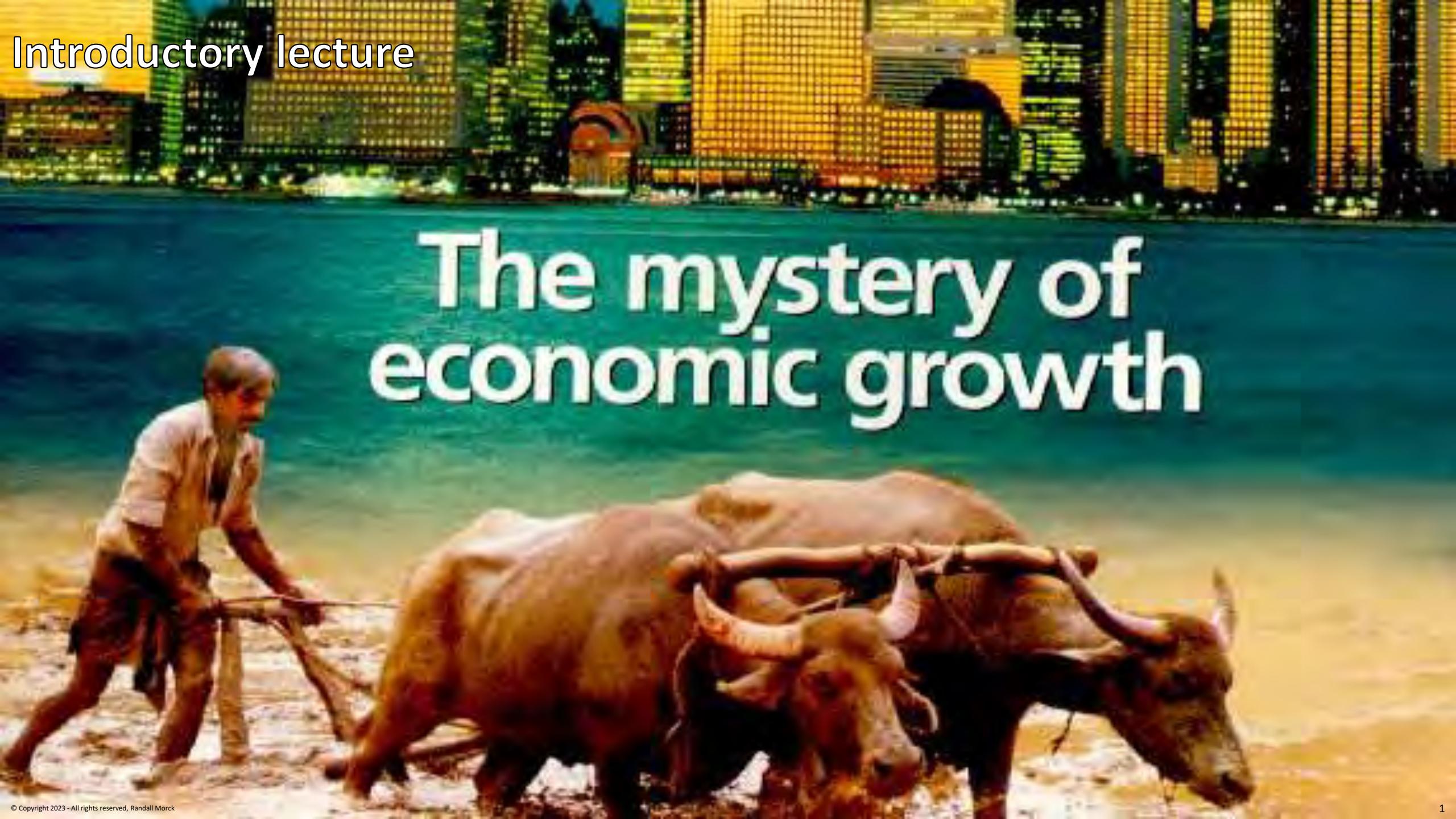


Introductory lecture



The mystery of economic growth



Finance 686

Three-part course in financial history

Part 2. Comparative Financial Systems

- Different countries' financial systems are very different from the financial system of the USA, which is the focus of most textbooks. Running a company or investing in a country without understanding these differences can cause major problems.
- This section is about how different countries' financial systems differ and why these differences arose

Part 1. Behavioral Finance & Market Inefficiency

- The equations in most finance models assume perfect rationality, complete arbitrage and efficient markets.
- Financial history shows that psychological factors also matter
- This section is about how psychology affects finance

Introductory lecture. Finance and Economic Growth

- Financial history shows how prosperity requires an efficient financial system
- This section shows how finance is linked to economics in ways that make the financial system of major importance to economic growth

金融686

第2部分。比较金融制度

第1部分。行为金融学与市场无效率

介绍性讲座。金融与经济增长

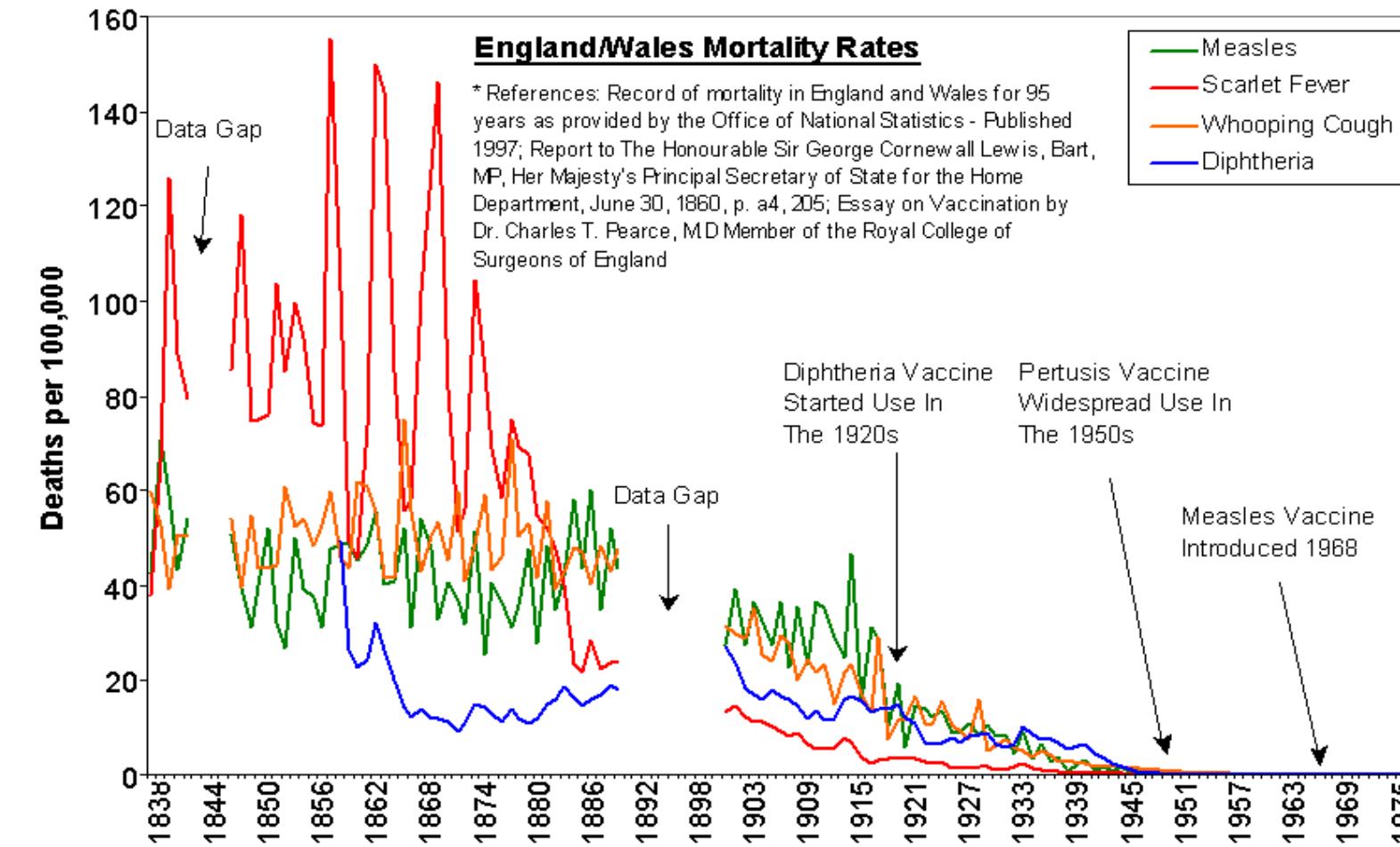
Until Recently, Deadly Pandemics Were Routine Events

Angus Deaton's *Nobel Prize* for

- Measuring many countries' histories of economy development accurately
- In 1600, except for a few aristocrats, people everywhere were very poor & died young



Angus Deaton
Nobel Prize 2015



Deaths because of disease

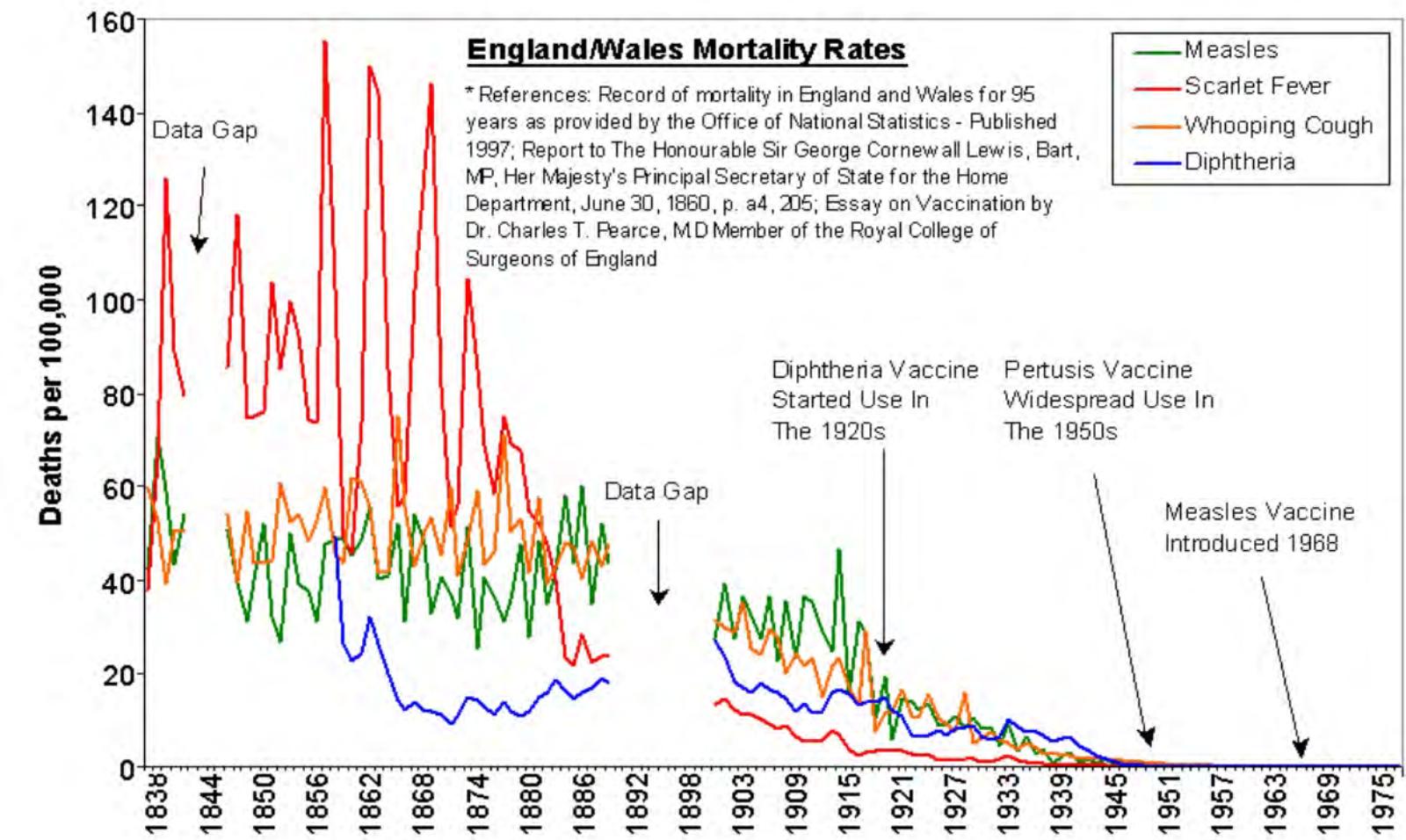
Until Recently, Deadly Pandemics Were Routine Events

安格斯·迪顿的诺贝尔奖

☒测量许多国家的经济发展的历史准确☒1600年,除了少数贵族,世界各地的人们非常贫穷和英年早逝



安格斯·迪顿2015年
诺贝尔奖



疾病导致的死亡

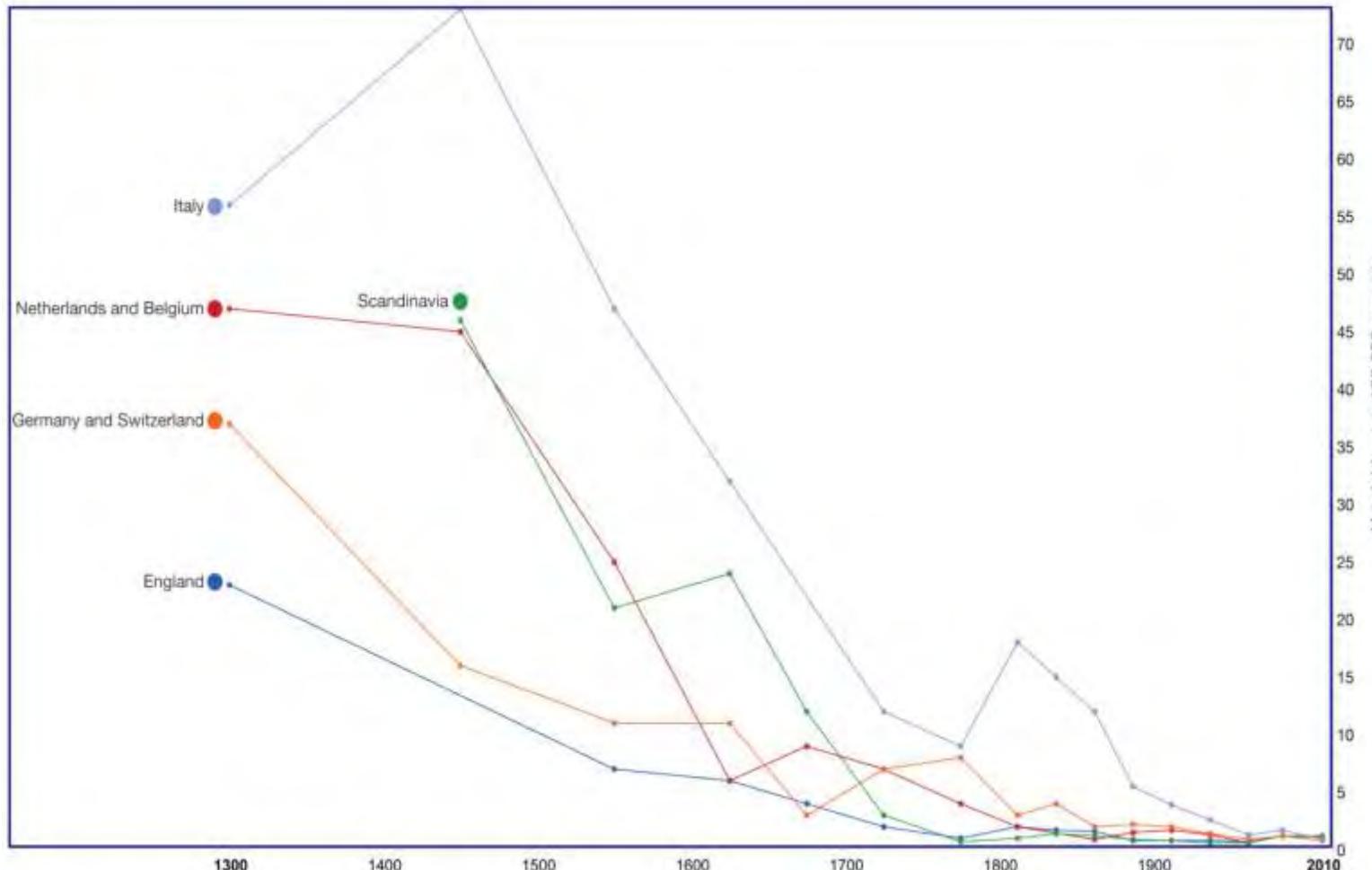
Until Recently, Almost Everyone Lived with Violence

Angus Deaton's *Nobel Prize* for

- Measuring many countries' histories of economy development accurately
- In 1600, except for a few aristocrats, people everywhere were very poor & died young



Angus Deaton
Nobel Prize 2015



Deaths because of murders

Until Recently, Almost Everyone Lived with Violence

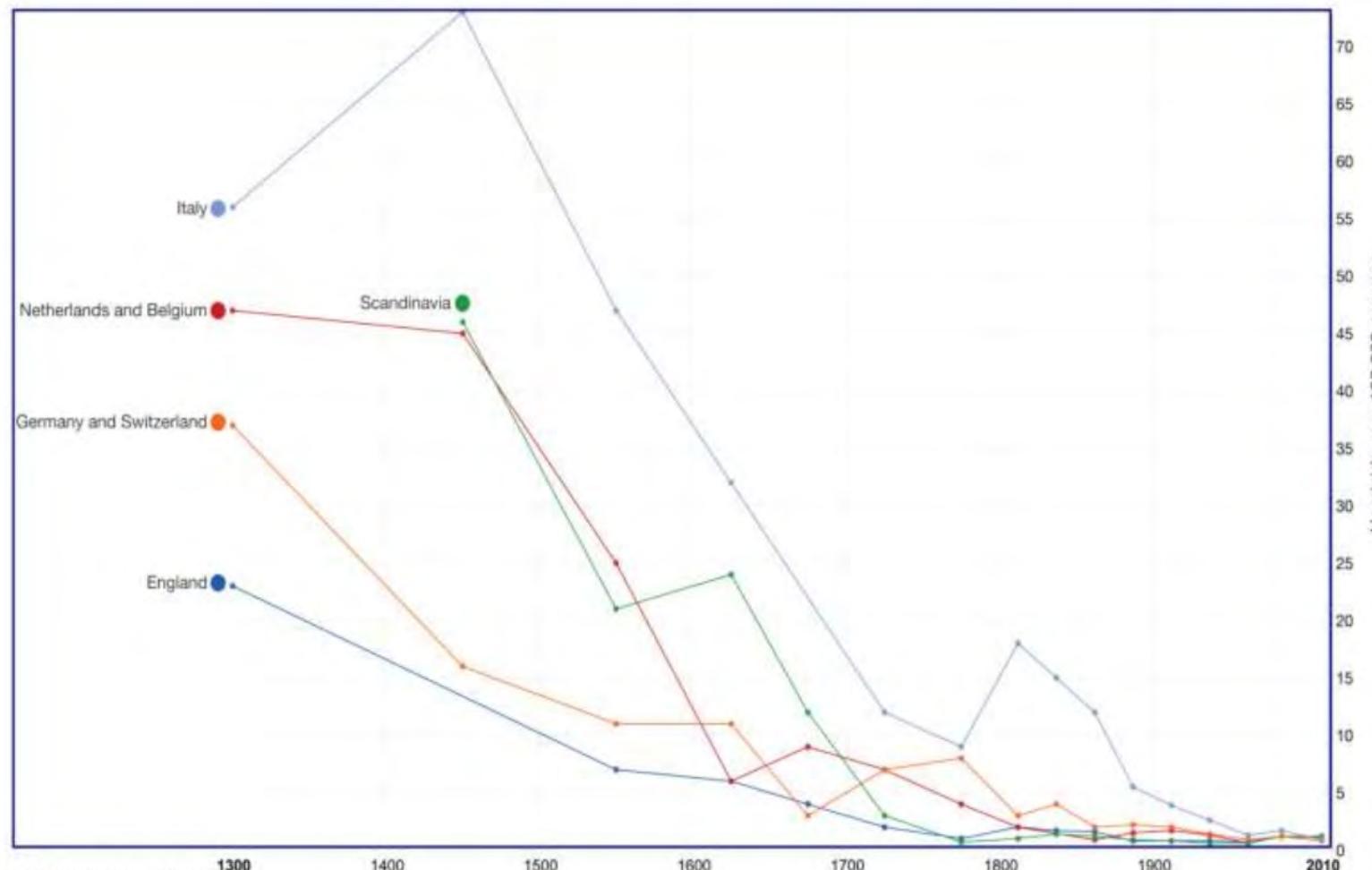
安格斯·迪顿的诺贝尔奖

准确衡量了许多国家的经济发展历史

在1600年，除了少数贵族外，世界各地的人都很穷，很早就死了



安格斯·迪顿2015年
诺贝尔奖



谋杀导致的死亡

Until Recently, Almost Everyone Lived with Famines

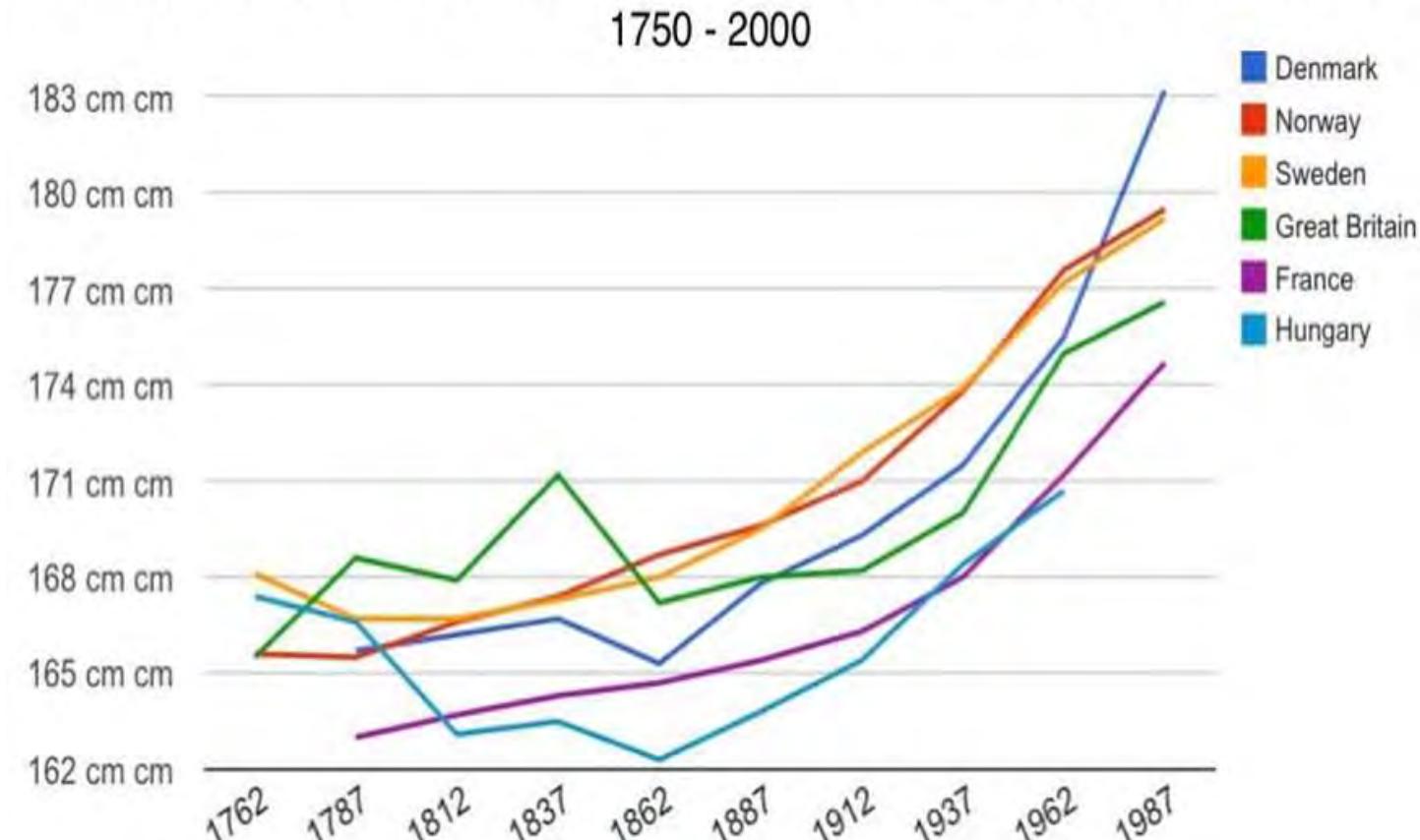
Angus Deaton's *Nobel Prize for*

- Measuring many countries' histories of economy development accurately
- In 1600, except for a few aristocrats, people everywhere were very poor & died young



Angus Deaton
Nobel Prize 2015

Average heights of men at maturity in six European countries



People were short because of famines

Until Recently, Almost Everyone Lived with Famines

安格斯·迪顿的诺贝尔奖

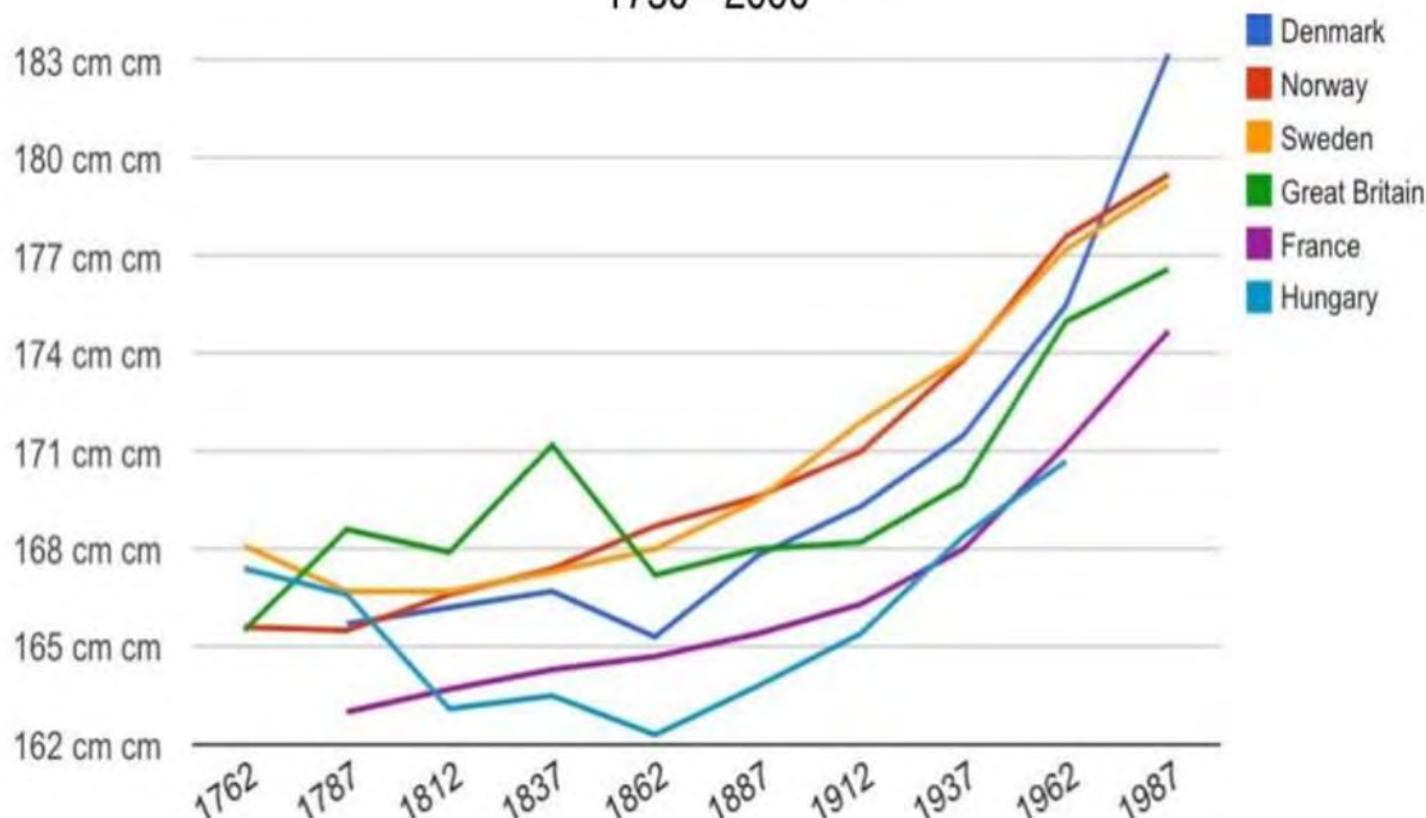
准确衡量了许多国家的经济发展历史

在1600年，除了少数贵族外，世界各地的人都很穷，很早就死了



Average heights of men at maturity in six European countries

1750 - 2000



2015年安格斯·
迪顿诺贝尔奖

人们因为饥荒而矮小

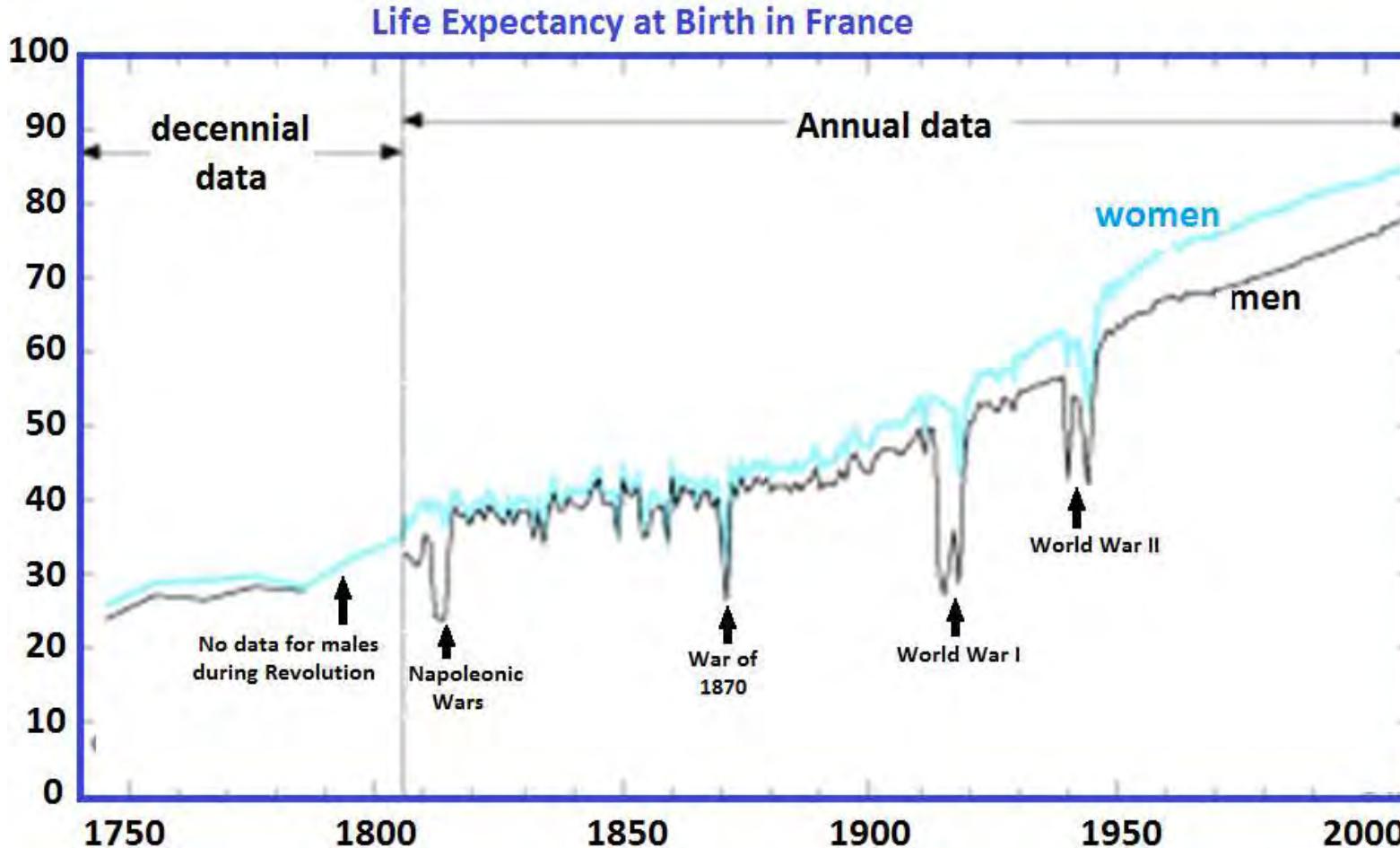
Until Recently, Almost Everyone Lived Short Lives

Angus Deaton's *Nobel Prize for*

- Measuring many countries' histories of economy development accurately
- In 1600, except for a few aristocrats, people everywhere were very poor & died young



Angus Deaton
Nobel Prize 2015



Life was short because of
disease, murders & famines

Until Recently, Almost Everyone Lived Short Lives

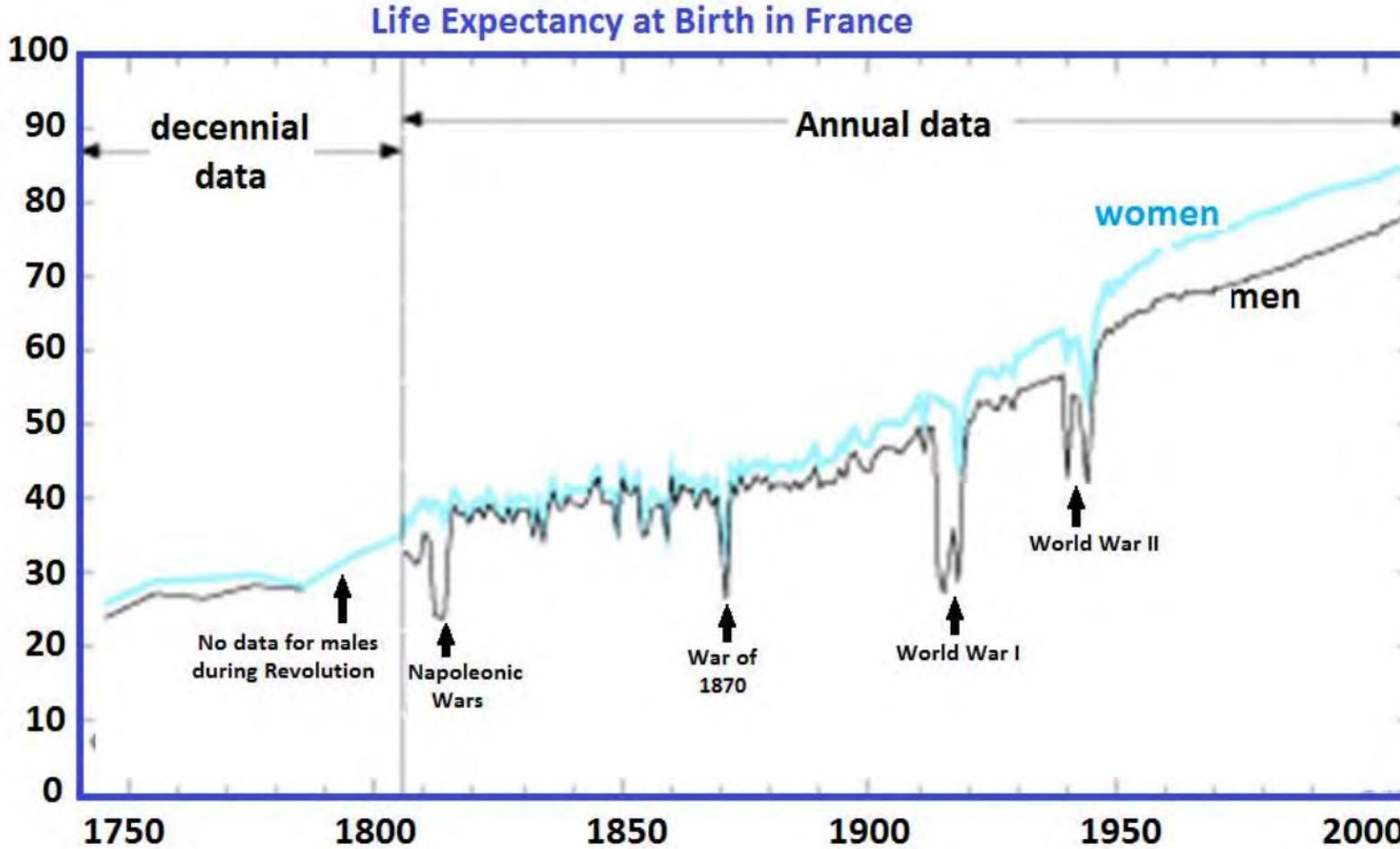
安格斯·迪顿的诺贝尔奖

准确衡量了许多国家的经济发展历史

在1600年，除了少数贵族外，世界各地的人都很穷，很早就死了



2015年安格斯·迪顿
诺贝尔奖

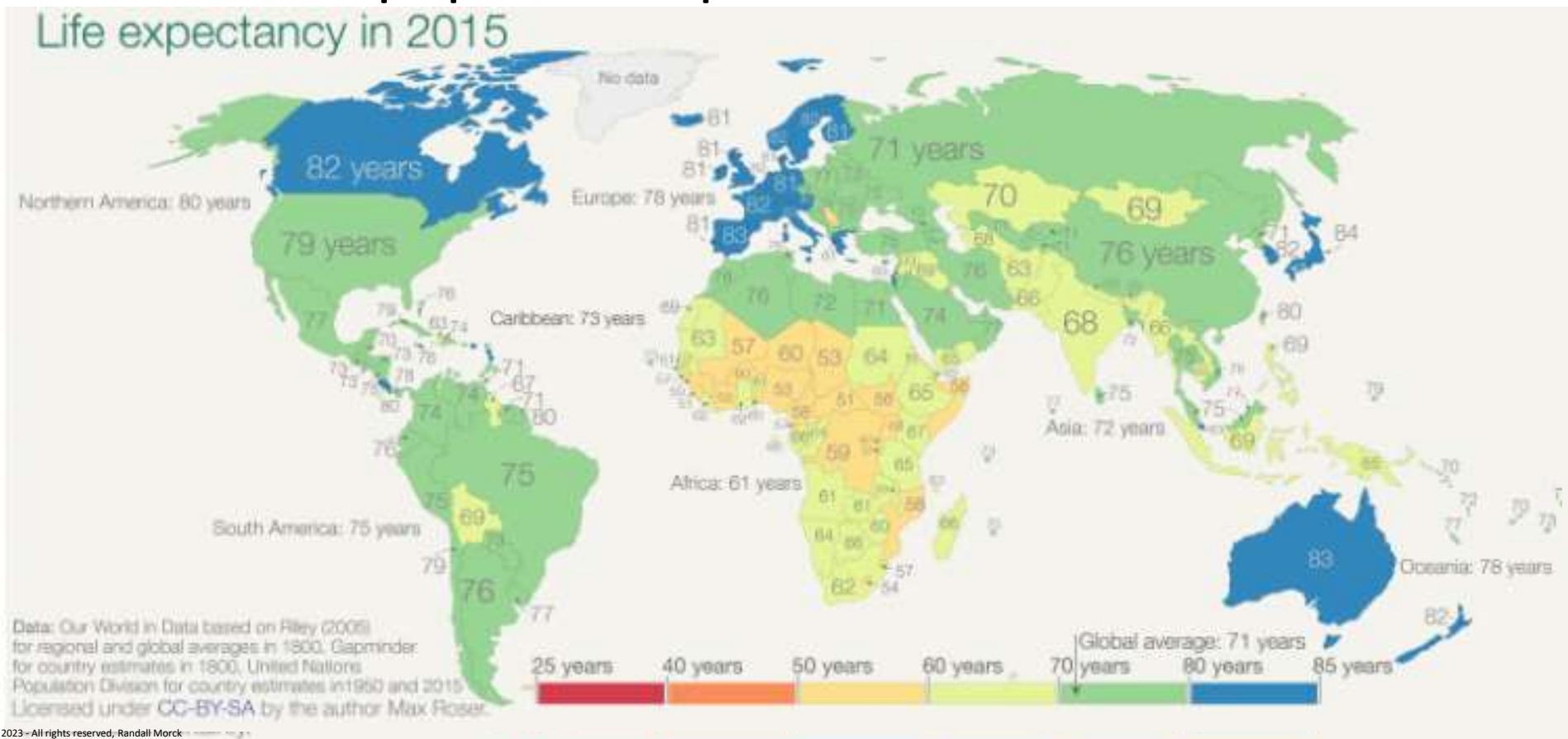


生命因疾病、谋杀和饥荒而短暂

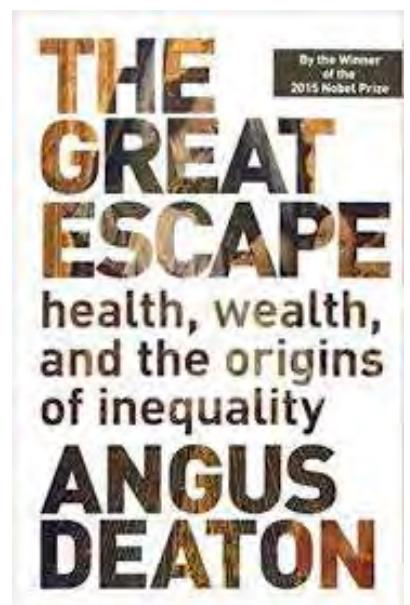
Then, One-by-one, Countries “Escaped” from Poverty

Angus Deaton's *Nobel Prize for explaining The Great Escape*

- ❑ Measuring many countries' histories of economy development accurately
- ❑ In 1600, except for a few aristocrats, people everywhere were very poor & died young
- ❑ After 1600, and especially after 1800, some countries' people became rich and longer lived, but other countries' people remained poor and short-lived



Angus Deaton
Nobel Prize 2015

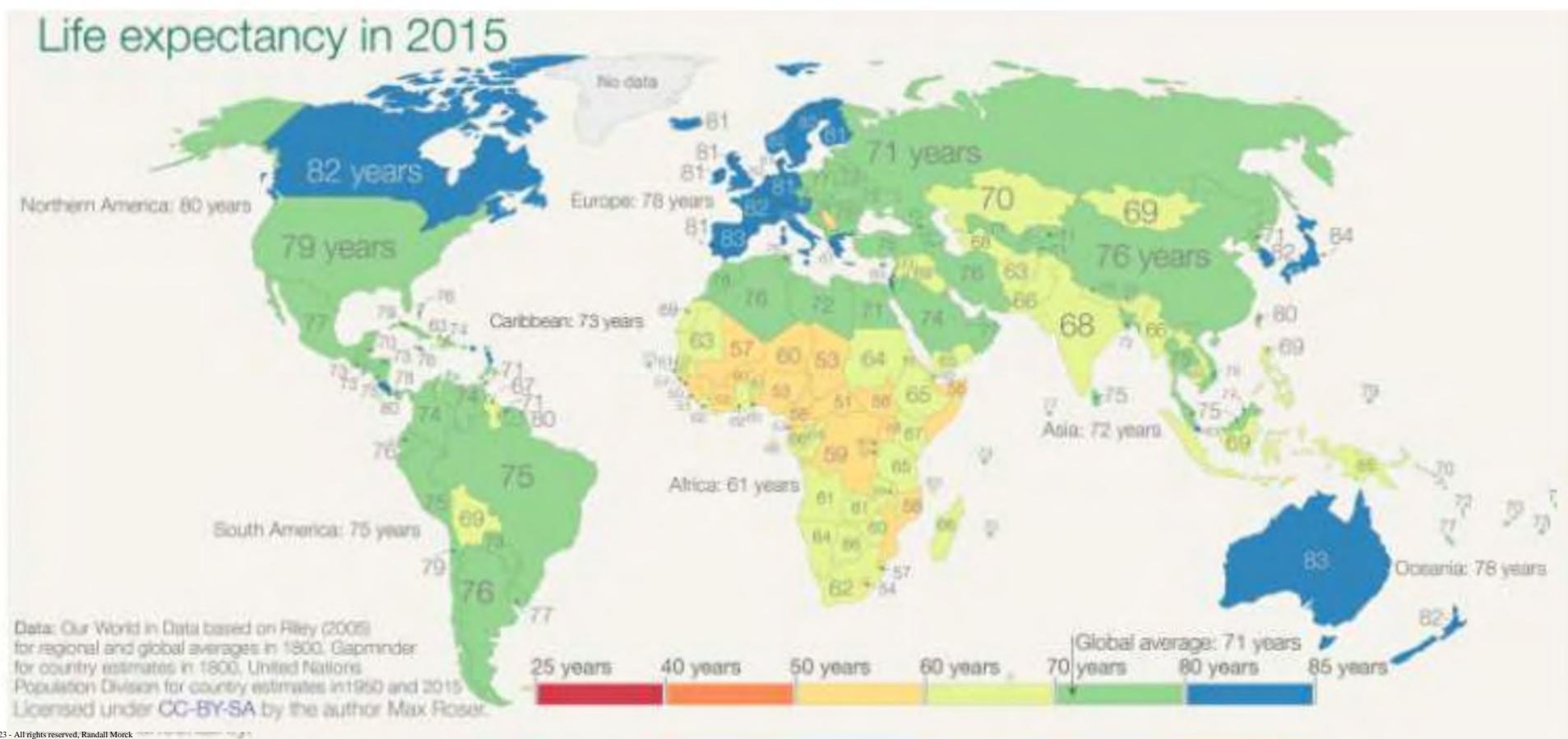


Then, One-by-one, Countries “Escaped” from Poverty

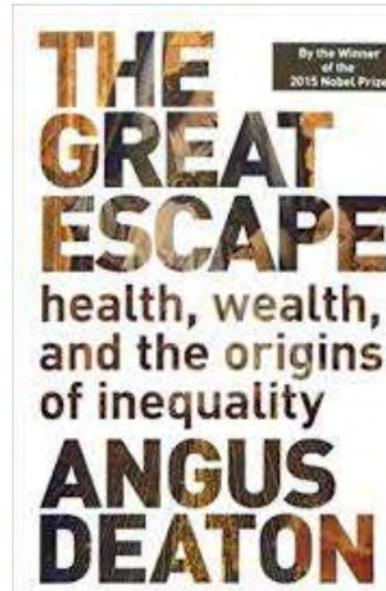
安格斯·迪顿因解释《大逃亡》而获得诺贝尔奖

准确衡量许多国家的经济发展历史

1600年后，特别是1800年后，一些国家的人民富裕起来，寿命更长，
但其他国家的人民仍然贫穷且短命



2015年安格斯·
迪顿诺贝尔奖



& Other Countries Did Not Escape from Poverty

Angus Deaton's *Nobel Prize for explaining The Great Escape*

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- ❑ In 1600, except for a few aristocrats, people everywhere were very poor & died young
- ❑ After 1600, and especially after 1800, some countries' people became rich and longer lived, but other countries' people remained poor and short-lived



Angus Deaton
Nobel Prize 2015

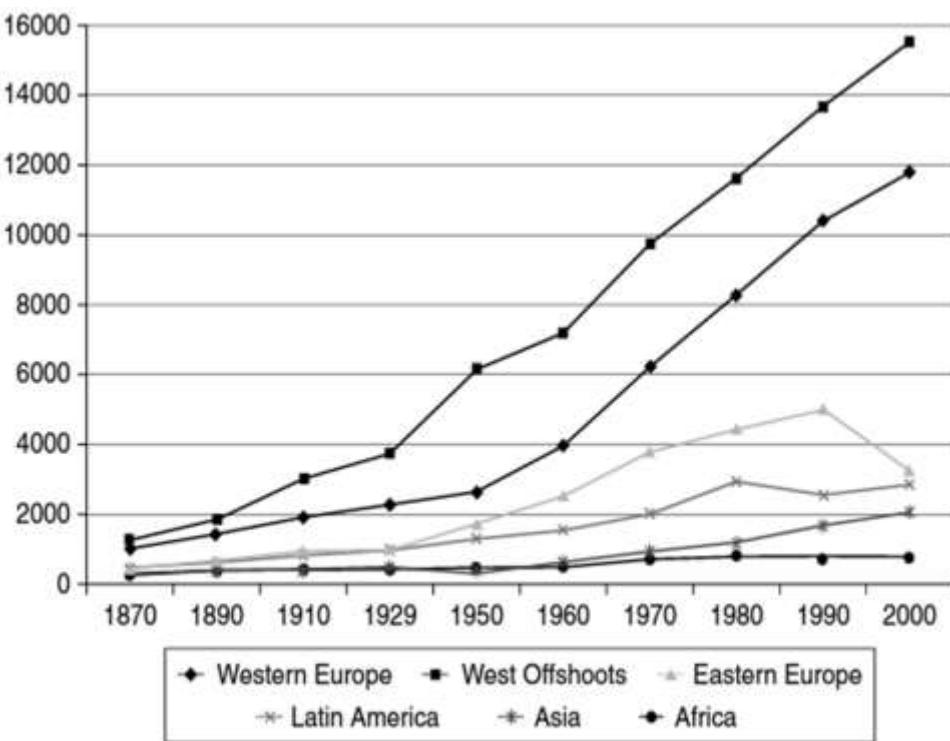
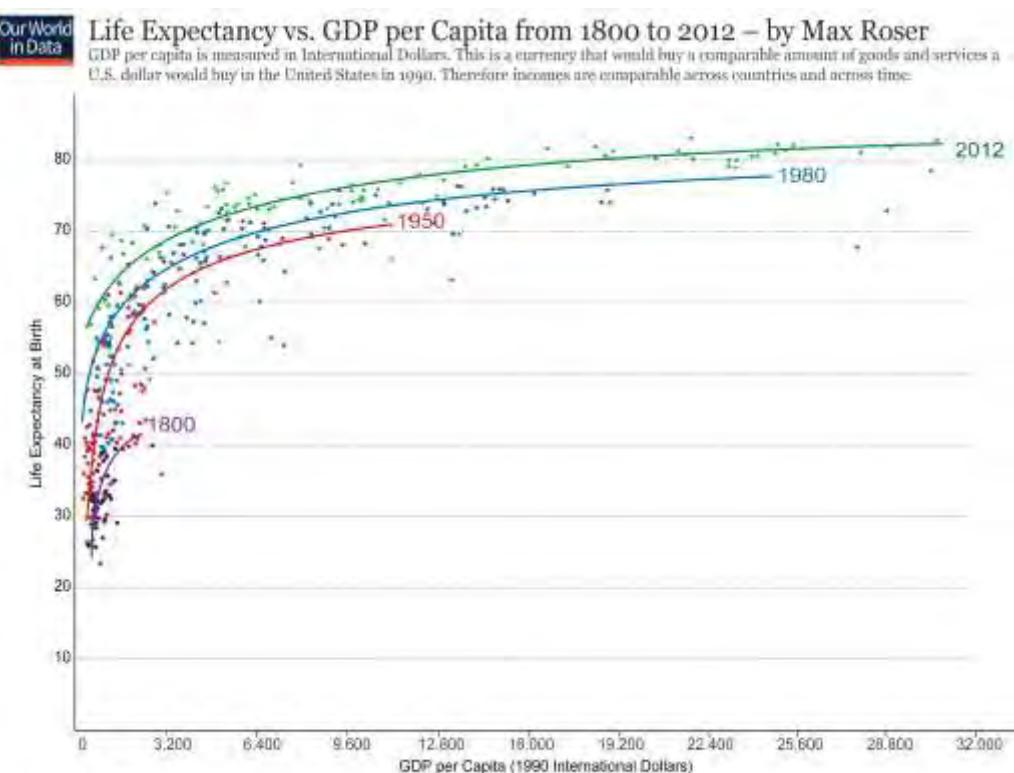
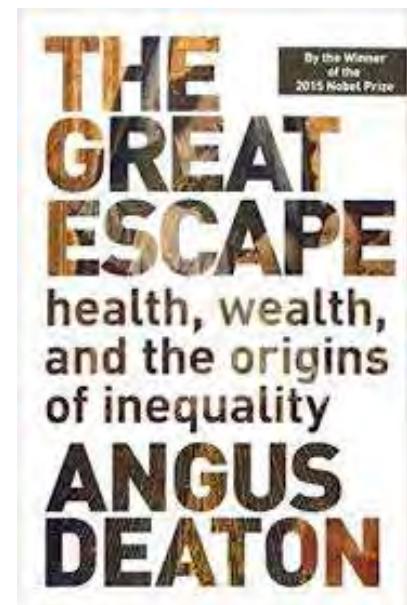


Figure 15.1. Sen-Welfare (inequality-adjusted real GDP per head) across world regions



Data source: Data on life expectancy are from Gapminder.org; data on GDP per capita are from the Penn World Bank Database. This interactive visualization is available at OurWorldInData.org. Thank you for the raw data and nice visualizations for this topic.

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&其他国家没有摆脱贫困

安格斯·迪顿因解释《大逃亡》而获得诺贝尔奖

准确衡量许多国家的经济发展历史

1600年后，特别是1800年后，一些国家的人民富裕起来，寿命更长，

但其他国家的人民仍然贫穷和短命

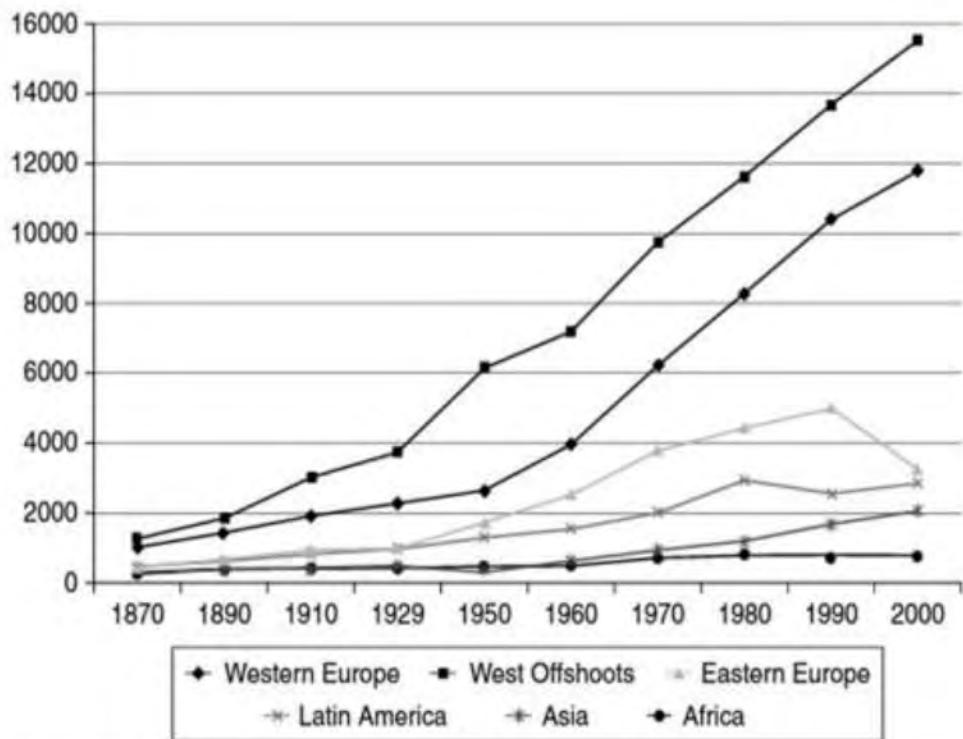
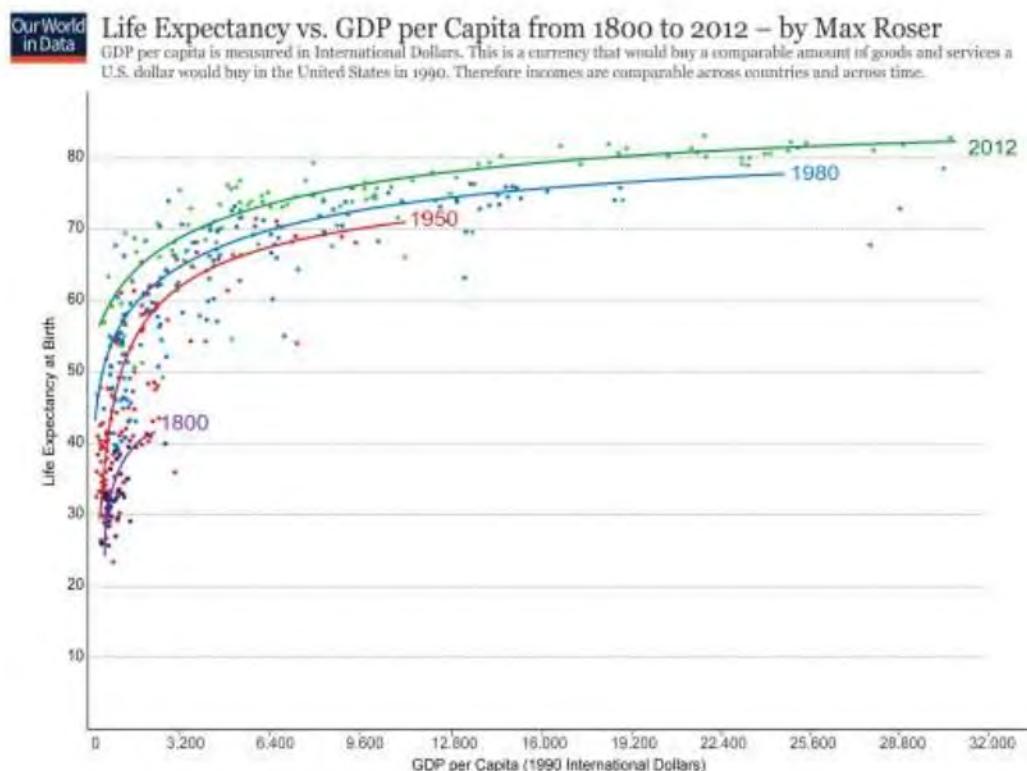


Figure 15.1. Sen-Welfare (inequality-adjusted real GDP per head) across world regions

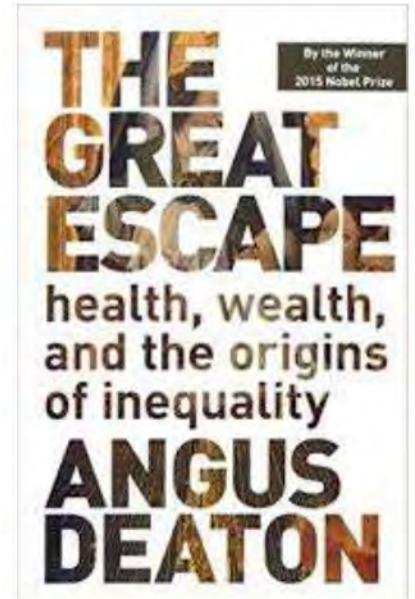


Data source: Data on life expectancy are from Gapminder.org, data on GDP per capita are from the 'New Maddison Project Database'. The interactive data visualisation is available at OurWorldInData.org. There you find the raw data and more visualisations on this topic.

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2015年安格斯·迪顿诺贝尔奖



How Did Some Countries Escape from Poverty?

Hobson, John. 1902. *Imperialism: A Study*. James Pott & Co.
Lenin, Vladimir. 1920. *Imperialism, the highest stage of capitalism*. USSR Foreign Languages Publishing,
Dilley, Andrew. 2016. *Capitalism and imperialism*. Wiley
Brenner, Robert. 2003. *Merchants and revolution: commercial change, political conflict, and London's overseas traders, 1550-1653*. Verso
Beckert, Sven & Seth Rockman, eds. 2016. *Slavery's capitalism: A new history of American economic development*. University of Pennsylvania Press
Pomeranz, Kenneth. 2000. *The Great Divergence: China, Europe, and the Making of the Modern World Economy*, Princeton University Press
Williams, Eric. 1944. *Slavery & capitalism*. University of North Carolina Press

Did rich countries get rich from imperialism?

- Some Western countries & Japan undertook imperialism, colonialism, opium trade, slave trade. ...
- Imperialism made many African & Asian countries poor. Did imperialism also make imperialist countries rich?

Economic data show imperialism had $NPV > 0$ for imperialist individual, but $NPV \leq 0$ for imperialist countries

Acemoglu, D., Johnson, S., & Robinson, J. 2005. *The rise of Europe: Atlantic trade, institutional change, and economic growth*. *American Economic Review*, 95(3)546-79
Coelho, Philip. 1973. *The Profitability of Imperialism: The British Experience in the West Indies 1768-1772*. *Explorations in Economic History*, 10(3)253-280
Davis, Lance & Robert Huttonback. 1986. *Mammon & the pursuit of Empire: The political economy of British imperialism, 1860-1912*. Cambridge Univ. Press
Eltis, David & Stanley Engerman. 2000. *The importance of slavery & the slave trade to industrializing Britain*. *Journal of Economic History* 60(1)123-144
Engerman, Stanley. 1972. *The slave trade & British capital formation in the 18th century*. *Business History Review*, 430-443
Grossman, Herschel & Murat Iyigun. 1995. *The profitability of colonial investment*. *Economics & Politics* 7(3)229-241
Viner, Jacob. 1948. *Power v. plenty as objectives of foreign policy in the 17th & 18th centuries*. *World Politics* 1(1)1-29

- Ordinary people in imperialist countries paid (higher taxes) the high costs of imperialism (armies & navies to build & rule empires)
- Indemnities from defeating other countries & tax revenues from colonial possessions < costs of empire
- Profits of imperialism made a few individuals and families very rich, but was very small as % of GDP
- Non-economic objectives – e.g. “national greatness” – justified imperialism by Britain, France, Portugal, Spain, ...
- As middle class people became more important in Western countries, governments stopped having colonies & empires

Historically, imperialism, slavery etc. didn't enrich ordinary people in imperialist countries

- Throughout history, many empires (Arab, Aztec, Egyptian, Inca, Persian, Syrian, Mongol, Turkish, ...) did not make their own people rich
- People in many Western countries with big colonial empires (e.g. Spain, Portugal, Russia, ...) became less rich than people in countries without big colonial empires (Ireland, Singapore, S. Korea, Sweden, Switzerland, ...)

Research continues and new evidence may change these conclusions

How Did Some Countries Escape from Poverty?

约翰·霍布森, 1902。帝国主义:一项研究。James Pott & Co..

列宁, 弗拉基米尔。1920。帝国主义, 资本主义的最高阶段。苏联外文出版社, 迪利, 安德鲁。

2016。《资本主义与帝国主义》。威利

罗伯特·布伦纳, 2003。商人与革命:商业变革、政治冲突和伦敦的海外商人, 1550-1653。Verso Beckert, Sven & Seth Rockman主编。2016.

奴隶制的资本主义:美国经济发展的新历史。宾夕法尼亚大学出版社, 彭慕兰, 肯尼斯。2000。《大分化:中国、欧洲和现代世界经济的形成》, 普林斯顿大学出版社, 埃里克·威廉姆斯, 1944。《奴隶制与资本主义》。北卡罗来纳大学出版社

富国是靠帝国主义致富的吗?

一些西方国家和日本进行了帝国主义、殖民主义、鸦片贸易、奴隶贸易。…

帝国主义使许多非洲和亚洲国家变得贫穷。帝国主义也让帝国主义国家富裕了吗?

经济数据显示, 帝国主义个体的NPV > 0, 但帝国主义国家的NPV ≤ 0

Acemoglu, D., Johnson, S., & Robinson, J. 2005。《欧洲的崛起:大西洋贸易、制度变迁与经济增长》。《美国经济评论》, 95(3)546-79科埃略, 菲利普。

1973。帝国主义的盈利能力:1768-1772年英国在西印度群岛的经验。《经济史探索》, 10(3)253-280 Davis, Lance & Robert Huttonback. 1986。财神与对帝国的追求:1860-1912年英帝国主义的政治经济学。剑桥大学出版社Eltis, David & Stanley Engerman, 2000。奴隶制和奴隶贸易对英国工业化的重要性。《经济史学刊》60(1)123-144 Engerman, Stanley. 1972。18世纪的奴隶贸易与英国资本形成。《商业历史评论》, 430-443

Grossman, Herschel & Murat Iyigun. 1995。殖民投资的盈利能力。经济与政治7(3)229-241

雅各布·维纳, 1948。权力与富足:17th&18th世纪外交政策的目标。世界政治1(1)1-29

帝国主义国家的普通人支付了(更高的税收)帝国主义的高昂成本(建立和统治帝国的陆军和海军)

帝国主义的利润使少数个人和家庭非常富有, 但占GDP的百分比非常小

非经济目标——例如; “国家伟大” ——英国、法国、葡萄牙、西班牙……

随着中产阶级在西方国家变得越来越重要, 政府停止了殖民地和帝国的存在。从历史上看, 帝国主义、奴隶制等并没有让帝国主义国家的普通人富裕起来

纵观历史, 许多帝国(阿拉伯帝国、阿兹特克帝国、埃及帝国、印加帝国、波斯帝国、叙利亚帝国、蒙古帝国、土耳其帝国等)并没有让自己的人民富裕起来。许多拥有大型殖民帝国的西方国家(如西班牙、葡萄牙、俄罗斯等)的人民比没有大型殖民帝国的国家(爱尔兰、新加坡、韩国、瑞典、瑞士等)的人民富裕得多。

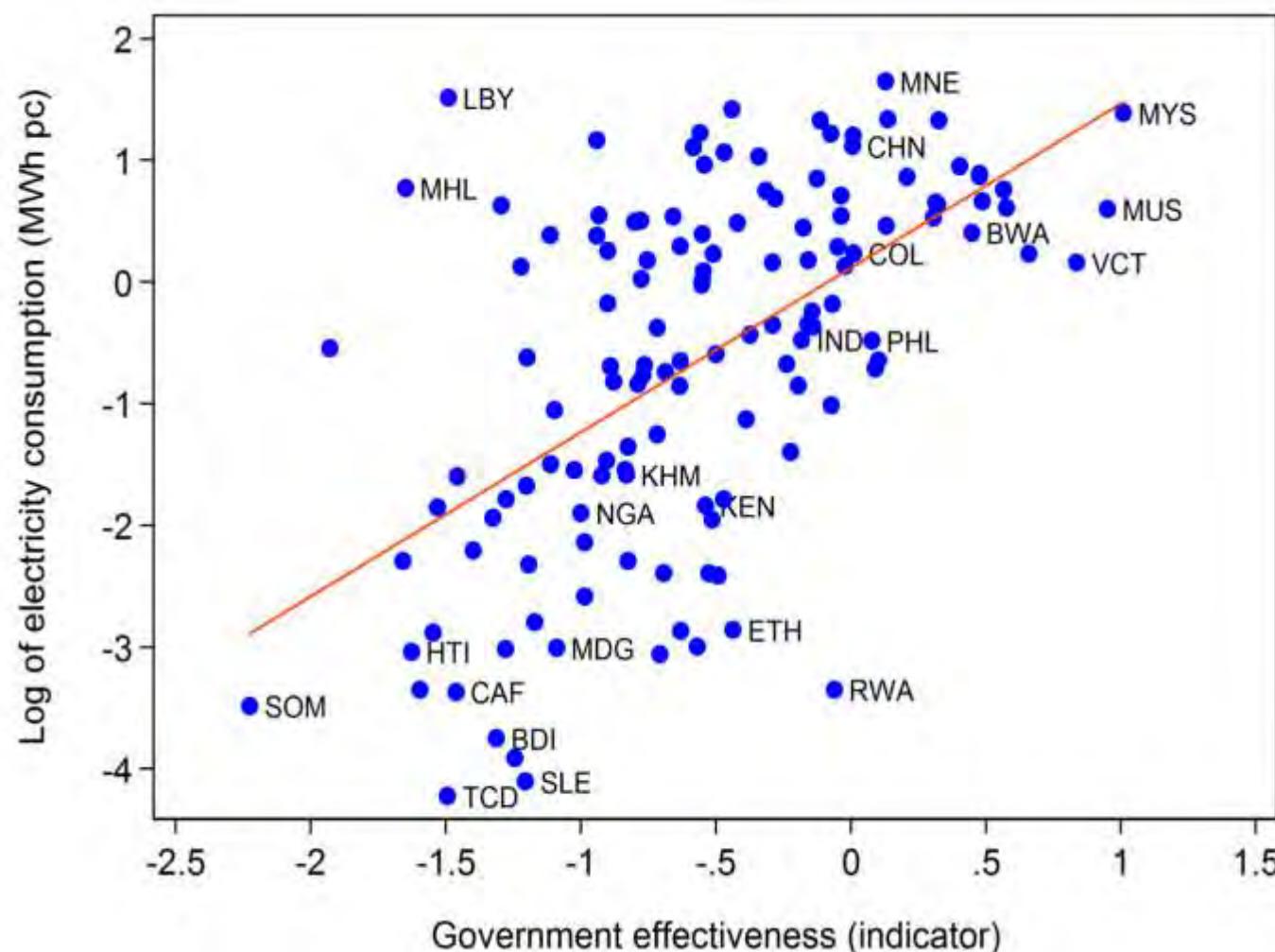
研究仍在继续, 新的证据可能会改变这些结论

How Did Countries Truly Escape from Poverty?

Hobbes, Thomas. 1652. Leviathan

1. Effective (strong & non-corrupt) government

- Without law & order, people do not work & save because their wealth will be stolen



Thomas Hobbes

"[When] men live without a common power to keep them all in awe, [it is] every man against every man [and] life is solitary, poor, nasty, brutish and short".

-- Hobbes, Leviathan 1652



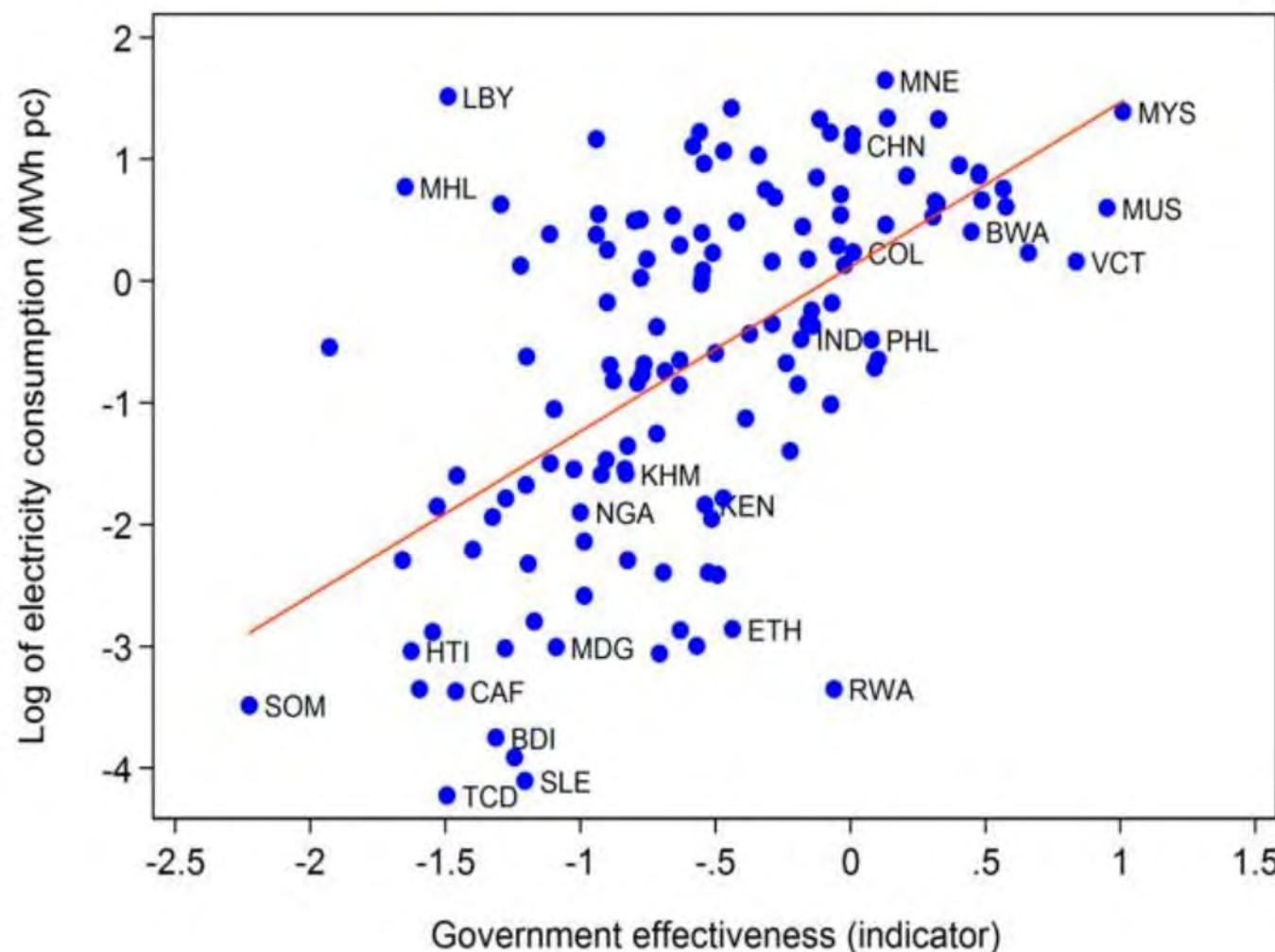
How Did Countries Truly Escape from Poverty?

Hobbes, Thomas. 1652. Leviathan

1. 有效(强大且不腐败)的政府



没有法律和秩序，人们就不会工作和储蓄，因为他们的财富会被偷走



“当人们生活中没有一种共同的力量来让他们敬畏时，[这是]人与人之间的[和]生活是孤独的，贫穷的，肮脏的，野蛮和短暂的。”

——霍布斯，《利维坦》1652



托马斯·霍布斯



How Did Countries Truly Escape from Poverty?

Smith, Adam. 1776. *The Wealth of Nations*

1. Effective government

2. Free markets (allow specialization & division of labor)

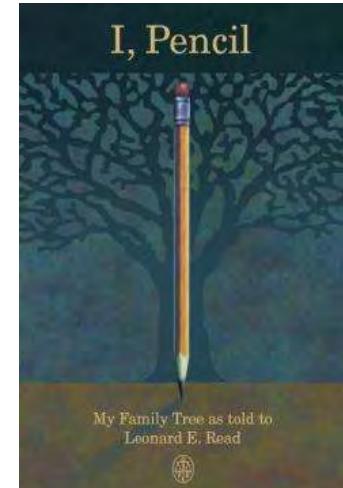
A. To make a pencil (all alone, on your own)

- Hollow wood cylinder
 - Cut & shape wood. but must make wood cutting & wood shaping tools first, but must make equipment needed to make these tools first, but ...
- Carbon graphite core
 - Find & mine graphite deposits, but must make mining, purifying & shaping tools, but must make equipment needed to make these tools first, but ...
- Find & smelt ore to make metal
 - Find & mine metal ore deposits, refine metal ore to make metal, but must make mining, refining & shaping tools and equipment, but must make equipment needed to make all this first, but ...
- Eraser, glue & yellow paint
 - React chemicals to make paint, glue, synthetic rubber, and other inputs, but must find & mine chemicals deposits, refine deposits to make chemicals first, but must make mining, refining & shaping tools and equipment first, but must make equipment needed to make all this first
- Put it all together to make a pencil

Cost = thousands of dollars & many years

B. Buy a pencil at a store

Cost = \$0.10 & 1 minute ← How is this possible?



How Did Countries Truly Escape from Poverty?

亚当·斯密(1776年)《国富论》

1. 有效的政府

2. 自由市场(允许专业化和分工)

a. 制作铅笔(独自一人，靠自己)

空心木筒

切割和塑造木材。但必须先制造木材切割和木材成型工具，但必须制造制造所需的设备

首先是这些工具，但是……

<S:1> 碳石墨芯

发现和开采石墨矿床，但必须制造开采、净化和成型工具，但必须制造所需的设备

先制作这些工具，但是……

找到并冶炼矿石来制造金属

发现和开采金属矿床，提炼金属矿石以制造金属，但必须制造采矿、精炼和成型工具和

设备，但必须先制造制造这一切所需的设备，但是……

橡皮擦、胶水和黄色油漆

反应化学物质以制造油漆、胶水、合成橡胶和其他输入物，但必须找到并开采化学物质沉积物，进行提炼

沉积物要先制造化学品，但必须先制造开采、精炼和成型的工具和设备，但必须先制造

首先制造这一切所需的设备

把它们放在一起做成一支铅笔

成本=几千美元&很多年

B. 在商店买一支铅笔

成本= 0.10美元& 1分钟☒这怎么可能？



How Did Countries Truly Escape from Poverty?

Smith, Adam. 1776. *The Wealth of Nations*

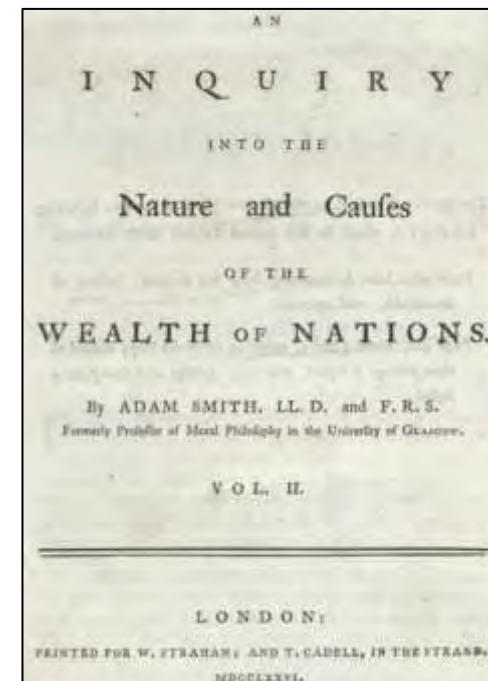
1. Effective government

2. Free markets (allow specialization & division of labor)

- Specializing lets people do one job very well, earn money & buy what they need
 - A company hires needed specialists and pays them money
- Free markets let people who specialize not die
 - Without a free market, only farmers have food, others starve
- Free markets force people to specialize in what they do best to make the most money
 - Poor pencil companies die & good pencil companies grow
 - People get pencils made by the best pencil companies
- Free markets force prices down
 - Competition between pencil companies keeps pencils as cheap as possible
- Free markets maximize everyone's purchasing power by making everything as cheap as possible



Adam Smith



How Did Countries Truly Escape from Poverty?

Smith, Adam. 1776. The Wealth of Nations

1. 有效的政府

2. 自由市场(允许专业化和分工)

专业化让人们把一项工作做得很好，赚到钱，买到他们需要的东西

一家公司雇佣所需的专家并付给他们钱

自由市场让专门化的人免于死亡

没有自由市场，只有农民有饭吃，其他人饿死

自由市场迫使人们专注于自己最擅长的领域，以获得最大收益

钱

差的铅笔公司会倒闭，好的铅笔公司会成长

人们买到的铅笔是最好的铅笔公司生产的

自由市场迫使价格下降

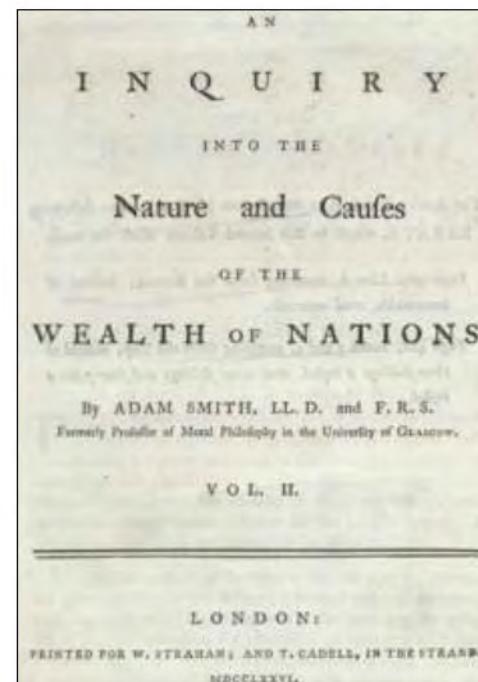
铅笔公司之间的竞争使铅笔尽可能便宜

自由市场通过把所有东西都变成……从而使每个人的购买力最大化

尽可能便宜



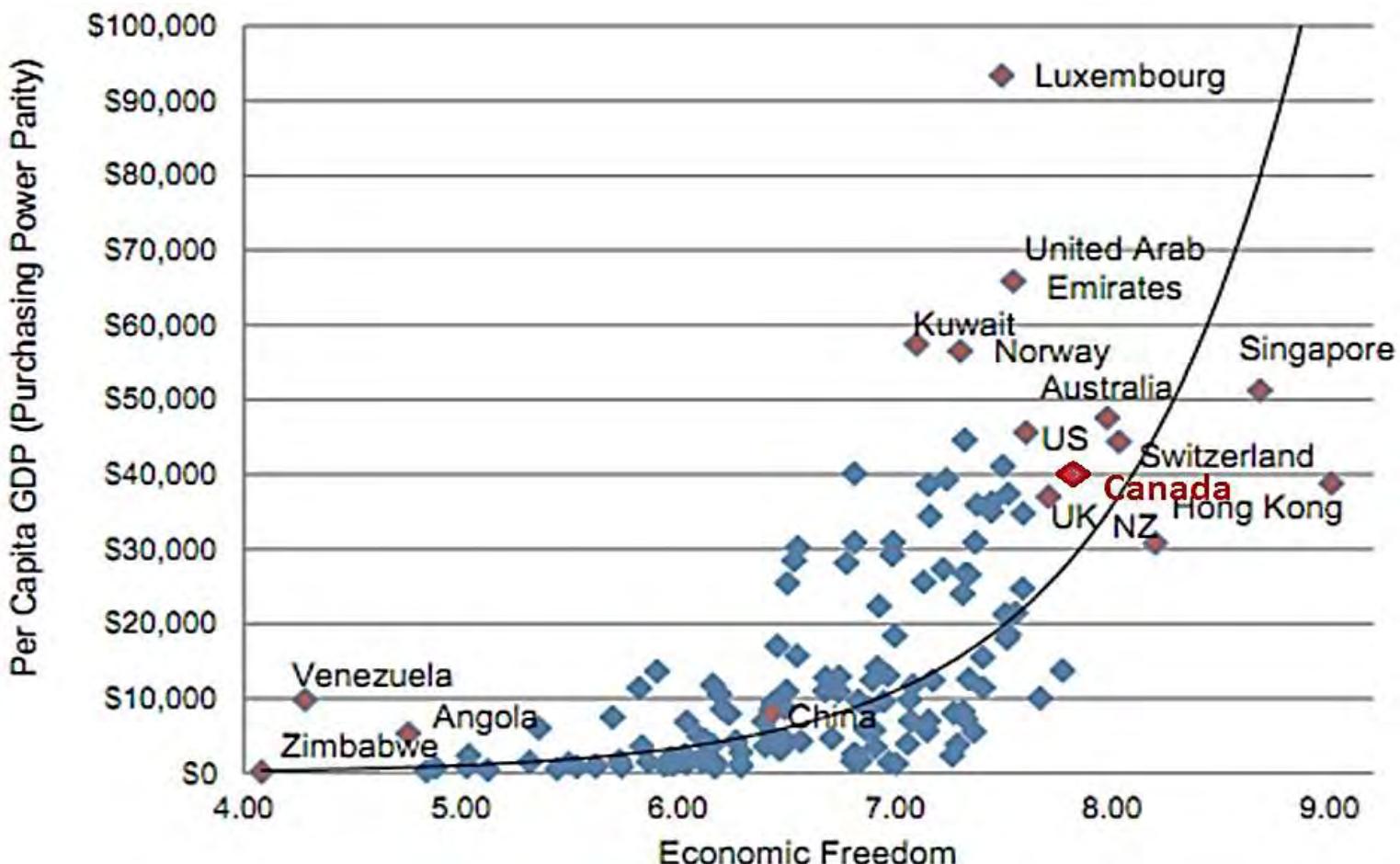
亚当·斯密



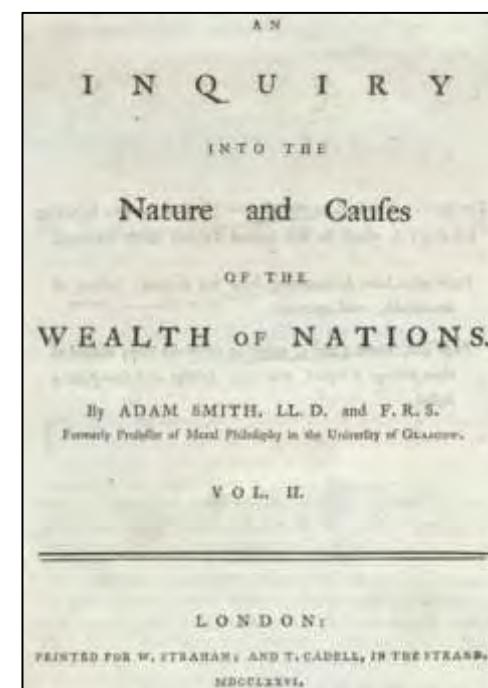
How Did Countries Truly Escape from Poverty?

Smith, Adam. 1776. *The Wealth of Nations*

1. Effective government
2. Free markets (allow specialization & division of labor)



Adam Smith

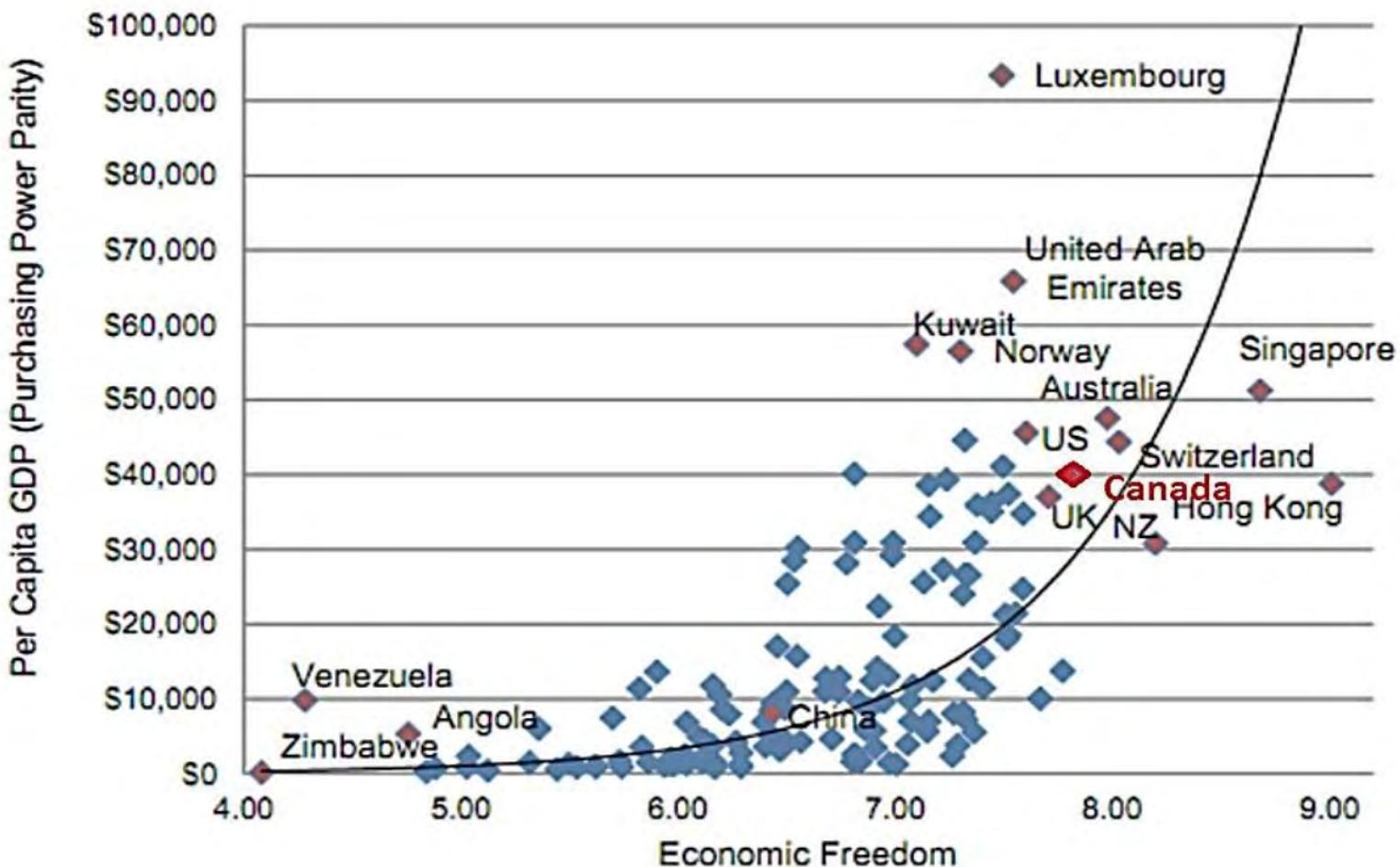


How Did Countries Truly Escape from Poverty?

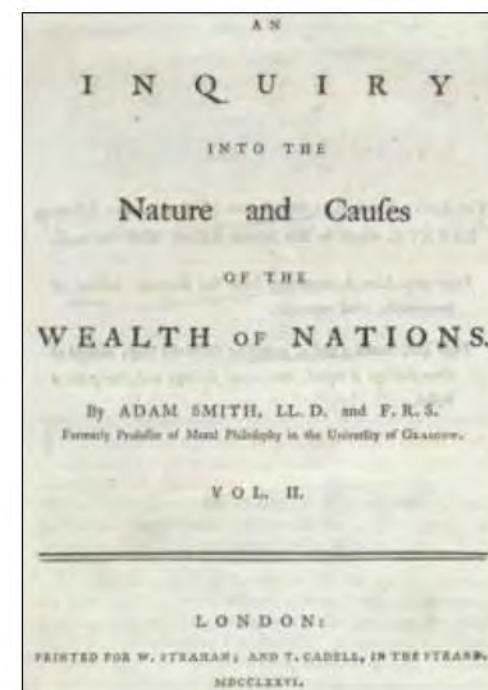
亚当·斯密(1776)《国富论》

1. 有效的政府

2. 自由市场(允许专业化和分工)



亚当·斯密



What Had Kept Countries in Poverty?

Smith, Adam. 1776. *The Wealth of Nations*

1. Effective government
2. Free market (allow specialization & division of labor) economies

- Western countries, before free markets, had mercantilist economies
- What was (is?) mercantilism?
 - Jean-Baptiste Colbert, Finance Minister to Louis XIV, King of France, took mercantilism to highest level
 - Only the king & nobility (warrior elite) can appreciate the culture & war victories that make France great
 - Social purpose of king = make France “great” by paying for great poets, artists, building ... & wars
“It is simply, and solely, the abundance of silver within a state [which] makes the difference in its grandeur & power”– Colbert
 - Purpose of ordinary people = pay taxes to the king
“The art of taxation is plucking the goose to get the most feathers with the least hissing.”– Colbert



Jean-Baptiste Colbert

是什么让这些国家一直处于贫困?

亚当·斯密(1776)《国富论》

1. 有效的政府

2. 自由市场经济(允许专业化和劳动分工)

在自由市场之前, 西方国家有重商主义经济

什么是(现在是?)重商主义?

法国国王路易十四的财政大臣让-巴蒂斯特·科尔伯特将重商主义推向了顶峰

水平

只有国王和贵族(战士精英)才能欣赏文化和战争的胜利

法国

国王的社会目的=为伟大的诗人、艺术家、建筑和战争买单, 让法国变得“伟大”

“很简单, 而且唯一的原因是, 一个国家拥有丰富的白银[这]使它的伟大和力量。”

科尔伯特

普通人的目的=向国王纳税

“纳税的艺术就是拔鹅毛, 以最少的嘶嘶声得到最多的羽毛。”

科尔伯特



让-巴蒂斯特·科尔伯特

What Had Kept Countries in Poverty?

Smith, Adam. 1776. *The Wealth of Nations*

- 1. Effective government**
- 2. Free market (allow specialization & division of labor) economies**

- Western countries, before free markets, had mercantilist economies
- Basic mercantilist policies
 - 1. Maximize taxes on ordinary people**
 - Tax farmers pay king gold or silver for right to collect taxes, people pay taxes to tax farmers
 - No tax on elite (because purpose of taxes = support the elite)
 - Power to collect (& keep) taxes owed by ordinary people in each region sold to highest bidder

- 2. All industries are police-protected monopolies**
 - Rights to police-enforced monopoly sold to highest bidder or assigned to state-owned enterprises
 - Prices set by the state or by state-sanctioned guilds, competition illegal

- 3. State policy to make monopolies more valuable**
 - High tariffs to stop imports & subsidies to encourage exports

- 4. Civil service positions auctioned to members of elite for**
 - A fixed term – e.g. 5 years
 - For life to a person
 - Forever to a family (venal office)

- 5. Laws & regulations auctioned to members of elite**
 - Written as specified by highest bidder



Jean-Baptiste Colbert

**Basic idea: Organize economy
to maximize elite's income
from ... corruption?**

是什么让这些国家陷入贫困?

亚当·斯密1776年出版《国富论》

1. 有效的政府
2. 自由市场经济(允许专业化和劳动分工)

在自由市场之前, 西方国家有重商主义经济
基本的重商主义政策

1. 对普通人的税收最大化

收税农民向国王支付黄金或白银以获得收税权, 人民向收税农民纳税
对精英不征税(因为征税的目的=支持精英)
在每个地区征收(&保留)普通人所欠税款的权力出售给出价最高的人

2. 所有行业都是受警察保护的垄断企业

警察强制垄断的权利被卖给出价最高者或分配给国有企业
价格由国家或国家认可的行会设定, 竞争是非法的

3. 使垄断更有价值的国家政策

高关税阻止进口, 补贴鼓励出口

4. 公务员职位拍卖给精英成员

固定期限-例如:5年

为一个人的一生

永远属于一个家庭(贪官污吏)

5. 法律法规拍卖给精英成员

以最高出价者指定的方式书写



让-巴蒂斯特·科尔伯特

基本思路:组织经济, 使精英的收入最大化…腐败?

The Scottish Enlightenment Redefined “National Greatness”

Broadie, Alexander. 2010. *The Scottish Enlightenment*. Canongate Books

Adam Smith's free markets ideas were revolutionary & redefined “great nation”

- Kings and aristocrats fought to prevent free markets and to keep mercantilism
- Free markets eventually won because Adam Smith & other intellectuals (mostly in Scotland) changed the definition of “national greatness” during the “Age of Enlightenment”

What makes Russia “great”?

Pre-enlightenment Greatness

- Powerful military that can invade other countries
- Many gold medals at Olympic games
- Glorious culture (ballet, opera, ...)
- Patriotic ordinary people accept corruption & poverty but value the greatness of Russia



What makes Denmark “great”?



Enlightenment Greatness

- Innovative private-sector & free markets provide abundant goods & services
- Corruption-free government provides public goods & services (e.g. free high-quality education & health care) for high taxes
- Private & public sector provide many high-pay jobs so people can pay high taxes

苏格兰启蒙运动重新定义“国家伟大”

亚历山大·布罗迪, 2010。苏格兰启蒙运动。阿桑奇的书

亚当·斯密的自由市场思想是革命性的, 重新定义了“伟大的国家”。

国王和贵族们为阻止自由市场和保持重商主义而斗争

自由市场最终胜出, 因为亚当·斯密和其他知识分子(主要在苏格兰)在“启蒙时代”改变了“国家伟大”的定义。

是什么让俄罗斯“伟大”?

可以侵略其他国家的**强大军队力量**

在奥运会上获得许多金牌

灿烂的文化(芭蕾、歌剧、……)

爱国的普通民众接受腐败和贫穷, 但重视

俄罗斯的伟大



是什么让丹麦“伟大”?

启蒙运动的伟大

创新的私营部门和自由市场提供了丰富的商品和服务



无腐败的政府为高税收提供公共产品和服务(例如免费的高质量教育和医疗保健)

私营和公共部门提供许多高薪工作, 因此人们可以支付高税收

Pre-enlightenment Thinking Can Reappear



Pre-enlightenment Thinking Can Reappear



Countries Each Escaped after Changing to Free Markets

Living standards rose rapidly in

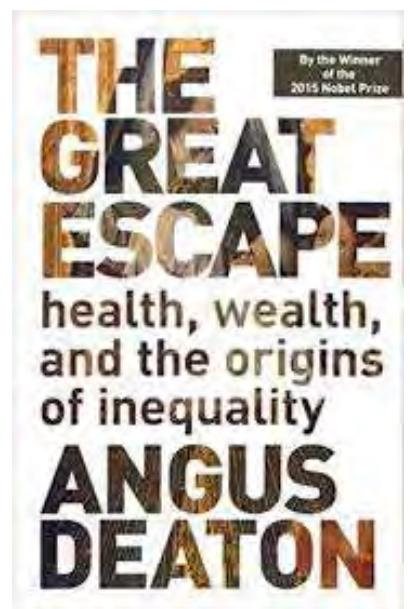
- Northern Italy (late 1400s & 1500s)
- Then Netherlands (Early & mid-1600s)
- Then Britain (late 1600s & 1700s)
- Then USA and other Western European countries (early & mid-1800s)
- Then Canada, Australia, Germany, Japan, Scandinavia ... (late 1800s)
- Then South Korea, Hong Kong, Singapore, Taiwan, Malaysia ... (late 1900s)
- China (????)



Angus Deaton
Nobel Prize 2015

This is the order of countries switching to (free markets)

- Some switched back (e.g. Germany & Japan in 1930s)
- Over the past 400 years, more countries switched to free markets & quickly made their people rich
- How is this connected to Finance courses?



Countries Each Escaped after Changing to Free Markets

生活水平迅速提高

意大利北部(15世纪末和16世纪)

然后是荷兰(17世纪早期和中期)

然后是英国(17世纪末和18世纪中期)

然后是美国和其他西欧国家(19世纪早期和中期)

然后是加拿大、澳大利亚、德国、日本、斯堪的纳维亚……(19世纪末)

再然后是韩国、香港、新加坡、台湾、马来西亚……(19世纪末)

中国(? ?)

这是各国转向(自由市场)的秩序

有些国家转回来了(如20世纪30年代的德国和日本)

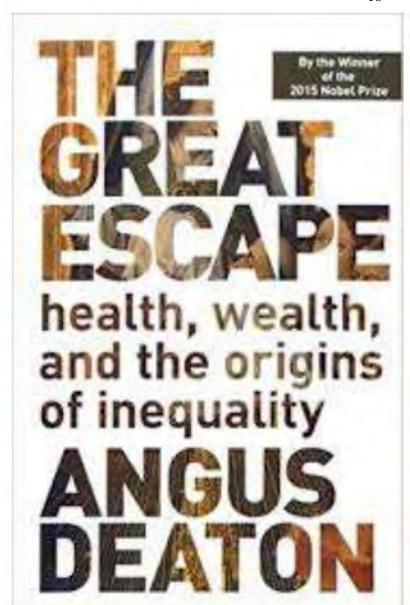
在过去的400年里，越来越多的国家迅速转向了自由市场

让他们的人民富裕起来

这和金融课程有什么关系？



安格斯·迪顿2015年
诺贝尔奖



Remember Capital Budgeting?

How well does a country allocate capital to its best uses?

How well do its firms do their NPV calculations?

The Net Present Value (NPV) Rule

- A software project costs \$20M
- Weighted average cost of capital is $r = 10\%$
- In year 1 it pays back \$17 million
- In year 2 it pays back \$8 million
- In year 3 it is worthless

$$\begin{aligned} NPV &= \frac{\$17M}{1 + 10\%} + \frac{\$8M}{(1 + 10\%)^2} - \$20M \\ &= 15,454,546 + \$6,611,570 - \$20,000,000 = \$2,066,116 > 0 \end{aligned}$$

NPV Rule: General Formula

$$NPV = \sum_{t=1}^T \frac{c_t}{(1+r)^t} - K_0$$

T = project lifetime

c_t = project cashflow in period t

r = cost of capital as %

K_0 = initial set-up cost

Apply the NPV Rule: $NPV > 0 \rightarrow$ project makes economic sense (enough people likely want the product to justify specializing in making it)

Remember Capital Budgeting?

一个国家如何将资本配置到最佳用途?
这些公司的NPV计算得如何?

净现值(NPV)规则

一个软件项目耗资2000万美元

资金加权平均成本 $r = 10\%$

第1年偿还1700万美元

在第二年，它还了800万美元

在第三年它就一文不值了

$$\begin{aligned} \text{NPV} &= \frac{\text{美元}51M}{5+54\%} + \frac{\$2M}{(5+54\%)^6} - \text{美元}64M \\ &= 15,454,546 + \$6,611,570 - \$20,000,000 = \$2,066,116 > 0 \end{aligned}$$

NPV规则:一般公式

$$\text{NPV} = \sum_{T=5}^T \frac{C_T}{(1+r)^T} - K_4$$

T = 项目寿命

<s:1> <s:1> 项目期间现金流量 <e:1>

r = 资金成本占%

K<e:2> = 初始设置成本

应用NPV规则: $\text{NPV} > 0$ 一个项目具有经济意义(足够多的人可能想要这个产品来证明
专门制作它是合理的)

EVAs: An Alternative to NPVs

EVA stands for economic value added ≈ “economic profit”

Look at the same investment project

- A software project costs \$20M & weighted average cost of capital is $r = 10\%$
- In year 1 it pays back \$17 million
- In year 2 it pays back \$8 million
- In year 3 it is worthless

Estimate the project’s EVA (economic profit) each year

- Recall how economic profit differs from accounting profit (& from cash flow)

Revenues	Revenues	Revenues
– Production cost	– Production cost	– Production cost
– Taxes	– Taxes	– Taxes
– Depreciation		
– Interest	– Cost of capital	
= Accounting Profit (Earnings)	= Economic Profit (Quasirent)	= Cash flow (as in Finance)

Concepts of “profitability” in different courses

- Like “cash flow” in finance, economic profit doesn’t count accounting fictions (e.g. ← depreciation) as a “cost”
- ← Unlike cash flow (where the cost of capital is in the discount rate) & accounting profit (which just subtracts the cost of debt), economic profit subtracts the cost of providing returns to all investors

EVAs: An Alternative to NPVs

EVA代表经济增加值≈“经济利润”

看同一个投资项目

- 一个软件项目耗资2000万美元，加权平均资本成本 $r = 10\%$
- 在第一年，它偿还了1700万美元
- 在第二年，它偿还了800万美元
- 在第三年，它是毫无价值的

每年估算项目的EVA(经济利润)

回顾经济利润与会计利润(&与现金流)的区别

收入	收入	收入
-生产成本	-生产成本	-生产成本
税	税	税
折旧		
感兴趣	-资金成本	
=会计利润 (收益)	=经济利润 (Quasirent)	=现金流量 (如《金融》)

不同课程中“盈利”的概念

就像金融中的“现金流”一样，经济利润并不重要
会计虚构(例如。
 折旧)作为“成本”
 不像现金流(资本成本在贴现中)
利率)和会计利润(它只是减去成本
债务)，经济利润减去提供回报的成本
致所有投资者

Capital Allocation

Alternative approach: EVA or economic value added

- A software project costs \$20M & weighted average cost of capital is $r = 10\%$
- In year 1 it pays back \$17 million
- In year 2 it pays back \$8 million
- In year 3 it is worthless

Step 1. Estimate project's annual cost of capital

To do this, convert the \$20M capital cost into an annuity with the same life as the project

$$\$20M = \frac{a}{1 + 10\%} + \frac{a}{(1 + 10\%)^2}$$

- Solve for annualized cost of capital
 $a = \$11,523,810$ per year

STEP 2: Calculate EVA each year

$$eva_t = c_t - a$$

$$eva_1 = \$17M - \$11,523,810 = \$5,476,190$$

$$eva_2 = \$8M - \$11,523,810 = -\$3,523,810$$

- Calculate the project's EVA for each year as its cash flow that year (the c_t s in NPV) minus the annualized cost of capital a

Capital Allocation

可供选择的方法:EVA或经济增加值

一个软件项目的成本为20M美元， 加权平均资本成本为 $r = 10\%$

在第二年，它将偿还800万美元

在第三年它就一文不值了

步骤1。估算项目每年的资金成本

要做到这一点， 将20M美元的资本成本转换为与项目寿命相同的年金

$$\text{美元 } 64M = \frac{A}{5+54\%} + \frac{A}{(5+54\%)^2}$$

?=CT-A \boxtimes 解年度资本成本

$$A = 11523810 \text{ 美元/年}$$

第二步:每年计算EVA

EVA?

计算项目每年的EVA为

23810美元3523810美元的现金流,(CTs NPV)
年化资金成本 a

$$\text{EVA}_5 = \$51M - 11523810 = 5476190 \text{ 美元}$$

$$\text{EVA}_6 = \$2M = -115$$

Capital Allocation

Alternative approach: EVA or economic value added

- A software project costs \$20M & weighted average cost of capital is $r = 10\%$
- In year 1 it pays back \$17 million
- In year 2 it pays back \$8 million
- In year 3 it is worthless

Step 1. Estimate project's annual cost of capital

STEP 2: Calculate EVA each year

STEP 3: Calculate the market value added (MVA)

$$MVA = \frac{eva_1}{1+r} + \frac{eva_2}{(1+r)^2}$$

The project's MVA is just the present value of its EVAs

$$= \frac{\$5,476,190}{1+10\%} + \frac{-\$3,523,810}{(1+10\%)^2} = \$4,978,355 + -\$2,912,239 = \$2,066,116$$

Apply the EVA Rule: $MVA > 0 \rightarrow$ project's PV of economic profit > 0 (enough people likely want it to make specializing in making it profitable)

资本配置

替代方法:EVA或经济增加值

- ☒ 一个软件项目耗资2000万美元， 加权平均资本成本 $r = 10\%$
- ☒ 在第一年， 它偿还了1700万美元
- ☒ 在第二年， 它偿还了800万美元
- ☒ 在第三年， 它是毫无价值的

步骤1。估算项目每年的资金成本

STEP2:每年计算EVA

STEP3:计算市场增加值(MVA)

$$MVA = \frac{EVA_5}{5+R} + \frac{EVA_6}{(5+R_6)}$$

项目的MVA只是其EVAs的现值

9美元,810,534-7美

元,967,254= +6= \$8312,799+-6美)

元,356,673= \$6,400,5505+54%5+54%

应用EVA规则:MVA > 0项目经济利润PV > 0(足够多的人可能想让它专业化，使其盈利)

Amazing Coincidence!!!

NPV = \$2,066,116 = EVA! Why?

Compare the general formula for EVA & Analysis

NPV Rule: General Formula

$$NPV = \sum_{t=1}^T \frac{c_t}{(1+r)^t} - K_0 > 0$$

T = project lifetime

c_t = project cashflow in period t

r = cost of capital as %

K_0 = initial set-up cost

EVA Rule: General Formula

$$MVA = \sum_{t=1}^T \frac{c_t - a}{(1+r)^t} > 0$$

T = project lifetime

c_t = project cashflow in period t

r = cost of capital as %

a = cost of capital as annuity

$$K_0 = \text{initial set-up cost} = \sum_{t=1}^T \frac{a}{(1+r)^t}$$

Some algebra shows $NPV = MVA$ because

$$\begin{aligned} NPV &= \sum_{t=1}^T \frac{c_t}{(1+r)^t} - K_0 = \sum_{t=1}^T \frac{c_t}{(1+r)^t} - \sum_{t=1}^T \frac{a}{(1+r)^t} \\ &= \sum_{t=1}^T \frac{c_t - a}{(1+r)^t} = \sum_{t=1}^T \frac{eva_t}{(1+r)^t} = MVA \end{aligned}$$

Amazing Coincidence!!!

NPV = \$2,066,116 = EVA! Why?

比较EVA和分析的一般公式

NPV规则:一般公式

$$NPV = \sum_{T=5}^T \frac{C_T}{(1+r)^T} - K_0$$

T = 项目寿命

< s:1 > < s:1 > 项目期间现金流量 < e:1 >

r = 资金成本为%

K<e:2> = 初始设置成本

EVA规则:一般公式

$$MVA = \sum_{T=5}^T \frac{C_T - A}{(1+r)^T} - K_0$$

T = 项目寿命

< s:1 > < s:1 > 项目期间现金流量 < e:1 >

r = 资金成本为%

= 资金成本为年金

$$Kyoudaoplacementholder13 = \text{初始设置成本} - \sum_{t=1}^T \frac{a}{(1+r)^t}$$

一些代数表明 $NPV = MVA$ because

$$\begin{aligned} NPV &= \sum_{t=1}^T \frac{c_t}{(1+r)^t} - K_0 = \sum_{t=1}^T \frac{c_t}{(1+r)^t} - \sum_{t=1}^T \frac{a}{(1+r)^t} \\ &= \sum_{t=1}^T \frac{c_t - a}{(1+r)^t} = \sum_{t=1}^T \frac{eva_t}{(1+r)^t} = MVA \end{aligned}$$

Internal Contradictions of Capitalism

In introductory microeconomics class

- Competition pushes economic profits to zero
- If EVA > 0 then cut prices to steal rivals' customers
- EVA falls to 0 so quickly we can assume economic profits are zero in all our models

In introductory finance class

- Firms are always finding NPV > 0 projects

Something is rotten in business schools

- If EVA = 0 always, then NPV = 0 always
- One or the other of the two classes is seriously wrong

资本主义的内部矛盾

在微观经济学导论课上

竞争将经济利润推至零

如果EVA > 0 , 则降低价格以窃取竞争对手的客户

EVA降至0如此之快, 我们可以假设所有的经济利润都为零

模型

在金融入门课上

企业总是找到NPV > 0 的项目

商学院里有些东西腐烂了

如果EVA总是= 0, 那么NPV总是= 0

两类中有一种是严重错误的

What Happens to Investment If All NPVs Fall to 0?

Marx, Karl. 1867. *Das Kapital*. Verlag von Otto Meisner

Schumpeter, Joseph. 1954. *Capitalism, socialism and democracy*. Routledge

Schumpeter, Joseph. 1956. *History of Economic Analysis*. Psychology Press

According to Karl Marx (interpreted by J. Schumpeter)

1. Competition to lower prices causes $EVA = 0$
2. NPV of new investment = 0
3. Investment falls to very low levels
4. Unemployment rises
5. Falling wages raise EVA
6. Go to 1



Internal contradiction of capitalism

- This cycle repeats, with wages falling more & more, until wages are so low that workers unite & free-market economics collapse

如果所有净现值降至0， 投资会发生什么？

马克思，卡尔。1867。《资本论》。魏拉格·冯·奥托·迈斯纳

约瑟夫·熊彼特，1954。资本主义、社会主义与民主。约瑟夫·熊彼特，
1956。《经济分析史》。心理学的新闻

根据卡尔马克思(由J.熊彼特解释)

1. 竞争降低价格导致EVA = 0
2. 新投资NPV = 0
3. 投资下降到非常低的水平
4. 失业率上升
5. 工资下降提高EVA
6. 见1



资本主义的内部矛盾

这个循环不断重复，工资越来越低，直到工资低到工人团结起来，自由
市场经济崩溃

What Happens to Countries if All NPVs Fall to 0?

Marx predicted this cycle would

- Destroy free market economies
- Cause revolution to establish workers' paradise



如果All 净现值降至0，国家将会发生？

马克思预言，这种循环将摧毁自由市场经济，引发革命，建立工人的天堂



What Went Wrong-Right?

- Free-market economies had recessions & depressions, but recovered & kept going
- NPVs didn't fall to zero
- Workers grew richer
- Old fashioned socialism worked poorly
 - Destroyed in revolutions in Eastern Europe & USSR
 - Replaced by "Market Socialism with Chinese Characteristics" in China
- Unreformed socialism only persists in Cuba, Eritrea, North Korea & Venezuela – and ordinary people in these countries are very poor



Chinese ordinary people began getting rich fast after China switched to (mostly) free markets

错在哪里？

自由市场经济有过衰退和萧条，但是

恢复并继续发展

npv没有降至零

工人变得更富有了

老式社会主义效果不佳

在东欧和苏联的革命中被摧毁

在中国被“有中国特色的市场社会主义”所取代

未经改革的社会主义只在古巴、厄立特里亚、朝鲜存在

朝鲜、委内瑞拉以及这些国家的普通民众

都很穷



在中国转向(大部分)免费后，中国普通民众开始快速致富

市场

Joseph Schumpeter Explains Marx's Error

Schumpeter, Joseph. 1911. *Theorie der Wirtschaftlichen Entwicklung*

Free markets cause 2 kinds of competition

1. Competition to cut prices

Makes economic profits go to zero because firms cut prices to compete for customers until economic profits are zero

2. Competition to innovate

Keeps successful innovators' economic profits above zero because successful innovators can compete for customers by offering new or better products at high prices

- If the only competition is “cut prices”, Marx is completely right: economic profits & NPV s & investment all fall to zero (or very low levels)
- If there is also ongoing competition to innovate, then Schumpeter is right: economic profits, NPVs & investment can all remain high

Conclusion: “Do $NPV > 0$ projects” = “innovate”



Joseph Schumpeter



约瑟夫·熊彼特解释马克思的错误

约瑟夫·熊彼特。1911。Theorie der Wirtschaftlichen Entwicklung

自由市场导致两种竞争

1. 竞争降价

使经济利润趋近于零，因为企业通过降价来争夺客户，直到经济利润趋近于零

2. 竞争创新

使成功的创新者的经济利润高于零，因为成功的创新者可以通过以高价提供新的或更好的产品来争夺客户

如果唯一的竞争是“降价”，马克思是完全正确的：经济利润、NPV和投资都降至零(或非常低的水平)。

如果存在持续的创新竞争，那么熊彼特是对的：经济利润、npv和投资都可以保持在高位

结论：“做 $NPV > 0$ 的项目” = “创新”



约瑟夫·熊彼特



Joseph Schumpeter Explains Marx's Error

Schumpeter, Joseph. 1911. Theorie der Wirtschaftlichen Entwicklung

Competition to innovate lets countries escape from Marx's contradiction

- Innovations create temporary monopolies
- EVA > 0 & NPV > 0 until innovation is copied or made obsolete

Minor conclusion

- Microeconomics is wrong, finance is right!!

Major conclusion

- Innovation stabilizes free market economies
- Search for NPV > 0 projects = search for “innovations”

Schumpeter describes free markets as a process of Creative Destruction

- Innovation stabilizes economies by destabilizing firms
- Creative firms win big because they have temporary monopolies (until another more innovative firm develops an even better new product)
- Uncreative firms are destroyed (partially or totally) because they lose customers
- Owners & workers at non-innovative firms hurt
 - Shareholders can diversify
 - Employees of older firms destroyed by rapid innovation need to be supported by socialist policies such as unemployment insurance, social welfare programs, etc.



Joseph Schumpeter



约瑟夫·熊彼特解释马克思的错误

约瑟夫·熊彼特, 1911。Theorie der Wirtschaftlichen Entwicklung

创新竞争使各国摆脱了马克思的矛盾

创新创造了暂时的垄断

EVA > 0, NPV > 0, 直到创新被复制或淘汰

小的结论

<s:1>微观经济学是错的, 金融是对的!!

主要结论

创新稳定了自由市场经济

搜索NPV > 0的项目=搜索“创新”

熊彼特将自由市场描述为一个创造性破坏的过程

创新通过破坏企业的稳定来稳定经济

创意公司之所以能大获成功, 是因为它们拥有暂时的垄断(直到另一个垄断)

创新型公司开发出更好的新产品)

缺乏创造力的公司会因为失去客户而被摧毁(部分或全部)

非创新公司的所有者和员工受到伤害

股东可以实现多元化

被快速创新摧毁的老公司的员工需要得到社会主义政策的支持, 如失业保险、社会福利计划等。



约瑟夫·熊彼特



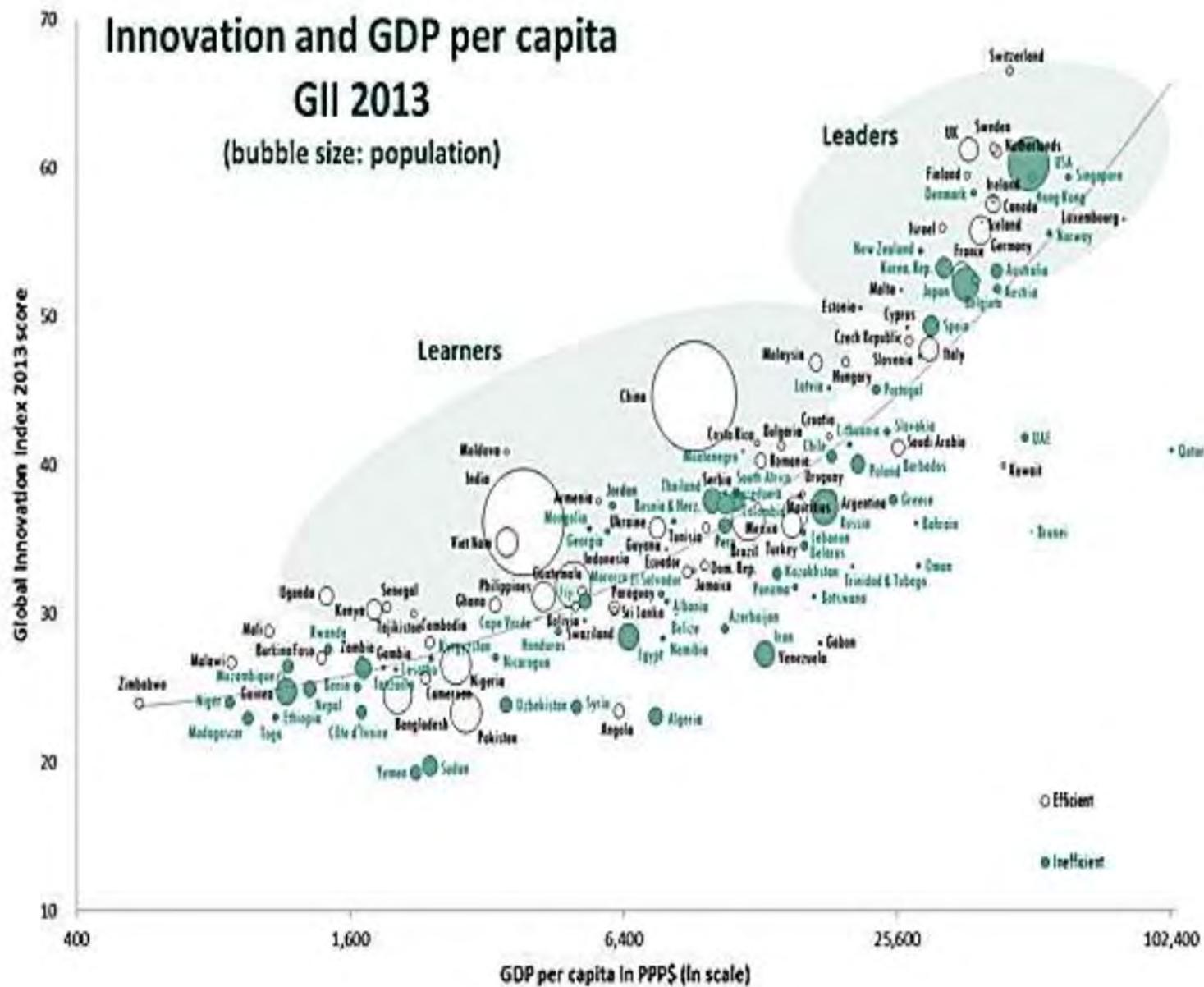
More Innovation = More Prosperity

Data clearly link innovation to economic growth & prosperity



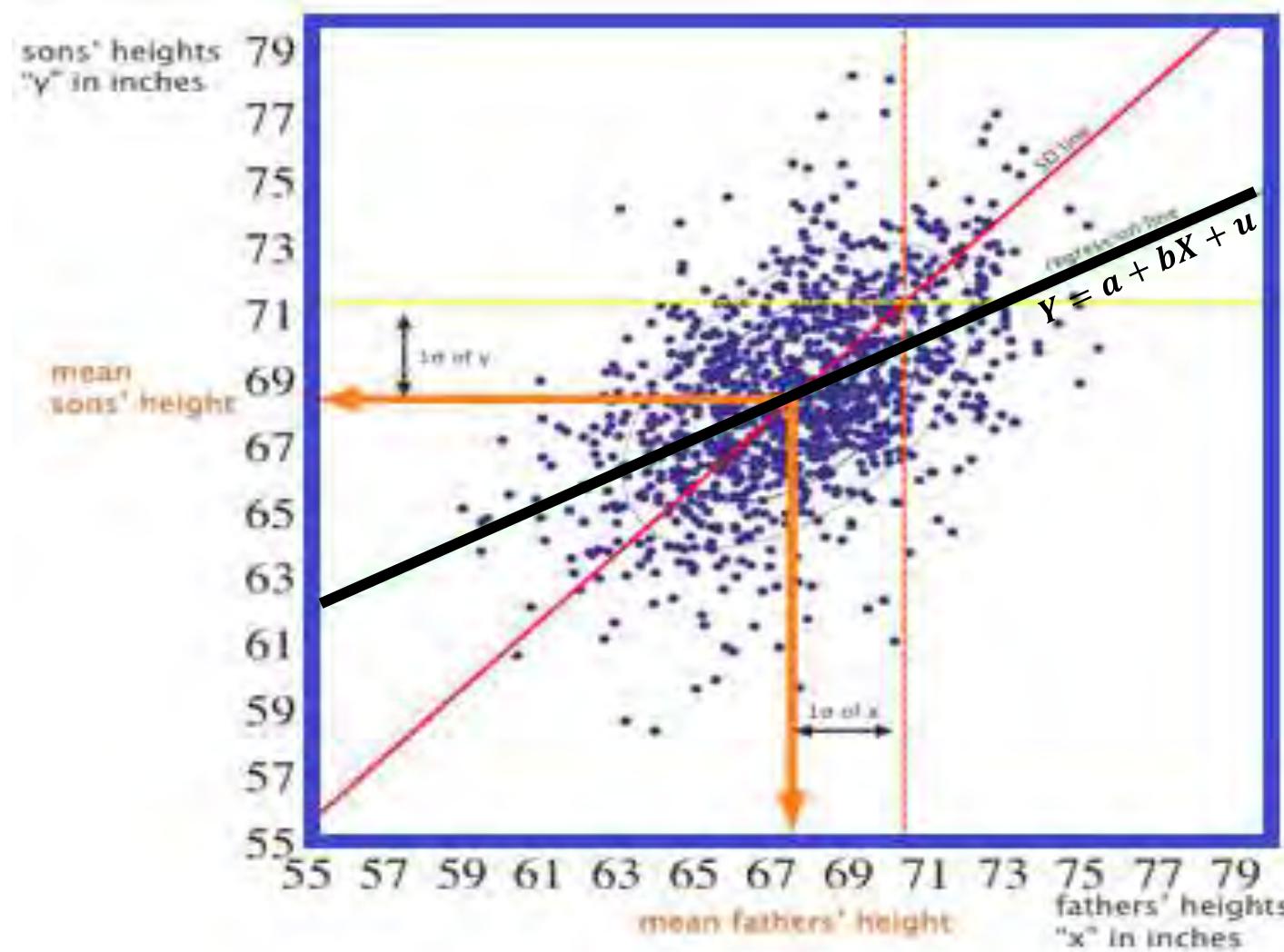
More Innovation = More Prosperity

数据清楚地将
创新与
经济增长与繁荣



Regression Analysis

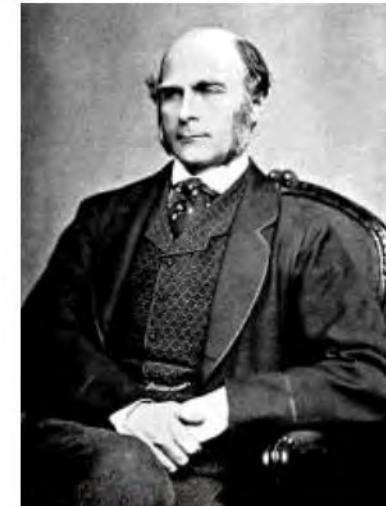
The statistical estimation technique called a Linear Regression was devised by Francis Galton (Charles Darwin's cousin)



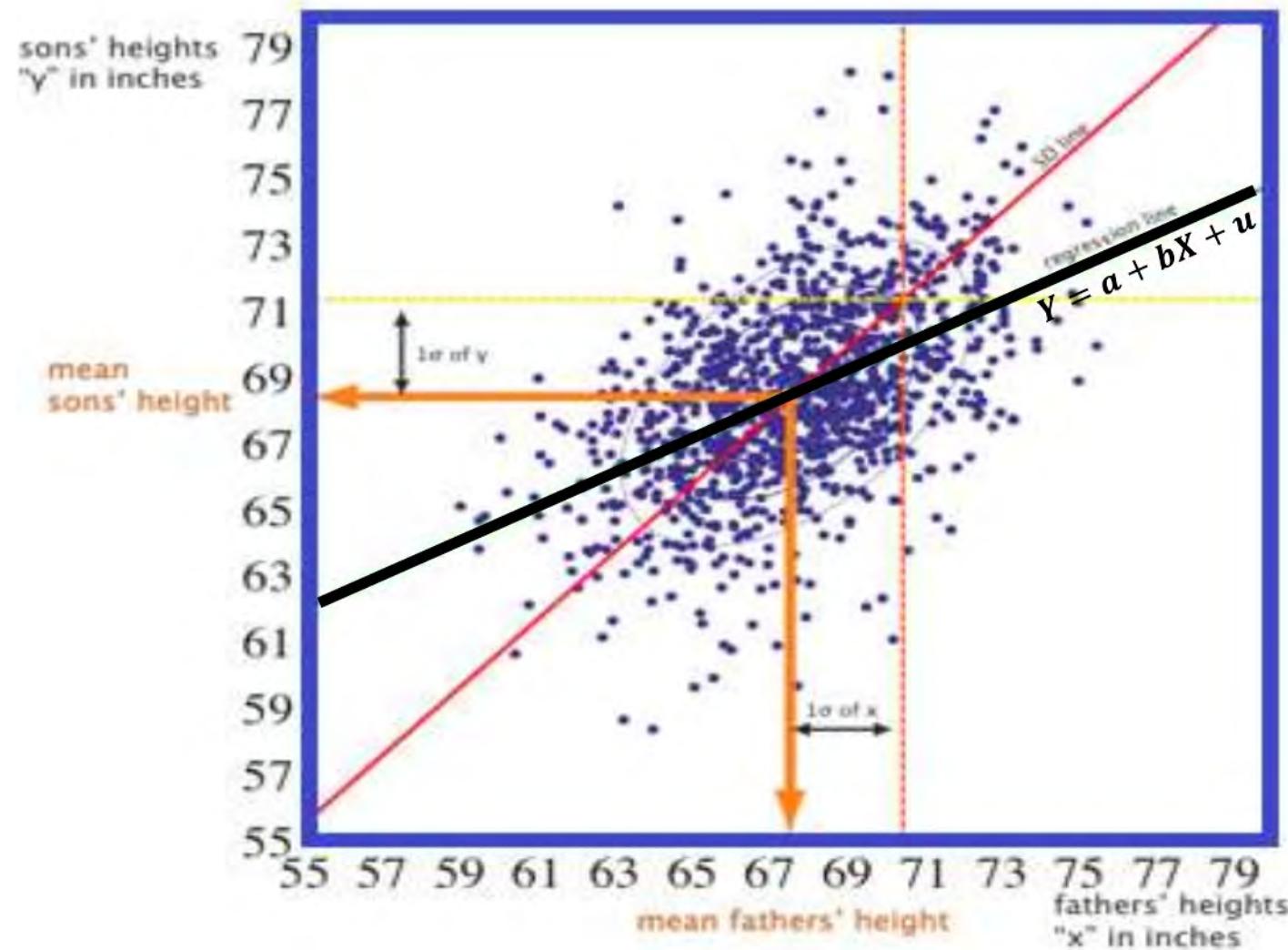
Sir Francis Galton
(1822 – 1911)

Regression Analysis

被称为线性回归的统计估计技术是由弗朗西斯·高尔顿(查尔斯·达尔文的表弟)设计的



Sir Francis Galton
(1822 – 1911)



The Social Purpose of Finance

Schumpeter, Joseph. 1912. Theorie der Wirtschaftlichen Entwicklung

- Schumpeter argued that brilliant innovators are rare
- Children cannot be expected to inherit their parents' talent, so the most creative innovators usually don't have wealthy families & need capital from investors
- The social purpose of the financial system is to direct people's savings to genuinely brilliant & honest entrepreneurs with $NPV > 0$ projects



Entrepreneurs
(Ideas, no money)

TRUST

financial markets and
institutions is to
connect them



Capitalists
(Money, no ideas)

The Social Purpose of Finance

约瑟夫·熊彼特，1912。Theorie der Wirtschaftlichen Entwicklung

熊彼特认为杰出的创新者是罕见的

新者是罕见的熊彼特认为杰出的创新者是罕见的

通常没有富裕的家庭，需要投资者的资金；金融体系的社会目的是将

人们的储蓄引导到真正杰出的人身上

项目NPV > 0的诚实企业家



Entrepreneurs
(Ideas, no money)

TRUST

financial markets and
institutions is to
connect them



Capitalists
(Money, no ideas)

Free Market Legal Institutions

Vereenigde Oost-Indische Compagnie (VOC, Dutch East India Company, 荷兰东印度公司)

- Formed in 1602 with a 21 year mercantilist monopoly on trade with Asia
- VOC used traditional financing of trade voyages

1. Company formed, set-up cost financed by

- Ship owners: each pays for a share of a ship
- Trade goods: each supplier pays for a share of trade goods to go to Asia
- Company promises shares of wealth from voyage to “ship share owners” & “trade goods share owners” & captain & crew (e.g. 1/3 to ship share owners, 1/3 to trade goods share owners, 1/3 to captain & crew)

2. Division of wealth (dividends) paid after ship returns from Asia

- Ships sold, goods brought back from Asia sold, company dissolved
- Dividends paid to each “ship share owner” & “trade goods share owner” & captain & crew as promised

Board refused to dissolve the VOC & sell ships

- Just sells goods brought back from Asia & pays dividends to all share owners using this money
- Sends ships back to Asia for more trading voyages, promises to pay all share owners more dividends from sale of trade goods each time a ship returns from Asia

Investors against invention of tradeable shares & indefinitely long-lived company

- Furious ship share owners & trade goods share owners go to court to force sale of ships & payment of “full” dividends
- Judge decides share owners can get their money back by selling their “shares” to others; no need to sell ships or dissolve company
- Actually tradable shares & indefinitely long-lived companies existed in Roman Empire period, but forgotten after barbarian invasions (5th to 7th centuries) destroyed the Ancient West’s economy



VOC board of directors

自由市场法律制度

荷兰东印度公司(荷兰东印度公司VOC)

成立于1602年，对亚洲贸易实行了21年的重商主义垄断
VOC使用传统的贸易航行融资

1. 公司成立，设立费用由

船东:每人支付一艘船的份额

交易货物:每个供应商支付一定份额的贸易货物去亚洲

公司承诺从航次到“船股所有人” & “贸易货物”分享财富

“船东” & 船长和船员(例如:1/3分给船东, 1/3分给贸易货物

船东, 1/3给船长和船员)

2. 船舶从亚洲返回后支付的财富分配(红利)

船卖了, 从亚洲带回来的货物卖了, 公司解散了

支付给每个“船舶股份所有人”和“贸易货物股份所有人”以及船长和船员的股息

承诺

董事会拒绝解散VOC并出售船舶

只是出售从亚洲带回来的商品, 然后用这笔钱给所有股东分红

将船只送回亚洲进行更多的贸易航行, 承诺从贸易销售中向所有股东支付更多的股息

船只每次从亚洲返回时都要支付货物

投资者反对发明可交易股票和无限期长寿公司

愤怒的船舶股东和贸易货物股东向法院起诉, 要求出售船舶并支付“全额”股息

法官决定股东可以通过将“股份”卖给他人来拿回他们的钱;不需要卖船或者

解散公司

实际上可流通的股票和无限期长寿的公司在罗马帝国时期存在, 但之后就被遗忘了

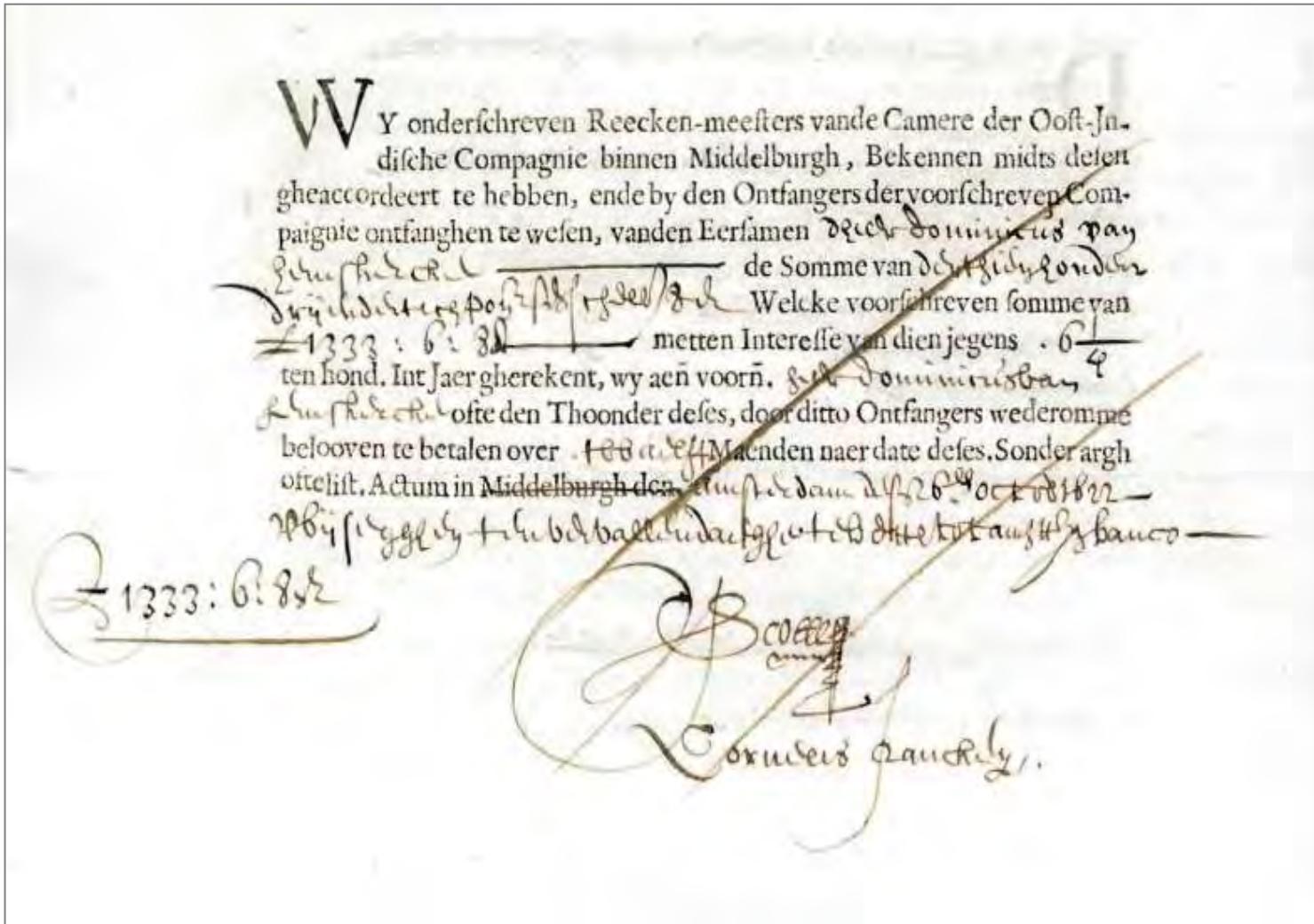
蛮族入侵(5至7世纪)摧毁了古代西方的经济



VOC董事会

Invention of Corporation & Stock Market

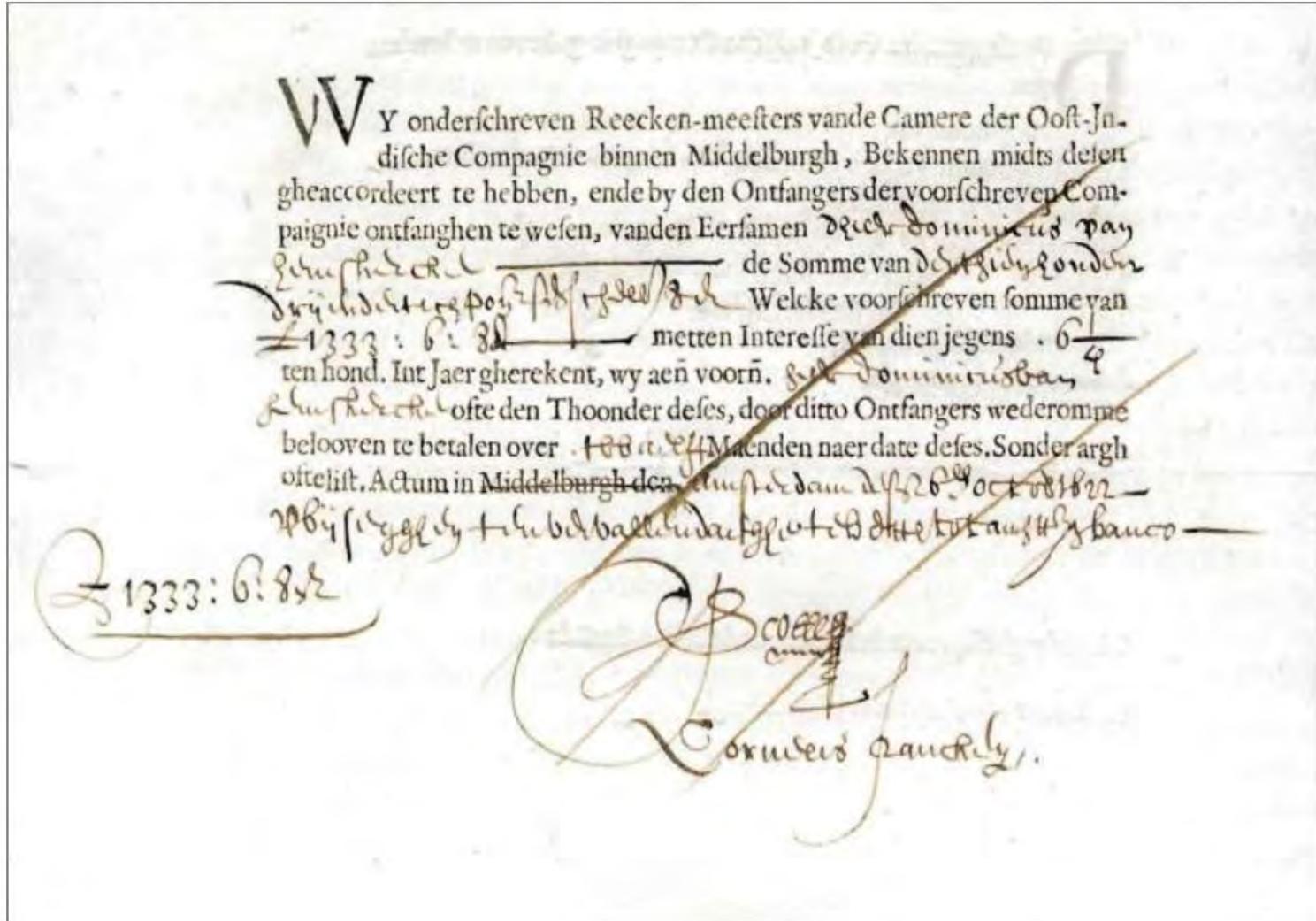
- ☐ Amsterdam Stock Market is first in the modern world
- ☐ The VOC was highly successful, and its “shareholders” became millionaires
- ☐ Copycat “joint stock companies” soon appeared in Netherlands & across north-western Europe



Original
tradeable
“share” in VOC

Invention of Corporation & Stock Market

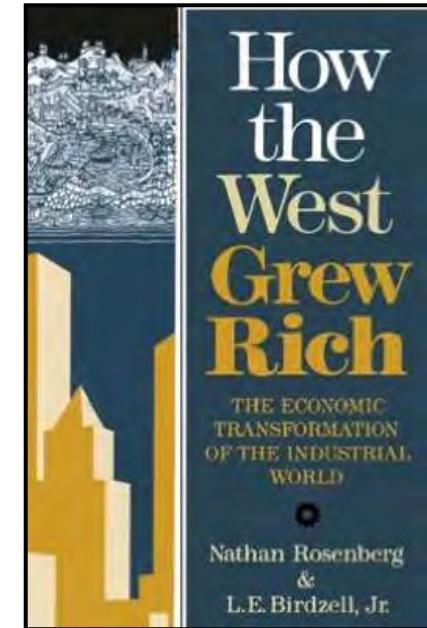
VOC非常成功，其“股东”成为百万富翁；**模仿的“股份公司”很快在荷兰和整个西北欧出现**



Original
tradeable
“share”的“份额”

Invention of Corporation & Stock Market

Rosenberg, Nathan, Luther Birdzell. 1986. How the West grew rich. Basic Books



Stock market & corporation among greatest innovations in history

Advantages to investors

- Investors can diversify; buy a few shares in many firms
- Market reprices shares daily, public measure of every firm's performance
- Investors can sell out without dissolving company

Advantage to entrepreneurs

- Allows vast amounts of capital to be assembled
- Allows specialization because shareholders can diversify risk by holding a few shares in many companies
- Allows firms to take high risks that a private venture owned by a family or a few individuals would not take
- Encourages trust
 - Shareholders elect trustworthy boards, chairs, etc.
 - Shareholders paid equal dividends
 - Firms try to have constant or steadily growing dividends

Subsequent developments

- Formalization of limited liability in bankruptcy
- Accounting standards for transparent financial statements
- Securities regulations, corporate law, etc.

公司与股票市场的发明

内森·罗森伯格、路德·伯德泽尔1986。西方是如何致富的。基本书

股票市场和公司是历史上最伟大的创新之一——
对投资者的好处

投资者可以多样化;购买多家公司的少量股票

市场每天对股票进行重新定价，这是对每家公司业绩的公开衡量

投资者可以在不解散公司的情况下出售股份

创业者的优点

允许大量的资本聚集起来

允许专业化，因为股东可以通过持有少量股份来分散风险

许多公司

允许公司承担家族或少数人拥有的私人企业的高风险

个人不会承担风险

鼓励信任

股东选举值得信赖的董事会、主席等。

股东支付相等的股息

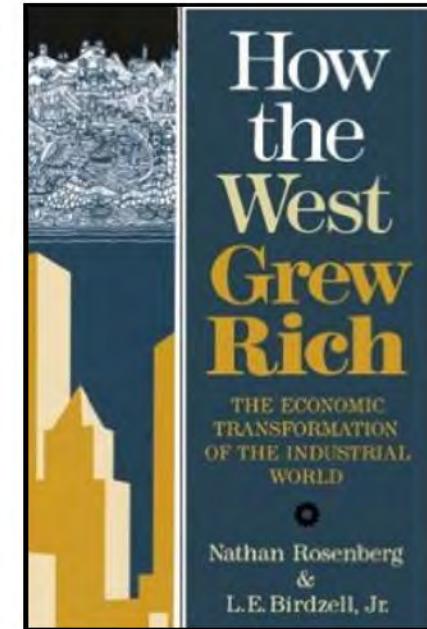
公司试图获得持续或稳定增长的股息

随后的发展

破产中有限责任的正规化

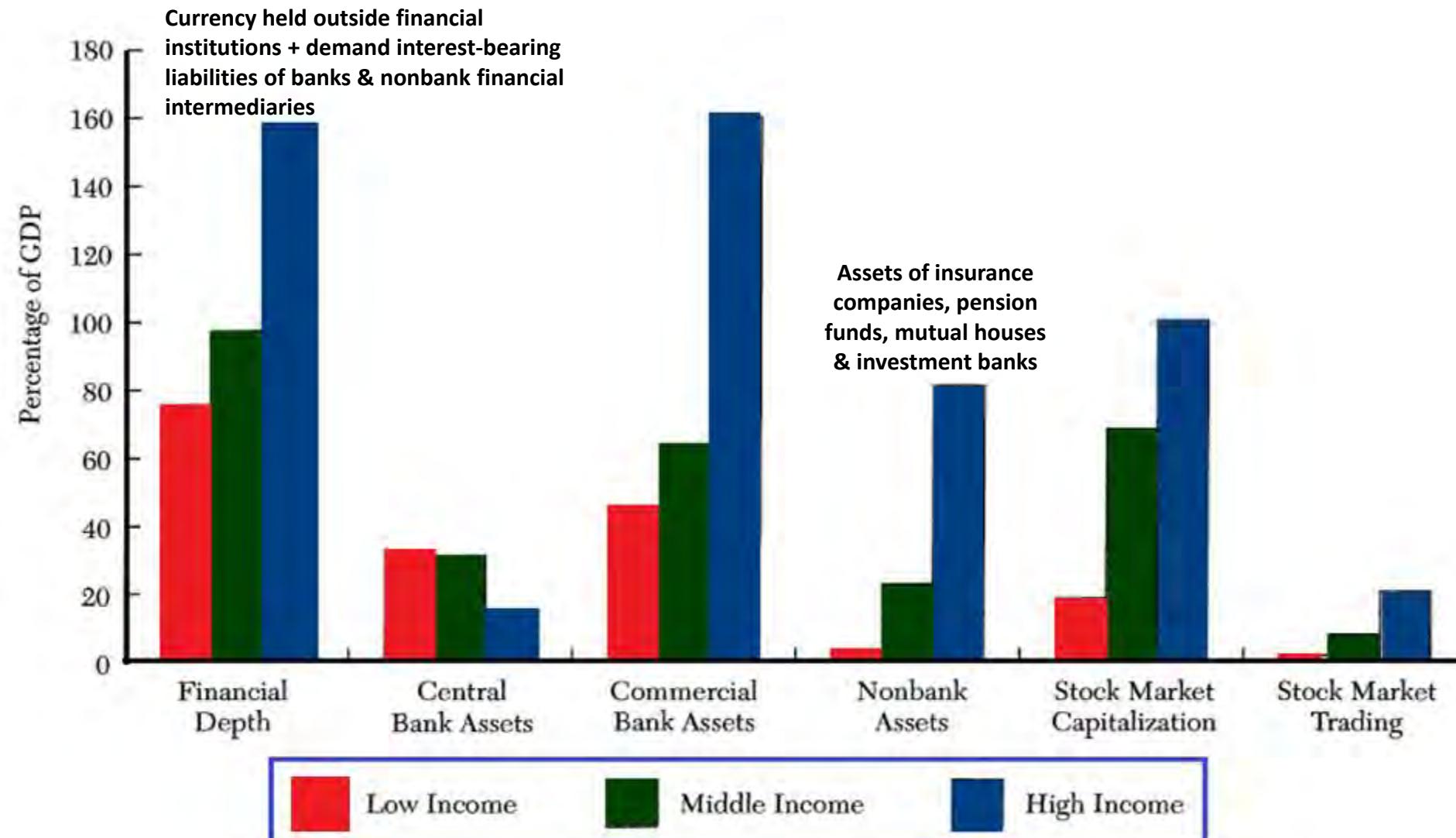
透明财务报表的会计准则

证券法规、公司法等。



Richer Countries Have Bigger Financial Systems

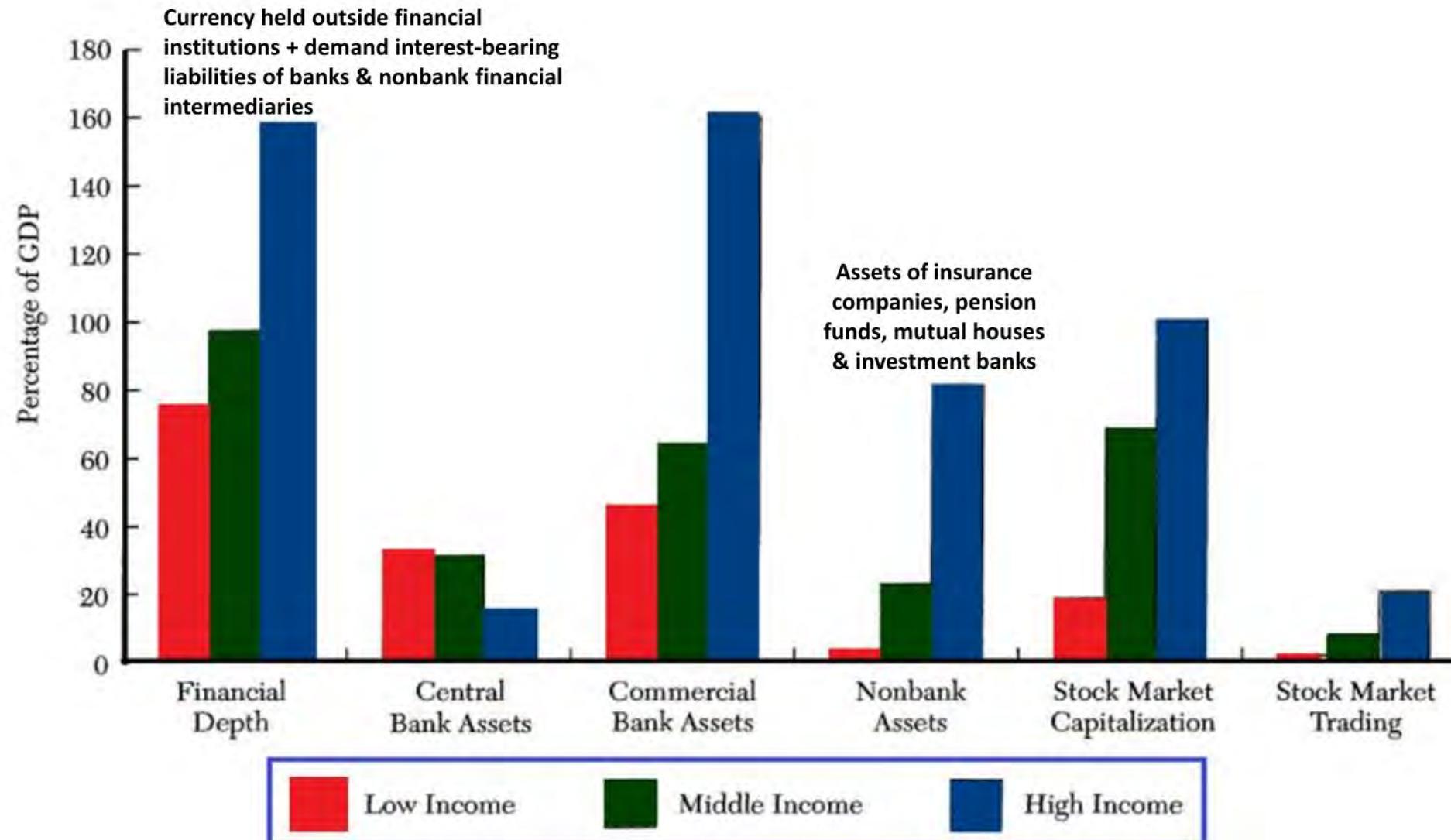
King, Robert G & Ross Levine. 1993. Finance & Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics*. 108(3) 717-738.



Low-income economies are Bangladesh, Egypt, Ghana, Guyana, Indonesia, Kenya, Nigeria, Pakistan, Zaire, Zambia, and Zimbabwe; middle-income are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Guatemala, Jamaica, the Republic of Korea, Malaysia, Mexico, Paraguay, The Philippines, Tunisia, Turkey, Uruguay, and Venezuela; high-income economies are Australia, Finland, Germany, Italy, Japan, The Netherlands, Singapore, Spain, Sweden, the UK and USA.

Richer Countries Have Bigger Financial Systems

罗伯特·G·金和罗斯·莱文, 1993。《金融与增长:熊彼特可能是对的》。《经济学季刊》, 108(3)717-738。



低收入经济体为孟加拉国、埃及、加纳、圭亚那、印度尼西亚、肯尼亚、尼日利亚、巴基斯坦、扎伊尔、赞比亚和津巴布韦;中等收入国家是阿根廷、玻利维亚、巴西、智利、哥伦比亚、哥斯达黎加、多米尼加共和国、危地马拉、牙买加、大韩民国、马来西亚、墨西哥、巴拉圭、菲律宾、突尼斯、土耳其、乌拉圭和委内瑞拉;高收入经济体包括澳大利亚、芬兰、德国、意大利、日本、荷兰、新加坡、西班牙、瑞典、英国和USA。

Solow Residual: “Unexplained” Economic Growth

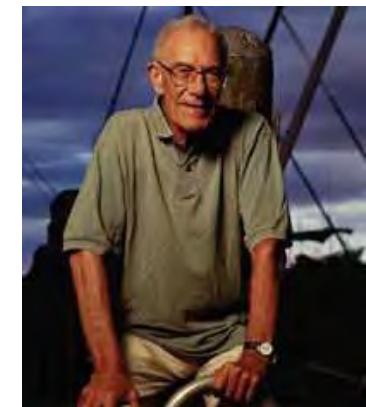
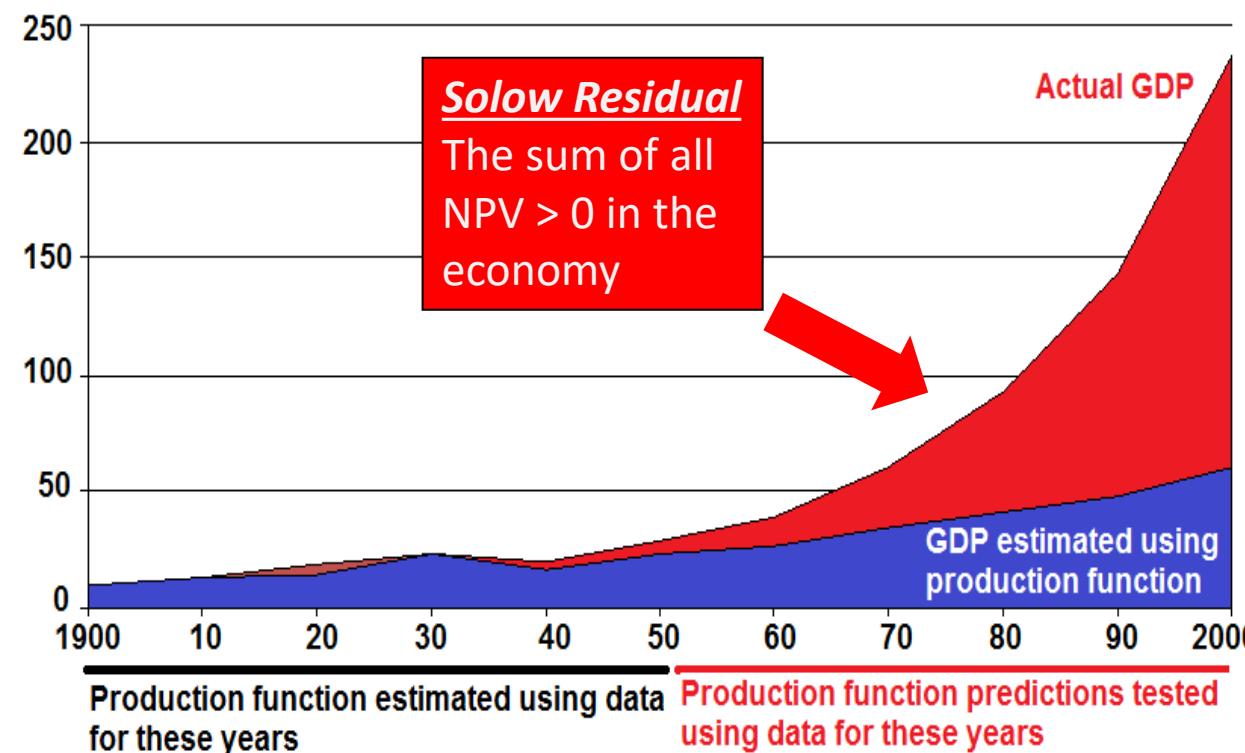
Solow, Robert. 1970. *Growth theory. An exposition.* Clarendon Press

Production functions

- Explain $GDP = Y_t = F(K_t, L_t, \dots)$ with K_t = capital, L_t = labor, & other inputs
- For example, a Cobb-Douglas production function has $GDP_t = AK_t^a L_t^b$
- Use Y_t, K_t, L_t , data for early years (e.g. $t = 1980, 1981, \dots 1998$) to calibrate production function (i.e. find A, a & b)
- Use these A, a & b & K_t & L_t data for later years (e.g. $t = 1999, 2000, \dots 2019$) – to get GDP estimates $E[Y_t]$

Problem

- Do this with data from USA or any other high income country → predictions are too low, problem worse over time
- About 2/3 of GDP growth in high-income economies is not explained by more capital or more workers



Robert Solow
Nobel Prize 1987

Solow Residual: “Unexplained” Economic Growth

罗伯特·索洛, 1970。经济增长理论。一个博览会。克拉伦登出版社

生产函数

解释 $GDP = Y = F(K, L, \dots)$, K =资本, L =劳动力, 和其他投入

例如Cobb-Douglas生产函数 $GDP_t = AK_t L^{1-\alpha} T^{1-\alpha}$

使用早年的 Y 、 K 、 L 、 T 数据(例如, $A = GDP$)来校准生产函数(即, 找到 A 、 $A & B$)。使用 这些晚年的 A 、 B & K & T & 333 数据(例如, $3 = \dots$)来获得 GDP 估计 $E[Y_t]$

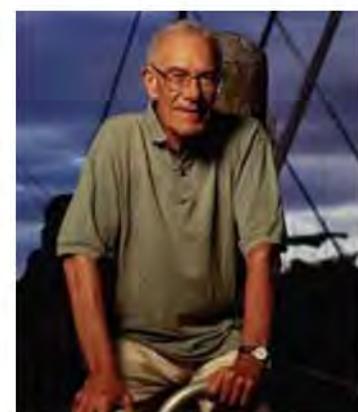
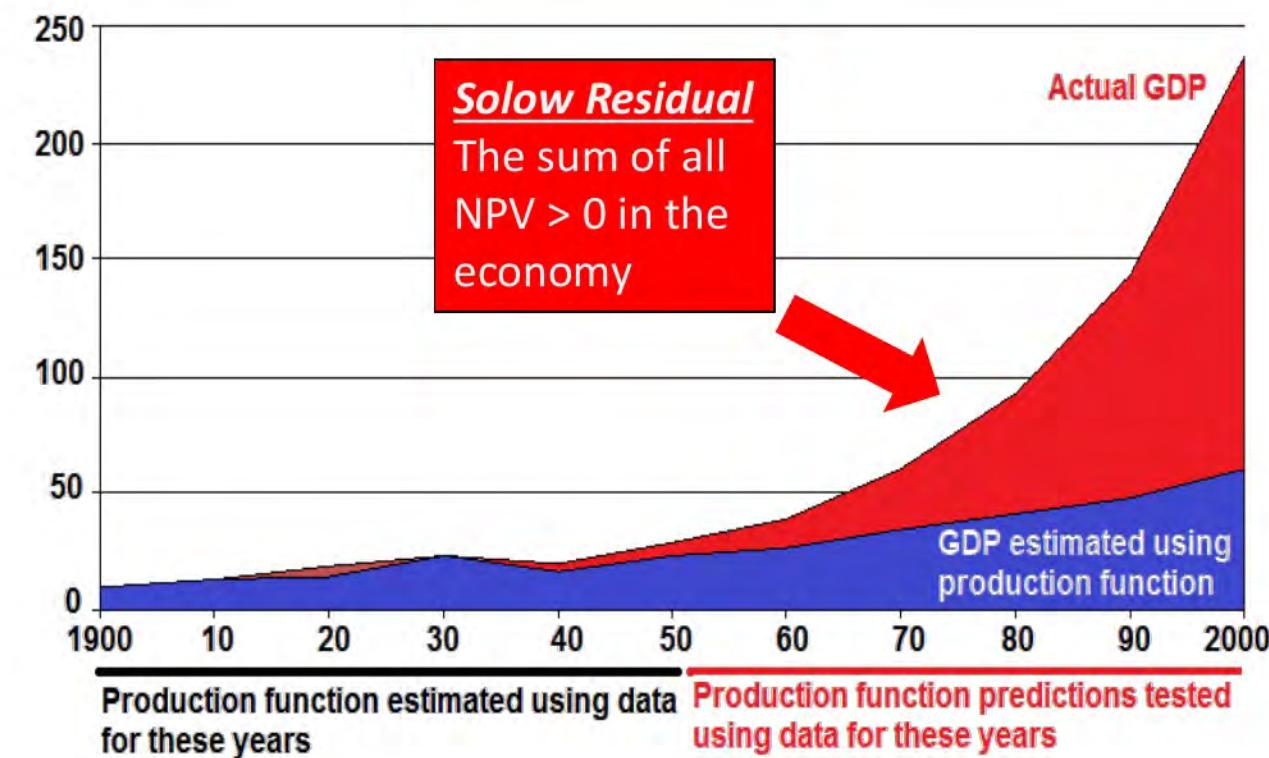
问题

使用 USA 或任何其他高收入国家的数据进行预测, 预测过低, 问题会随着时间的推移而恶化

在高收入经济体中, 大约 $2/3$ 的 GDP 增长并非如此

更多解释

资本还是更多的工人

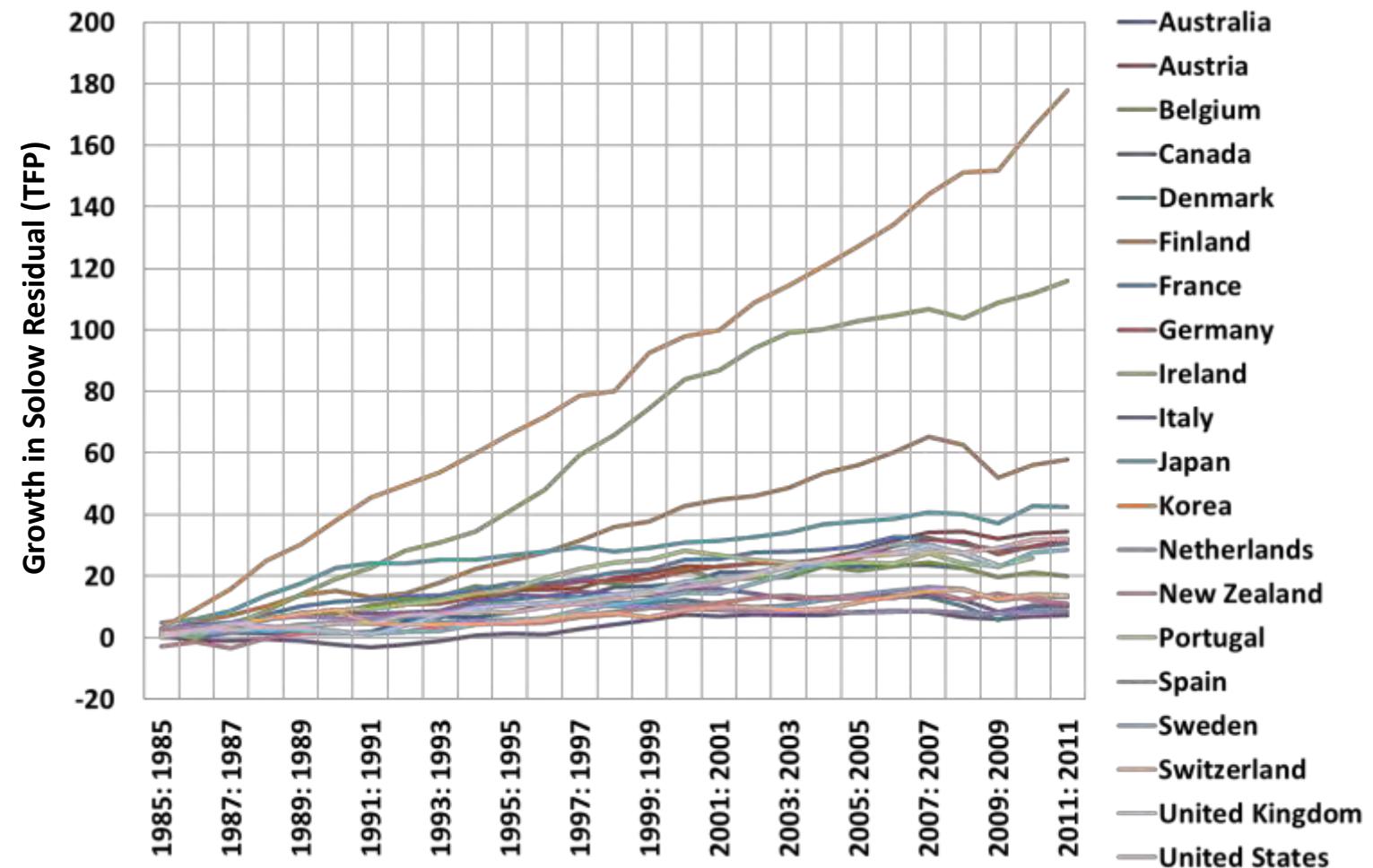
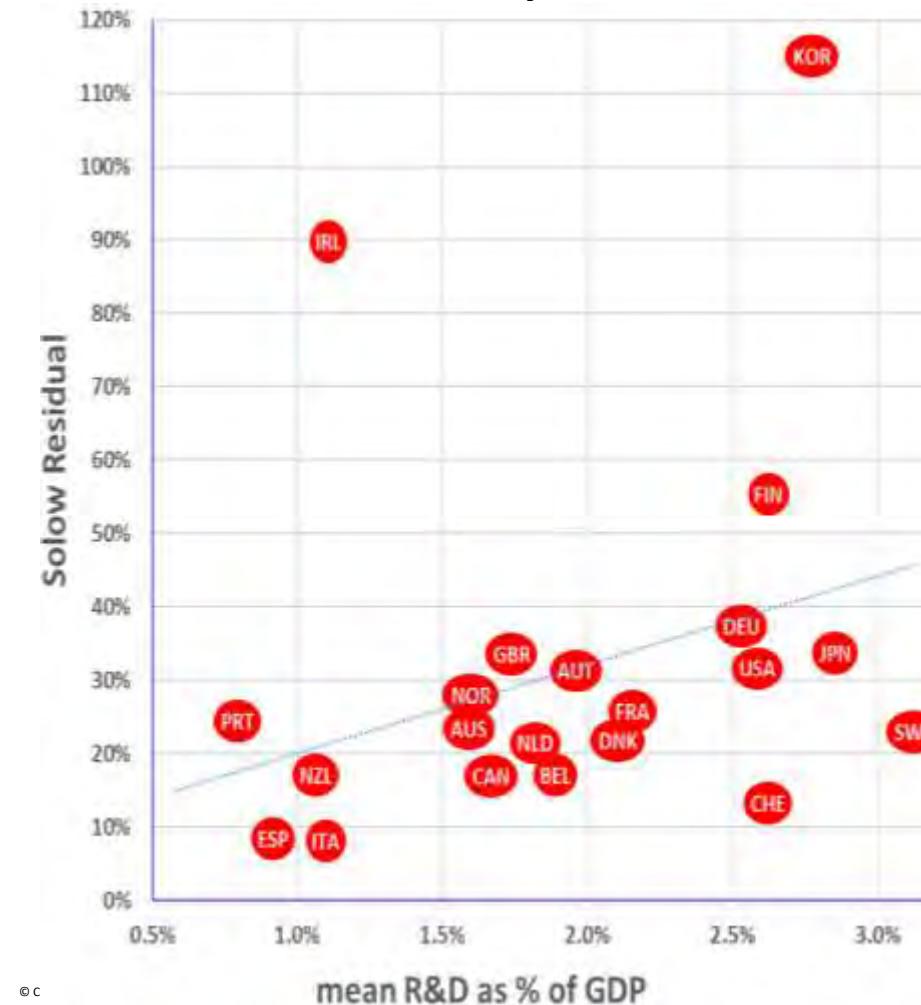


罗伯特·索洛 1987 年
诺贝尔奖

Solow Residual: Productivity Growth from Innovation

Solow, Robert. 1970. *Growth theory. An exposition.* Clarendon Press

- This “residual” is larger in economies that do more research & development (R&D) and reflects economic growth due to innovation: Faster innovation “improves” the economy’s production function to produce more outputs or more valuable outputs with less or less costly inputs
- Growth in an economy’s Solow residual is called total factor productivity TFP growth

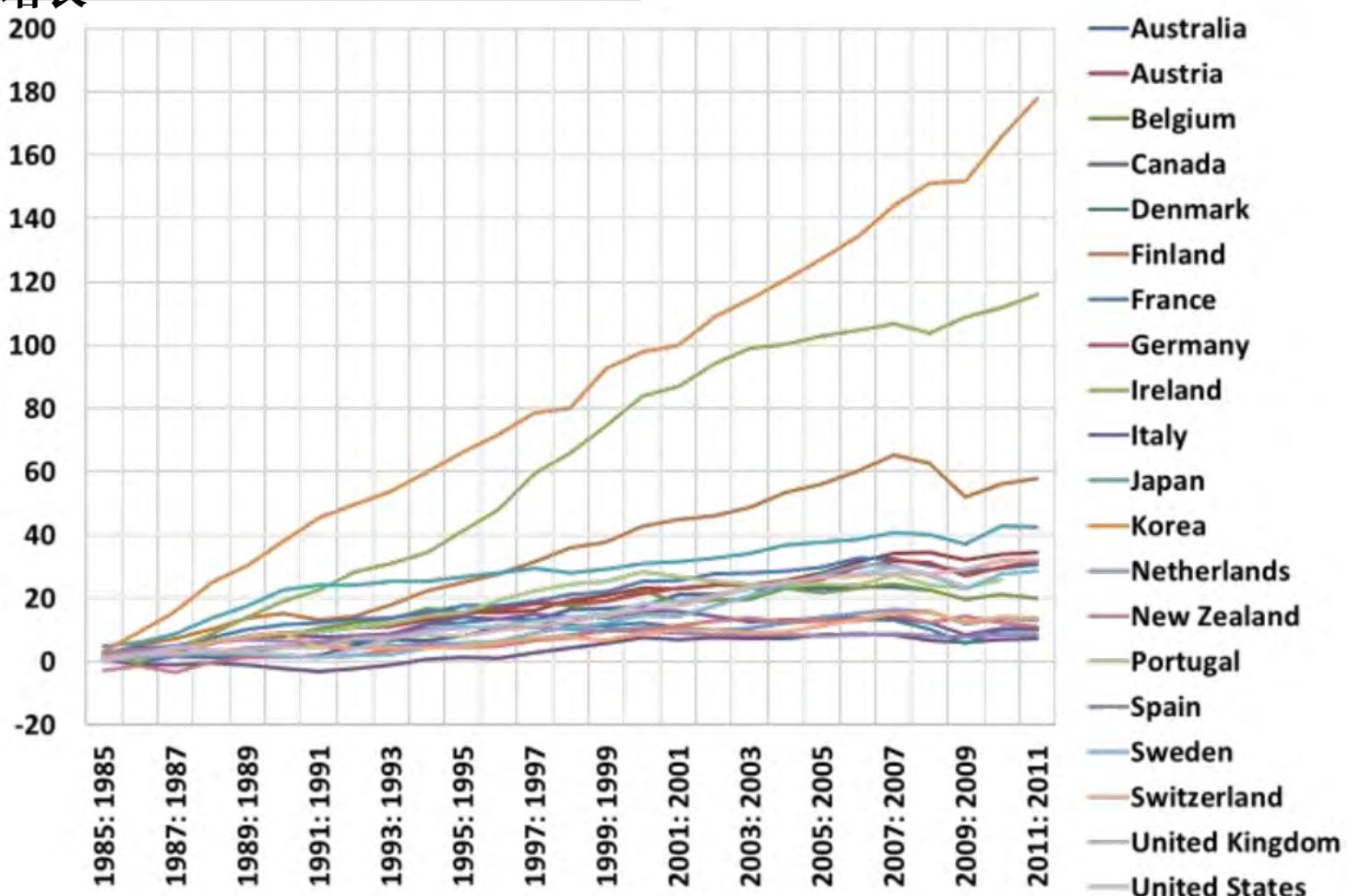
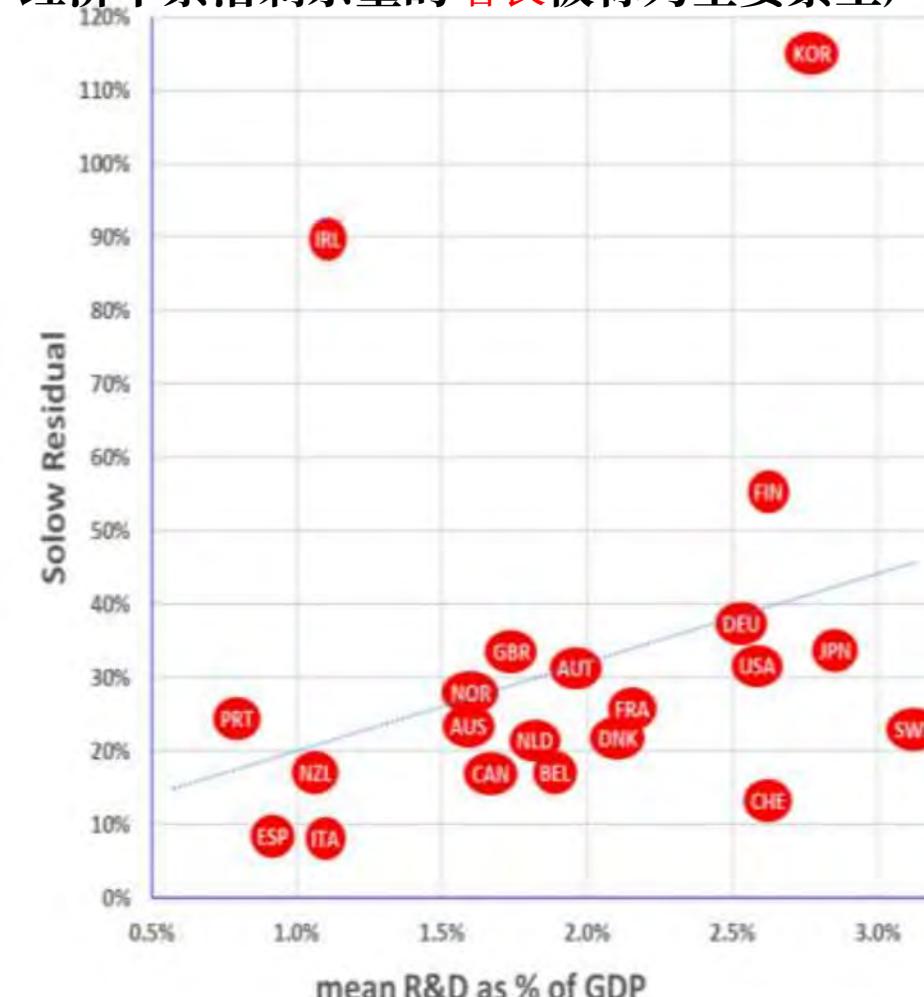


Solow Residual: Productivity Growth from Innovation

罗伯特·索洛, 1970。经济增长理论。一个博览会。克拉伦登出版社

这种“剩余”在做更多研究与开发(R&D)的经济体中更大, 反映了经济增长由于
创新: 更快的创新“改善”了经济的生产功能, 以生产更多的产出或更有价值的产品
投入更少或成本更低的产出

经济中索洛剩余量的增长被称为全要素生产率TFP增长



Creative Destruction & Higher Productivity Growth

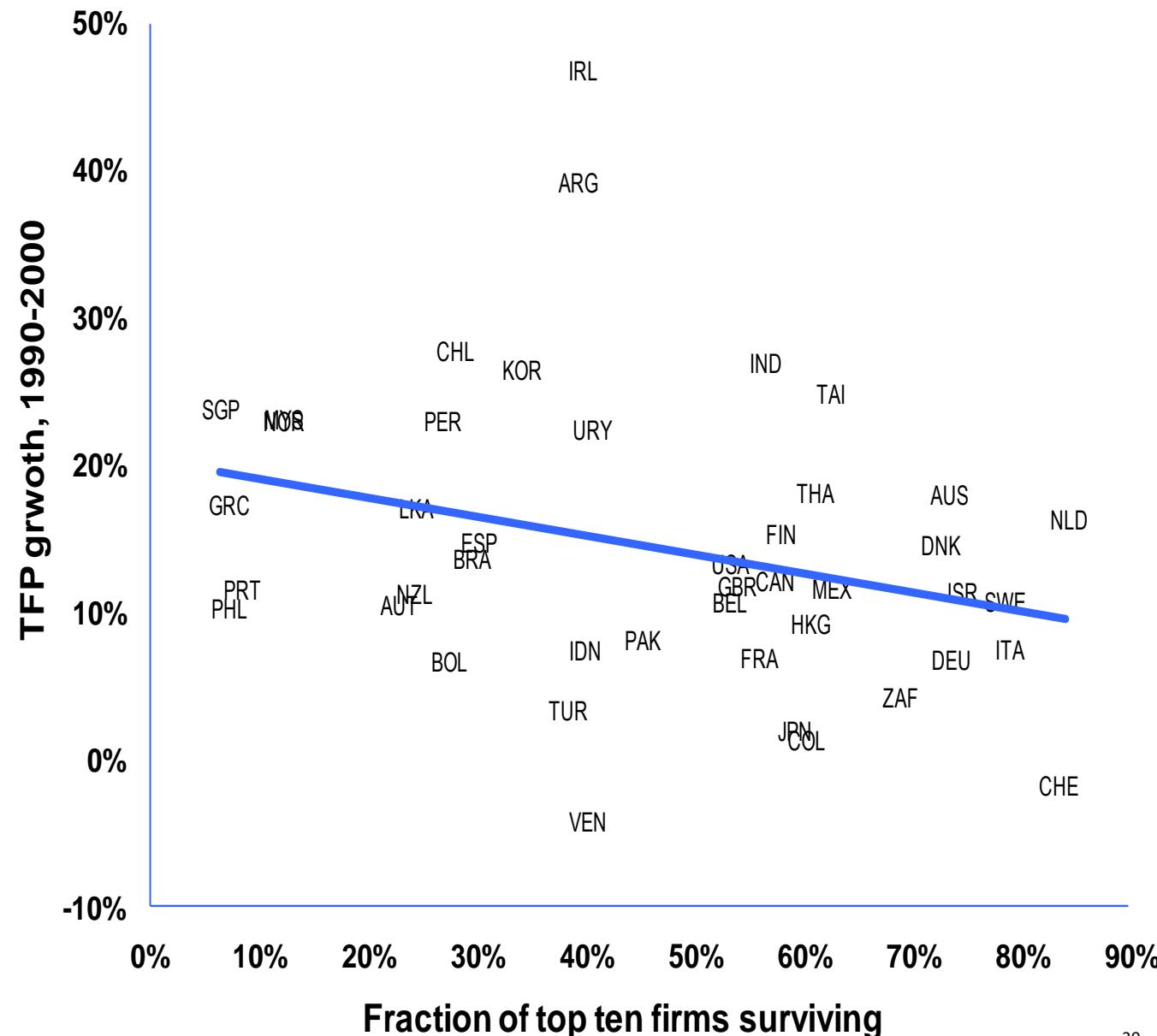
Fogel, Kathy, Randall Morck, Bernard Yeung. 2008. Big business stability and economic growth: Is what's good for General Motors good for America? *Journal of Financial Economics*

Productivity growth & innovation

- Countries with more R&D spending have larger Solow residuals

Innovation & creative destruction

- Countries whose big firms live longer have lower TFP (Solow residual) growth
- Countries whose big firms die and are replaced by new big firms have higher TFP growth



Creative Destruction & Higher Productivity Growth

Kathy Fogel, Randall Morck, Bernard Yeung. 2008。大企业稳定与经济增长:对通用汽车有利, 对美国有利吗?《金融经济杂志》

生产率增长与创新

研发支出较多的国家有更大的风险

索洛残差

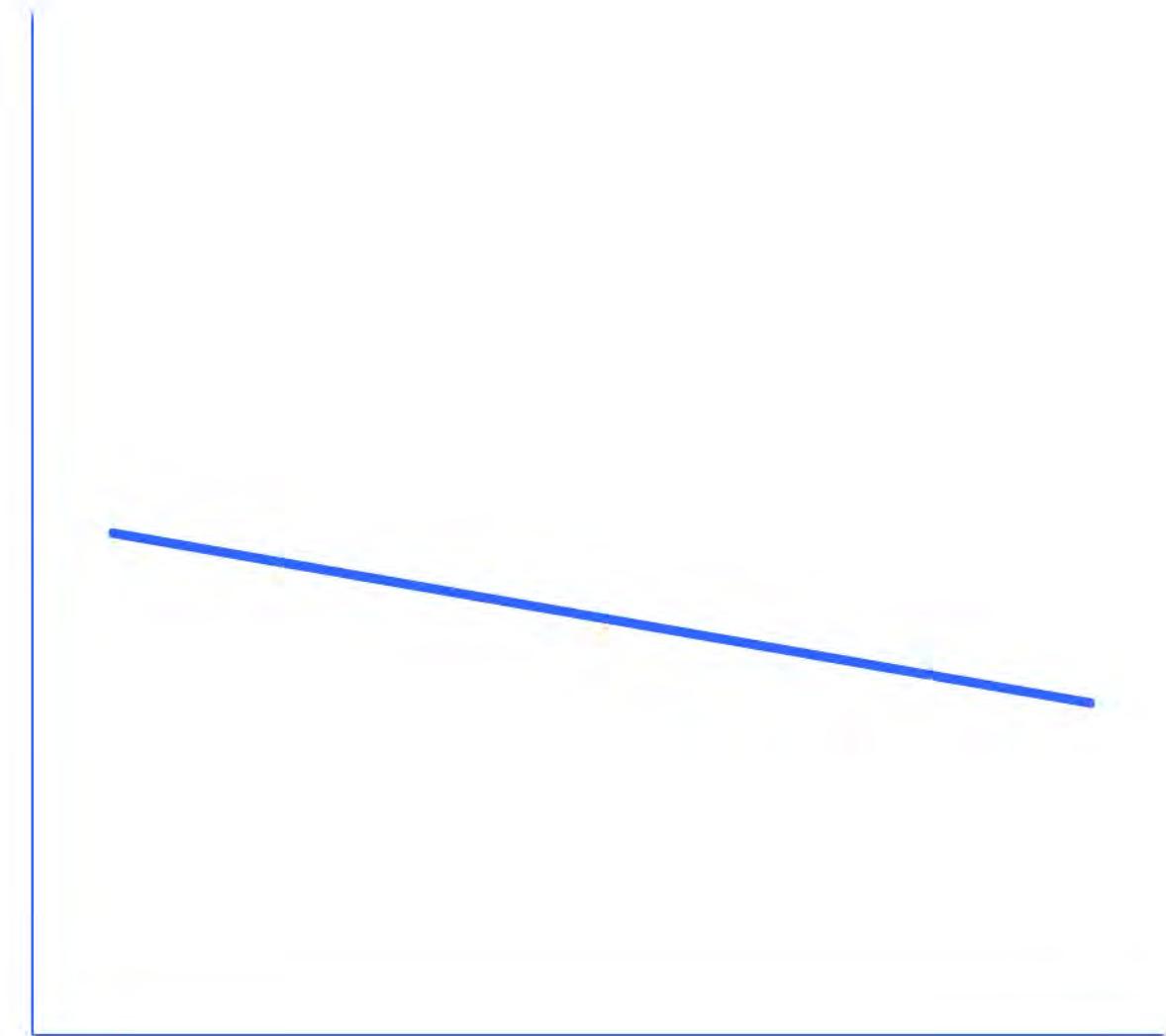
创新与创造性破坏

国家的大公司寿命越长, 成本越低

TFP(索洛残差)增长

国家的大公司倒闭并被取代

新大公司的TFP增长更高



Another Response to Marx

Marx's critique of free markets

- Microeconomics says competition drives profits to zero
- Finance says look for positive NPV projects, and a project's NPV is the present value of the economic profits it generates.
- If the microeconomists are right, there aren't any $NPV > 0$ projects in a highly competitive economy



Karl Marx

Schumpeter's response to Marx

- Schumpeter pointed out a second sort of competition, competition to innovate, that creates positive economic profits for a time, allowing there to be positive NPVs

But there is a second response ...

对马克思的另一个回应

马克思对自由市场的批判

微观经济学认为，竞争使利润趋近于零

金融说寻找正的NPV项目，项目的NPV是项目的现值
它产生的经济利润。

如果微观经济学家是正确的，在高度竞争的环境中不存在 $NPV > 0$ 的项目
经济

熊彼特对马克思的回应

熊彼特指出了第二种竞争，创新的竞争

在一段时间内创造正的经济利润，允许出现正的npv

但还有第二种反应……



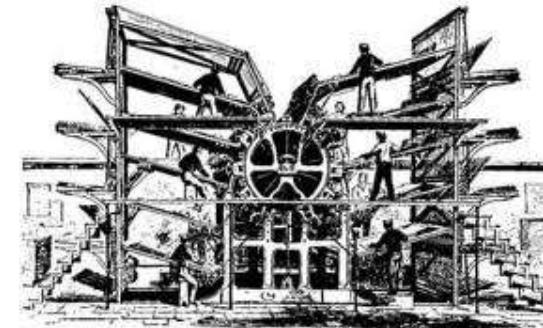
卡尔·马克思

Apply Capital Budgeting to Corruption

Krueger, Anne. 1974. The Political Economy of the Rent-Seeking Society. American Economic Review 64 291-303.

Project 1: Buy new technology

- Invest \$1M in new technology
- Cash flow \$0.11M per year indefinitely
- $NPV_1 = \frac{\$0.11M}{10\%} - \$1M = \$0.1M > 0$



Anne Krueger
Stanford University

Project 2: Buy government official

- Invest \$1M in lobbying the government
- Cash flow \$0.15M per year indefinitely
- $NPV_2 = \frac{\$0.15M}{10\%} - \$1M = \$0.5M > 0$



Result of NPV analysis

- $NPV_2 > NPV_1$ so invest in official
- Big corruption, small innovation
- Rich government officials & business owners, poor ordinary people

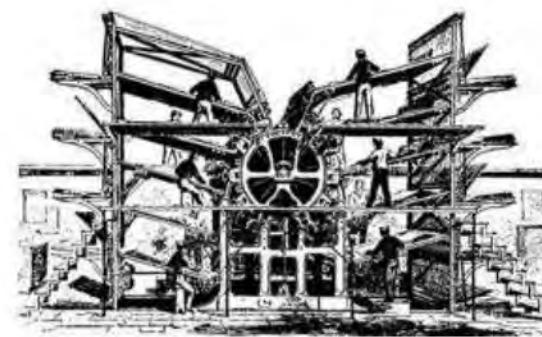
Apply Capital Budgeting to Corruption

安妮·克鲁格1974。《寻租社会的政治经济学》。《美国经济评论》64(291-303)。

项目一:购买新技术在新技术上投资100万美元

现金流0.11美元每年无限期 NPV₅ = \$4。<s:
1> ----- -5M>4

54%



安妮·克鲁格
斯坦福大学

项目二:收买政府官员投资100万美元游说政府 现金流每年0.15万美元无限期 NPV = \$.<s: 1> ///////////9M>??

54%



NPV分析结果

NPV₅ so 投资官方
大腐败，小创新
富裕的政府官员和企业主，贫穷的普通人

Apply Capital Budgeting to Corruption

Krueger, Anne. 1974. The Political Economy of the Rent-Seeking Society. American Economic Review 64 291-303.

Project 1: Invest in new technology

- Invest \$1M in new technology
- Cash flow \$0.11M per year indefinitely
- $NPV = \frac{\$0.11M}{10\%} - \$1M = \$0.1M > 0$

← Creative destruction

- Firm has $NPV > 0$ so shareholders get richer
- Positive externality: New wealth is created, ordinary people grow richer



Anne Krueger
Stanford University

Project 2: Invest in government official

- Invest \$1M in lobbying official
- Cash flow \$0.15M per year indefinitely
- $NPV = \frac{\$0.15M}{10\%} - \$1M = \$0.5M > 0$

← Political rent-seeking

- Firm has $NPV > 0$ so shareholders get richer
- Negative externality: No new wealth is created, corrupt officials & business leaders grow richer by making ordinary people pay higher taxes or higher prices for lower quality goods

← How fast economy grows depends on which sort of $NPV > 0$ investment usually has higher NPV

Result of NPV analysis

- $NPV_2 > NPV_1$ so invest in official
- Big corruption, small innovation

Apply Capital Budgeting to Corruption

Krueger, Anne. 1974。《寻租社会的政治经济学》。《美国经济评论》64(291-303)。

项目一:投资新技术

在新技术上投资100万美元

现金流为每年11万美元，无限期。 $\text{NPV} = \frac{11M}{5\%} = 220M$

54%

☒创造性破坏

公司NPV > 0, 因此股东更富有
正外部性:创造了新的财富,

普通人变富



安妮·克鲁格斯坦福
大学

项目二:投资政府官员

投资100万美元游说官员

现金流每年15万美元，无限期

$$\text{☒NPV} = \frac{15M}{5\%} - 100M = 5M$$

☒政治寻租

公司NPV > 0, 因此股东更富有
负外部性:没有创造新的财富, 腐败

官员和商界领袖通过让平凡变得更富有
人们为更低的质量支付更高的税或更高的价格
货物

☒经济增长的速度取决于

通常哪一种NPV > 0的投资
具有更高的NPV

NPV分析结果

NPV 5 so 投资官方
腐败大, 创新小

Investment in Political Rent-seeking

Krueger, Anne. 1974. The Political Economy of the Rent-Seeking Society. American Economic Review 64 291-303.

- ☐ If corruption severely punished, good science & engineering education, clear & predictable policies, laws & regulations then

$$NPV_{political\ rent-seeking} < NPV_{innovation} \text{ (rich firms, rich people)}$$

- ☐ If unpunished corruption, bad science & engineering education, complicated & unpredictable policies, laws & regulations then

$$NPV_{political\ rent-seeking} > NPV_{innovation} \text{ (rich firms, poor people)}$$



Anne Krueger
Stanford University

Murphy, Kevin M., Andrei Shleifer & Robert Vishny. 1991. The Allocation of Talent: Implications for Growth. Quarterly Journal of Economics. May. 503-530.

Students show what has the highest NPVs in a country

- ☐ Highest NPVs in innovation → students study science & engineering (S&E)
- ☐ Highest NPVs in political rent-seeking → students study law
- ☐ Basic finding

$$GDP\ Growth = \frac{1.3\%}{(0.01)} + \frac{5.4\%}{(0.03)} S\&E - \frac{3.1\%}{(0.03)} Law + \frac{0.0\%}{(0.00)} GDP_{1960} + \varepsilon$$

Schumpeter's “Circular Flow”

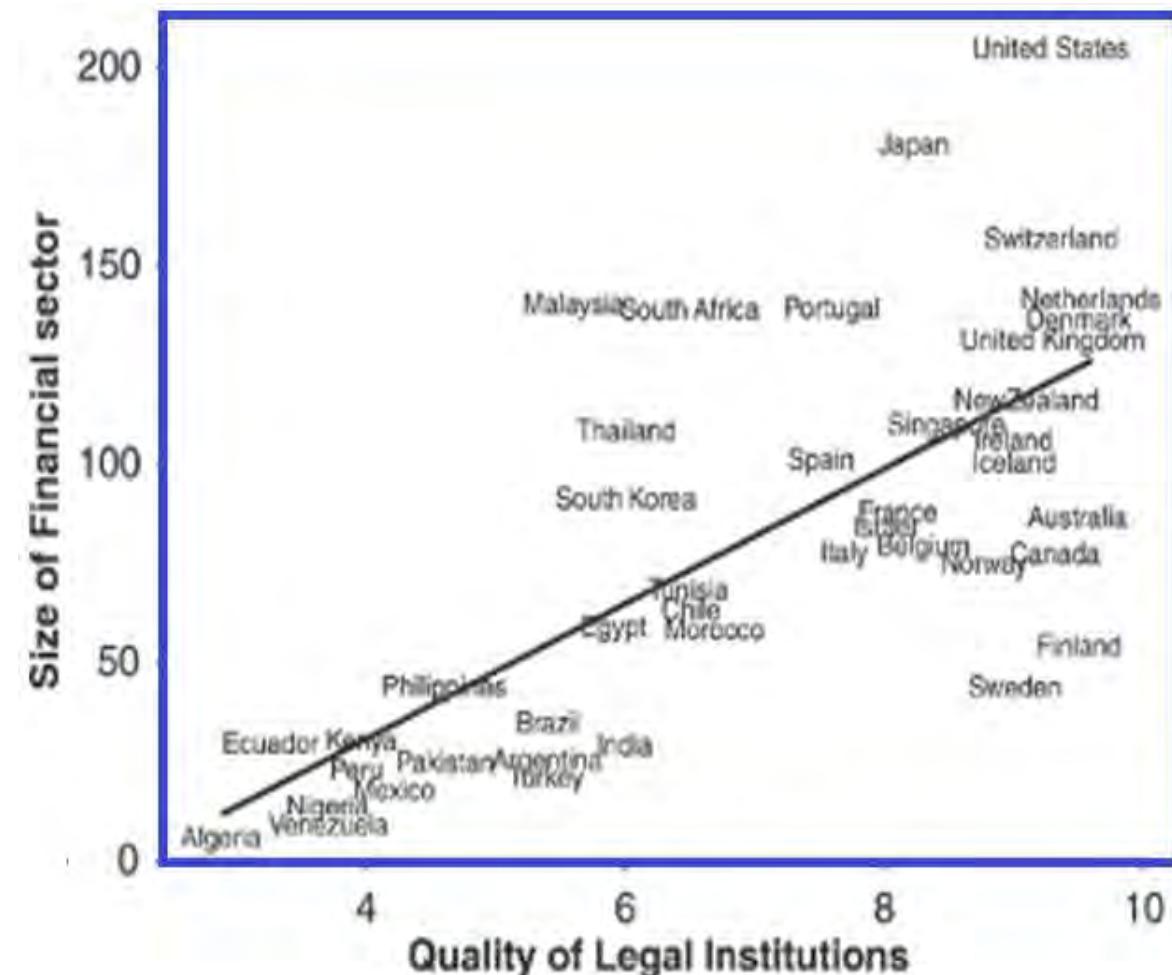
Schumpeter, Joseph. 1912. *Theorie der Wirtschaftlichen Entwicklung*

- ❑ A “circular flow” of capital – from capitalists to innovators to capitalists – sustains economic growth by directing capital to creative entrepreneurs with $NPV > 0$ projects
- ❑ Each “circular flow” rotation boosts economy because wealth (from previous cycle) finances more innovation (in next cycle)
- ❑ Getting circular flow going is key problem of development
- ❑ If investors think financial insiders or corporate insiders are incompetent or dishonest, the circular flow fails

That's why stock market efficiency matters



NO
TRUST



熊彼特的“循环流动”

约瑟夫·熊彼特，1912。Theorie der Wirtschaftlichen Entwicklung

资本的“循环流动”——从资本家到创新者再到资本家——
通过将资本导向 $NPV > 0$ 的创意企业家项目来维持经济
增长

每一次“循环流动”的循环都会促进经济发展，因为财富(来自上一个周期)会为更多的创新(在下一个周期)提供资金

如果投资者认为金融圈内人或企业圈内人不称职或不诚实，
循环流动就会失败

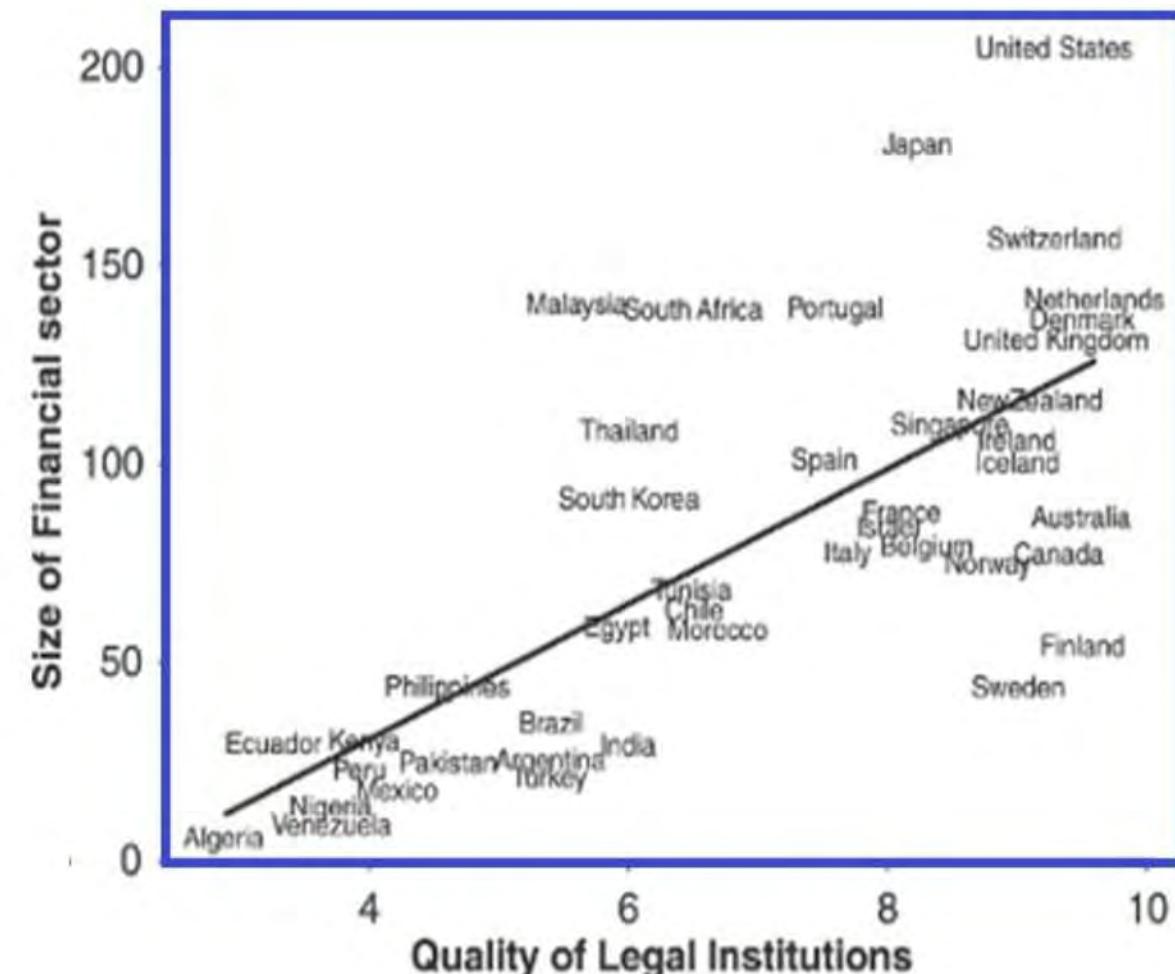
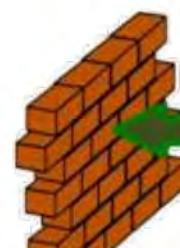
这就是为什么股市效率很重要



Entrepreneurs
(ideas, no money)



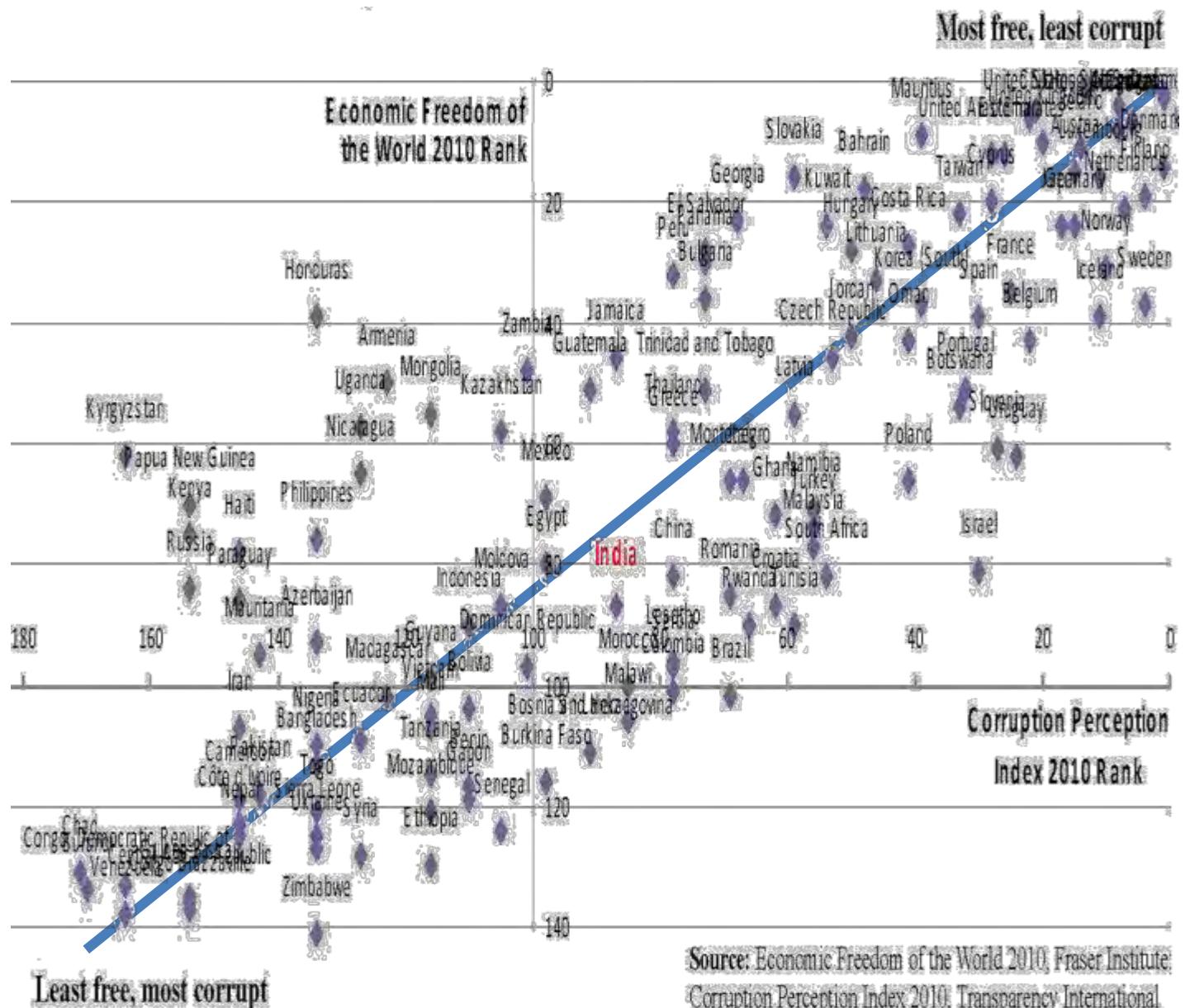
Capitalists
(Money, no ideas)



More Corruption Goes with Less Free Markets

Why?

- Free-markets liberalization → government officials have less power over economy
- Bribing (less powerful) officials has smaller NPV
- Less (small NPV) corruption & more innovation



More Corruption Goes with Less Free Markets

为什么?

自由市场自由化

政府官员有

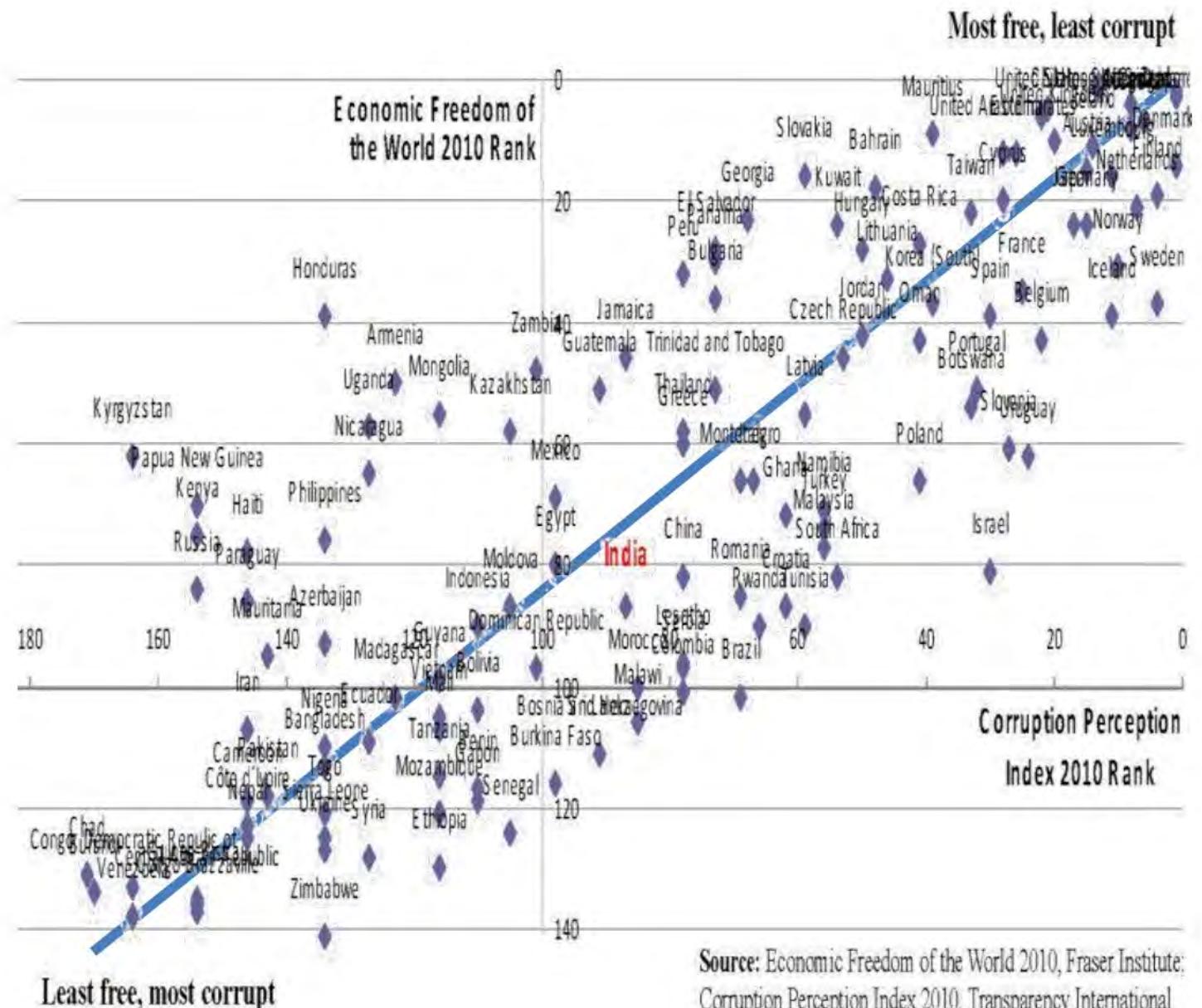
对经济的控制力减弱

贿赂(权力更小)

官员的NPV较小

更少(小NPV)腐败&

更多的创新

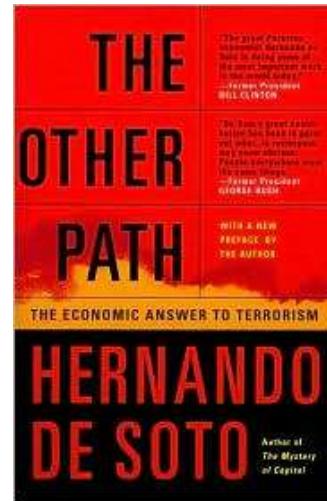


Political Rent-seeking-centered Economies

De Soto, Hernando. 2002. *The other path: The economic answer to terrorism*. Basic Books

What do political rent-seekers seek?

- Staying big**
 - Large political rent-seeking firms can pay big bribes top government officials
 - Small firms can only pay small bribes and potential start-up firms can only “promise” future bribes
- More complicated regulations**
 - Large political rent-seeking firms can pay lawyers, accountants, bribes, ... but small new firms cannot
- More state-led “national building” industrial policies**
 - Complicated systems of subsidies, tax credits, regulation exemptions to transfer government money to political rent-seeking
 - Free land from governments
 - Debt guarantees from governments
 - Bailouts from governments
- Higher trade barriers**
 - Higher trade barriers prevent foreign competition
 - Local people can only buy high-priced products of local political rent-seeking firms



Political Rent-seeking-centered Economies

埃尔南多·德索托，2002。另一条道路：对恐怖主义的经济回应。基本书

政治寻租者寻求的是什么？

住大

大型政治寻租公司可以向政府高级官员支付巨额贿赂

小公司只能支付小额贿赂，潜在的创业公司只能“承诺”未来

贿赂

更复杂的监管

大型政治寻租公司可以支付律师、会计师、贿赂……但是小型新公司

不能

更多国家主导的“国建”产业政策

复杂的补贴、税收抵免、监管豁免制度向政府转移

资金流向政治寻租

从政府手中免费获得土地

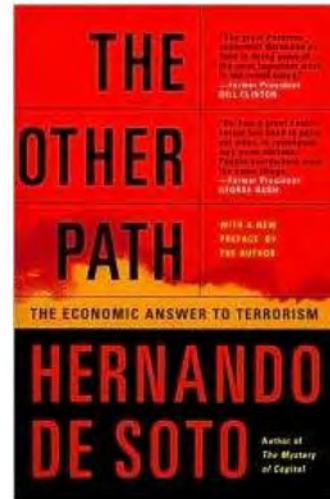
来自政府的债务担保

来自政府的救助

较高的贸易壁垒

较高的贸易壁垒阻碍了国外竞争

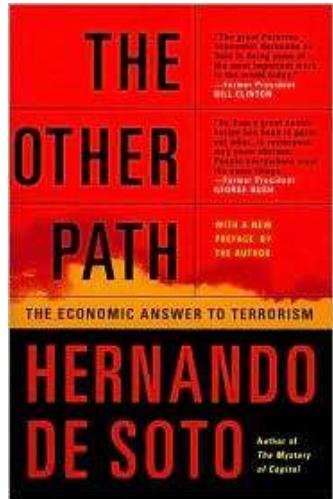
当地人只能购买当地政治寻租公司的高价产品



Political Rent-seeking Centered Economies

De Soto, Hernando. 2002. *The other path: The economic answer to terrorism*. Basic Books

What do political rent-seekers seek?



Procedure, Time, and Cost of Setting Up a Legal Business							
Rank	Country	Per capita GDP	Steps	Procedures	Days	Cost (US\$)	Cost (% pc GDP)
1	Australia	\$ 20,050	2	2	2	\$ 450	2%
2	Canada	\$ 19,320	2	2	2	\$ 280	1%
3	Denmark	\$ 32,030	3	3	3	\$ 3,203	10%
4	New Zealand	\$ 13,780	3	3	3	\$ 73	1%
5	United Kingdom	\$ 22,640	4	5	4	\$ 324	1%
6	United States	\$ 30,600	3	4	4	\$ 151	0%
7	Sweden	\$ 25,040	4	6	13	\$ 640	3%
8	Hong Kong SAR	\$ 23,520	4	5	15	\$ 784	3%
9	Panama	\$ 3,070	7	7	15	\$ 944	31%
10	Ireland	\$ 19,160	3	3	16	\$ 2,216	12%
11	Switzerland	\$ 38,350	6	7	16	\$ 6,613	17%
12	Norway	\$ 32,880	4	4	18	\$ 1,551	5%
72	Portugal	\$ 10,600	10	12	76	\$ 1,955	18%
73	India	\$ 450	10	10	77	\$ 260	58%
74	Dominican Republic	\$ 191	19	21	80	\$ 885	463%
75	Spain	\$ 14,000	10	11	82	\$ 2,422	17%
76	Peru	\$ 2,390	6	8	83	\$ 475	20%
77	Bolivia	\$ 1,010	20	20	88	\$ 2,682	266%
78	Slovak Republic	\$ 3,590	11	12	89	\$ 521	15%
80	Romania	\$ 1,520	13	16	97	\$ 233	15%
81	Venezuela	\$ 3,670	14	14	104	\$ 389	11%
82	Vietnam	\$ 370	16	16	112	\$ 495	134%
83	Indonesia	\$ 580	11	11	128	\$ 312	54%
84	Mozambique	\$ 230	19	19	149	\$ 256	111%
85	Madagascar	\$ 250	17	17	152	\$ 107	43%

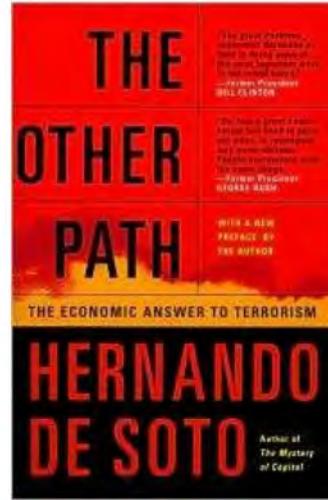
← Quick, cheap & simple to start a new business in high-income economies

← Slow, expensive & complicated to start a new business in middle-income economies

Political Rent-seeking Centered Economies

埃尔南多·德索托，2002。另一条道路:对恐怖主义的经济回应。基本书

政治寻租者寻求的是什么?



Tiebout Competition

Tiebout, Charles. 1956. A Pure Theory of Local Expenditures. *Journal of Political Economy* 64 416-24.

Tiebout Hypothesis: Competition makes governments efficient

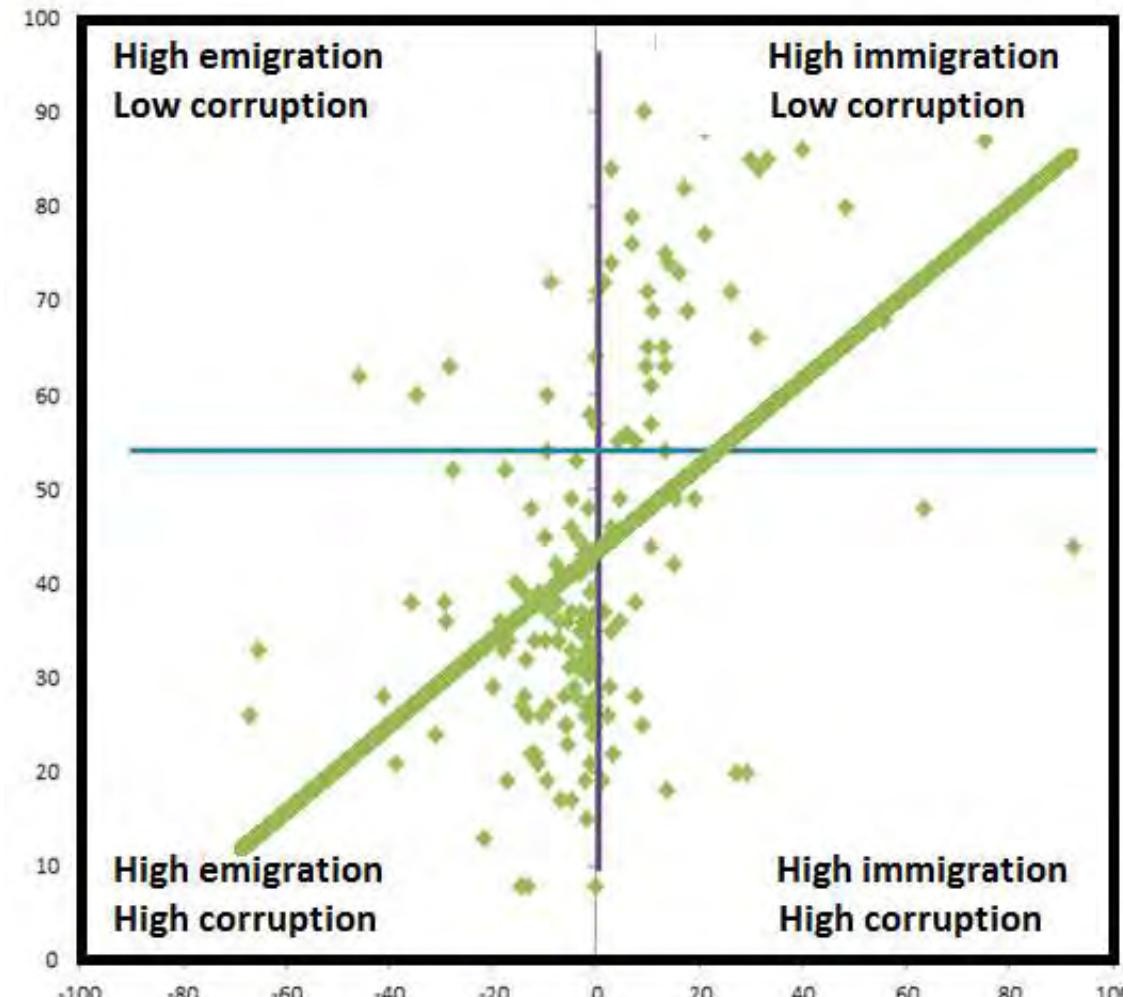
- Governments compete with each other for taxpayers
- Taxpayers move to places that offer better government services, legal systems, business environments for lower taxes
- Bad governments lose taxpayers & go out of business

Is the Tiebout Hypothesis true?

- For nearby cities or provinces, yes.
- For countries?
 - Increasing globalization lets businesses move more easily
 - Most immigration is from high-corruption countries to low-corruption countries

What can prevent Tiebout competition?

- Barriers to free movement of goods, people & capital
- Government officials focused on maximizing their own bribe income rather than ordinary people's incomes
- Governments that want innovative (i.e. disruptive) people and businesses to go away



Source: Carling, Jørgen, Erlend Paasche & Melissa Siegel. 2015. Finding Connections: The Nexus between Migration and Corruption. Migration Policy Institute

Tiebout Competition

查尔斯·蒂布特1956年著。《地方支出的纯粹理论》。政治经济学学报64 416-24.

蒂布特假设:竞争使政府有效率

政府为了纳税人而相互竞争

纳税人搬到提供更好政府服务的地方,

法律体系、低税收的商业环境

糟糕的政府会失去纳税人并破产

蒂布特假设成立吗?

对于附近的城市或省份, 是正确的。

☒国家吗?

日益增长的全球化让企业更容易移动

大多数移民是从腐败程度高的国家流向腐败程度低的国家

腐败的国家

什么能阻止铁布特的竞争?

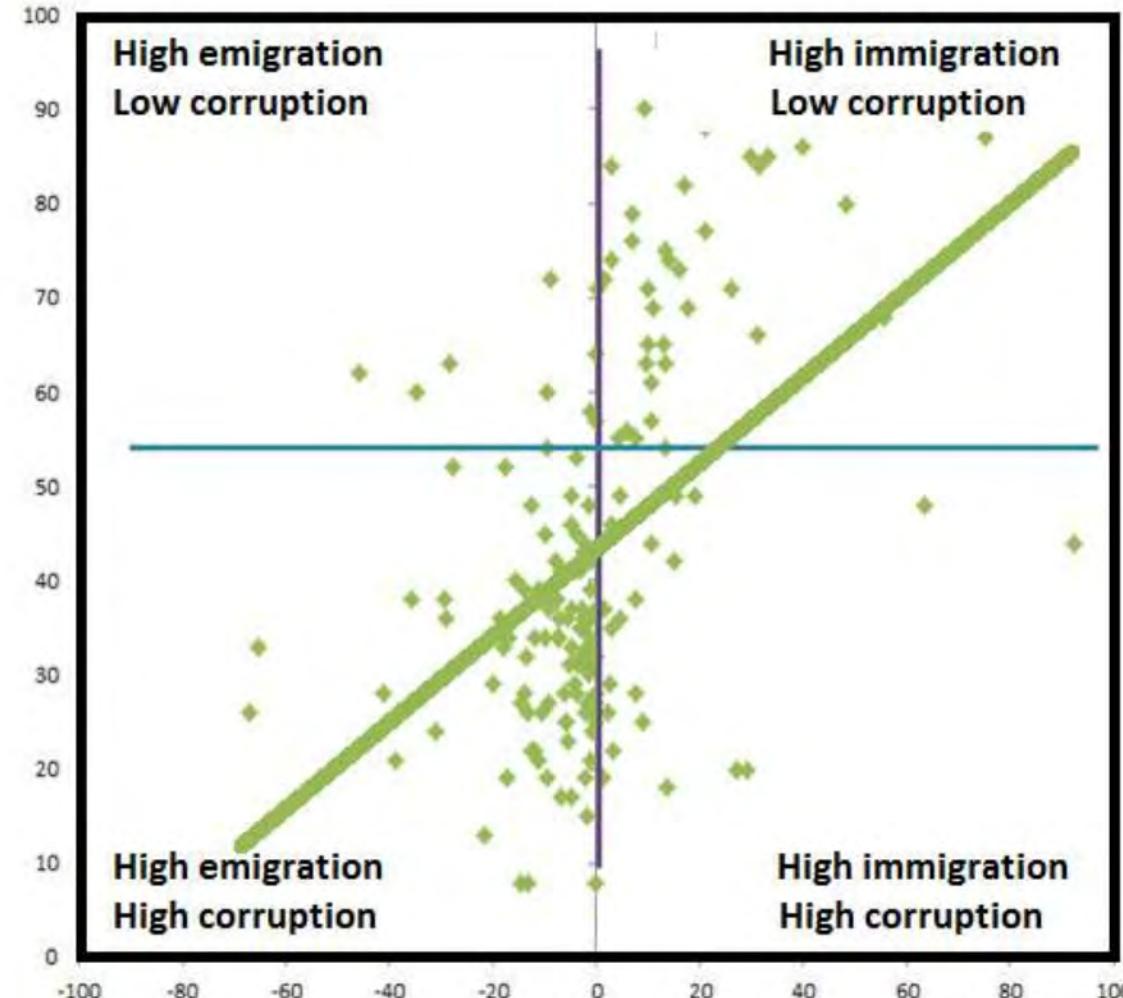
商品、人员和资本自由流动的障碍

政府官员专注于最大化自己的贿赂

收入而不是普通人的收入

需要创新(即颠覆性)人才的政府

企业也要离开



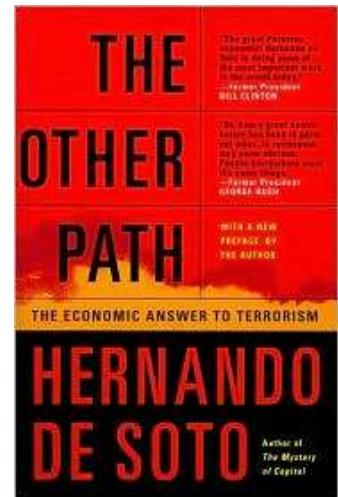
资料来源:Carling, Jørgen, Erlend Paasche & Melissa Siegel, 2015。《寻找联系:移民与腐败之间的联系》。移民政策研究所

The Middle Income Trap

De Soto, Hernando. 2002. *The other path: The economic answer to terrorism*. Basic Books

Corruption can stop growth & “trap” countries at middle-income levels

- Very many small illegal businesses
- A few huge state-owned enterprises
- A few groups of very large legal firms controlled by a few wealthy politically-connected families



Egyptian fish-seller
breaking the law



Bolivian cloth-maker
breaking the law



Bolivian young men
not breaking the law

The Middle Income Trap

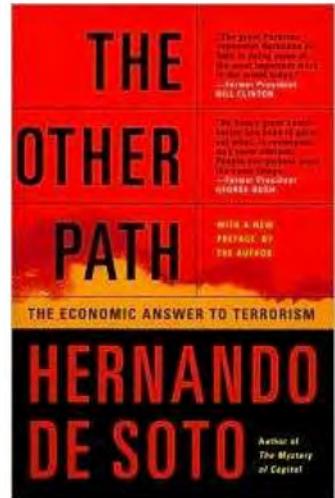
De Soto, Hernando, 2002。另一条道路:对恐怖主义的经济回应。基本书

腐败会阻碍增长，让国家陷入中等收入水平

非常多的小型非法企业

少数大型国有企业

由少数有政治关系的富裕家族控制的几家非常大的法律公司集团



Egyptian fish-seller
breaking the law



Bolivian cloth-maker
breaking the law



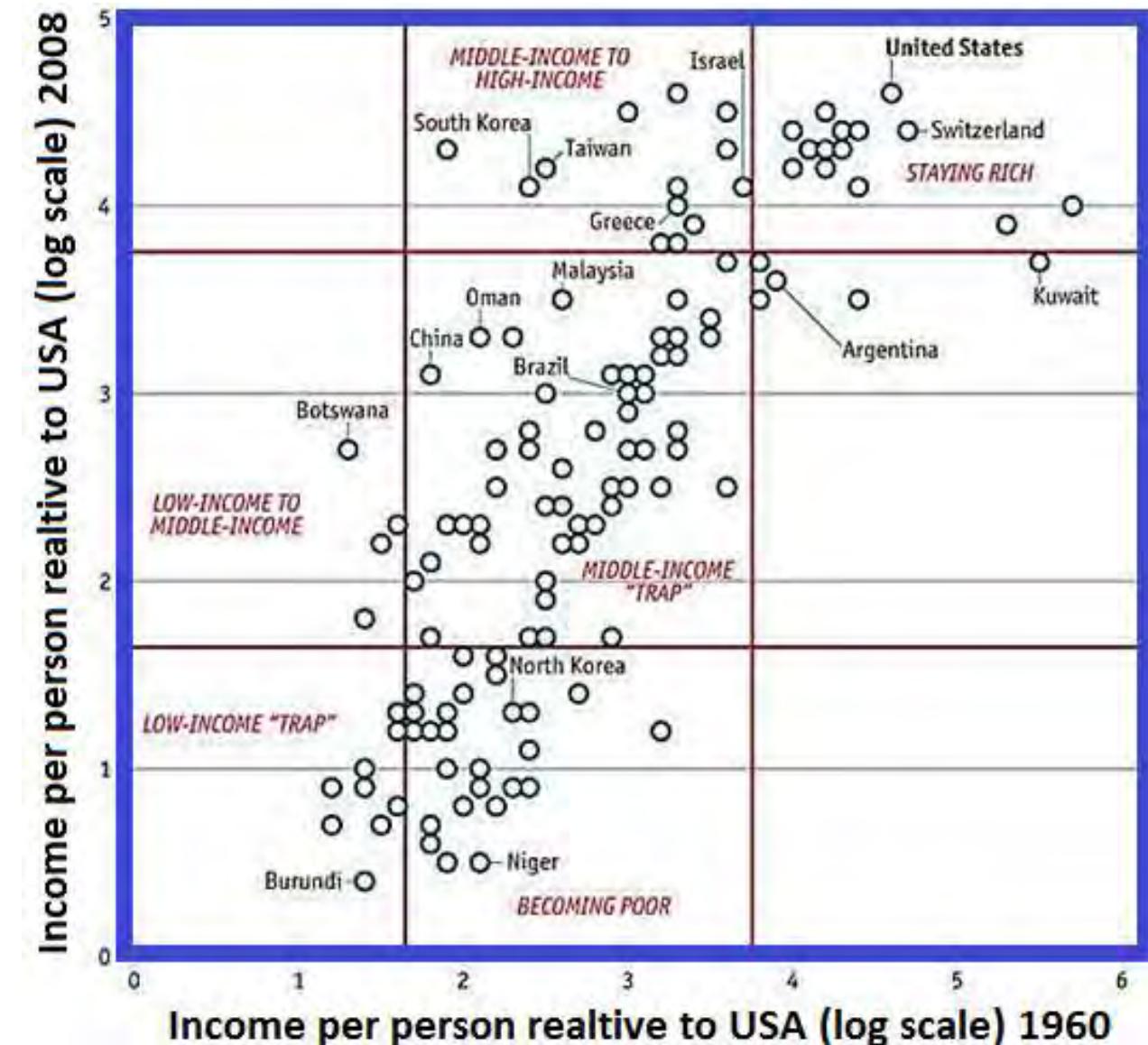
Bolivian young men
not breaking the law

The Middle Income Trap

Morck, Randall, Daniel Wolfenzon & Bernard Yeung. 2005. Corporate governance, economic entrenchment & growth. *Journal of Economic Literature* 43(3)655-720.

Caught in Middle Income Trap?

- A first generation of entrepreneurs build big businesses
- Their children take over, but must rely on connections, not entrepreneurial talent
- This elite is a small class, and its lobbying power lets it capture the entire government
- Country is trapped in a low-level rent-seeking equilibrium. It is partly developed , but its growth has stalled
- Middle Income Trap countries are “always developing, never developed”



中等收入陷阱

莫克, 兰德尔, 丹尼尔·沃尔芬森和伯纳德·杨, 2005。公司治理、经济堑壕与增长。《经济文献学报》43(3)655-720。

陷入中等收入陷阱?

第一代创业者做大生意

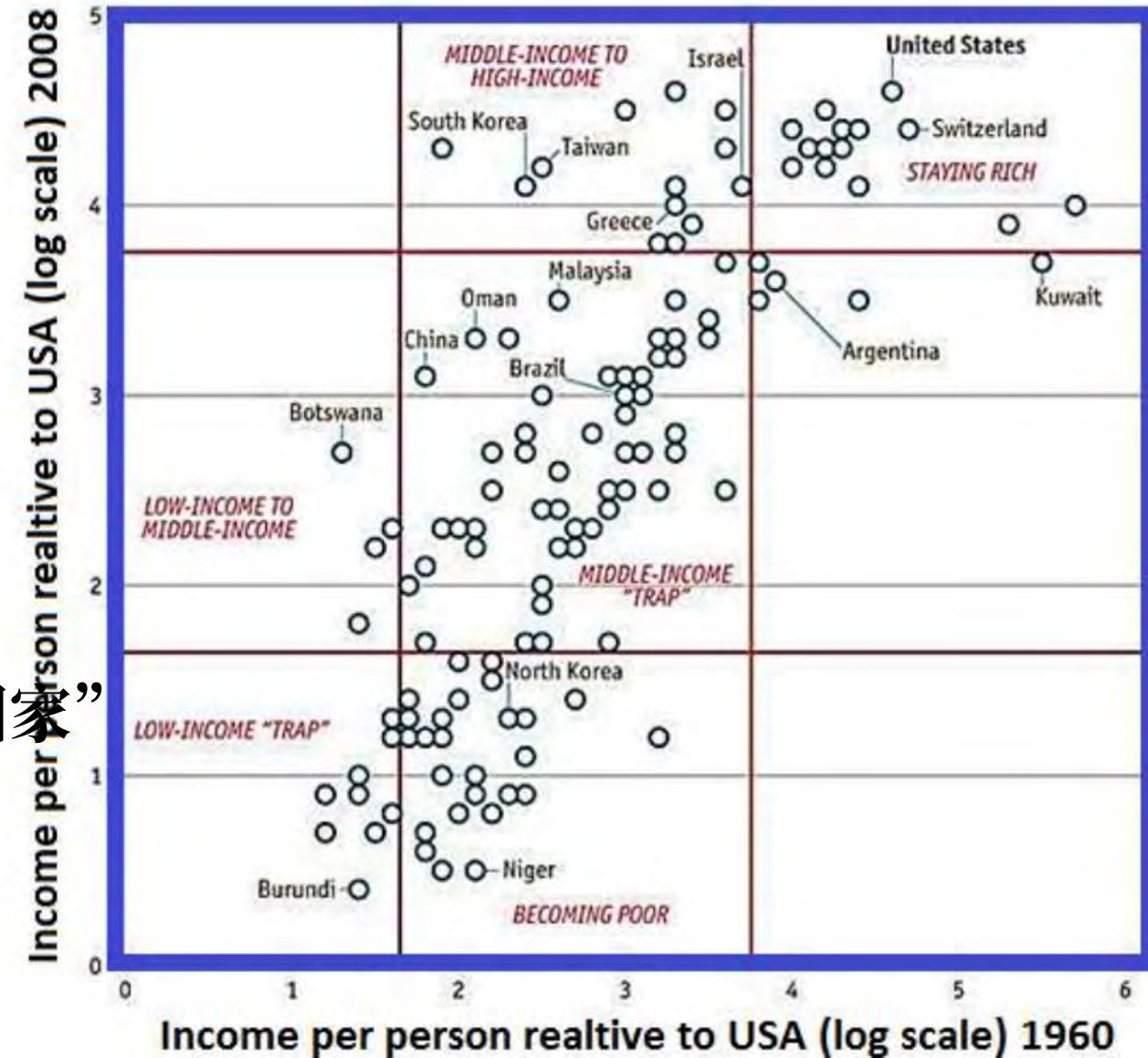
他们的子女接班, 但必须依靠

这个精英是一个小阶层, 它的游说能力让它可以掌控整个政府

<s:1>国家陷入低水平寻租均衡。它是部分发达国家, 但它的增长已经

停滞, 中等收入陷阱国家都是

“永远是发展中国家, 永远不是发达国家”



Needham's Question: Why didn't China get rich first?

Needham, Joseph. 1974. *Science & Civilisation in China*. Cambridge University Press

- The Chinese repeatedly invented technology more advanced than anything in the Western world, but failed to apply it in their economy



Joseph Needham

- Why did the Industrial Revolution not occur first in China?

Baumol, William J. 1990. Entrepreneurship: Productive, Unproductive & Destructive. *Journal of Political Economy* 98 893-921.

- Highest NPVs in Imperial China were not from innovation
- Careers in Imperial Bureaucracy (income from political rent-seeking) were always best way to become wealthy and powerful in Imperial China
- Western countries got Schumpeter's circular flow circulating so that creative destruction could direct large amounts of capital to creative innovators
- Political rent-seeking was more profitable than innovation in Western countries until the Enlightenment and is still more profitable than innovation in most non-Western countries



William Baumol

李约瑟的问题:为什么中国没有先富起来?

约瑟夫·李约瑟:1974。《中国的科学与文明》。剑桥大学出版社

中国人一再发明比西方世界更先进的技术，但未能将其应用到经济中
为什么工业革命没有首先在中国发生？

William J. Baumol, 1990。《企业家精神:生产性、非生产性和破坏性》。《政治经济学杂志》(Journal of Political Economics) 98 893-921。

帝制中国最高的npv并非来自创新

在帝制中国，在帝制官僚机构工作(来自政治寻租的收入)永远是致富
和强大的最佳途径

西方国家让熊彼特的循环流动循环起来，这样创造性的破坏就可以将大
量的资本引向创造性的创新者

在启蒙运动之前，西方国家的政治寻租比创新更有利可图，在大多数非西
方国家，政治寻租仍然比创新更有利可图



李约瑟
William Baumol



Needham's Question: Why didn't China get rich first?

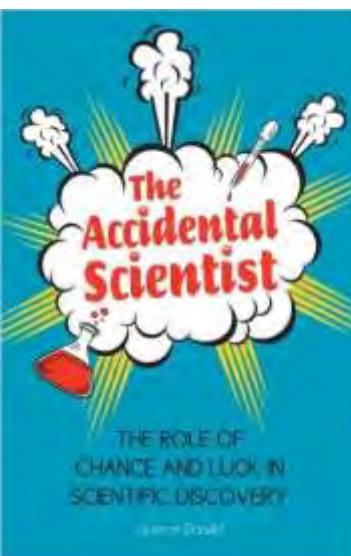
How the West Got Rich First

Accidentally invented free markets, corporations & stock markets

- Many important people opposed these innovations
- But these “innovations” let creative entrepreneurs assemble very large amounts of capital so technological innovation $NPV > 0$ projects became possible
- Political rent-seeking $NPV > 0$ no longer the best way to get rich



Joseph Needham



走狗屎运？

← Many important scientific discoveries were found by accident

- The Western World (mostly accidentally!) got Schumpeter's “circular flow” circulating by developing free markets, finance, creative destruction, institutions to limit political rent-seeking and institutions to promote social trust
- Other parts of the world are either following the same path (easy way?) or trying to find their own paths (harder, but avoid repeating mistakes?) to getting rich

Needham's Question: Why didn't China get rich first?



李约瑟

因为是他们先富起来的First

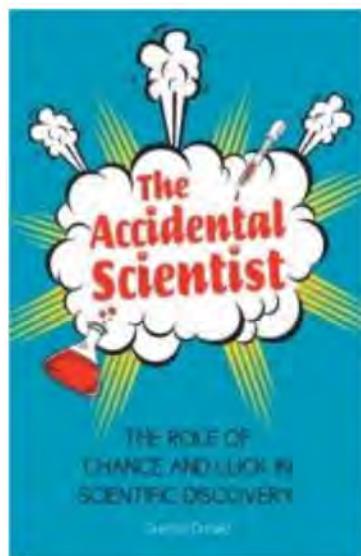
因为他们发明了自由市场 公司和股票市场 Corporations & stock markets

但重要人物反对这些创新 opposed these innovations

但是这些“创新”让有创造力的企业家聚集了大量的资本 assemble very large amounts of capital so

技术创新项目 innovation 成为可能 New projects became possible

政治寻租 NPV > 0 不再是致富的最佳途径 For the best way to get rich



走狗屎运？

许多重要的科学发现都是偶然发现的

西方世界(大多是偶然!)通过发展自由市场、金融、创造性破坏、限制政治寻租的制度和促进社会信任的制度，让熊彼特的“循环流动”得以流通

世界其他地区要么是在走同样的路(容易的路?), 要么是在努力寻找自己的致富之路(更难, 但要避免重蹈覆辙?)

Obviously, It's More Complicated ...

**But it's remarkable how much
of the story depends critically on finance**

Obviously, It's More Complicated ...

但值得注意的是，这个故事在很大程度上取
决于金融