unless it improves its performance, it will cease to exist. Countries, on the other hand, do not go out of business. They may be happy or unhappy with their economic performance, but they have no well-defined bottom line. As a result, the concept of national competitiveness is elusive.



A trade surplus may be a sign of national weakness, a deficit a sign of strength.

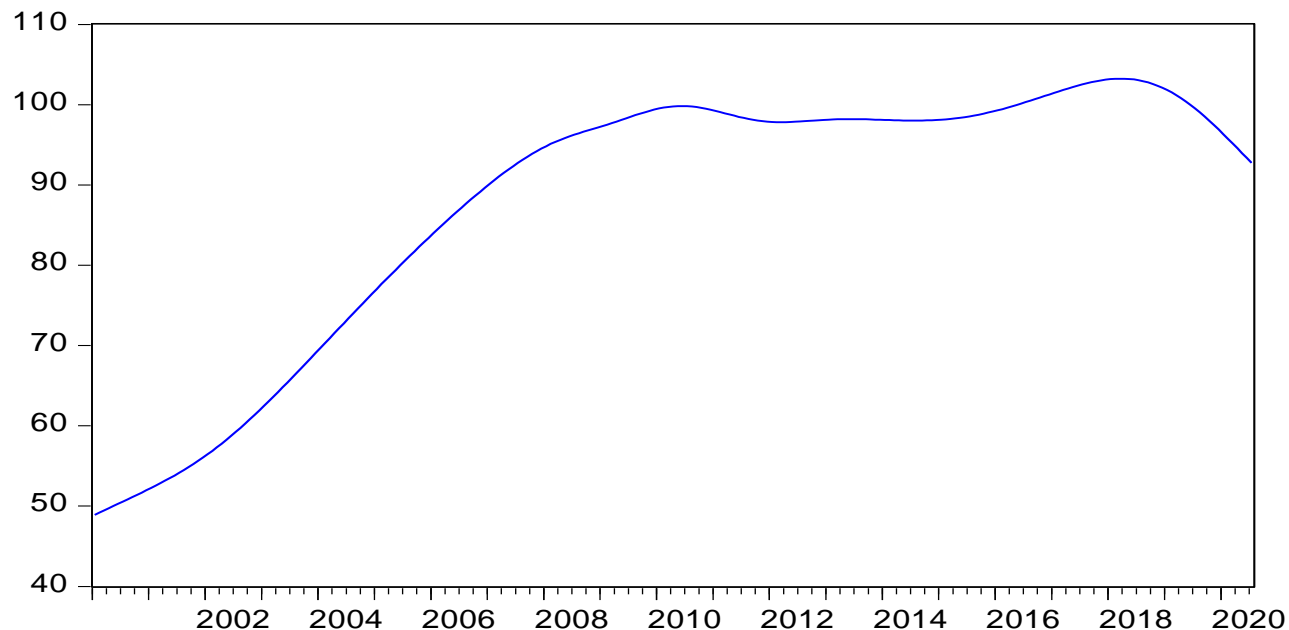
Competitiveness *of a nation* is not well defined by the bottom line (current account)

- If an uncompetitive company is losing money (negative at the bottom line), the company will go out of business unless it improves its performance.
- Countries do not go out of business when their trade balances are deficit.
- They may be happy or unhappy with their economic performance, but they have no well-defined bottom line.
- The concept of national competitiveness is elusive, says Krugman.

Jeffery Sachs' definition of Competitiveness

“Competitiveness” is **not** a meaningless word. Sachs defines “competitiveness” as ***The ability of a country to achieve sustained high rates of growth in GDP per capita***

Trend of Manufacturing Production Index (MPI)



Jeffery Sachs

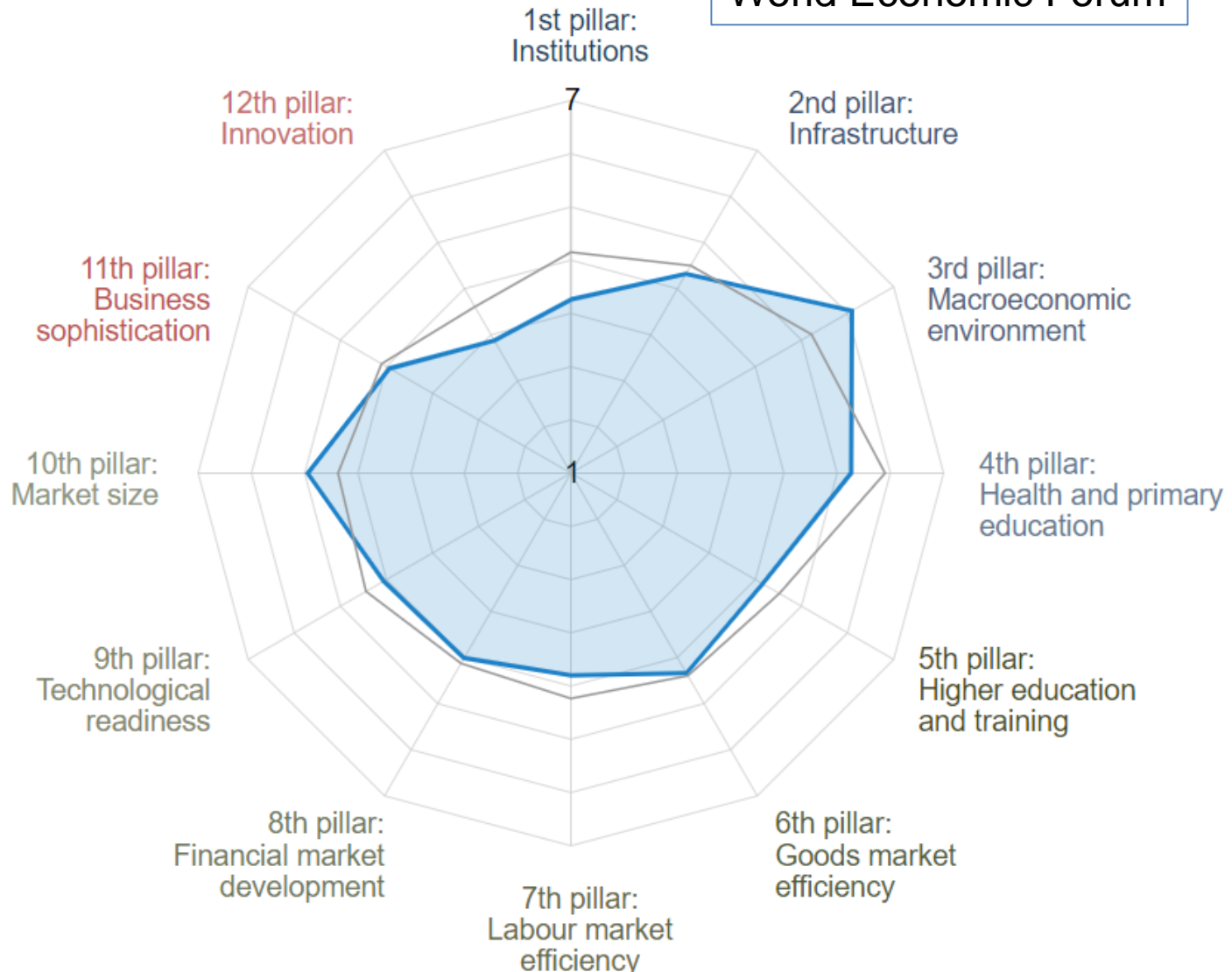
Competitiveness and GDP growth relationship

He found a fairly **strong** *correlation* between recent growth rates and the competitiveness index.

- Critique to Sachs' definition: Correlation between the two variables does not guarantee that the competitive index will be a good predictor of economies' future growth prospects.

Thailand vs East Asia and Pacific's Global Competitiveness Index

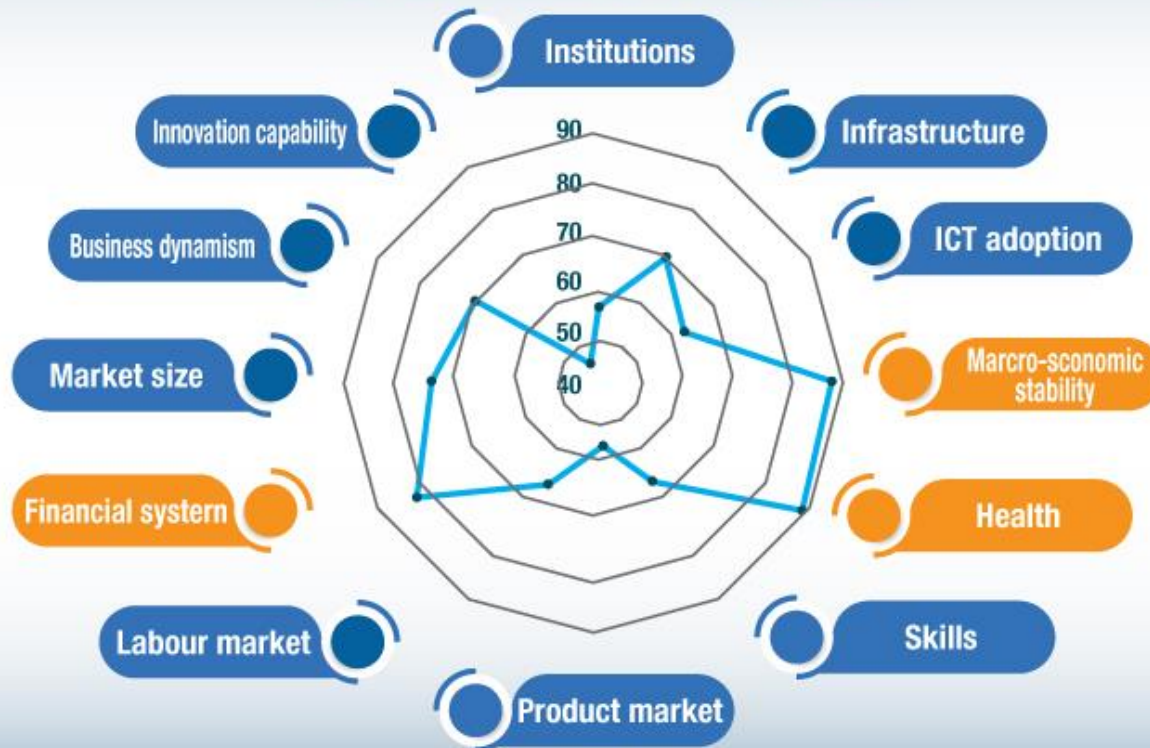
World Economic Forum



Thailand's ranking among 141 economies has dropped to 40th place from 38 in 2018 in the WEF Global Competitiveness Index.

Thailand's Best Performance in 12 Pillars

Performance Overview

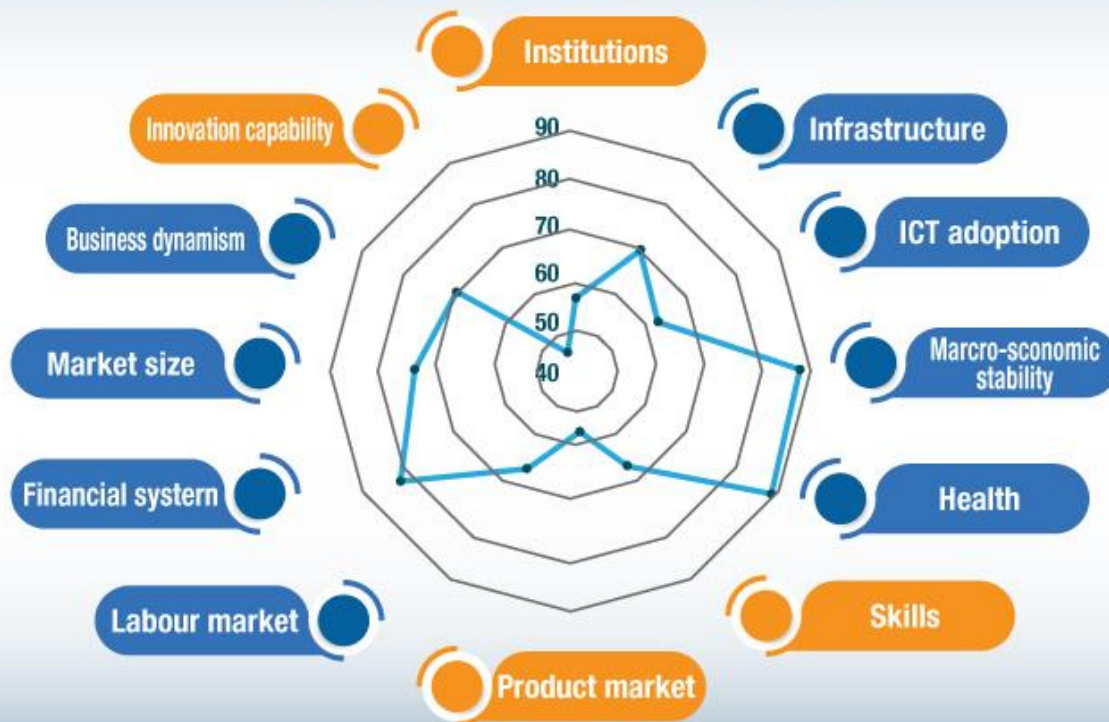


Global Competitiveness 2019

The four weak (orange) pillars

Thailand's Weaknesses in 12 Pillars

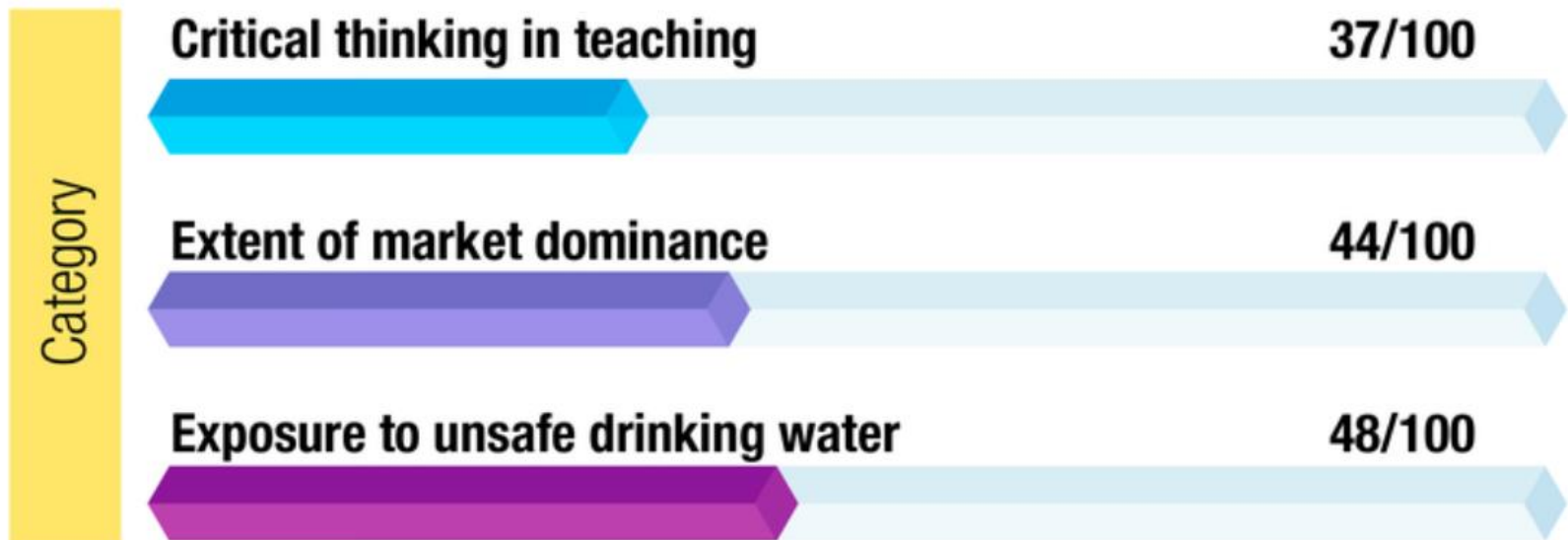
Performance Overview



Source: WEF

Challenges: How to catch up with Singapore and not be overtaken by Vietnam

Thailand's lowest scores in the Global Competitiveness Index 2019



Source: WEF

Thailand's labor productivity between 2000 and 2010 grew 3.6 % per year, compared to 12.3 % in China, 5% in Vietnam

If labor productivity growth lags behind wage hikes, competitiveness deteriorates

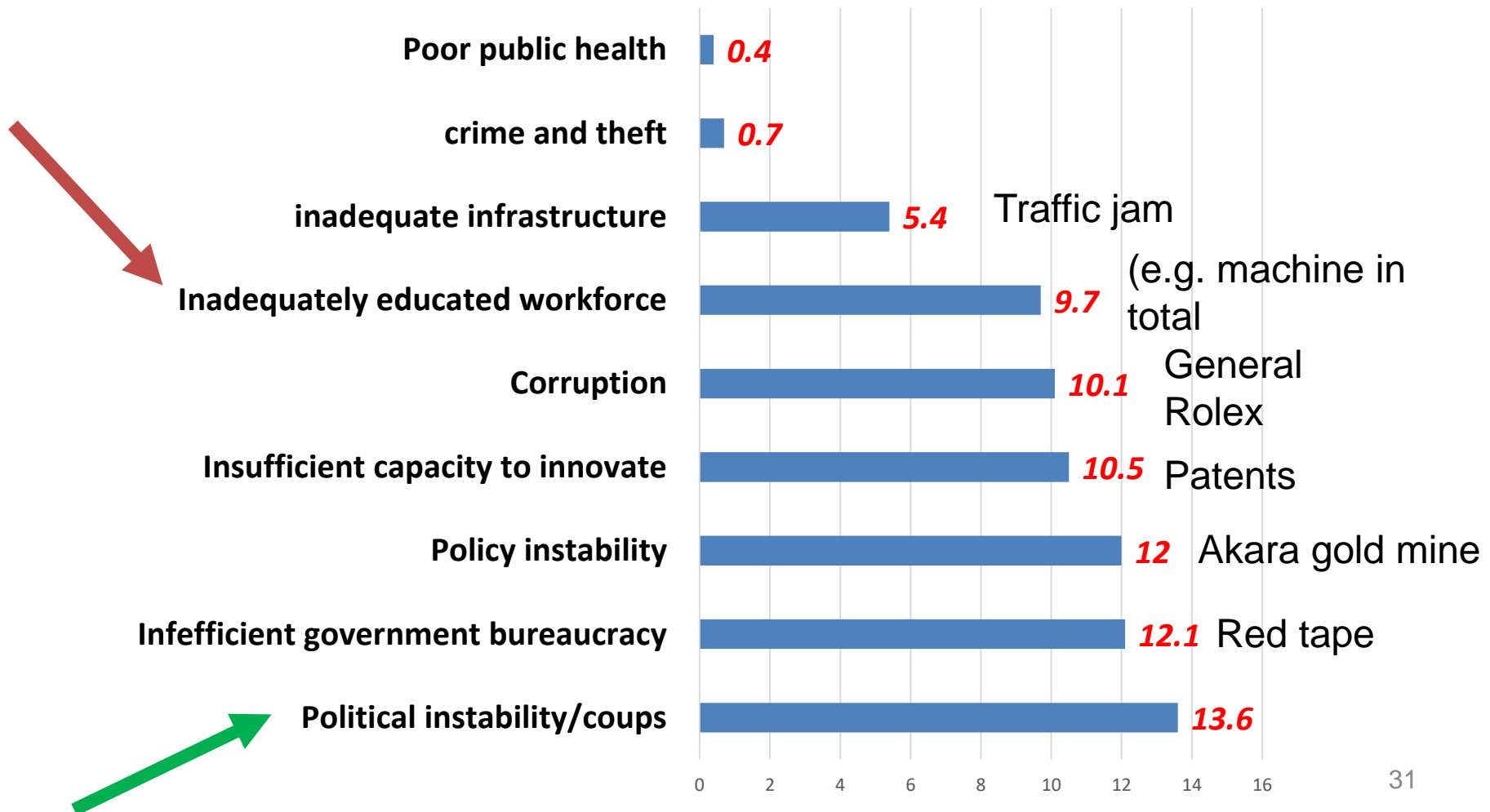


Myths about the causes of productivity

- Michael Porter (1985) “low wages , rather than being a boost to competitiveness, were a sign of failure”
- The ability to compete despite paying high wages is a far more desirable goal of a nation.
- International success comes from creating and selling things of high added value, which meaning cutting edge research and design, the most advanced production techniques, and a highly skilled and educated work force.

World Economic Forum identifies problems

Problematic factors for doing business in Thailand, 2018



Inadequately educated workforce



Program for International Students Assessment

OECD PISA 2018 MEAN RESULTS (CONDENSED)

Countries	Reading	Science	Mathematics
1 B-S-J-Z* (China)	555	590	591
2 Singapore	549	551	569
3 Macao (China)	525	544	558
4 Hong Kong (China)	524	517	551
5 Estonia	523	530	523
6 Canada	520	518	512
7 Finland	520	522	507
8 Ireland	518	496	500
9 Korea	514	519	526
10 Poland	512	511	516
11 Sweden	506	499	502
12 New Zealand	506	508	494
13 United States	505	502	478
14 United Kingdom	504	505	502
15 Japan	504	529	527
16 Australia	503	503	491
17 Chinese Taipei	503	516	531
18 Denmark	501	493	509
19 Norway	499	490	501
20 Germany	498	503	500
56 Malaysia	415	438	440
60 Brunei Darussalam	408	431	430
66 Thailand	393	426	419
73 Indonesia	371	396	379
78 Philippines	340	357	353
OECD Average	489	487	489

THAILAND



66/78

Reading



1st B-S-J-Z* (China)
78th Philippines

Data not available from Spain

Science



52/79

1st B-S-J-Z* (China)
79th Dominican Republic

Mathematics



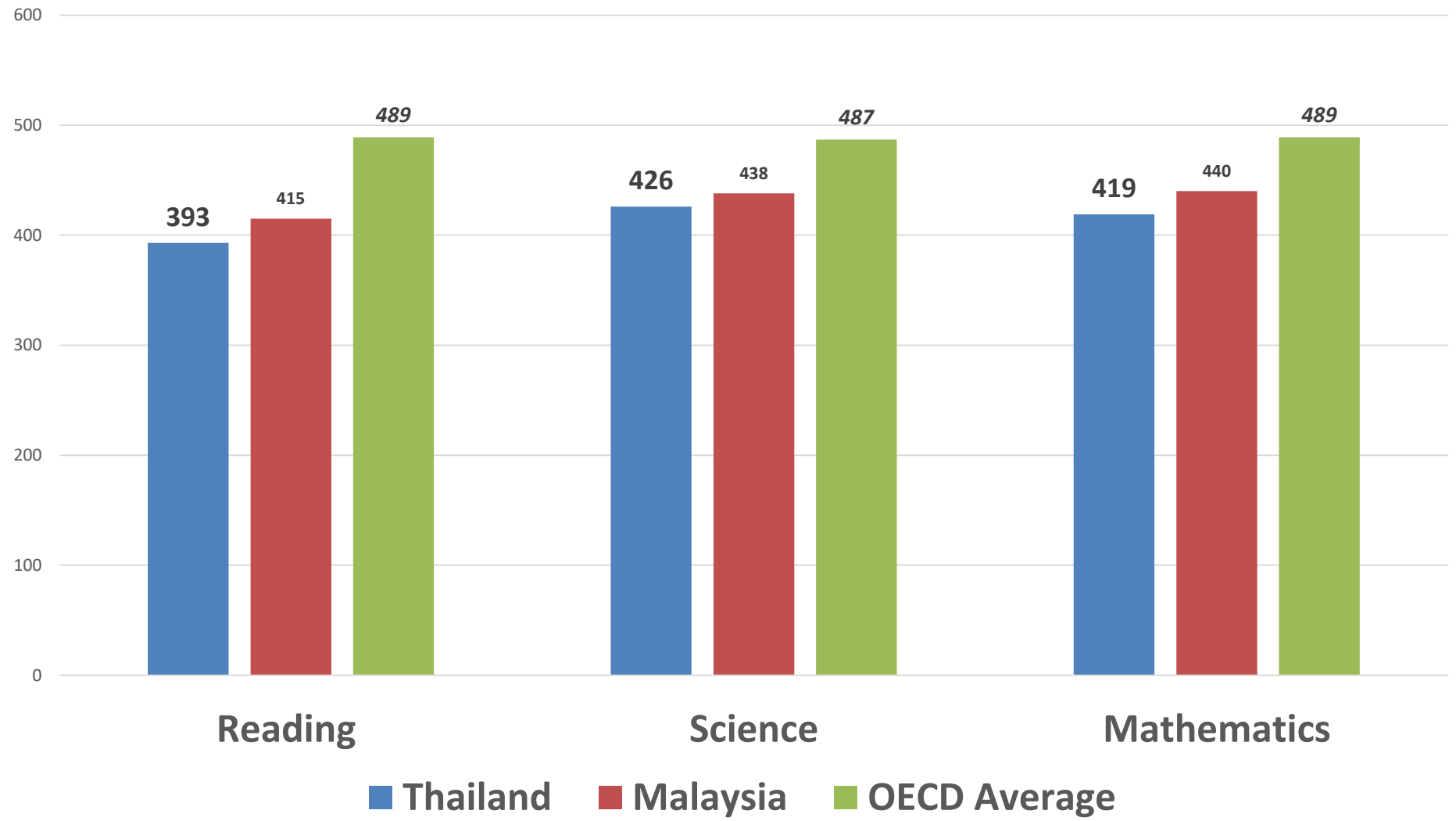
56/79

1st B-S-J-Z* (China)
79th Dominican Republic

Note: *B-S-J-Z refers to Beijing, Shanghai, Jiangsu and Zhejiang

**Countries are ranked in descending order of the average reading score (focus of Pisa 2018)

PISA 2018



Countries with high per capita income obtained high *PISA* scores

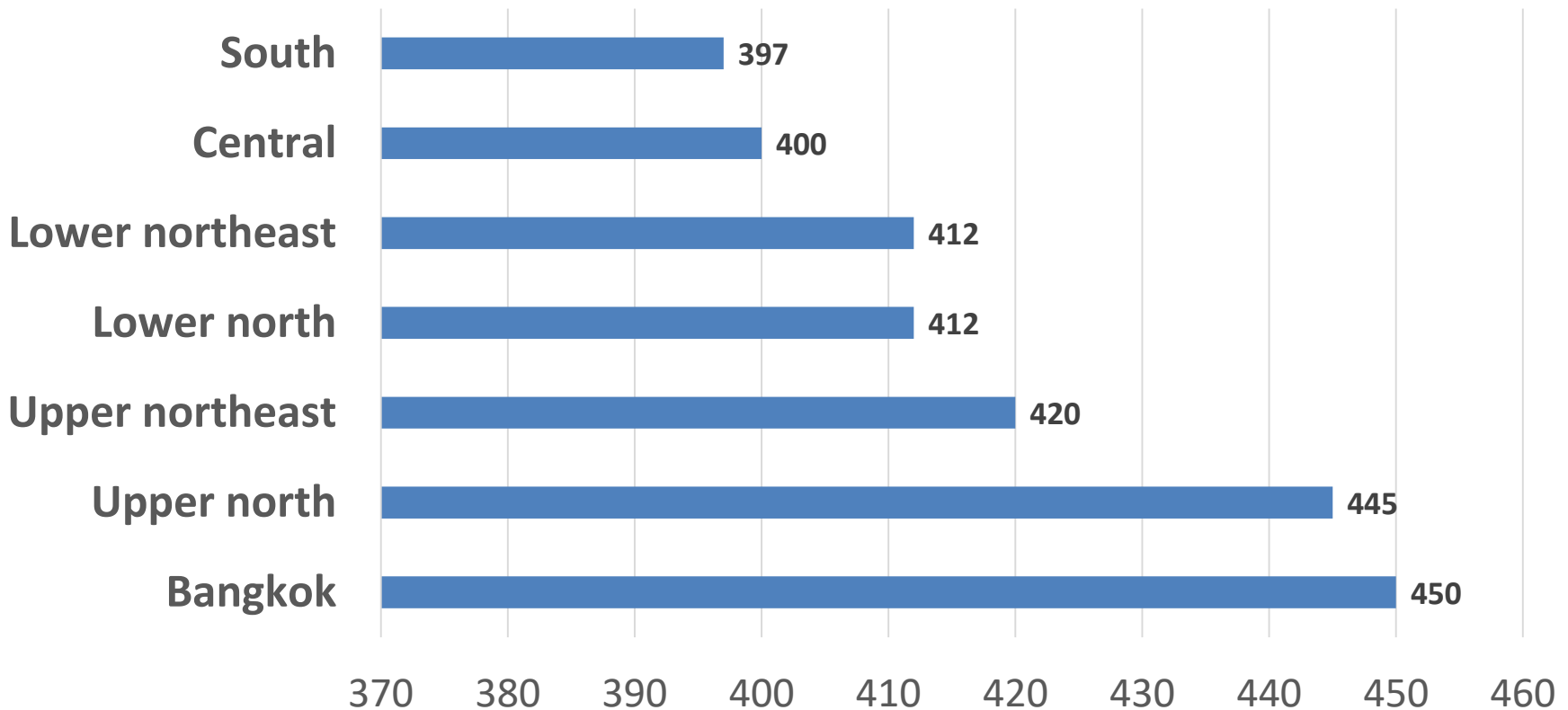
- High-income countries can afford high salaries for attracting able teachers and high-quality facilities including computer and science laboratories.
- High per capita income (based on PPP) implies high *cognitive ability* as students were less unlikely to be deprived of food and calories intake.
- High-income parents can afford private tuition and cram school for their children.
- Teaching job in high-income countries can be a well-respected and often well-paid occupation.

Thai girls scored higher than boys

- About **600,000 pupils** from 79 countries, including 37 OECD nations, completed the latest test, which focused primarily on reading ability.
- In terms of gender equality, Thai girls scored higher than boys in **mathematics by 16 points**. Across OECD countries, boys outperformed girls by five points.
- While girls slightly outperformed boys in science (by two points) on average across OECD countries, in Thailand girls outperformed boys in ***science by 20 points***.

***Socio-economically advantaged students in Thailand
outperformed disadvantaged students in reading by
69 points in 2018***

PISA Math Scores in 2012



Thailand's reading performance in Pisa 2018 was lower than in any previous assessment

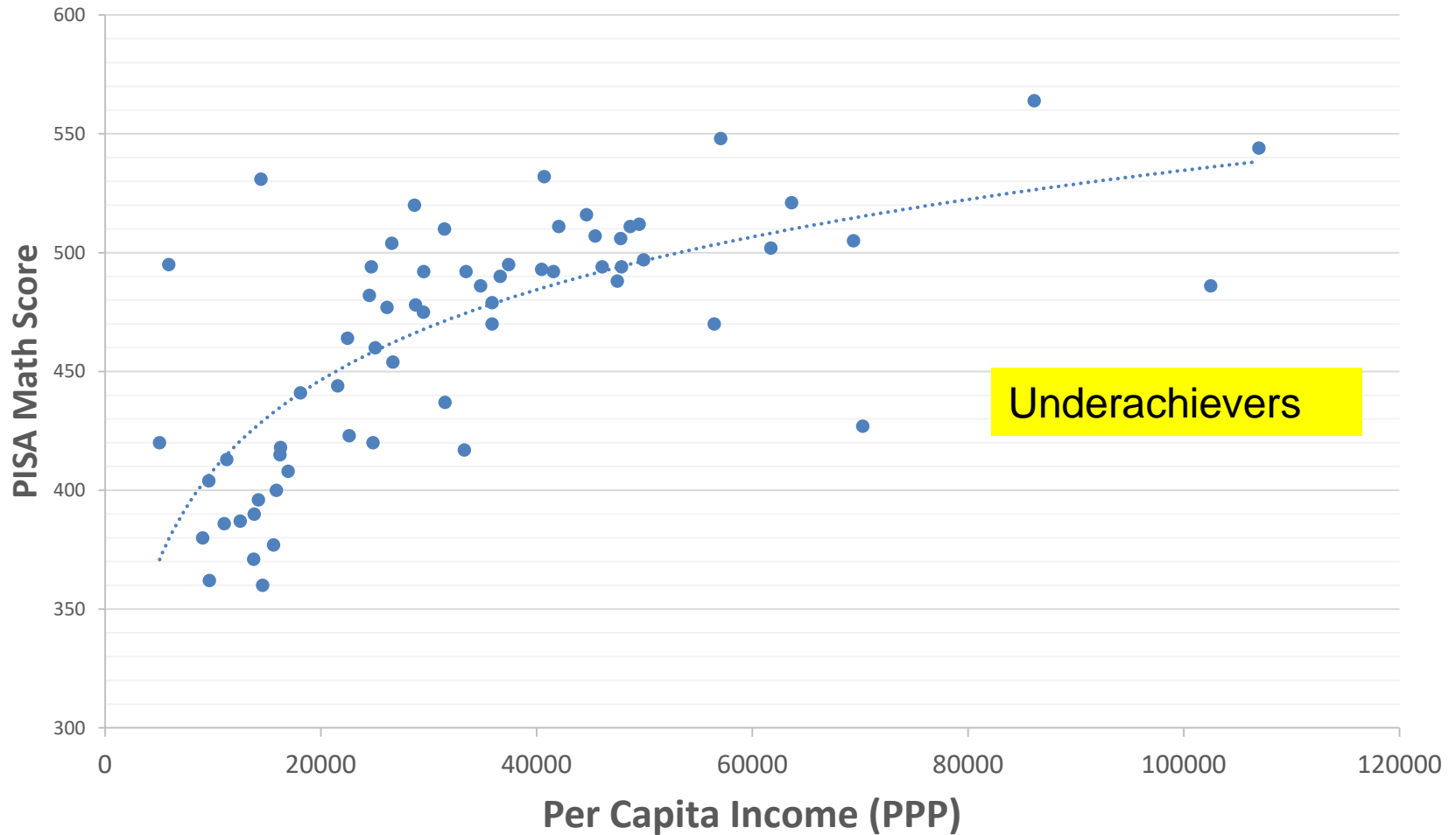


Does culture matter?

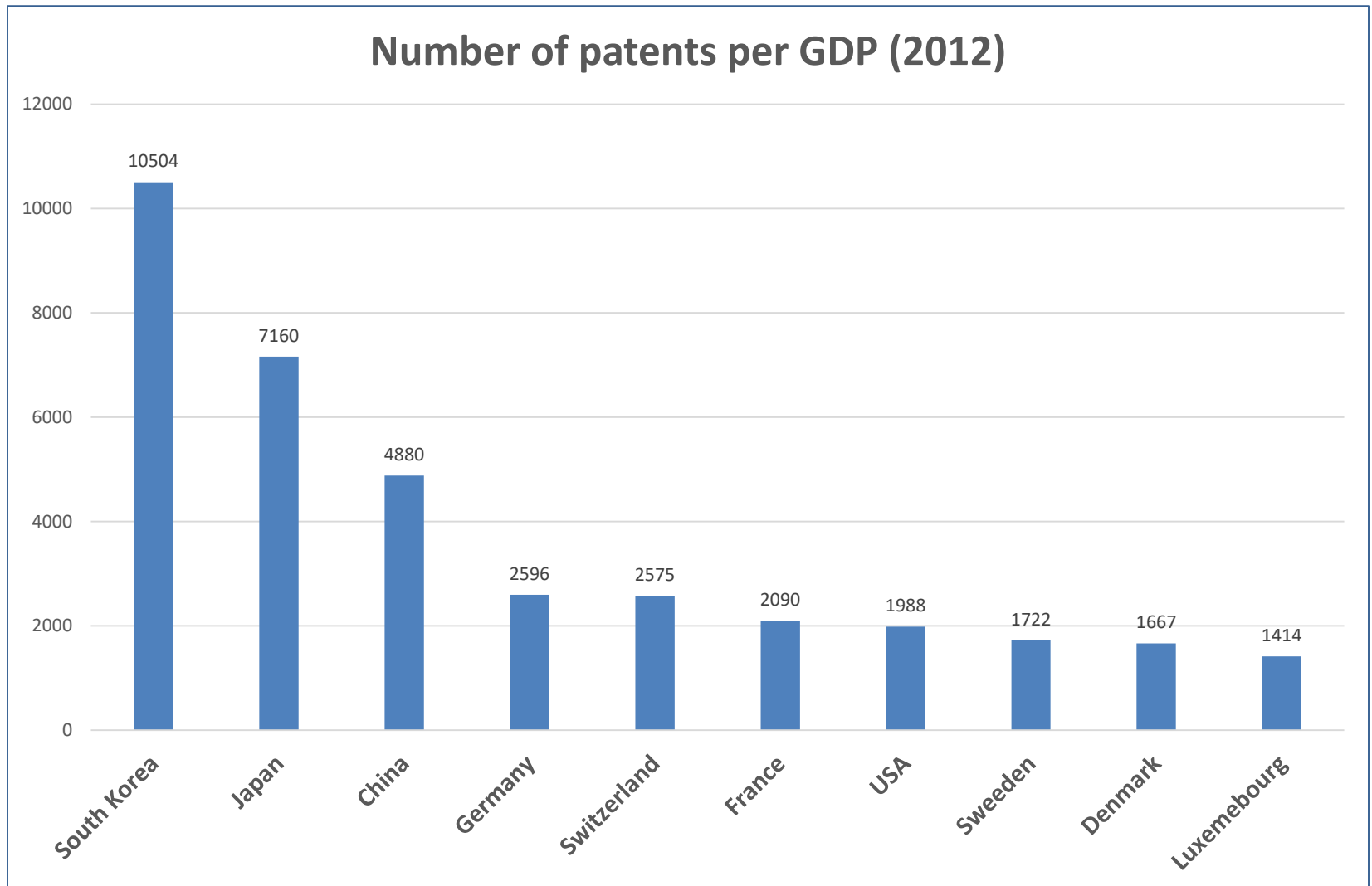
- The incremental impact of increased income on PISA is smaller when income grows higher.
- Some high-income countries can be underachievers, compared to other countries with the same level of per capita income.
- Six Asian countries among the over-achievers belong to **Confucius** tradition.

Income and Math PISA Scores: 2015

Source: OECD and World Bank



Japan, Hong Kong, South Korea, Taiwan, Macao, and BSJG-China: Cultural factor



Association between number of patents (innovation) and PISA scores

3. The BCG model

- Boston Consulting Group (BCG) model
- Export the commodities which are growing faster than world trade volume (high income elasticity of demand)
- Manufacture commodities which gain the world market share (revealing competitiveness)

Competitiveness is captured by the ability to increase world market share (Z)

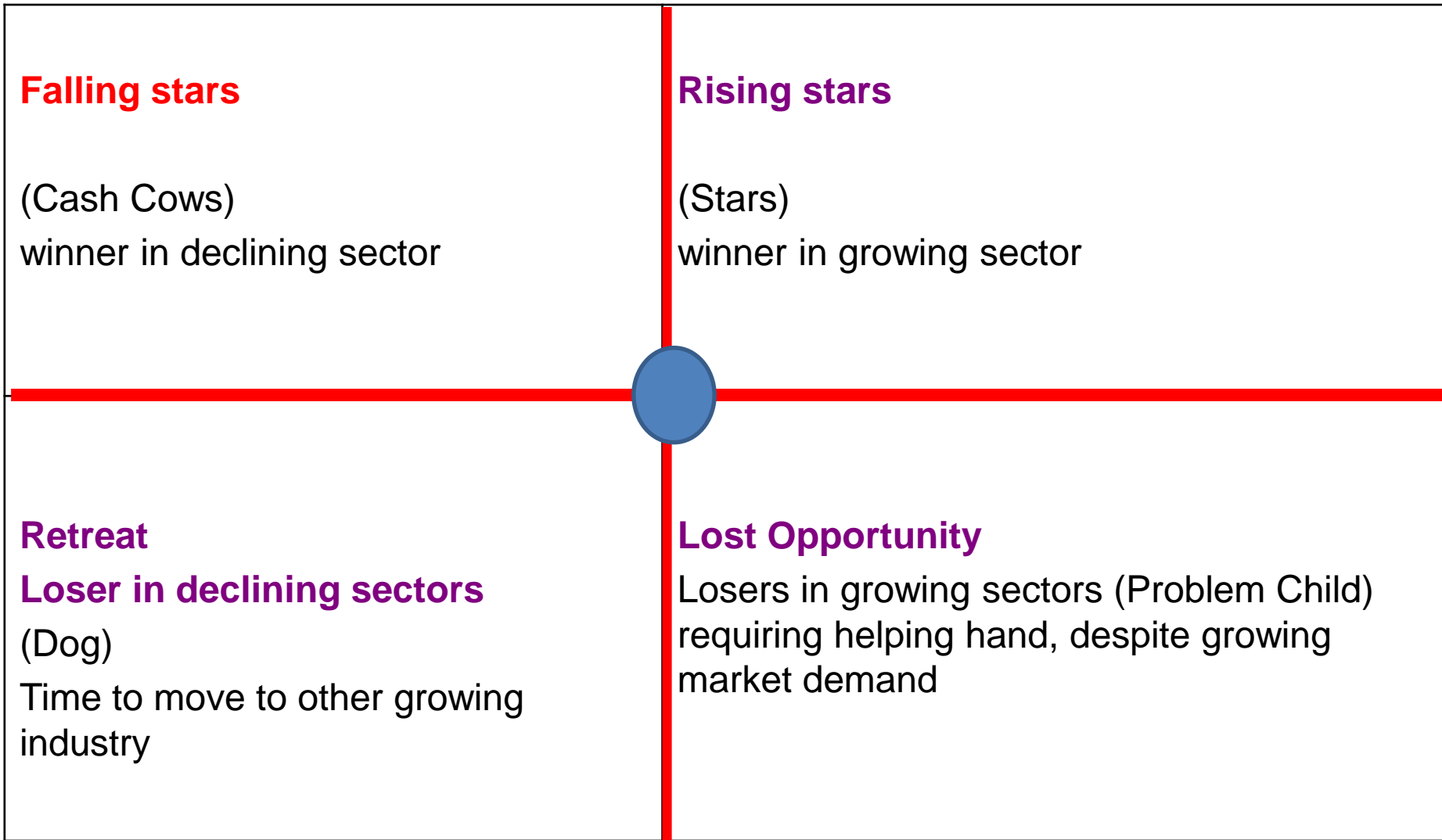
- International competitiveness is demonstrated by increasing the world market share (Z) of a particular export commodity.
- We can raise the market share in either growing markets (high income elasticity of demand) or declining markets (low--less than unity--income elasticity of demand)
- We must export dynamic commodities (increasing market share in total world trade)
- We must export commodities competitively (gaining world market share in that particular commodity).

Competitive Positioning

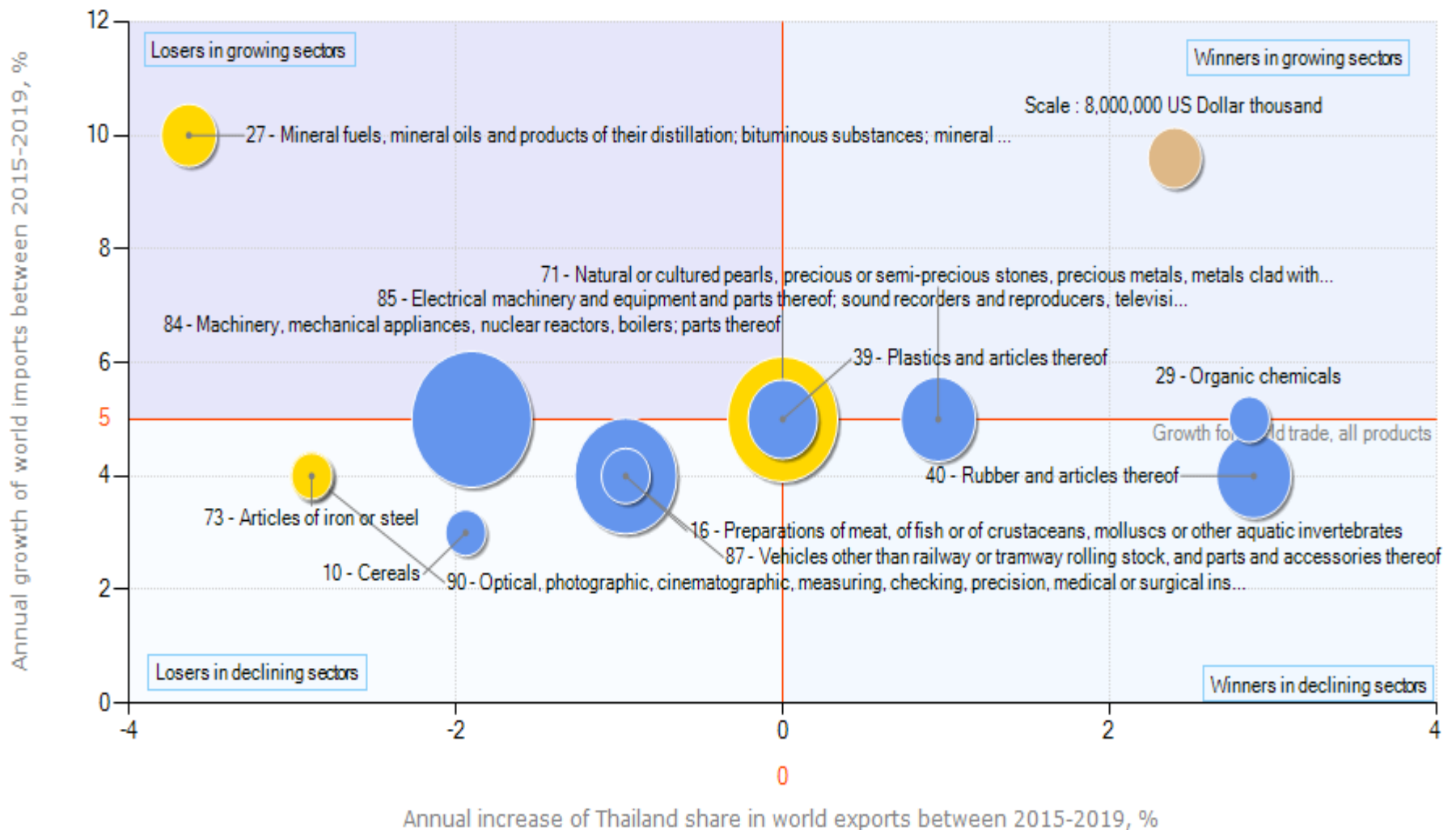
Revealed competitiveness ($\dot{Z} > 0$) and income elasticity of demand (η)

	<p>Declining share of that product in world trade ($\eta < 1$)</p> <p>Declining sectors</p>	<p>Rising share of that product in world trade ($\eta > 1$)</p> <p>Growing (dynamic) sectors</p>
<p>Gaining world market share ($\dot{Z} > 0$)</p> <p>Winners</p>	<p>Falling stars</p> <p>(Cash Cows) winner in declining sector</p>	<p>Rising stars</p> <p>(Stars) winner in growing sector</p>
<p>Losing world market share ($\dot{Z} < 0$)</p> <p>Losers</p>	<p>Retreat Loser in declining sectors</p> <p>(Dog) Time to move to other growing industry</p>	<p>Lost Opportunity</p> <p>Losers in growing sectors (Problem Child) requiring helping hand, despite growing market demand</p>

The BCG Metric



Growth of national supply and international demand for products exported by Thailand in 2019



● Thailand is a net importer for this product

● Thailand is a net exporter for this product

● Reference bubble

The bubble size is proportional to export value



Comparative Advantage or Competitive Advantage?

- **David Ricardo's** theory of comparative advantage rested on the assumption that a nation's natural endowment of resources and labor with sufficient capital would be enough for a country to become a successful trader.
- **Michael Porter** argued that such factor inputs become increasingly less important in a globalized economy, because it is not what you processed that made for success, but what you created.
- Many countries with abundant resources remain poor and underdeveloped, poor resource countries create environment which allows constant upgrading of skill, technology and infrastructure.
- Porter's competitive advantage is a **choice** rather than natural advantages.

Michael E. Porter (1990)

The Competitive Advantages of Nations

- There are two basic types of competitive advantages: **lower cost** and **product differentiation**.
- **Pure cost advantages** are less sustainable than **product differentiation**: Any new comer with lower costs can nullify a firm's cost advantage.
- Differentiation is the ability to provide ***unique and superior value to buyers*** in terms of product quality, special features, or after-sale service.
- Examples: differentiation in services provided by banks, supermarkets, and gasoline stations.

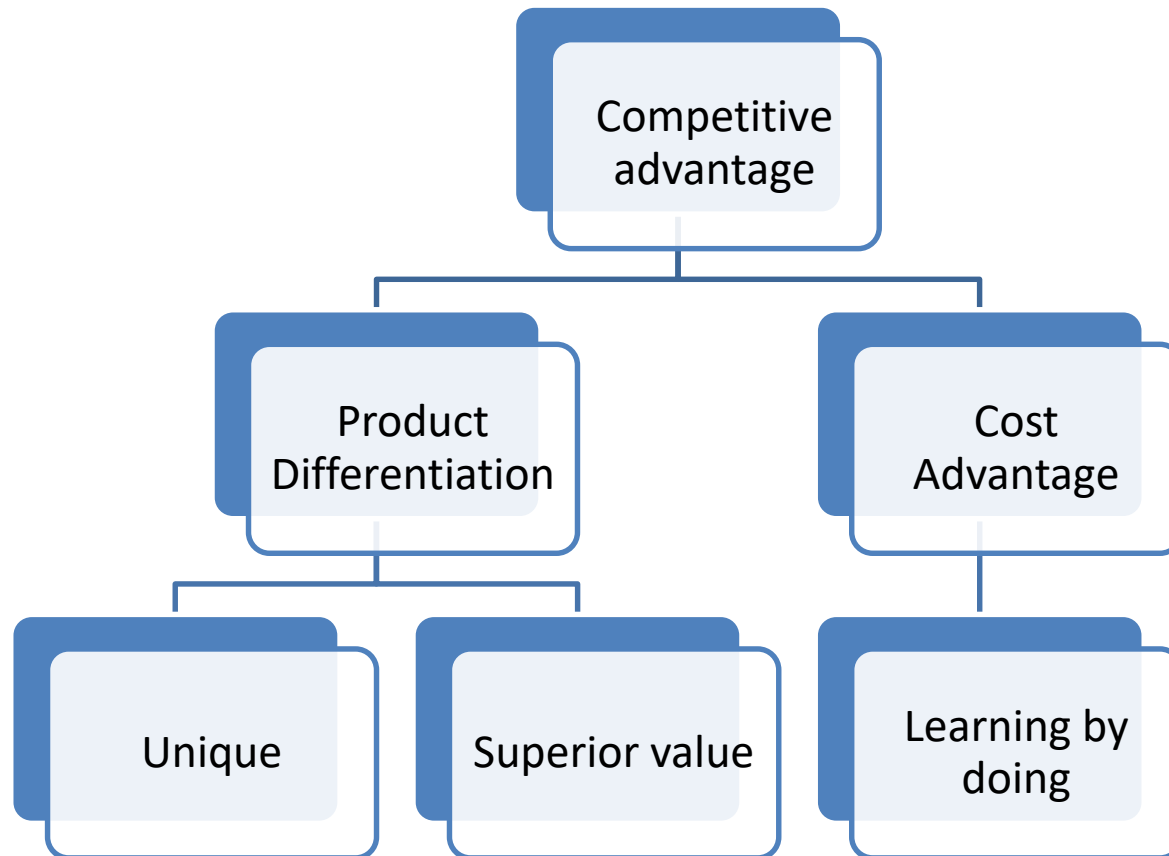
Michael Porter

- “A nation’s industries are either upgrading and extending their competitive advantages or are falling behind.”
- The best thing that governments can do to increase national economic advantage is to ensure there is lively competition in local industries, which pushes companies to create world-beating products and services that can be exported.

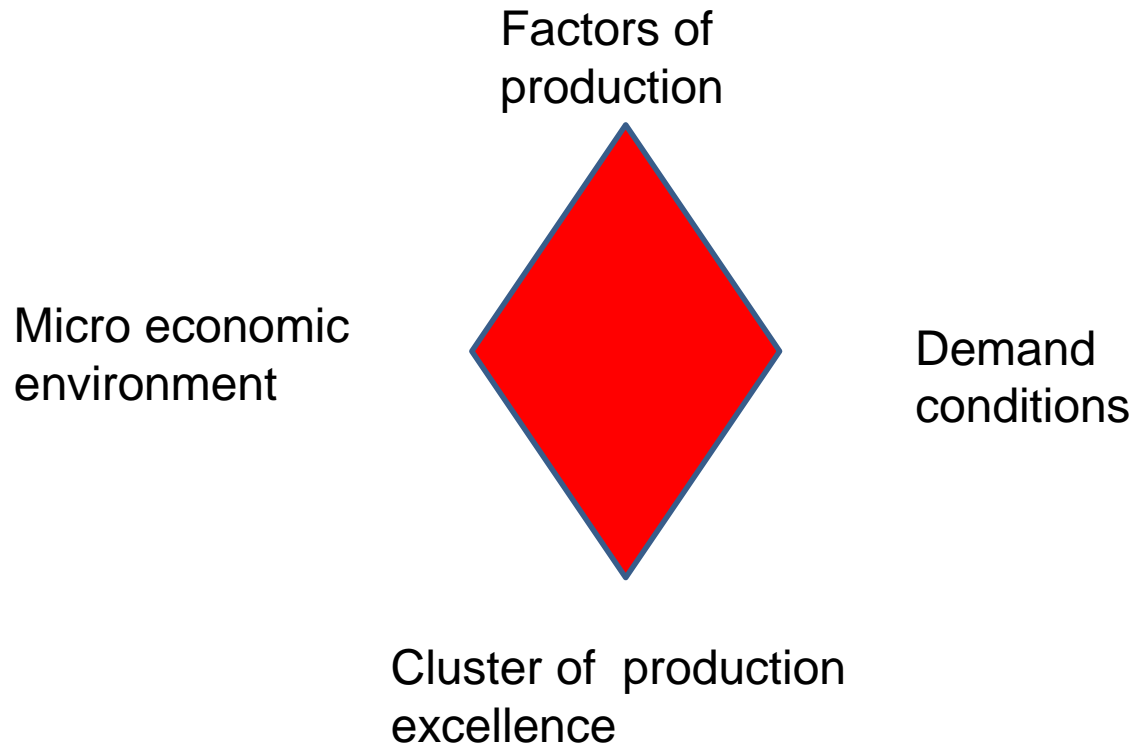
Advices from Michael Porter

- **Differentiation** allows a firm to command a **premium price**, which leads to superior profitability provided costs are comparable to those of competitors.
- Pure cost advantages are more vulnerable because new product designs or product **differentiation can eliminate** cost advantage.
- The government can raise the probability of gaining competitive advantage but lacks the power to create advantage by itself.

Pure cost advantages are more vulnerable



“Diamond” theory of the determinants of competitiveness



The success diamond

- Factors of production: skilled and educated workers, infrastructure, stock of scientific, technical, and market knowledge, and capital resources
- Demand conditions: consumer discernments of particular products and services
- Clusters of supporting industries, which are internationally competitive
- Microeconomic environment: legal and political conditions affecting how firms are created and structured to produce rivalry and competition among them

A diamond gets stronger as each point reinforces each other

- German consumers, passion for precision and quality was a key factor in its car makers designing and engineering the best cars in the world.
- In the U.S. the demand for millions of mass affordable mass market cars which could get people comfortable from point A to B
- Italy loves of clothes and cars spawned Gucci and Ferrari.
- America's penchant for credit spawned leadership in Visa and Mastercard. Its talent for popular culture and entertainment pushed the movie industry to be world-dominant

Is the role of government the fifth diamond?

- Can the government create national competitive advantages?
- The government role is not to create the competitiveness but raise the odds of it happening.
- The government's real role is in influencing existing points of the diamonds by being a procurer: establishing standards and regulations or creation education policies which push the industry into a certain direction.

Clusters (Agglomeration)

- It is a wrong to ask a question why a whole nation is competitive, said Michael Porter.
- We must ask why and how a particular industry can manage to raise productivity growth.
- Agglomeration (clusters) of firms, suppliers, specialized skills, and supporting institutions, in a certain geographical location bring multiple benefits to a nation.
- Information flows quickly between leading companies, who leap upon new ideas and technology.
- One firm's success in a global market spurs the other to have a go.

Cluster of Competition

- The city of London would never have flourished without stiff competition.
- Its banks, insurance firms, trading firms are supported by a myriad of industry including information services (Reuters), financial journalism and publishing, legal services advertising and public relations plus state institution (Bank of England).

Out of the comfort zone

- Competitive advantages emerge from competition, pressure, adversity, challenges, rarely from easy life.
- There is a strong association between domestic rivalry and the creation and persistence of competitive advantages in an industry.
- Would too much competition among local firms reduce the economies of scale?

Local rivalries

- Switzerland's small size would suggest one dominant player, but several strong local rivals achieved their economies of scale through worldwide scales.
- Each industry tends to have several rivals. Nestle, Jacobs-Suchard, Lindt in chocolates, Rolex, Patek Phillips in watches.



The cloud war: Microsoft v Amazon

The Economist, 21st September 2020

- Amazon reigns supreme in the cloud-computing business, holding nearly half the market.
- But Microsoft has put up a ferocious fight of late.
- The firm has steadily increased its own market share to nearly a fifth, and last year won a \$10bn contract to help power the systems for America's Department of Defence.
- Amazon took the matter to court, alleging that Donald Trump's administration unfairly meddled in the process because the president dislikes the company's boss, Jeff Bezos.
- Microsoft and Amazon are now taking their cloud-computing tussle to the skies.
- Today Microsoft will begin its Ignite conference virtually, showing off its latest technologies.
- One of the biggest showpieces will be a service to connect satellites directly to Azure, its cloud platform.
- Quick satellite-to-ground connections will become more important as the private-sector space industry continues to grow.
- But Microsoft is starting from behind. Amazon unveiled a similar product almost two years ago.

The Netherlands

- The country has a multi-billion dollar cut flower and vegetable growing industry despite its factor disadvantage of a cold, grey climate which spurred greenhouse technology, new strains of flowers, and energy conservation.
- The country developed value chains in flower handling and air freight.
- *Pressure instead of abundance or a comfortable environment underpins true competitive advantage.*

The blunting of competitive advantages

- It is a natural human tendency of for individuals and nations to stop creating new wealth and live off the capital already accumulated.
- Competitive advantages start to decline by increasing concentration of ownership, less competition, and the seeking of protection by established interest.
- Non-functional activities of mergers, takeovers, and acquisitions take place of innovation and productivity
- Location, particularly *stiff competition* among rivalry within that location matters: Hollywood and Silicon Valley are classic examples of a self-reinforcing “diamond”

Review Questions

- *How has the manufacturing sector been affected by the Covid-19?*
- *What went wrong with Thailand's exports in 2019?*
- *Would Thai exports return to previous growth path by 2021?*
- *Compare China's emerging industries policy with Thailand's S-curve strategy*

คำขวัญเด็กไทย



การบ้านคือยาพิษ
เสาร์อาทิตย์คือสวรรค์
นรกคือวันจันทร์
วันสอบนั้นคือวันตาย

Midterm Exam
February 2018
9:30-11:00 am

1. Explain how Thailand's early economic development evolved around the concept of the big push theory, the flying geese hypothesis, and the theory of economic backwardness.
2. Examine the relevance of political economy and the root of the Asian Financial Crisis (AFC).

3. Discuss the relationship between the Dutch disease and the Prebisch Hypothesis. Do you think that between 1991 and 2005 Thailand suffered from the Dutch disease and adverse consequences as described by the Prebisch Hypothesis?

