

Trade as an Engine of Growth – From Ricardo to 21st Century

Enhancing the contribution of PTAs to
inclusive and equitable trade:

Islamic Republic of Iran

13-15 August 2017

Tehran



Workshop outline

- Trade, growth and development
- Trade protection and liberalization: from efficiency to meeting social objectives
- PTAs and multilateral trading system and PTAs in Asia-Pacific
- Trade reforms and PTAs of Islamic Republic of Iran
- Towards PTA's contribution to inclusive and equitable trade
- Getting a PTA done:
 - Stakeholders
 - Negotiation
 - Implementation
- What if the expectations are not met?

**TRADE AS AN ENGINE OF GROWTH – FROM RICARDO TO
21ST CENTURY**

SESSION 1.1

Key Learning Objectives

1. Understand the concept of comparative advantage, and the way in which it can drive mutually beneficial exchange between countries.
2. Look at trade through the lens of technological differences (Ricardo) and resource endowments (Heckscher-Ohlin).
3. Use these new concepts to better understand the operation of Global Value Chains, and the potential economic gains they can offer.



Outline

1. Why do countries trade? – traditional views: exploiting advantages of “single country production”
2. Why do countries trade – more modern views: exploiting advantages of Global Value Chains and Trading in Tasks

1. Why do countries trade?

- a. Different concepts of “advantage”.
- b. Productivity differences as a driver of trade (Ricardo).
- c. Resource endowments as a driver of trade (Heckscher-Ohlin).
- d. Scale economies as a driver of trade (Krugman/Melitz).



1. Why do countries trade?

a. Different concepts of advantage

- ▶ **Absolute advantage (AA):**
- ▶ One country manufactures goods at a lower (absolute) cost than another.
 - ▶ Swiss watches cost \$100, Chinese watches cost \$20
 - ▶ Swiss t-shirts costs \$10, Chinese t-shirts costs \$1

=> China has an absolute advantage in watch production AND in t-shirt production
- ▶ **Comparative advantage (CA):**
- ▶ One country manufactures goods at a lower cost *in terms of foregone resources* than another.
 - ▶ BUT:
 - ▶ Switzerland: production of 1 watch = non-production of 10 t-shirts
 - ▶ China: production of 1 watch = non-production of 20 t-shirts

=> Switzerland has a comparative advantage in watch production

=> China has a comparative advantage in t-shirt production
- ▶ **Competitive advantage:**
- ▶ One firm creates and/or maintains a strategic edge over others competing in the same market.
- ▶ The popular press often focuses on absolute and competitive advantage in discussing trade relations, but economists believe comparative advantage is in fact more important as an explanation for trade.

1. Why do countries trade?

b. Source of CA - Productivity differences (Ricardo)

▶ Basic ideas:

- ▶ Comparative advantage is driven by differences in labour productivity (=“technology”)
- ▶ In the absence of trade, these differences can lead to differences in the prices of inputs as well as outputs and these in turn create incentives to trade.
- ▶ Opening to trade leads to:
 - ▶ Equalisation of world relative prices
 - ▶ Specialisation by comparative advantage
 - ▶ Separation of production and consumption possibilities in each country
 - ▶ Increased consumption possibilities for both countries

1. Why do countries trade?

b. Source of CA - Resource differences (Heckscher-Ohlin).

- ▶ Basic ideas:
 - ▶ Comparative advantage is driven by differences in **relative resource endowments**
 - ▶ In the absence of trade, relative shortage or abundance of some resources (inputs) can lead to differences in the prices of inputs as well as outputs and these in turn create incentives to trade [idea of labour-rich country producing labour-intensive goods at a lesser cost].
 - ▶ Opening to trade leads to:
 - ▶ Equalisation of world relative prices
 - ▶ Partial specialisation in each country according to its comparative advantage
 - IE, each country specialises in the product that is relatively intensive in the factor in which the country is relatively abundant
 - ▶ Separation of production and consumption possibilities in each country
 - ▶ Increased consumption possibilities for both countries
- ▶ In this model, trade has effects on factor incomes (labour and capital):
 - ▶ The relative price of the relatively abundant factor increases, while that of the relatively scarce factor decreases.
 - ▶ Explains why there are “winners and losers” from trade within a country: depends on the pattern of comparative advantage, and industry links.

1. Why do countries trade?

c. Scale economies (Krugman/Melitz).

- ▶ Ricardo and Heckscher-Ohlin concentrate on modelling two (perfectly) different homogeneous goods.
- ▶ What about a single (imperfectly) differentiated good?
 - ▶ Imagine that consumers “love **variety**”
 - ▶ Imagine there is a “**fixed cost**” for each producer in differentiating her goods from those of other producers
 - ▶ The size of the market determines the number of product varieties available, because each producer has to sell enough to cover her fixed costs
 - ▶ Hence, increasing the size of the market—e.g., by opening to trade—increases the number of varieties available in equilibrium...
 - ▶ Which increases consumption possibilities
- ▶ More recent theories emphasize productivity differences across *firms*: opening to trade leads to a “shake out” in which the least productive firms exit the market, and the most productive grow.
 - ▶ Trade increases sectoral productivity, which can drive growth.

1. Why do countries trade?

▶ Consolidation:

- ▶ The key concept in explaining the gains from trade is comparative advantage (not absolute advantage or competitive advantage).
- ▶ Countries can have different comparative advantages due to technological differences, or different resource endowments.
- ▶ Models like Ricardo and Heckscher-Ohlin use differences as a way of explaining the gains from trade, i.e. inter-industry trade.
- ▶ More recent models like Krugman and Melitz look at similar products within an industry. **Scale economies** can drive consumer gains through **intra-industry trade**.

Inter- and intra-industry trade



Image by Christine Daniloff

1. Why do countries trade - Are there any costs?

- ▶ Although trade can bring important economic benefits, the adjustment from a protected economy to a more open one can be painful for particular groups:
 - ▶ Unemployment and/or lower incomes as industries contract.
 - ▶ Higher prices for some goods as distortions are removed.
- ▶ In addition, there are concerns about the extent to which vulnerable and historically marginalized groups, including women, can benefit from the opportunities offered by trade.
- ▶ Economists accept that there is a strong case for using complementary policies (i.e., policies in areas other than trade) to mitigate these losses.
- ▶ Examples include **adjustment assistance** for displaced workers, or anti-discrimination laws.
- ▶ From an economic standpoint, the gains of the “**winners**” from trade liberalization are typically sufficient to more than compensate the “**losers**”, but redistribution rarely takes place in reality—which makes it difficult to sustain the political momentum behind liberalization.

Special focus:

- ▶ The case of gender provides an interesting example of the way in which comparative advantage analysis can be applied to an important policy issue:
 - ▶ How do patterns of female employment match comparative advantage sectors? If they are relatively intensive in female employment, then women can benefit from liberalization through increased earning opportunities.
 - ▶ How do patterns of female consumption match comparative disadvantage sectors? If women's consumption skews towards products that will see a price fall following liberalization, then it can benefit them through increased consumption possibilities.
- ▶ **Mainstreaming gender in trade** means equipping analysts and policymakers to examine these types of questions rigorously.
- ▶ Designing inclusive trade agreements covers the objective of fully involving women in decision making, and resulting economic activity.

Ex.

FIGURE 5.7 Industry and occupational segregation patterns are common across countries with very different levels of economic development and aggregate sectoral distributions of employment



Source: International Labour Organization (Bangladesh 2005, Mexico 2008, Sweden 2008).

Source: World Bank, World Development Report 2012.



2. Global Value Chains and Trading in Tasks

- ▶ The concept of comparative advantage is not new; Ricardo first wrote about it in 1817.
- ▶ Do these basic ideas about the gains from trade still apply in a new trade landscape, where **Global Value Chains** (GVCs) are becoming increasingly important?
- ▶ To examine this question, we first look at what GVCs are and how they work, then we consider how they fit with standard trade paradigms.

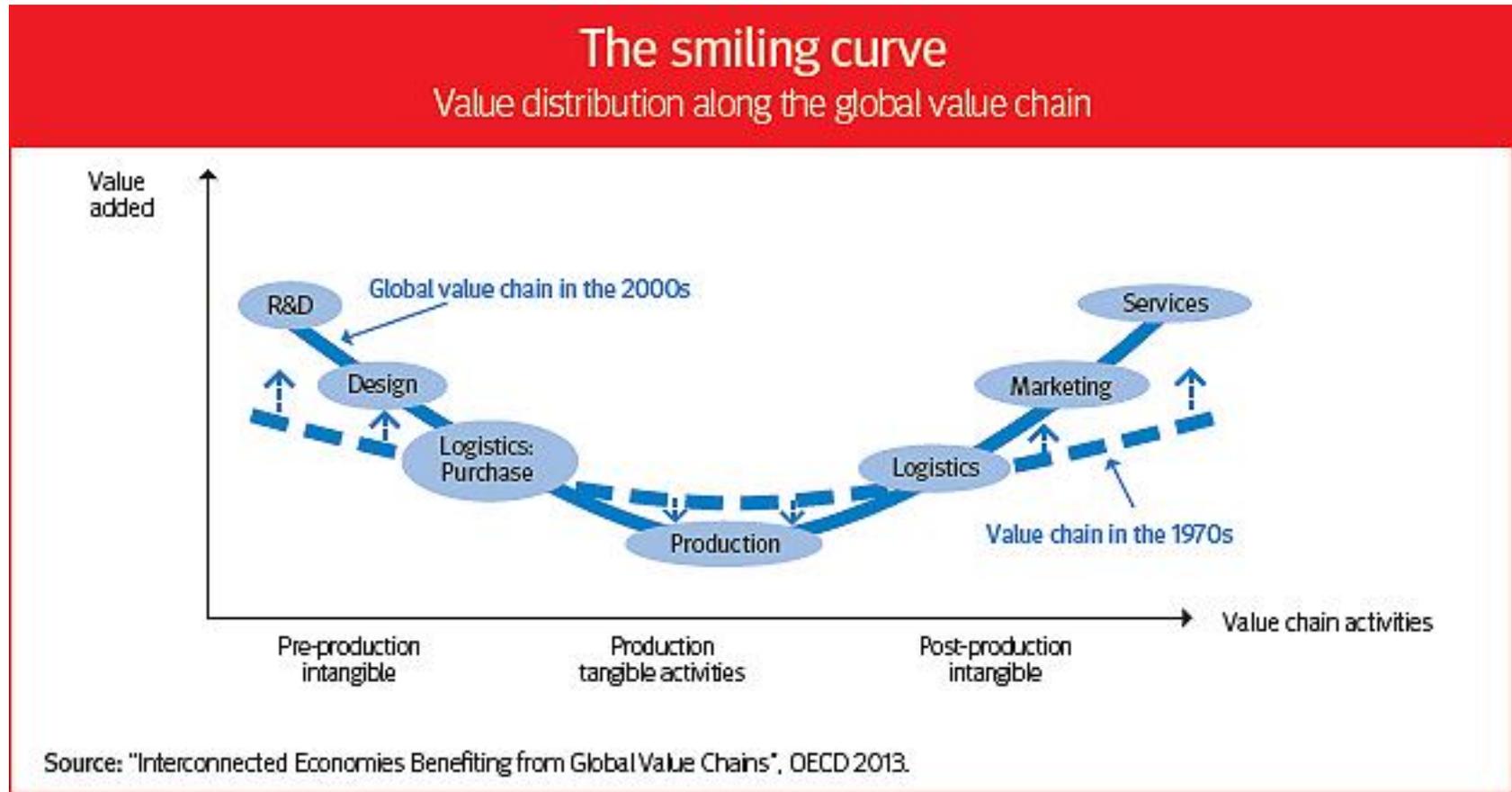
2. Global Value Chains and Trading in Tasks

- ▶ GVCs are complex, interlinked networks of economic activity.
 - ▶ Trade in goods.
 - ▶ Trade in services.
 - ▶ Investment.
 - ▶ Movement of ideas.
 - ▶ Movement of people.
- ▶ A typical GVC consists of a **lead firm**, and a potentially large number of suppliers at various levels.
- ▶ Trade in **intermediate inputs** is intense, and goods can travel across borders multiple times during the production process (*more than **half** of world **manufactured imports** are intermediate goods, and more than **70%** of world **services imports** are intermediate services*)
- ▶ The lead firm is responsible for creating and maintaining the network, and typically also supplies **intellectual property** (like designs) and marketing. Suppliers take care of component sourcing and manufacture, as well as assembly.

2. Global Value Chains and Trading in Tasks

- ▶ The key concept behind GVCs is “**trading in tasks**”.
- ▶ Instead of specializing in production of a complete product like a watch or a t-shirt, firms (and countries) can specialize in much narrower activities, like production of a particular **component**, or assembly, or a service like research and development, design, or marketing.
- ▶ Comparative advantage can still drive trade within GVCs, with similar economic gains to the ones already seen.
- ▶ But how do we deal with the fact that GVC logic leads some countries to specialize in **high value added** tasks (like design), while others specialize in **low value added** tasks (like assembly)?
 - ▶ Value added follows a “**smile**” pattern in many GVCs: high at the two extremes of the production process, lowest in the middle.

2. Global Value Chains and Trading in Tasks



2. Global Value Chains and Trading in Tasks

- ▶ But in fact, specialization with different levels of value addition is already there in our simple models.
- ▶ Under a basic comparative advantage framework, a country can still benefit from trade even though it is less productive absolutely than another country in all sectors.
 - ▶ The reason is that comparative advantage is a relative concept focusing on **opportunity costs**, not an absolute one.
- ▶ In our models, countries have different productivity levels, and one specializes in a “high tech” sector (watches), and the other in a “low tech” sector (t-shirts)... but both still gain from trade.

2. Global Value Chains and Trading in Tasks

- ▶ Concretely, what kinds of economic benefits can low value added tasks supply in a poor country?
 - ▶ Employment in the formal sector for a wage, compared with the counterfactual of the informal sector (lower wages and typically worse conditions) or agriculture (perhaps no wage, but subsistence only).
 - ▶ Low value added activities like assembly typically require foreign inputs, but there is evidence that domestic and foreign value added are **complements**: opening to trade allows faster sectoral growth than otherwise.
- ▶ But of course, moving up to higher value added activities is an important medium term goal.
 - ▶ Activities like research and development have economic spillovers that can support faster long-run growth.
 - ▶ Market-based processes can support moving up when labor markets tighten, assuming that there is a sufficient human capital base—so education is a more vital investment than ever for developing countries.

Example: Apple i-pad story

Slicing the Apple

Distribution of value for 16 GB Wi-Fi iPad*, 2010
Profit/cost breakdown†, \$ (Share of retail value‡, %)

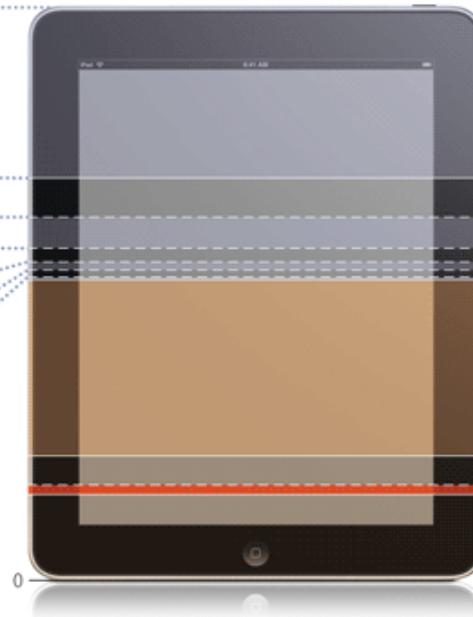
▼ PROFITS

Apple: 
 150 (30.1)

Subcontractors‡:

- South Korea 34 (6.8)
- unidentified 27 (5.4)
- other United States 12 (2.4)
- Japan 7 (1.4)
- Taiwan 7 (1.4)
- European Union 1 (0.2)

TOTAL RETAIL PRICE:
 \$499



▼ COSTS

Materials & components:
 Worldwide
 154 (30.9)

Labour:
 unidentified
 25 (5.0)

China
 8 (1.6)

Distribution & retail:
 Worldwide
 75 (15.0)

Source: Kenneth L. Kraemer,
 University of California, Irvine

*1st generation, Wi-Fi only version

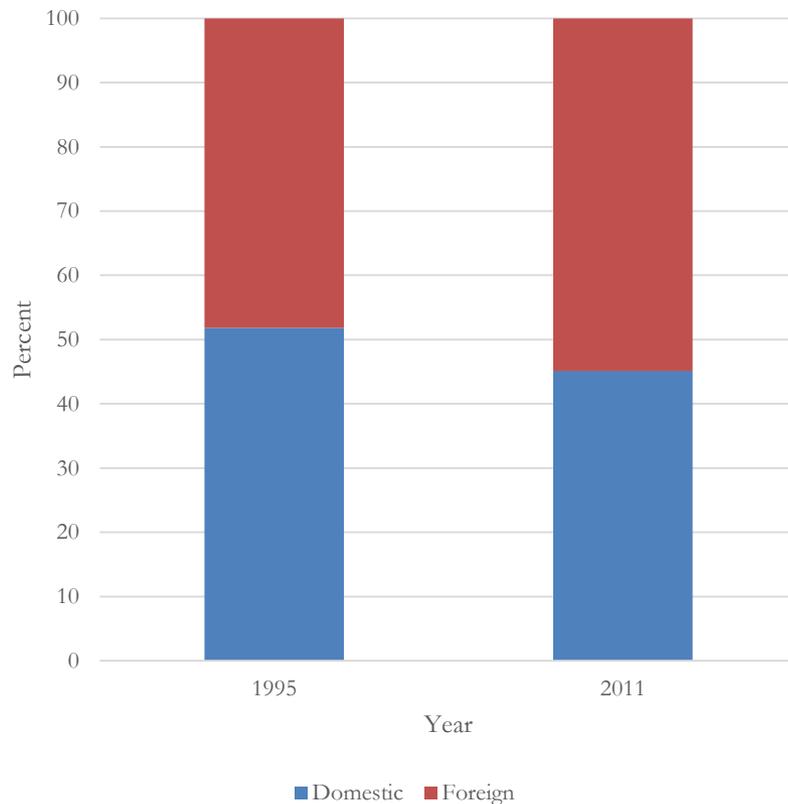
†Numbers do not add to their respective totals because of rounding

‡Non-labour, components only. Assigned to corporate headquarters

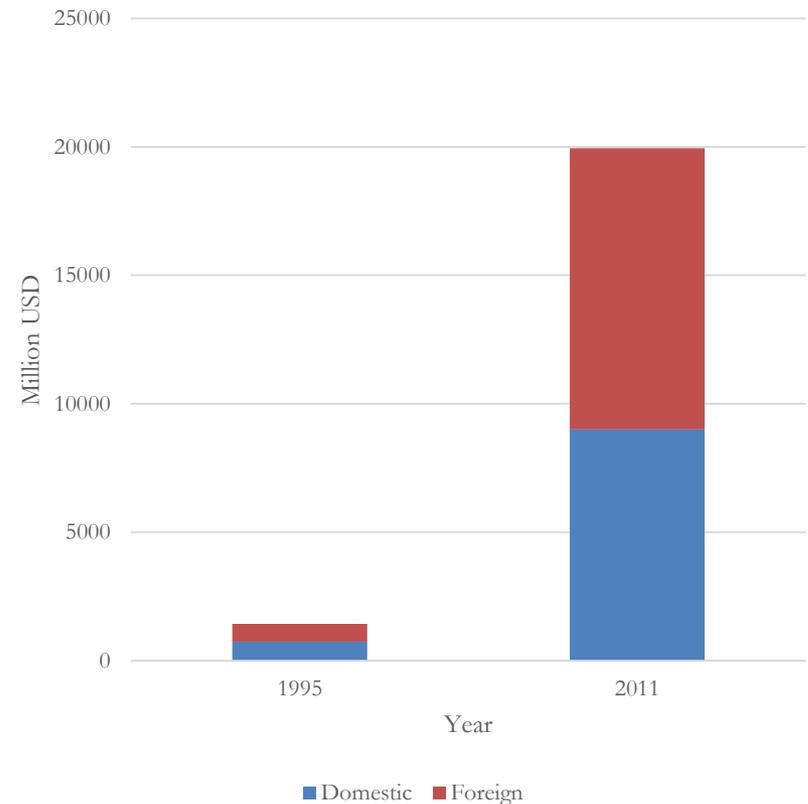
Source: The Economist

2. Global Value Chains and Trading in Tasks

A Smaller Slice...



Of a Larger Pie.

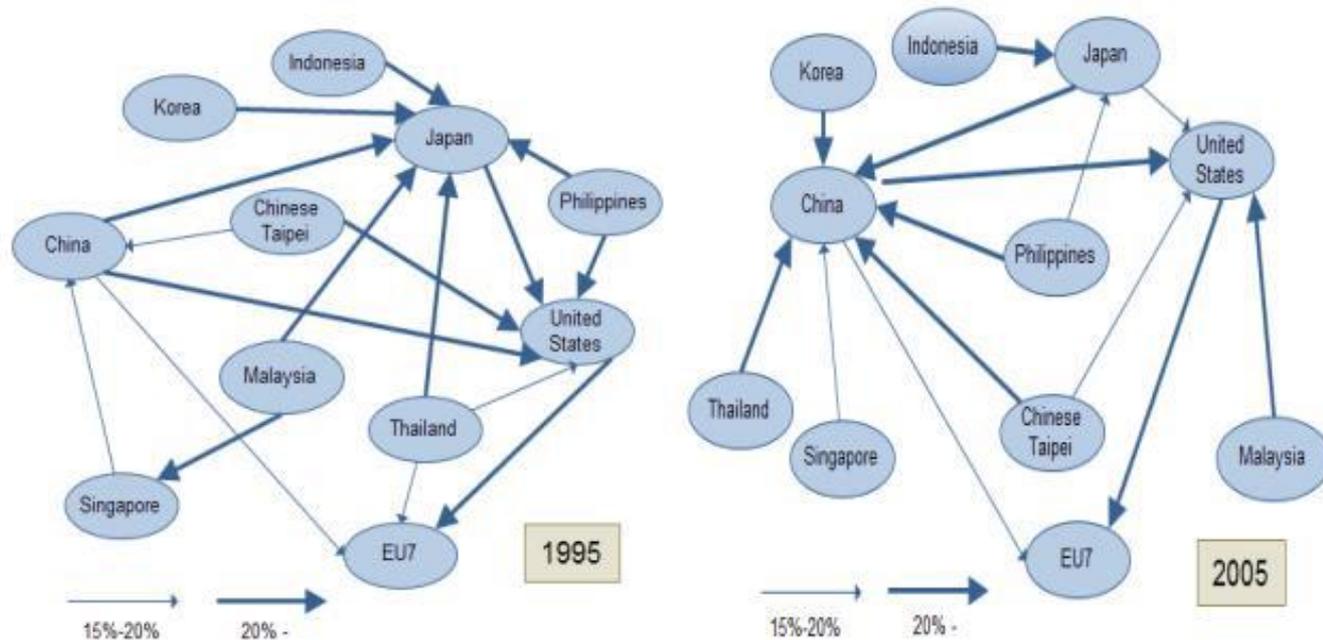


Transport Equipment Industry in Thailand;

2. Global Value Chains and Trading in Tasks

- ▶ Comparative advantage reasoning is still powerful in explaining the spread and operation of GVCs.
- ▶ Even though the nature of trade is changing, there is still potential for countries at all income levels to reap significant economic gains.
- ▶ GVCs also pose issues of social and environmental sustainability—see later modules for further analysis.

2. Global Value Chains and Trading in Tasks - Changing Pattern of Regional Trade

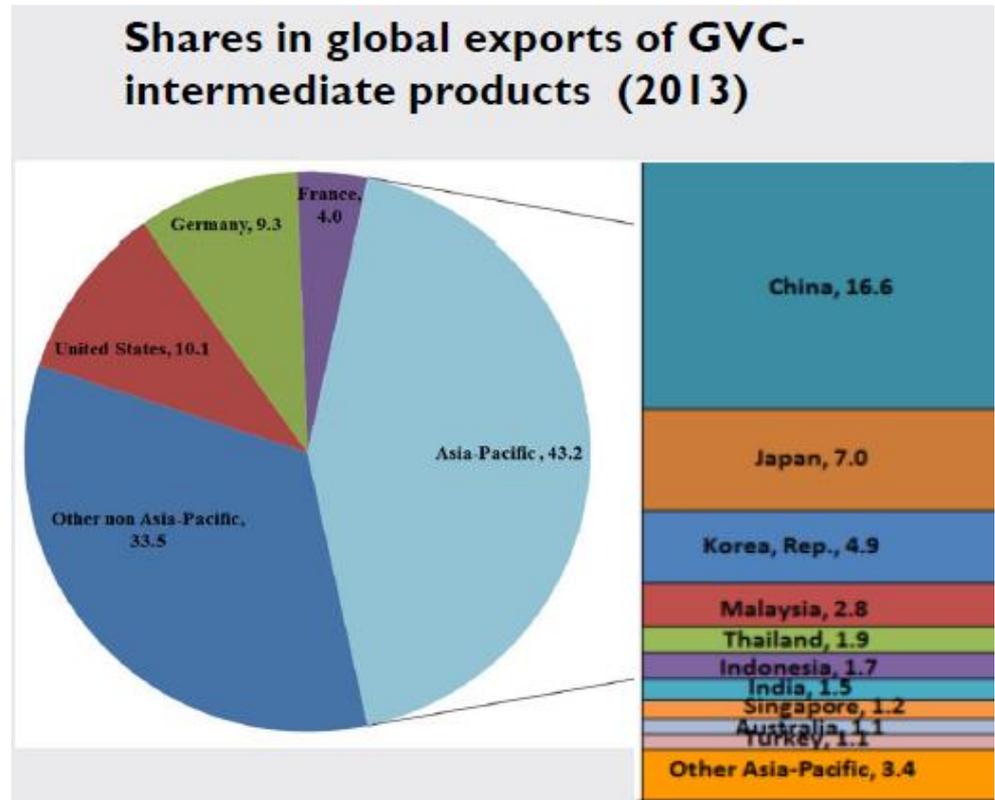


Notes: EU7 is Belgium, Germany, France, Italy, Netherlands, Spain and United Kingdom. Each arrow indicates that a partner's share of a country's total exports is greater than 15%.

Source: Yamano, Meng, Fukasaku (2011)

2. Global Value Chains and Trading in Tasks - Asia-Pacific Region in GVCs

- ▶ GVCs dominate policy discussions, but we lack a common yardstick for measurement (APTIR 2015).
- ▶ The region plays a major role on the supply side of GVCs: 43% of global intermediates exports and 39 % for imports.
- ▶ 90% of the GVC participation by the region is concentrated in only 10 countries. Low-income economies are largely bypassed.



2. Global Value Chains and Trading in Tasks - Factors affecting competitiveness in GVCs

- ▶ **Natural factors**
- ▶ Country's geographic location
- ▶ Endowment of natural resources
- ▶ Size of the economy
- ▶ **Other factors might be changed by the right policy mix.**
- ▶ Infrastructure,
- ▶ Skills of workforce,
- ▶ Trade and investment barriers
- ▶ Border procedures
- ▶ Macroeconomic stability, access to finance, and the overall ease of doing business.
- ▶ Technology absorptive capacity

Conclusion on why countries trade:

1. The key concept for understanding why countries trade is comparative advantage. It can drive mutually beneficial exchange between countries.
2. Traditional trade theory focuses on technological differences (Ricardo) and resource endowments (Heckscher-Ohlin) as drivers of comparative advantage.
3. GVCs present the new paradigm of trading in tasks, but comparative advantage reasoning is still relevant—and suggests why even low value added activities can have economic benefits for developing countries.
4. This session has focused on economics. Subsequent sessions will integrate some social (and environmental) perspectives. All are important in the context of sustainable development.



Annex

- ▶ Technical demonstration of comparative advantage in the Ricardian and Heckscher-Ohlin models

1. Why do countries trade?

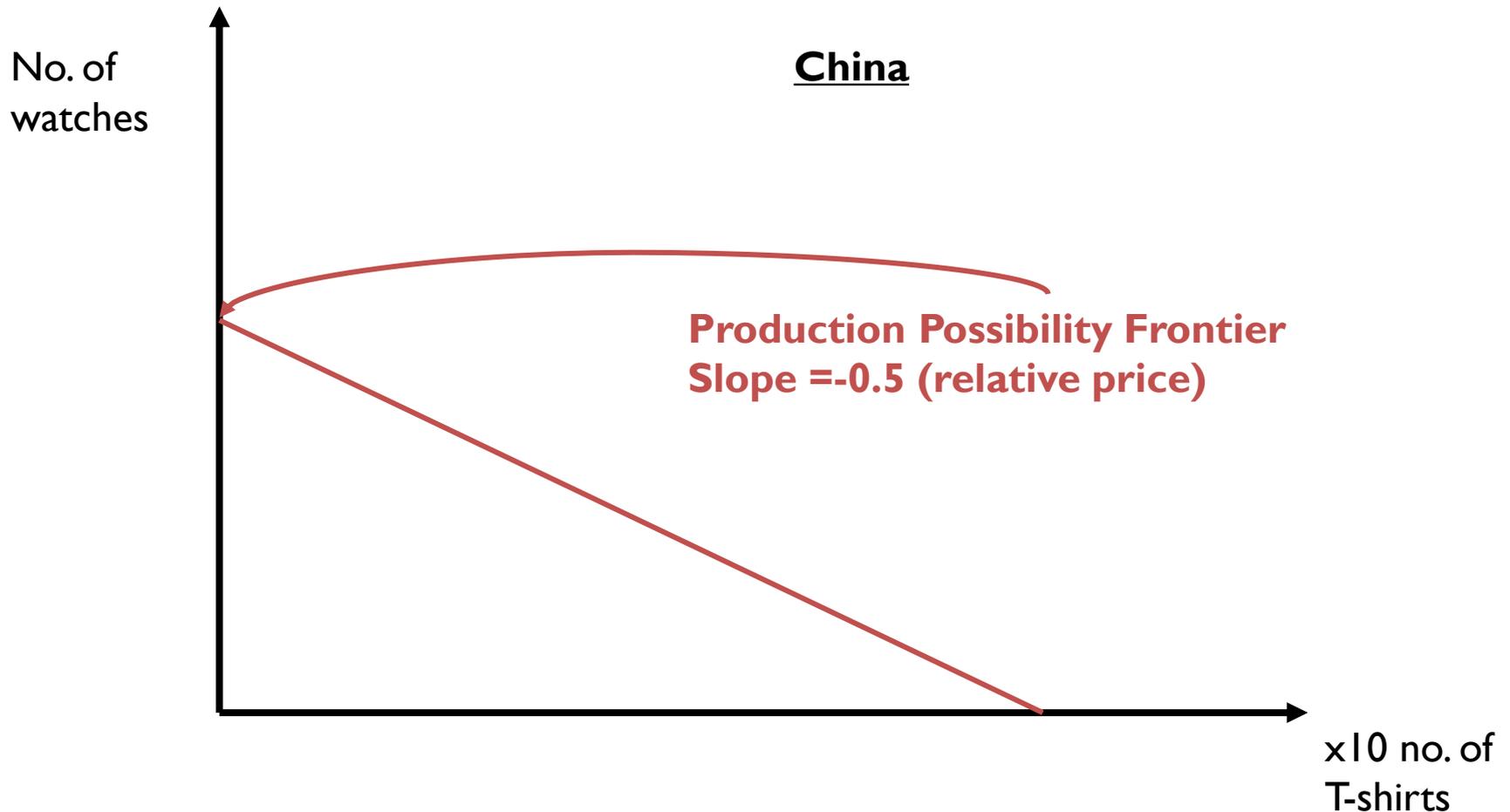
b. Productivity differences (Ricardo).

▶ Step One: The Production Side

- ▶ Each country produces the same two goods (watches and t-shirts).
- ▶ Producing a certain amount of one product implies not producing a certain amount of another product (opportunity cost).
- ▶ The tradeoff between producing one product rather than the other provides a simple representation of a country's production technology.

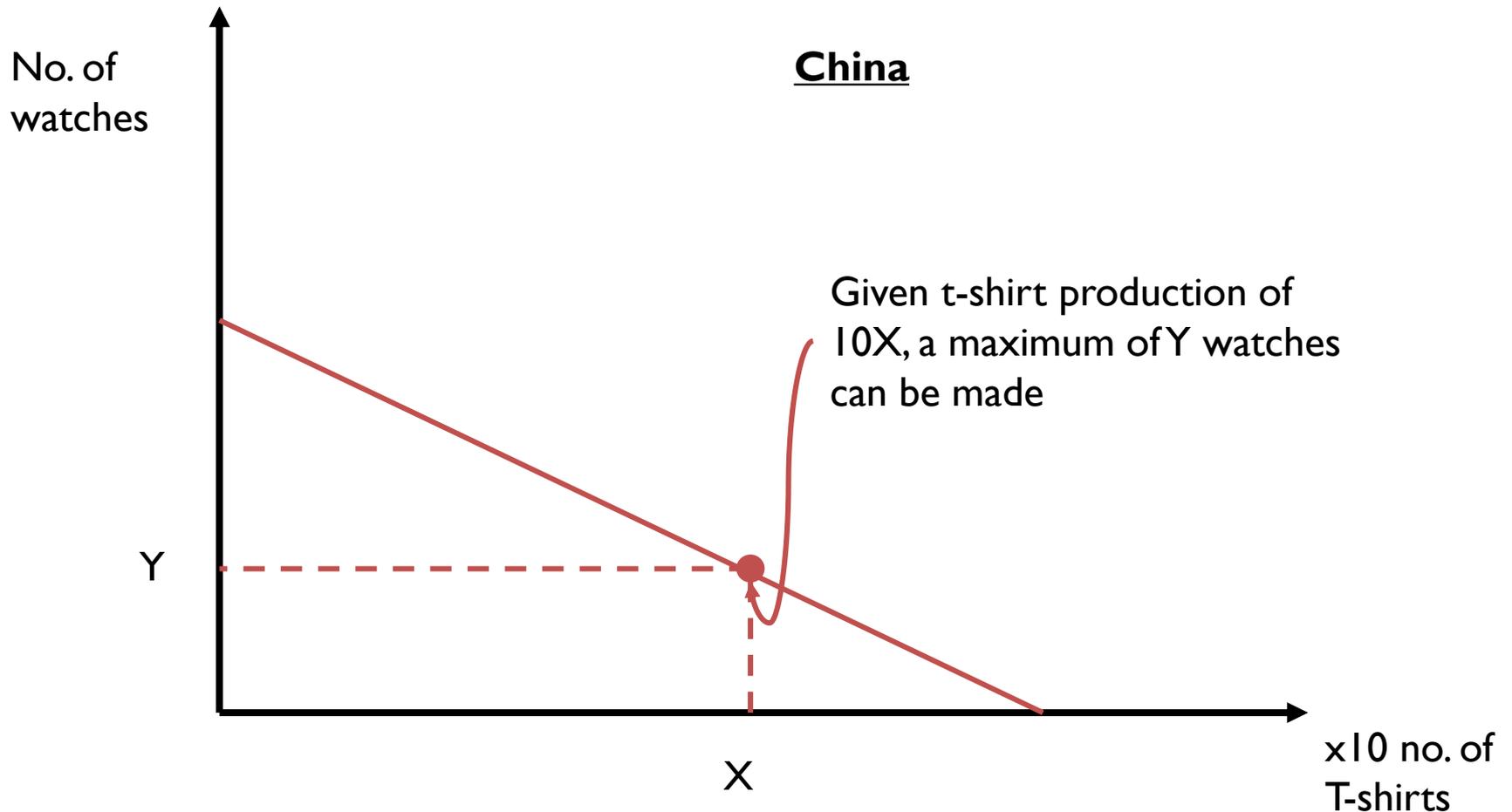
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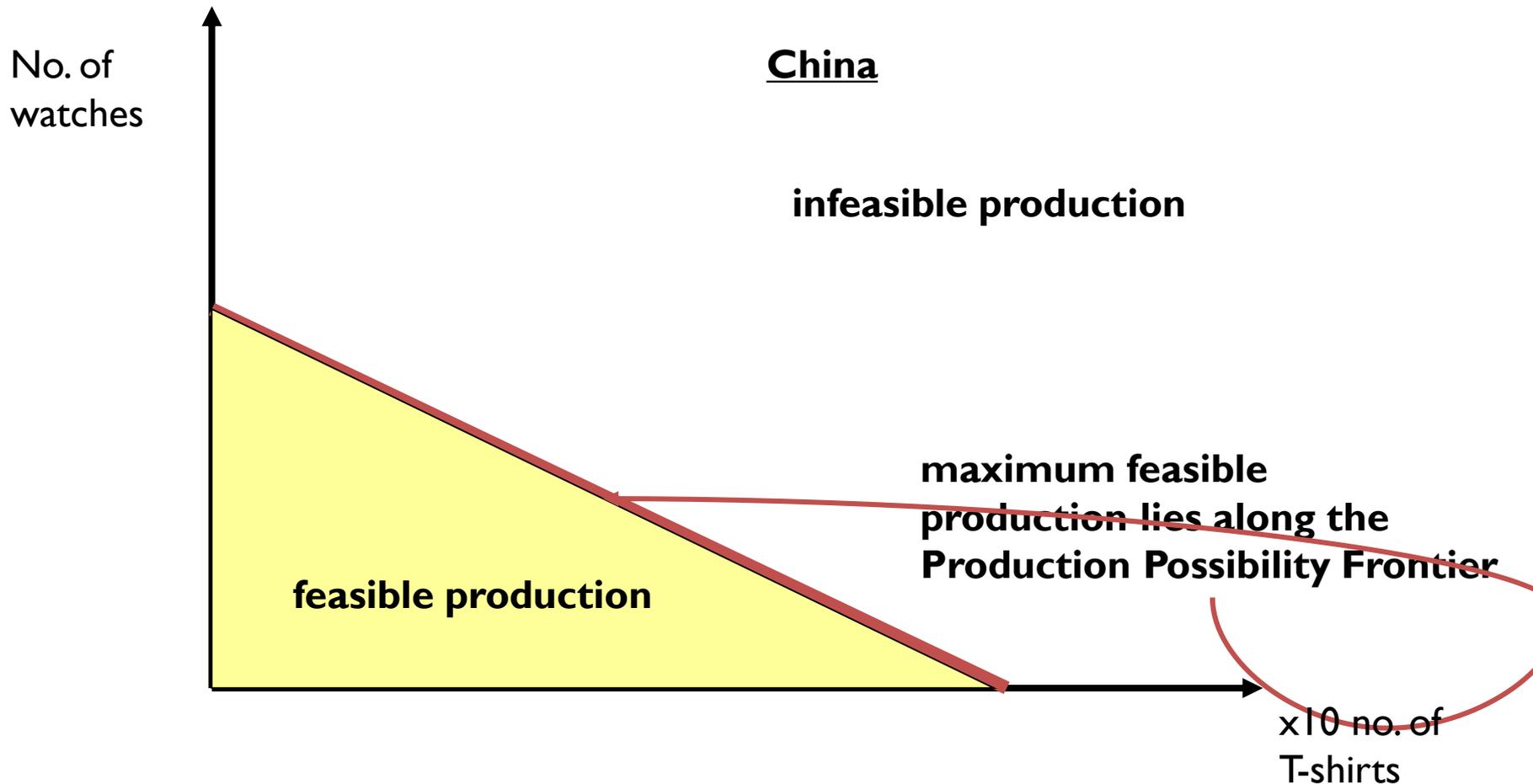
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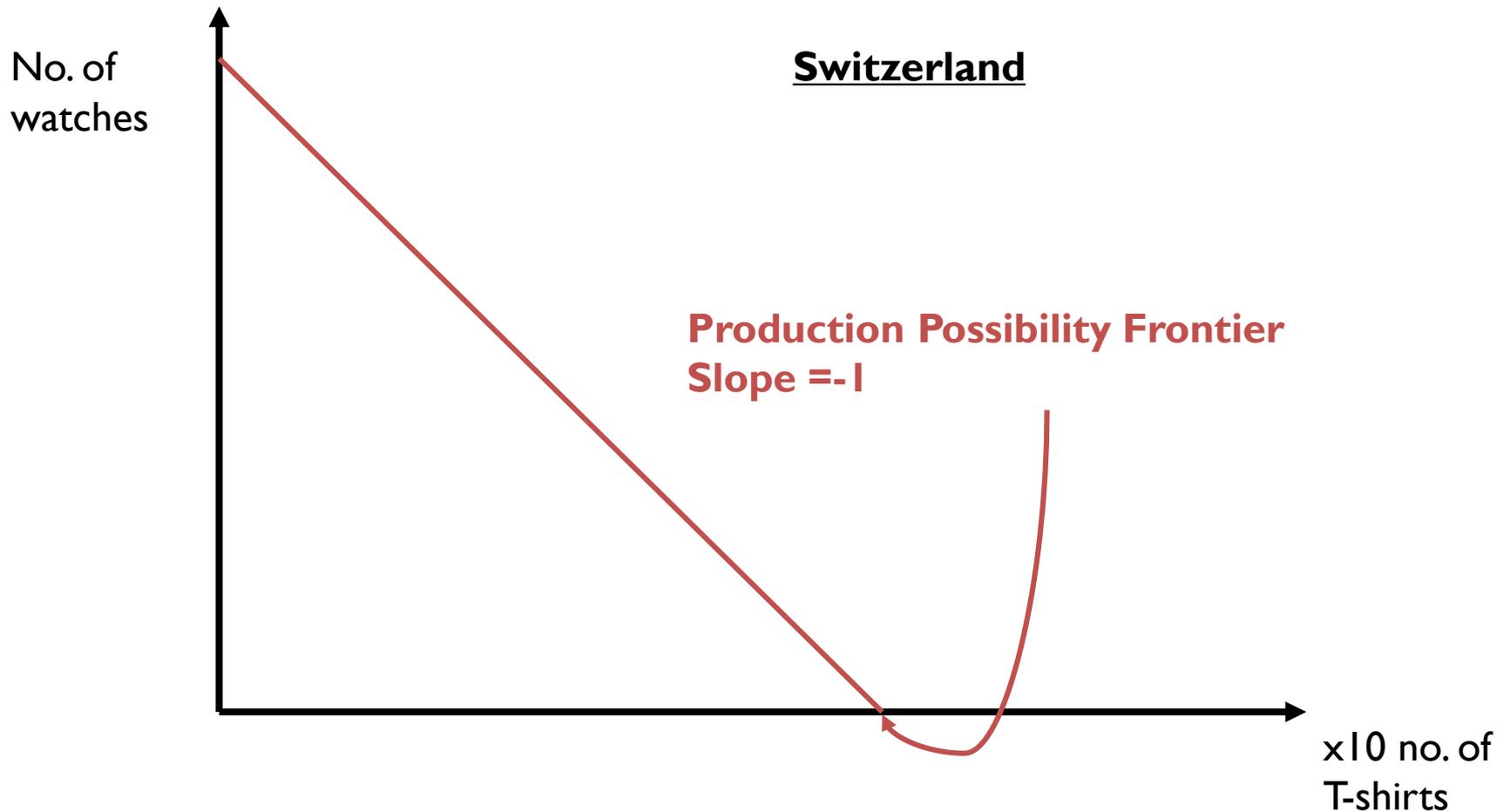
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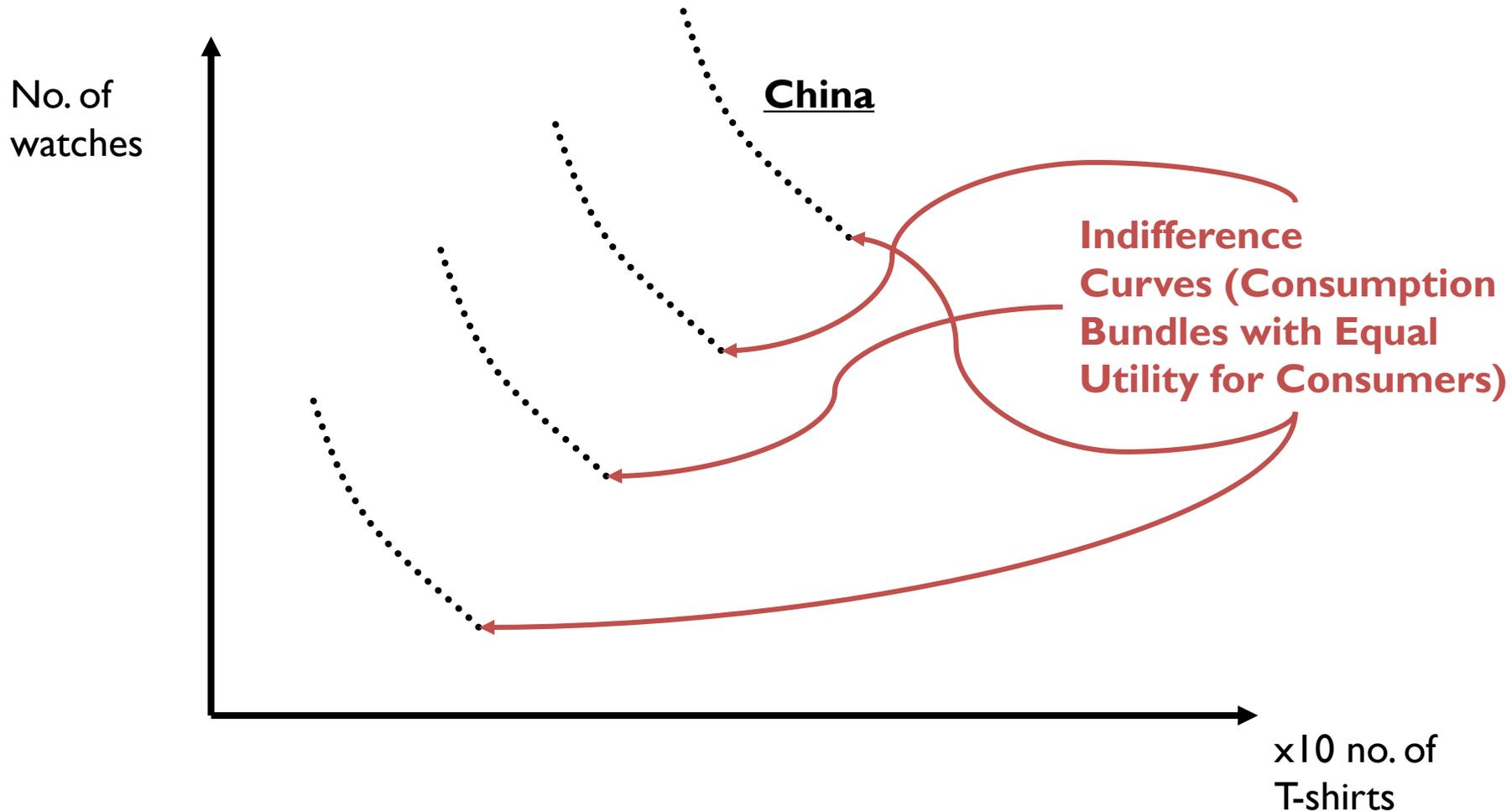


▶ Step Two: The Consumption Side

- ▶ In this economy, people consume watches and t-shirts.
- ▶ Consuming more of either good gives them a higher level of utility, but their income limits how much they can consume.
- ▶ It is possible to identify combinations of t-shirts and watches at each income level that represent equal utility for consumers (indifference curves).

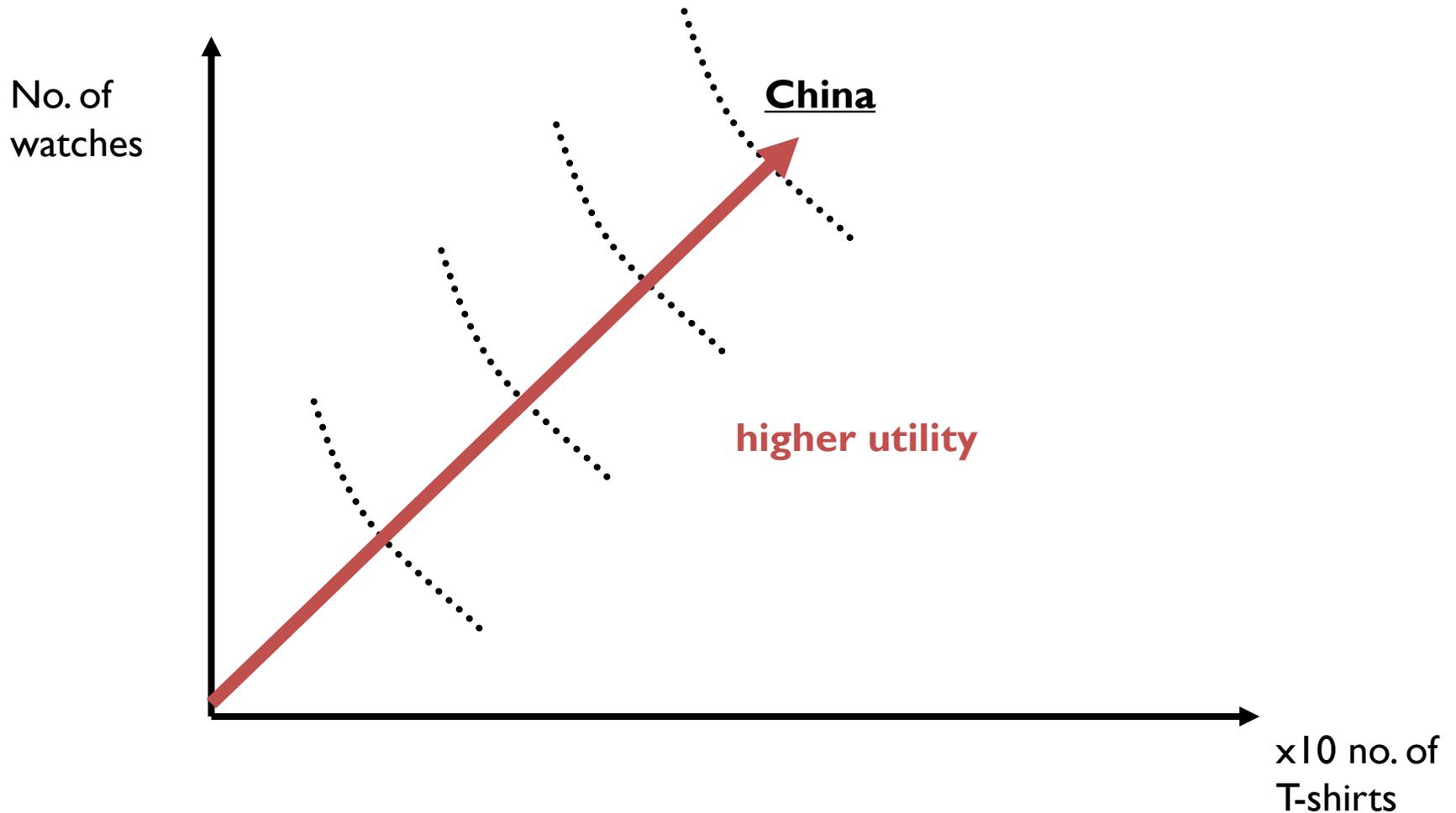
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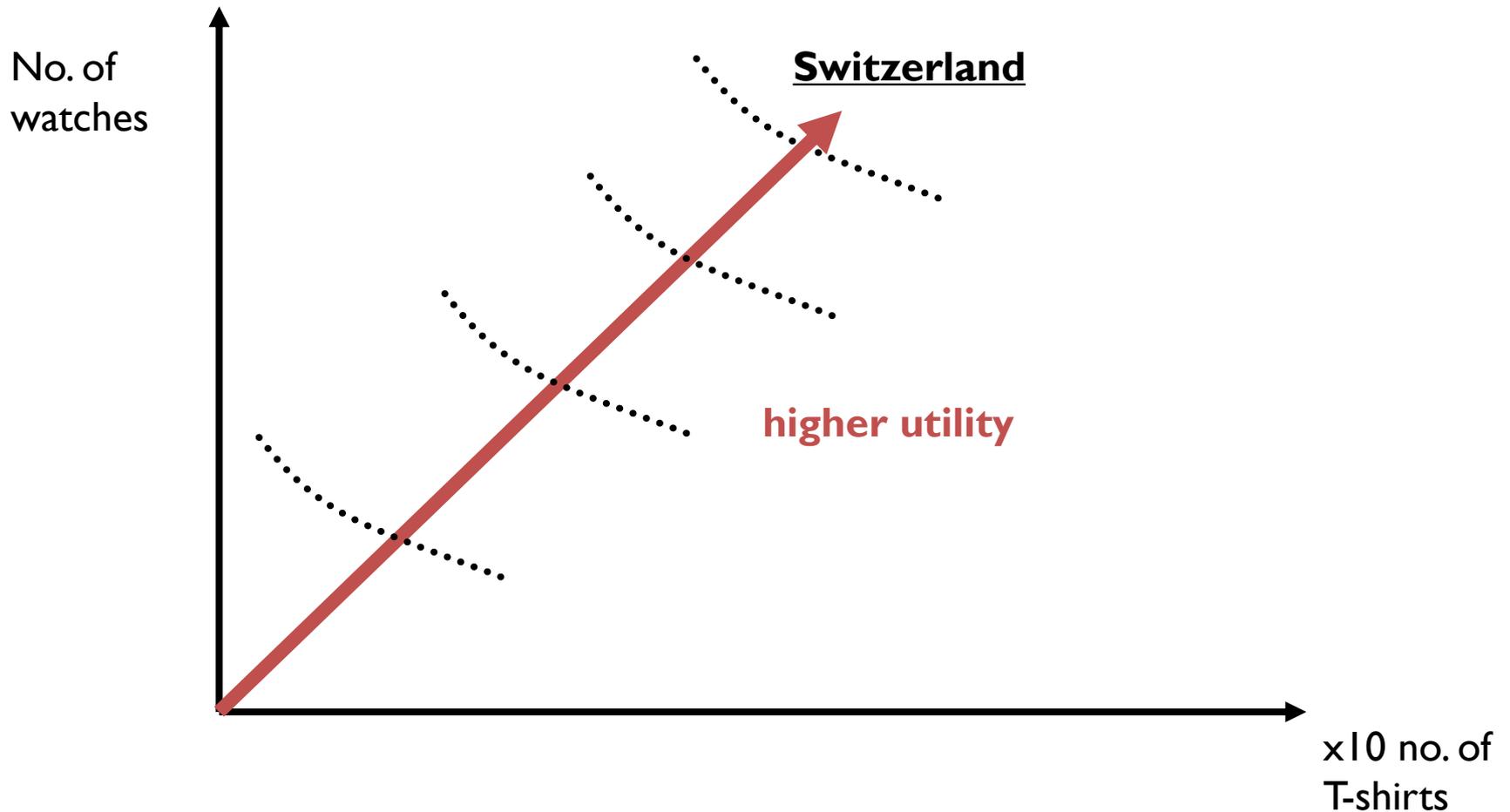
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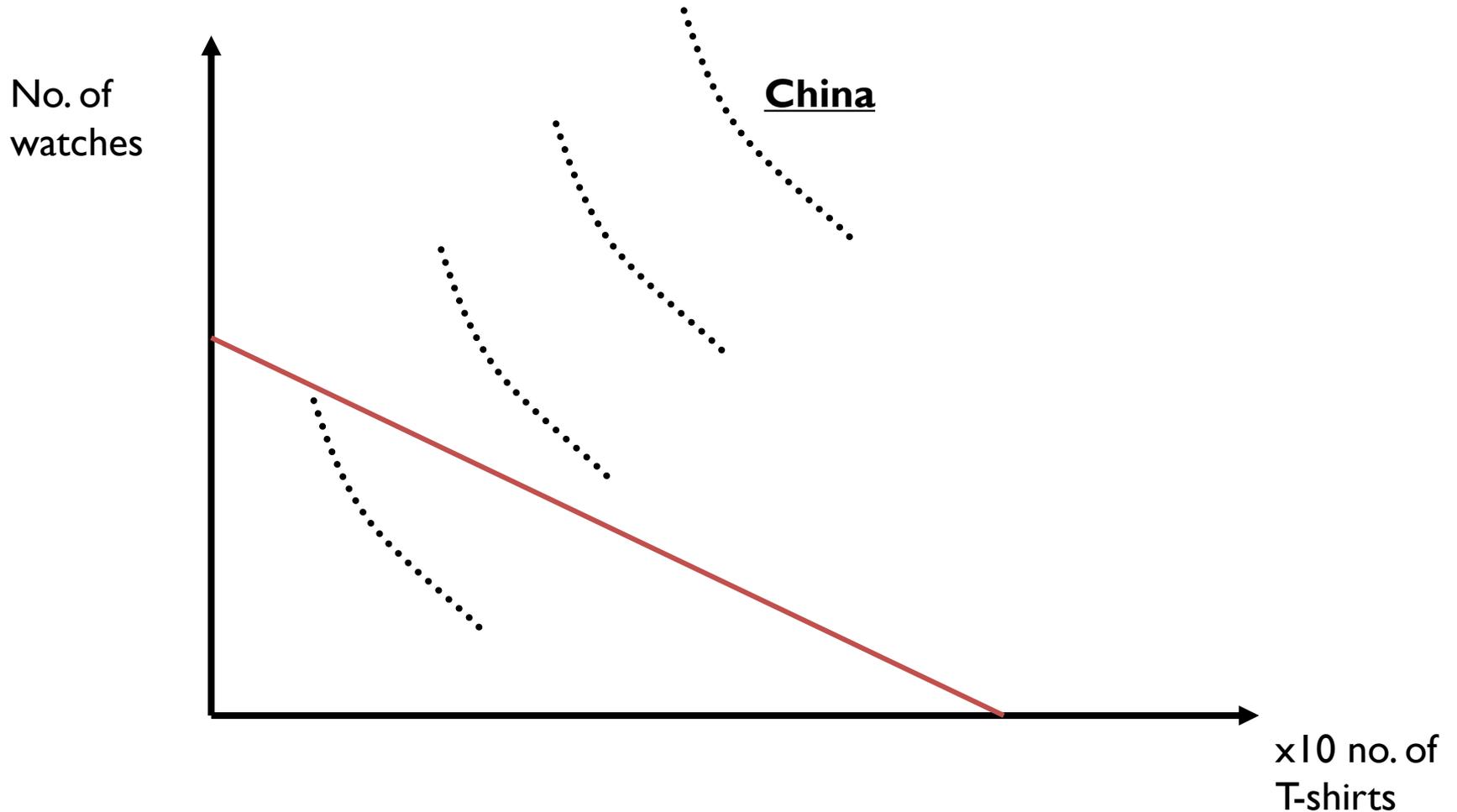
b. Productivity differences (Ricardo).

▶ Step Three: Autarky Equilibrium

- ▶ Autarky means that there is no trade, so countries are completely self-sufficient in t-shirts and watches.
- ▶ Equilibrium results from combining the production and consumption sides of the model in each country: producers produce the most they can with the available labor and technological tradeoff, and consumers consume as much as they can given their income.

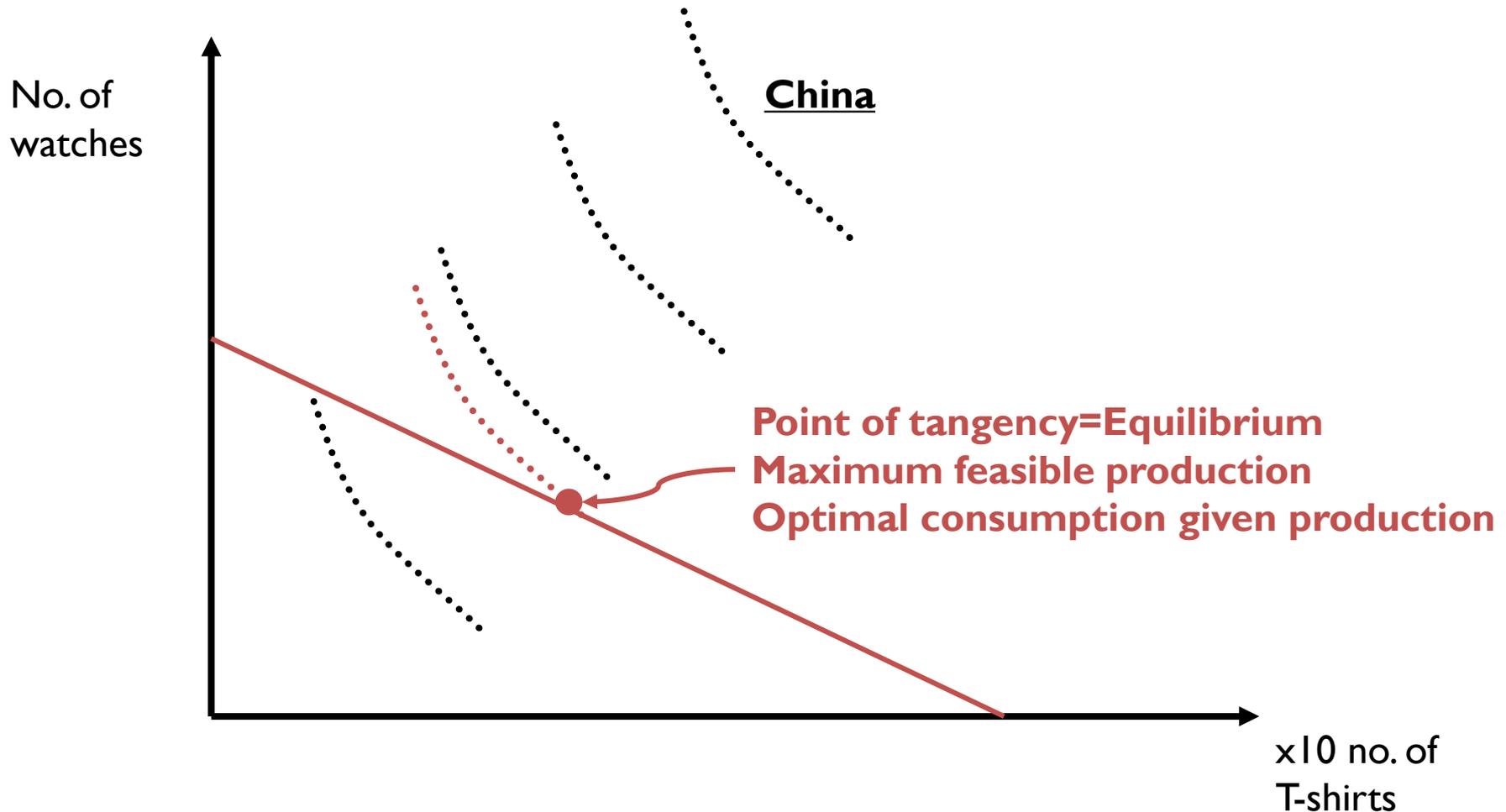
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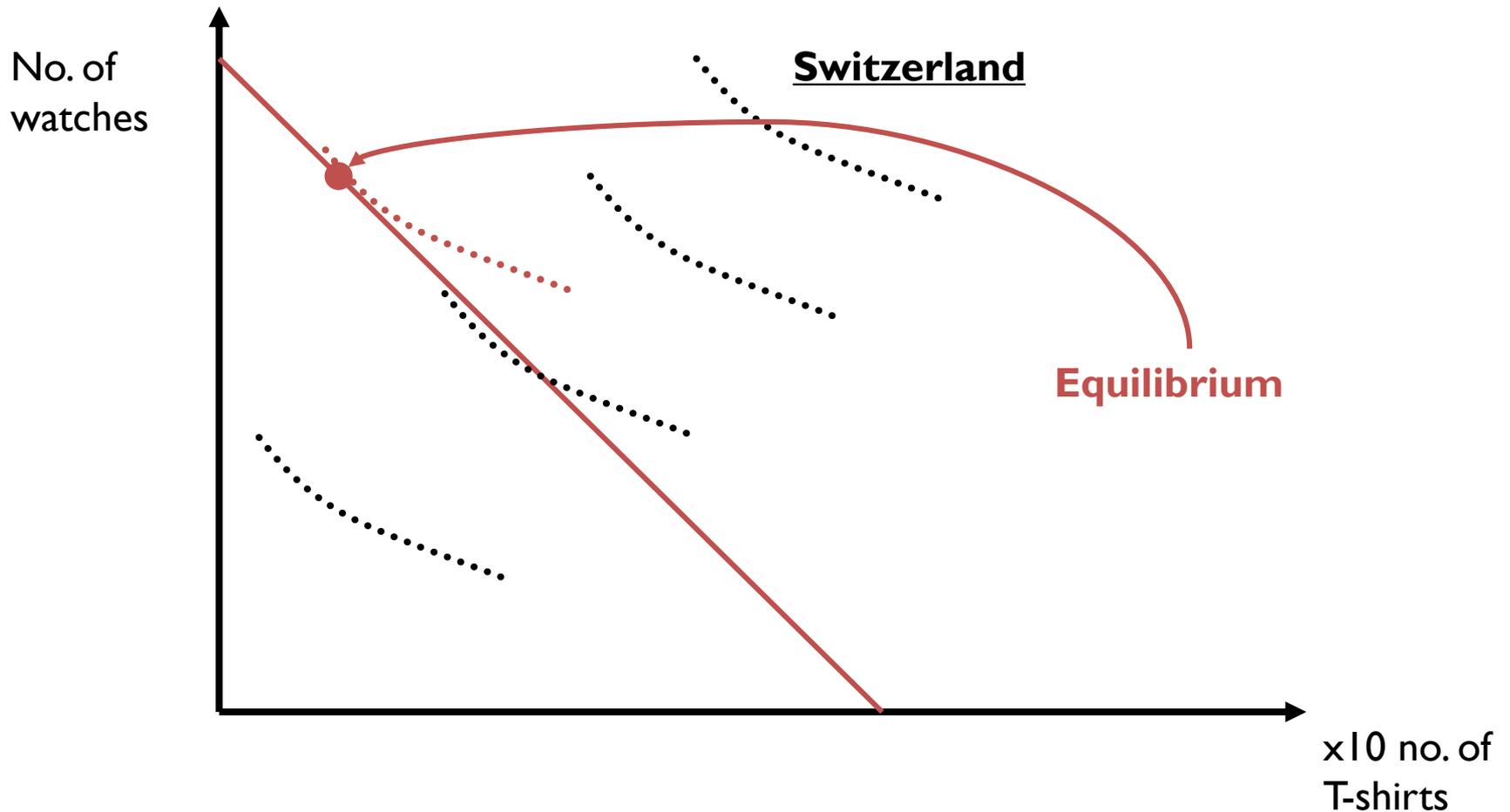
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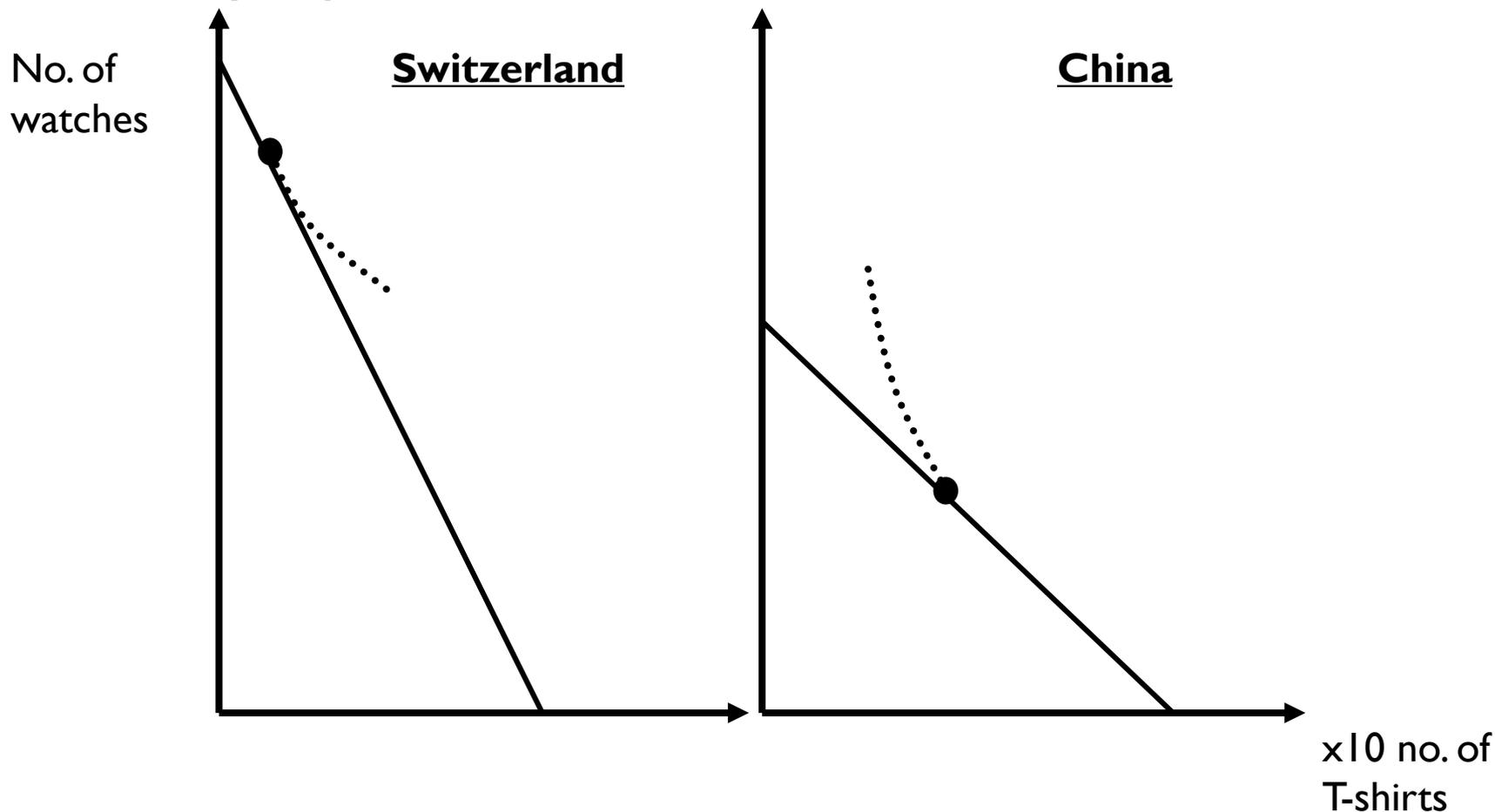
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▶ Autarky Equilibrium:



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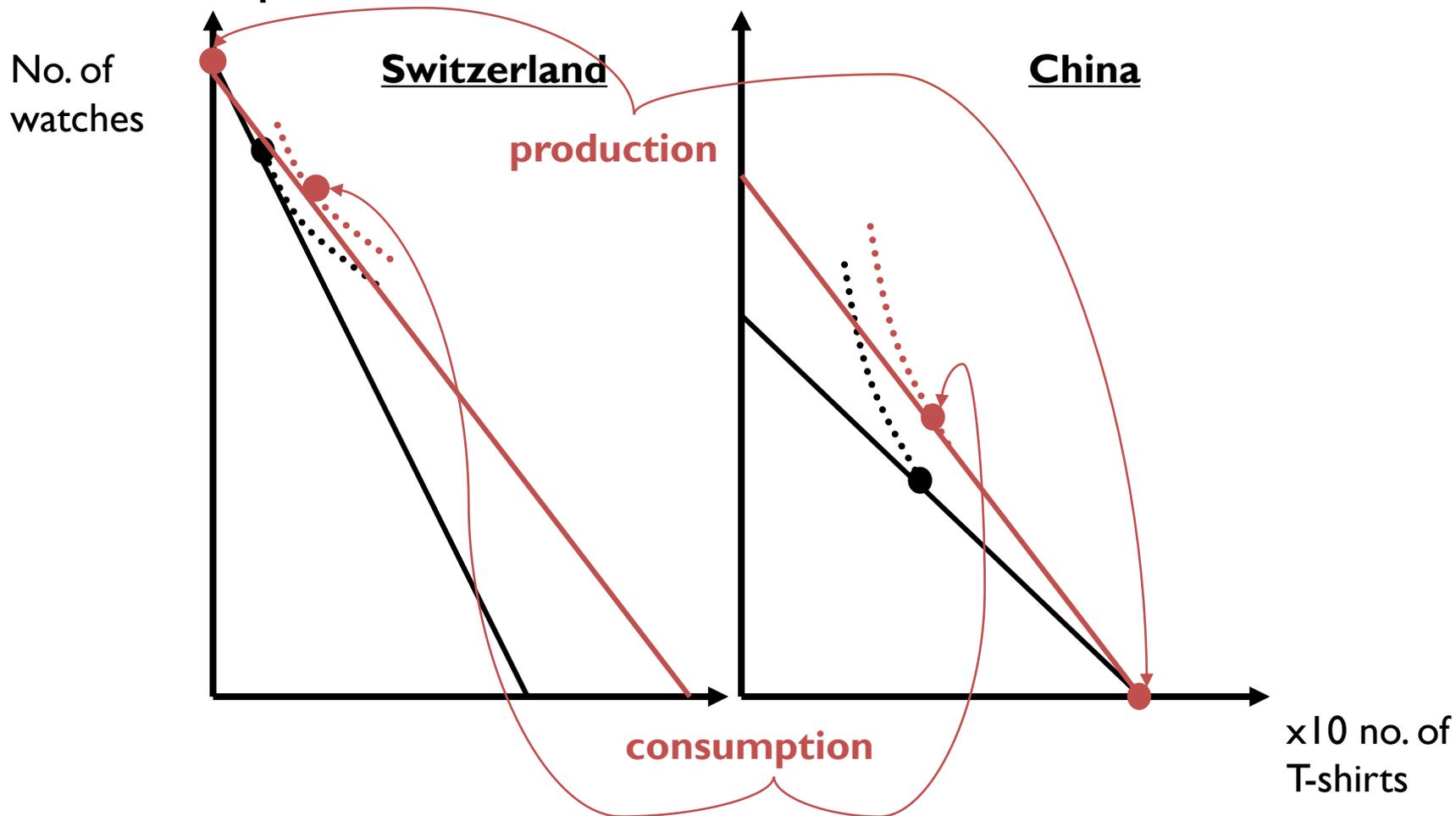
▶ Step Four: Equilibrium With Trade

- ▶ Countries open their borders, and so can exchange watches for t-shirts with the other country.
- ▶ There is now one integrated “world market”, with a single production and consumption tradeoff between watches and t-shirts. The new tradeoff lies somewhere between the two original points.
- ▶ Consumers in both countries are able to consume at a higher level of utility than under autarky.

1. Why do countries trade?

b. Productivity differences (Ricardo).

► Trade Equilibrium:



1. Why do countries trade?

b. Productivity differences (Ricardo).

▶ Summary of the basic Ricardian model:

- ▶ Comparative advantage is driven by differences in labour productivity (=“technology”)
- ▶ Opening to trade leads to:
 - ▶ Equalisation of world relative prices
 - ▶ Specialisation by comparative advantage
 - ▶ Separation of production and consumption possibilities in each country
 - ▶ Increased consumption possibilities for both countries

1. Why do countries trade?

b. Resource differences (Heckscher-Ohlin).

▶ Basic components:

- ▶ 2 factors (labour and capital)
- ▶ 2 goods (t-shirts and watches)
- ▶ 2 countries (China, Switzerland)

▶ We need to model:

- ▶ The production side (optimal use of inputs to produce outputs)
- ▶ The consumption side (optimal consumption balance between watches and t-shirts)
- ▶ Market equilibria under autarky and with trade

1. Why do countries trade?

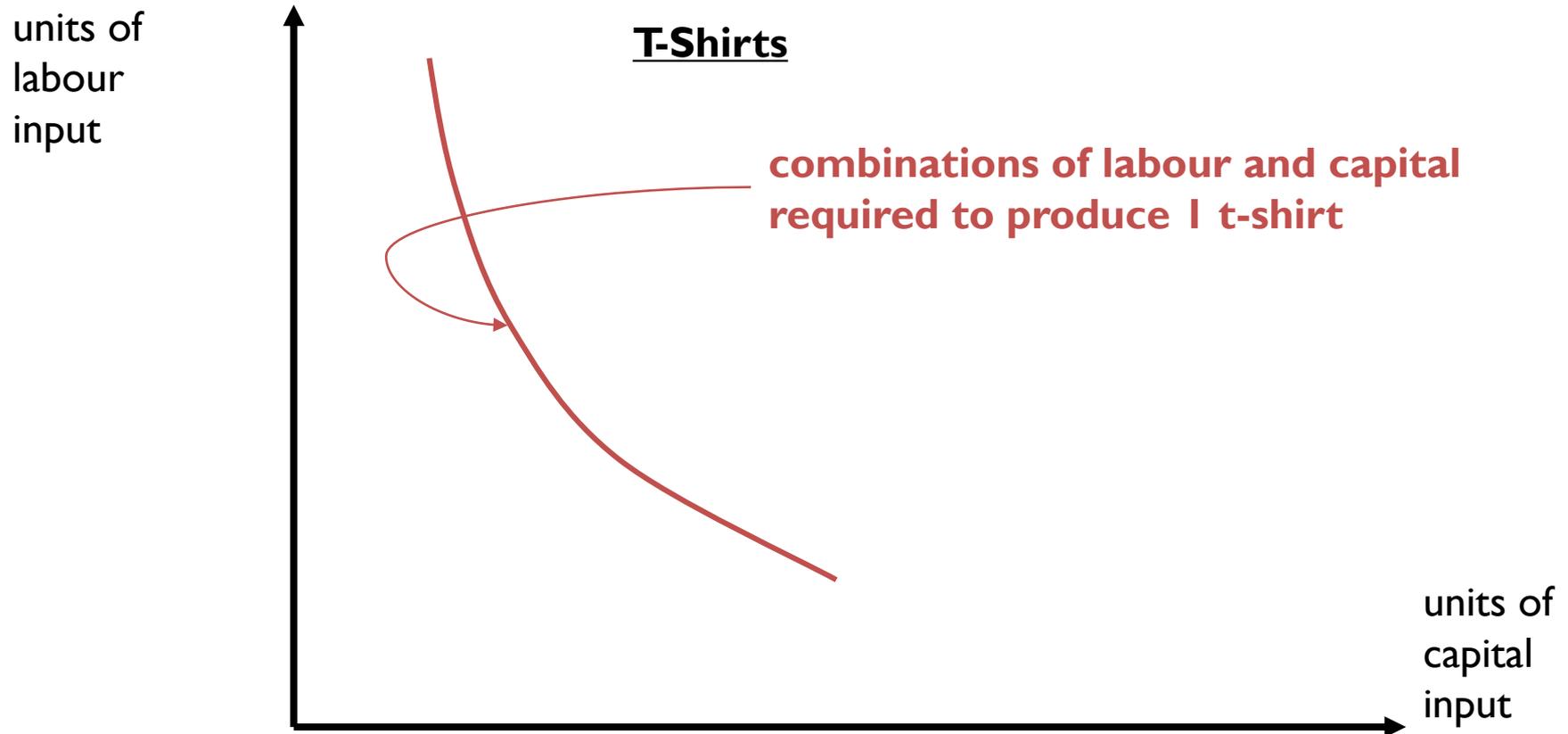
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▶ Step One: The Production Side

- ▶ Labor and capital can be combined to produce either watches or t-shirts, but in different ratios.
- ▶ By looking at the amount of labor and capital required to produce one unit of each product, we can identify one product as relatively labor intensive and the other as relatively capital intensive.
- ▶ The two countries differ in resource endowments: China has relatively more labor than capital, and the opposite is true in Switzerland.
- ▶ As a result of different resource endowments, feasible production bundles also differ, with efficient combinations defined by a production possibility frontier.

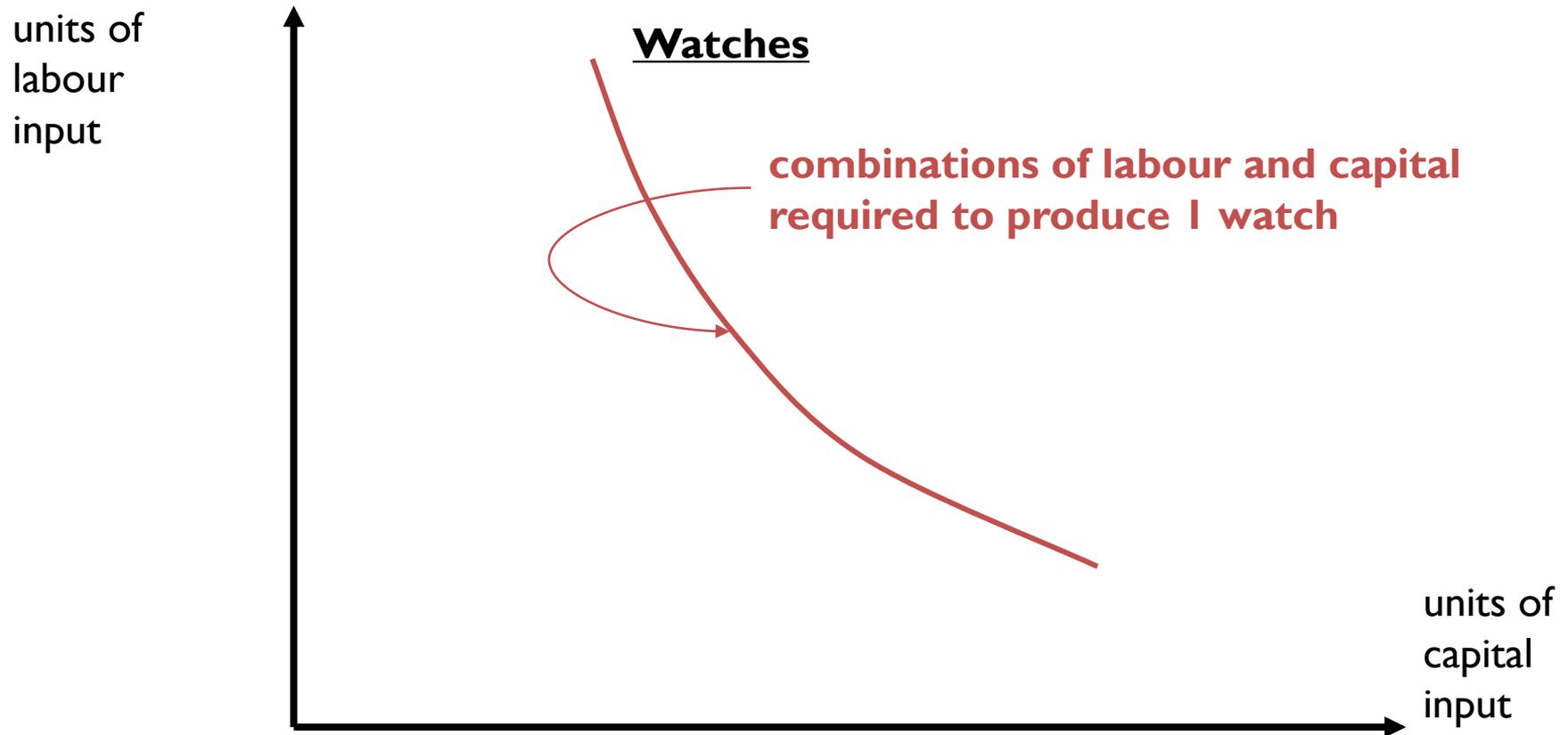
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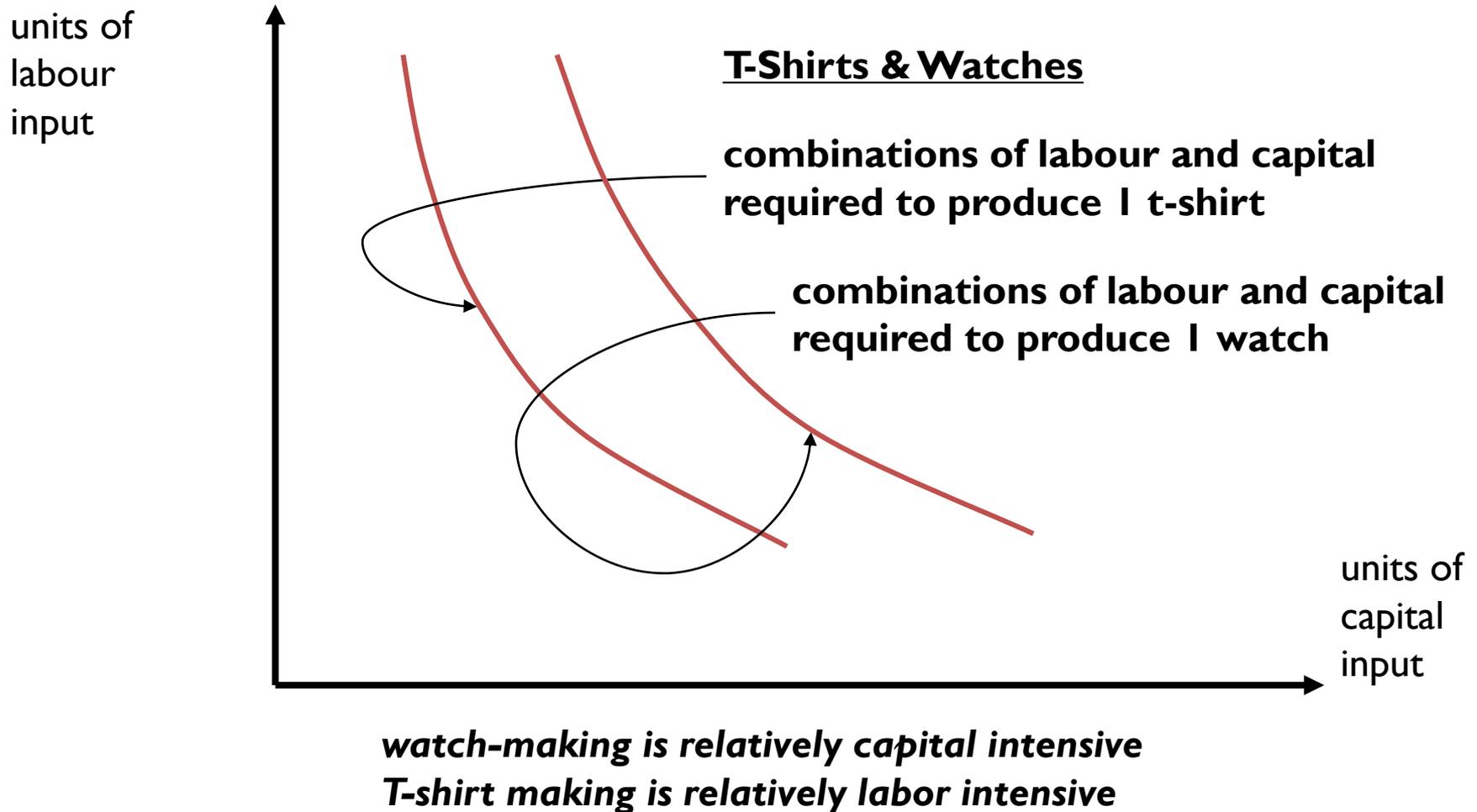
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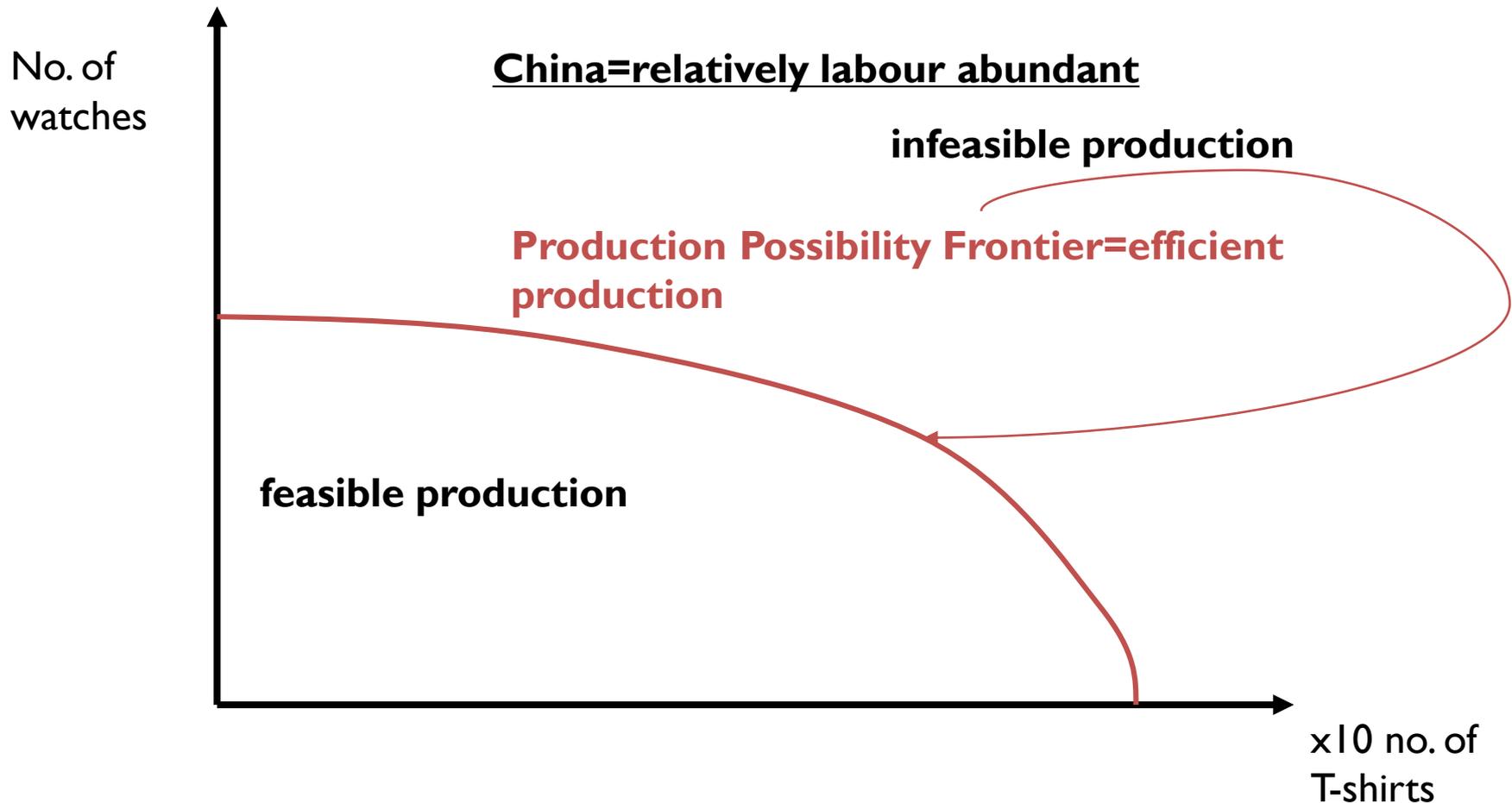
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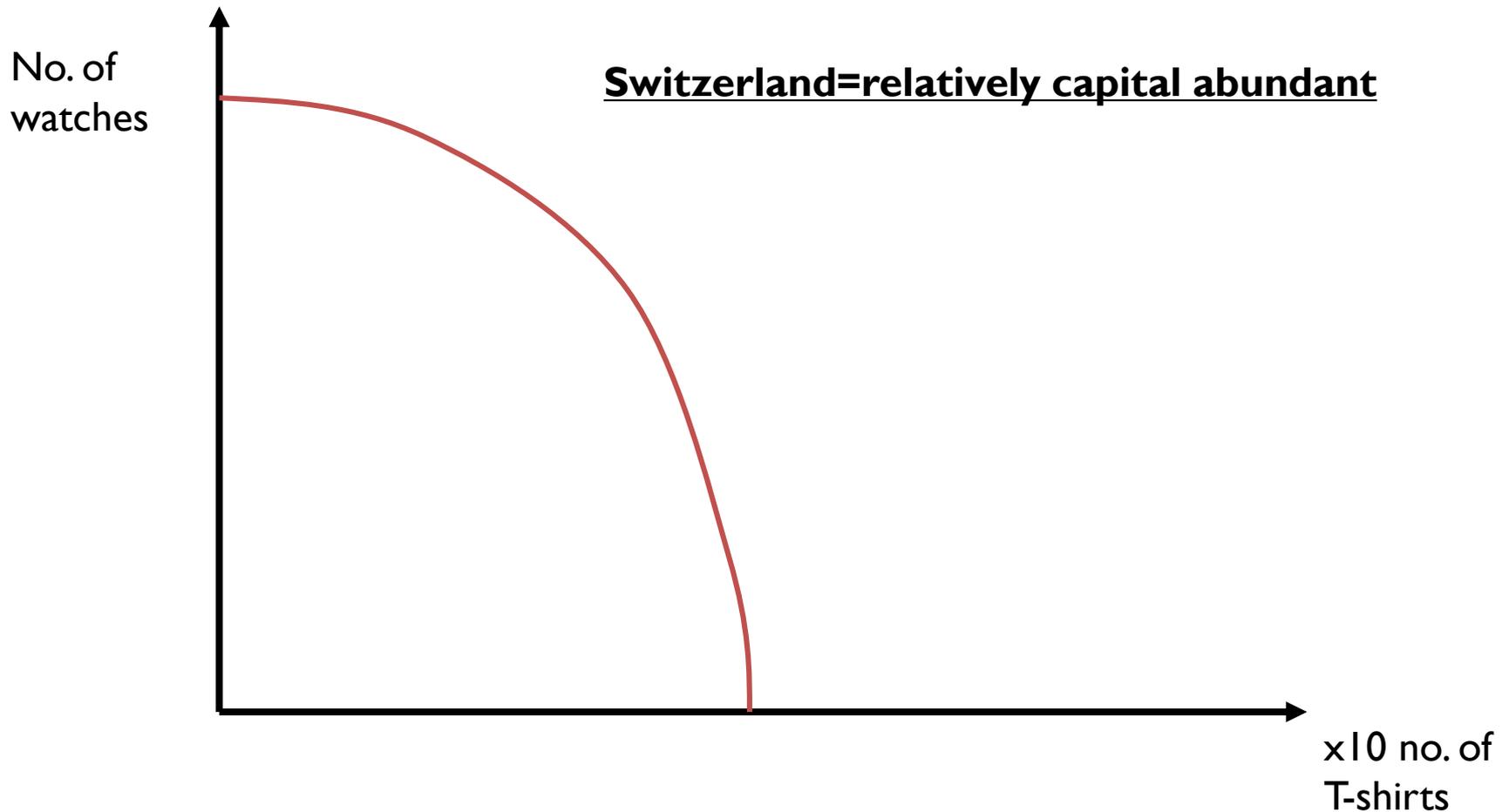
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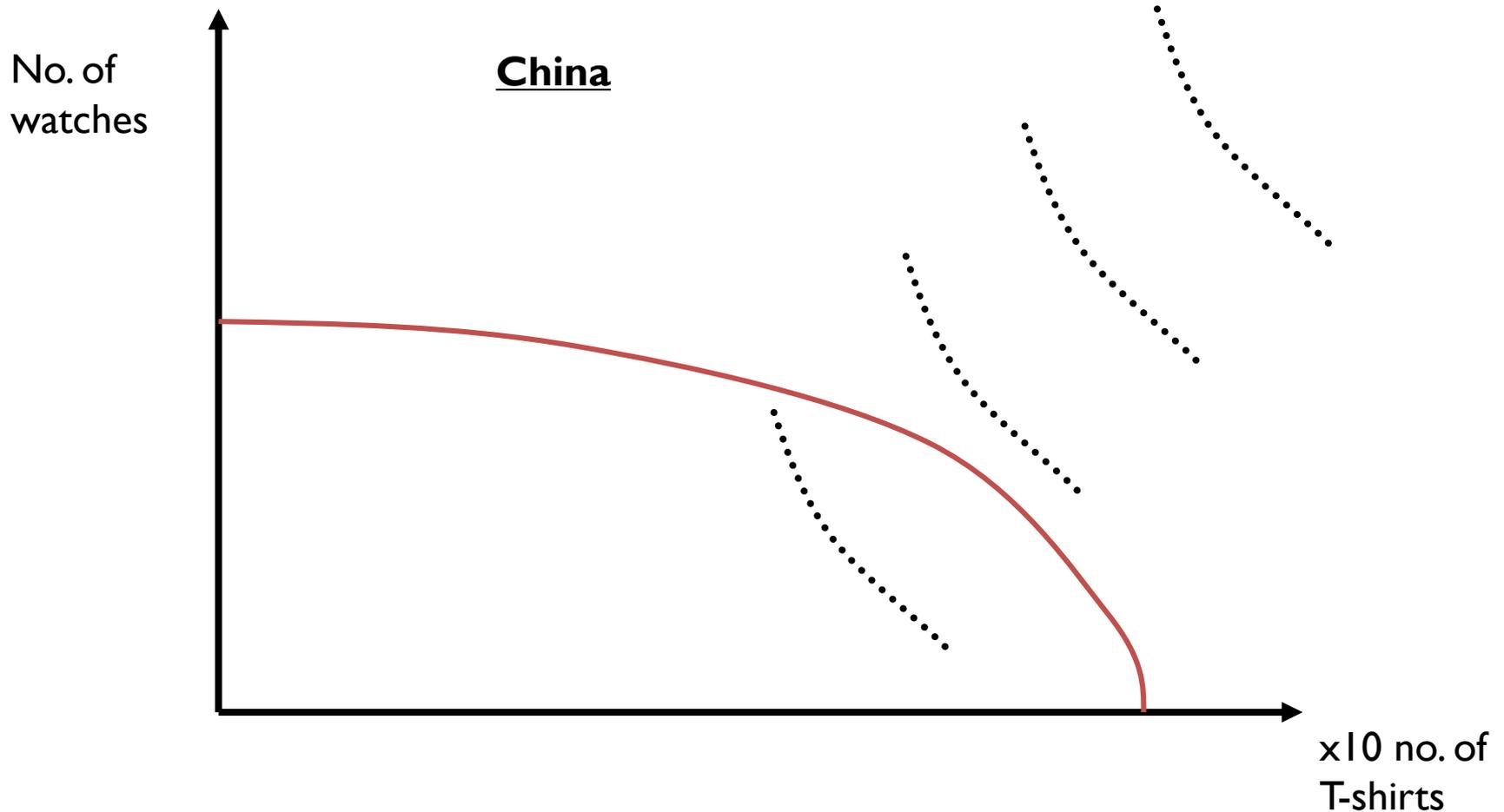
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▶ Step Two: The Consumption Side

- ▶ As for the Ricardian model, consumers want to consume as much as possible given their income.
- ▶ Indifference curves define combinations of the two products that give equal utility to consumers.

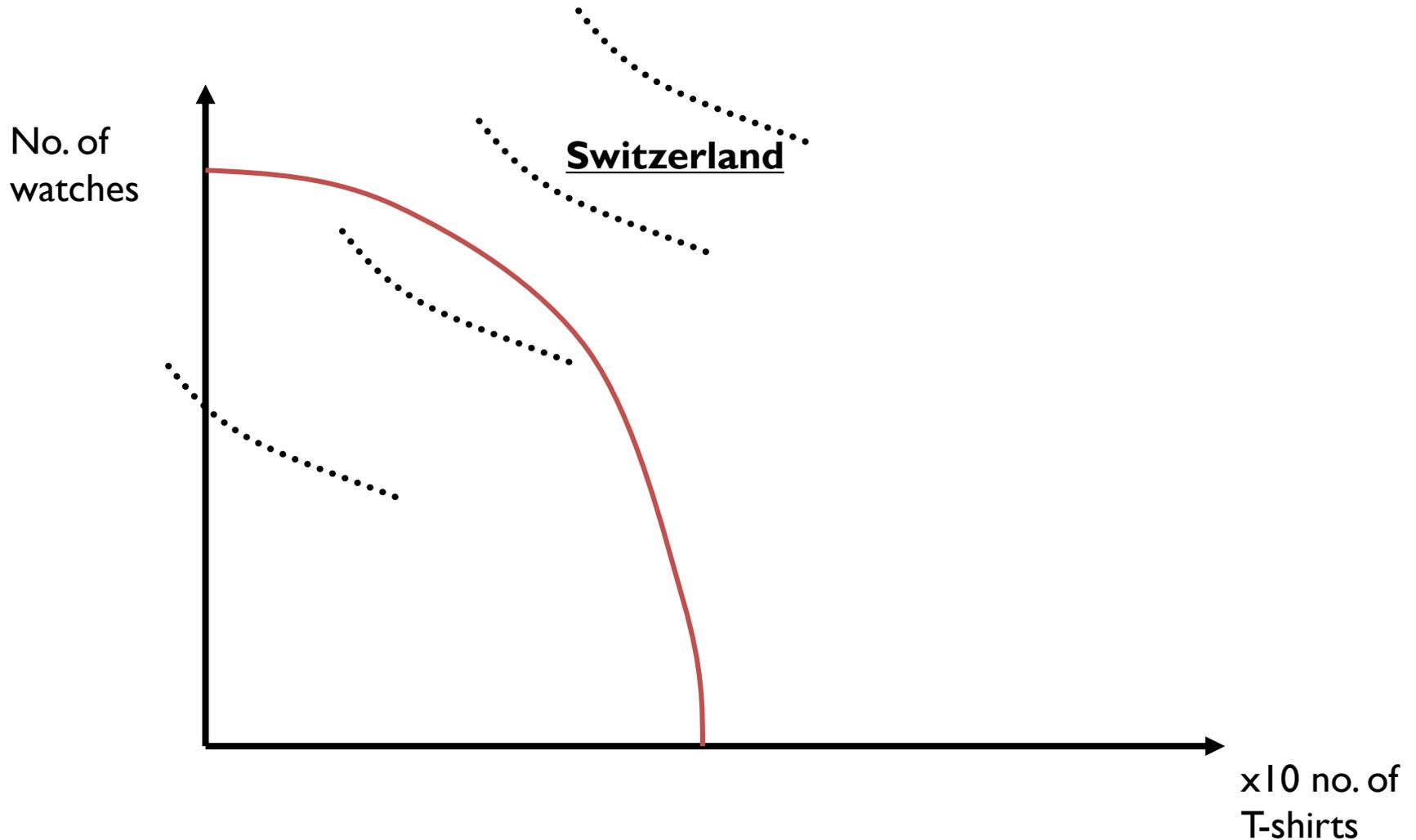
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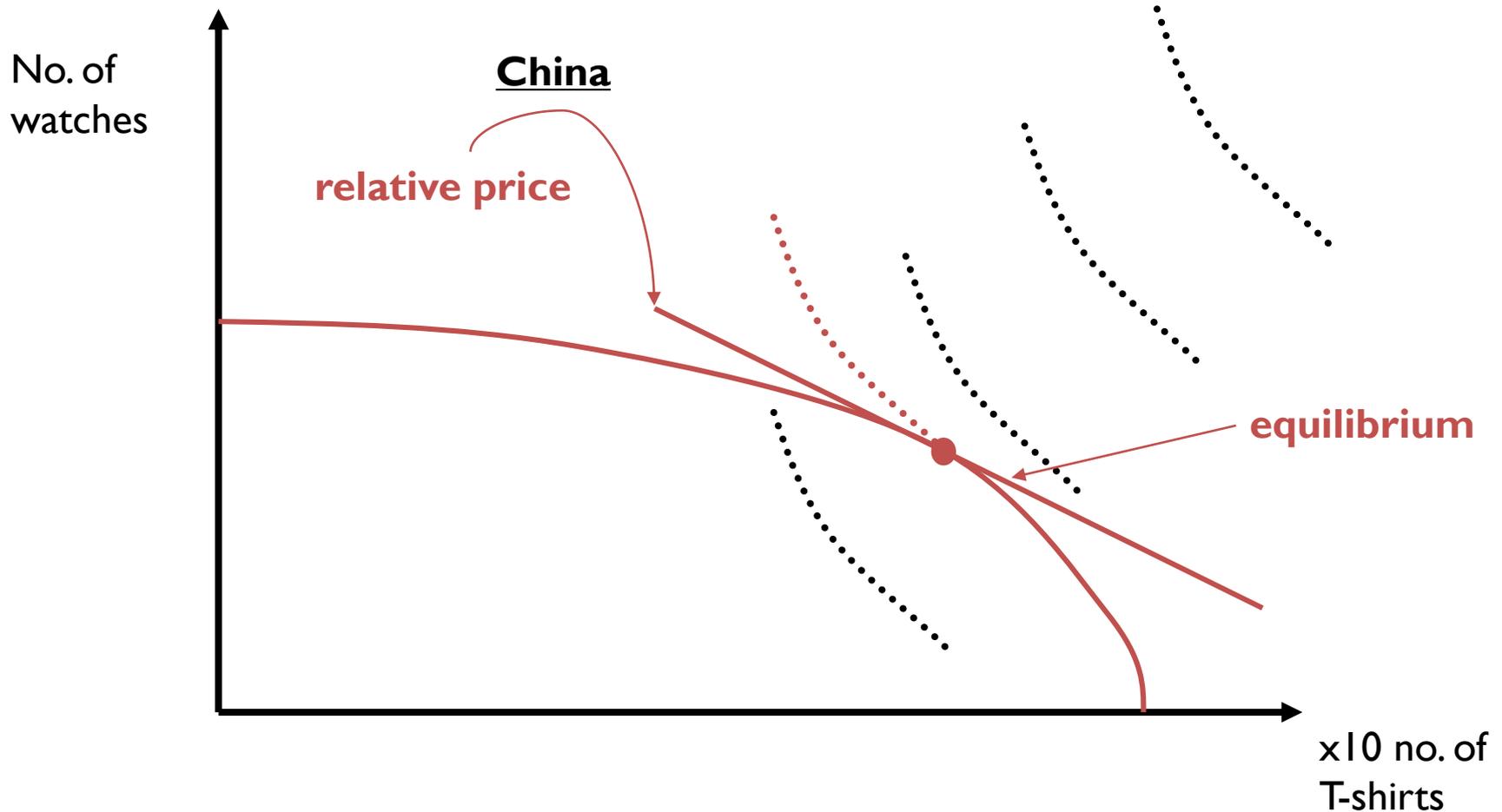
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▶ Step Three: Autarky Equilibrium

- ▶ As in the Ricardian model, equilibrium is where consumers consume efficiently and producers produce efficiently.
- ▶ The point on the diagram is the tangent between an indifference curve and the production possibility frontier.
- ▶ The differently shaped curves in the two countries give different levels of autarkic consumption and production.

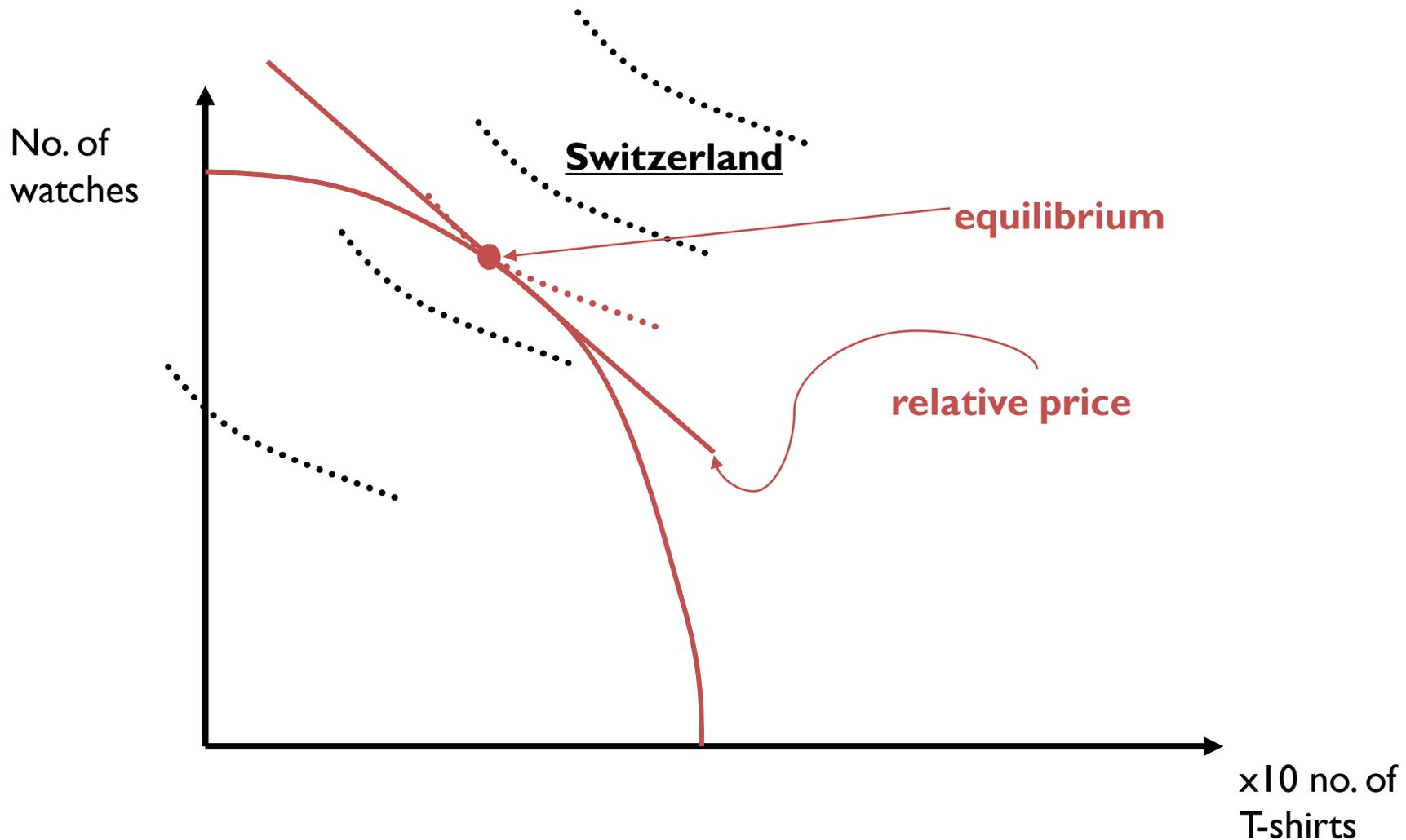
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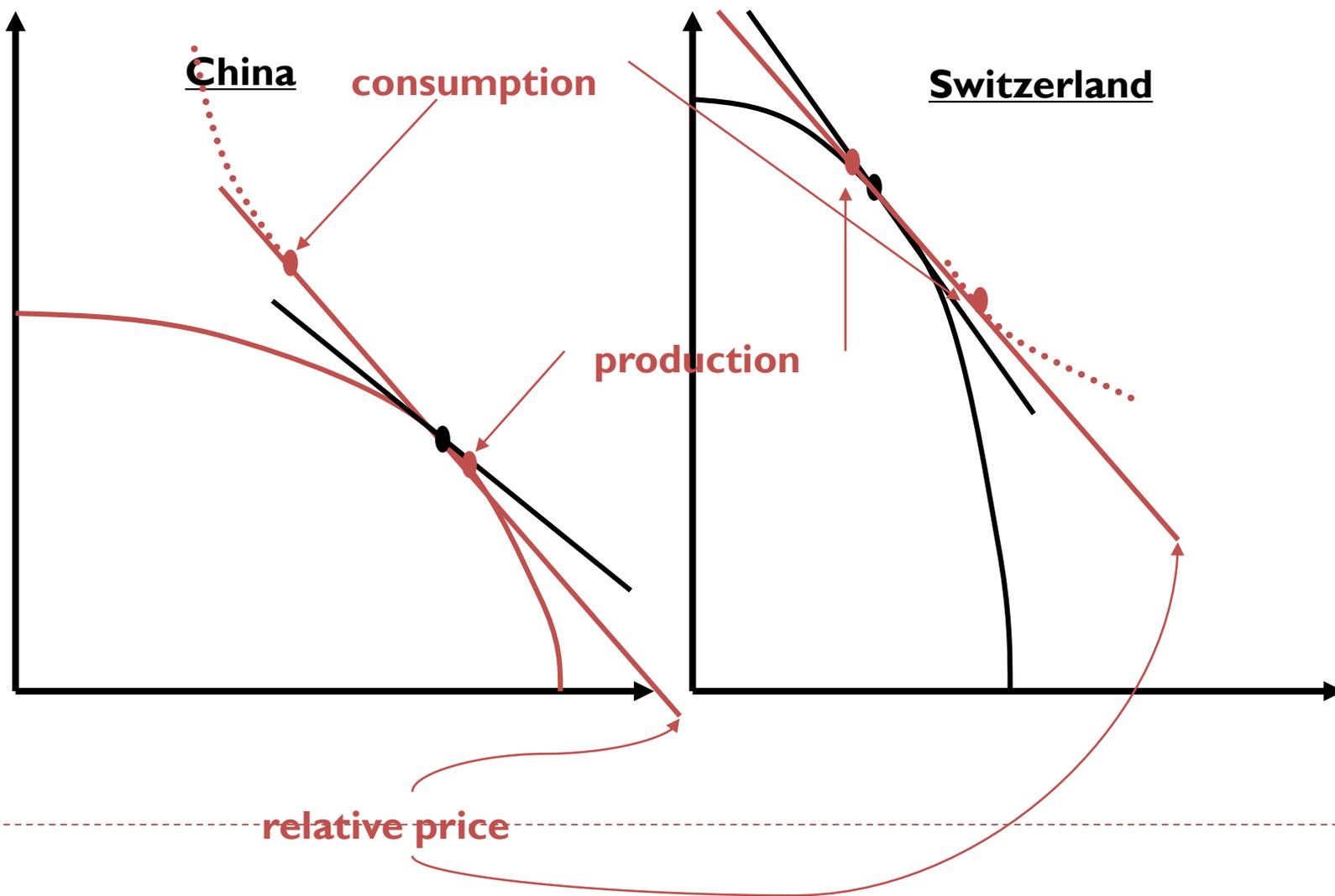
b. Resource differences (Heckscher-Ohlin).

▶ Step Four: Equilibrium With Trade.

- ▶ As in the Ricardian model, opening to trade results in an integrated “world” market, with a single relative price.
- ▶ At the new relative price, consumers in both countries move to a higher indifference curve, so they are experiencing greater utility.
- ▶ Production continues along the frontier. The difference between consumption and production is made up by imports and exports.

1. Why do countries trade?

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- ▶ Summary of the basic Heckscher-Ohlin model:
 - ▶ Comparative advantage is driven by differences in resource endowments
 - ▶ Opening to trade leads to:
 - ▶ Equalisation of world relative prices
 - ▶ Partial specialisation in each country according to its comparative advantage
 - IE, each country specialises in the product that is relatively intensive in the factor in which the country is relatively abundant
 - ▶ Separation of production and consumption possibilities in each country
 - ▶ Increased consumption possibilities for both countries
- ▶ Trade has effects on factor incomes (labour and capital) in this model:
 - ▶ The relative price of the relatively abundant factor increases, while that of the relatively scarce factor decreases.
 - ▶ Explains why there are “winners and losers” from trade within a country: depends on the pattern of comparative advantage, and industry links.