



Reinterpreting the U.S.-China Manufacturing Trade Deficit

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Road map

- Importance of trade for U.S.
 - Large and growing U.S. trade deficit
 - Dependence on imports from China
- Measuring trade flows in global supply chains
 - *Double counting* of intermediate goods
 - Where *value-added* takes place
- Reinterpret U.S.-China trade deficit
 - Interdependence smaller than we think

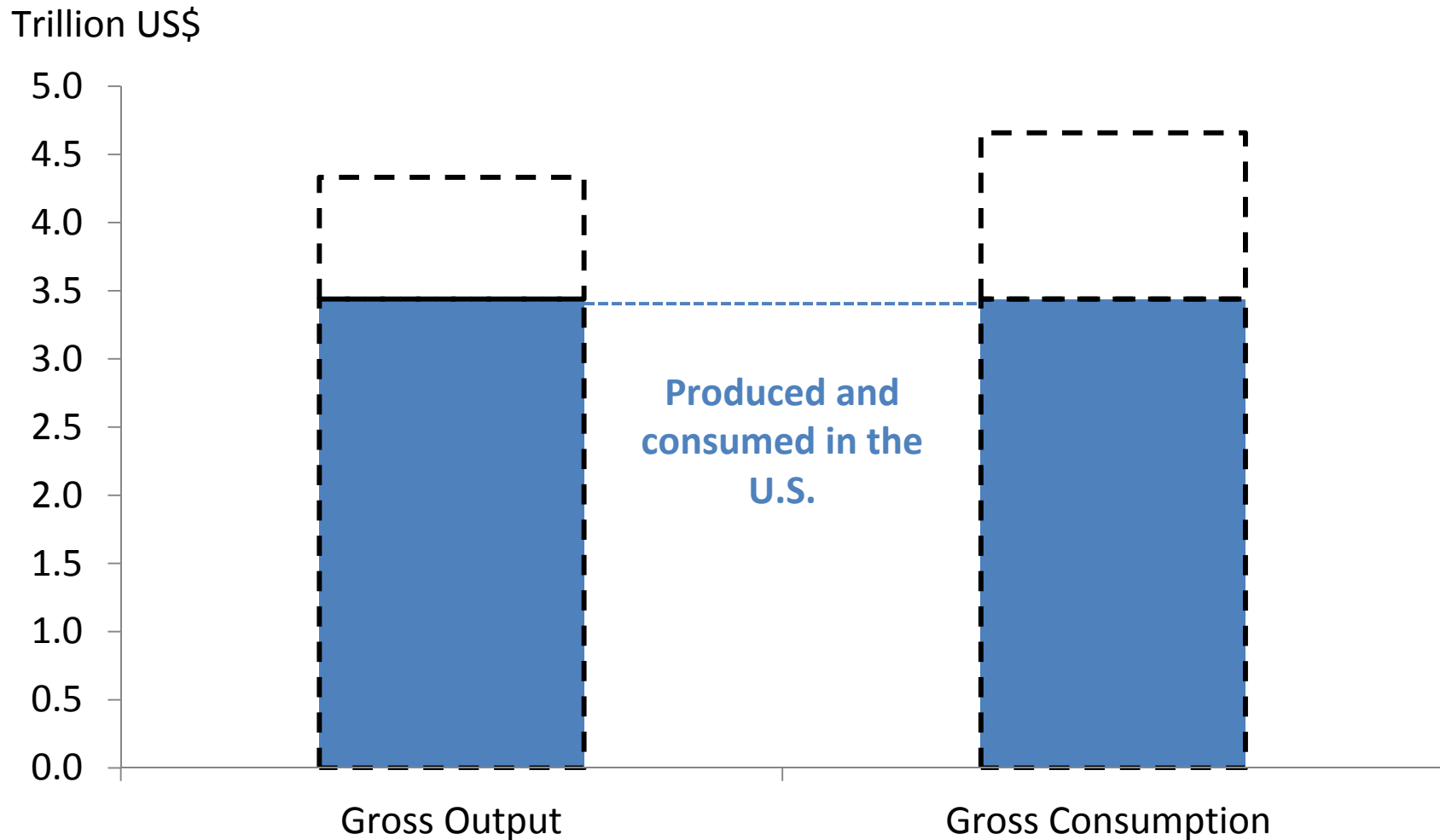
Background

- Increased globalization and use of global supply chains
 - Trade relationships are far more complex
- U.S. manufacturing *disappearing*
- Need to look at data differently
 - Less dependent on China than we thought

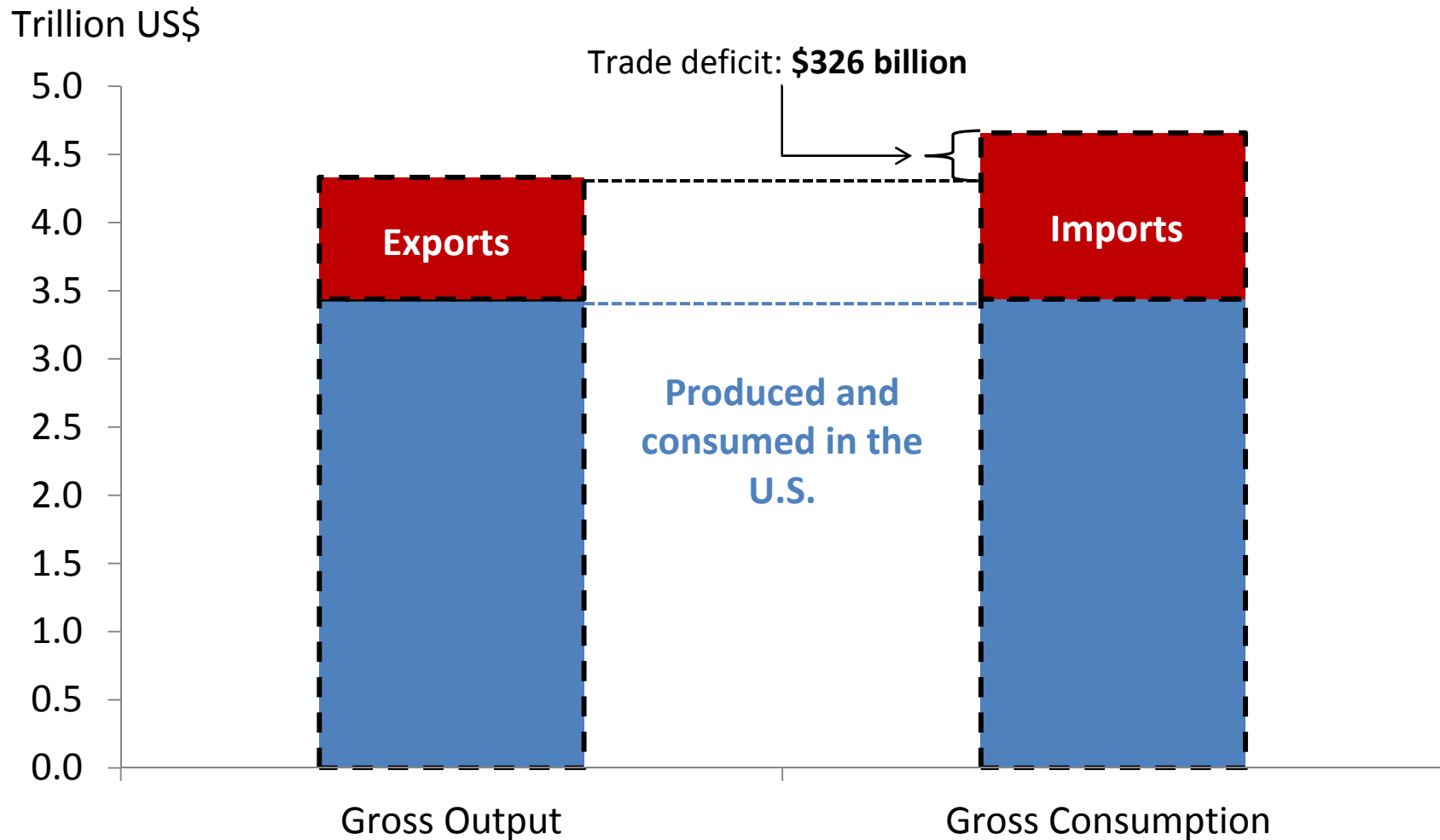
Global supply chains

- Companies are increasingly breaking down production processes and relocating to cost-effective locations
- China, “factory of the world,” is a key link in international production chains
- Position on the supply chain matters
- Trade data should also track what and where value is added for each production step

Economic activity in the U.S. manufacturing sector

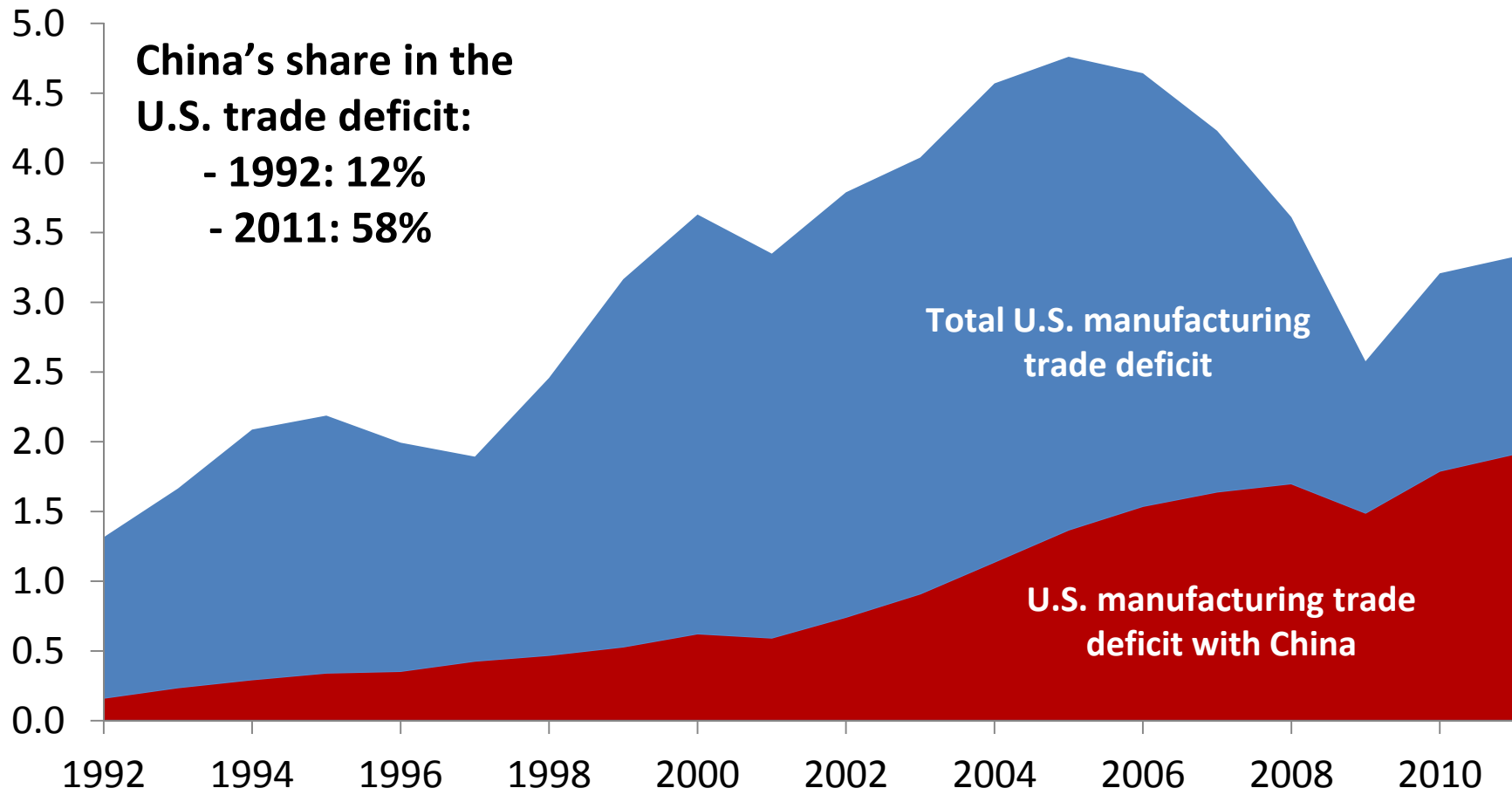


Economic activity in the U.S. manufacturing sector



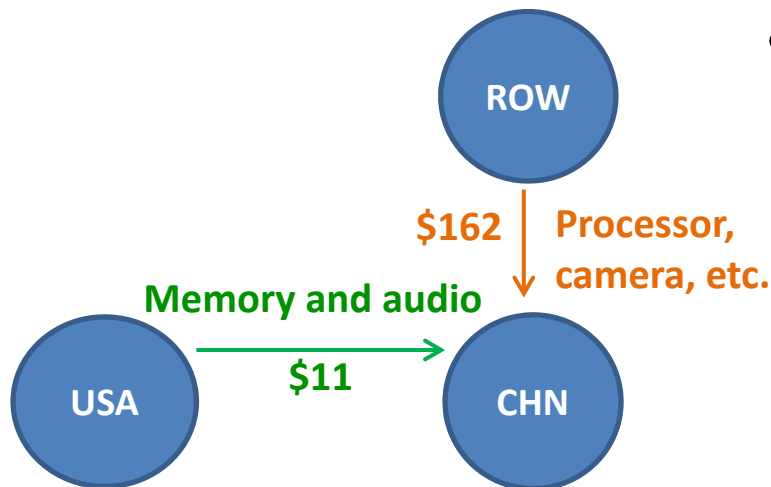
China accounts for a large and growing share of the U.S. trade deficit

Percent of U.S. GDP



Measuring trade flows in global supply chains: conventional approach

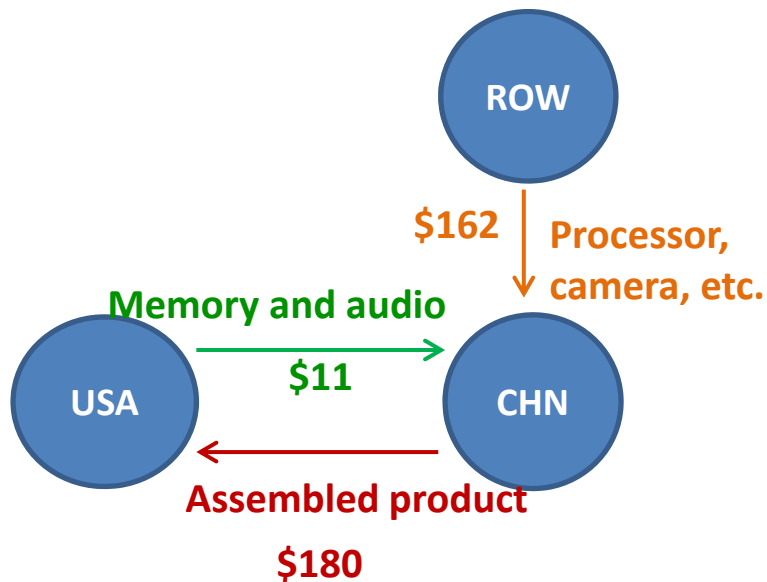
A U.S. consumer purchases an iPhone for \$500: How are trade flows recorded?



- China imports intermediate goods from the U.S. and other countries
 - Imports **\$11** in goods from the U.S.
 - Imports **\$162** in goods from the rest of the world

Measuring trade flows in global supply chains: conventional approach

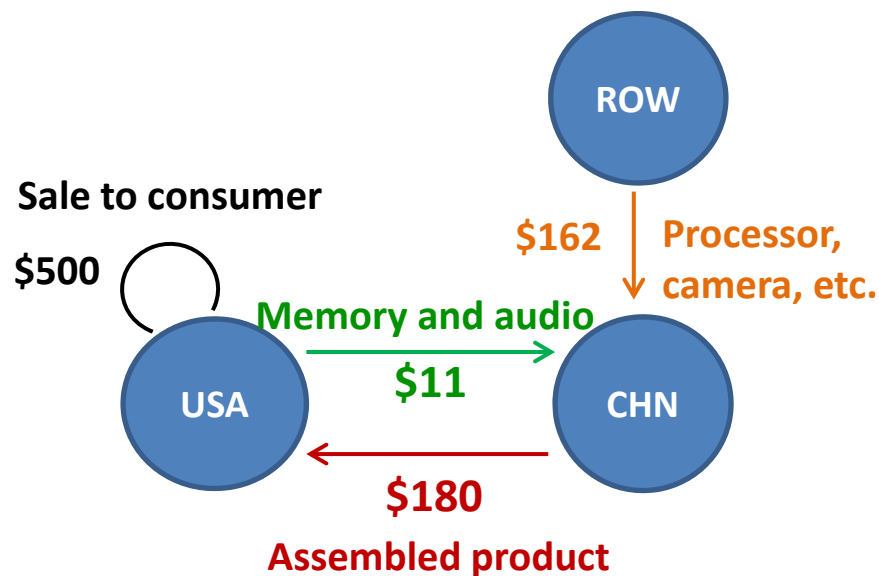
A U.S. consumer purchases an iPhone for \$500: How are trade flows recorded?



- China assembles and exports the iPhone to the U.S. for **\$180**

Measuring trade flows in global supply chains: conventional approach

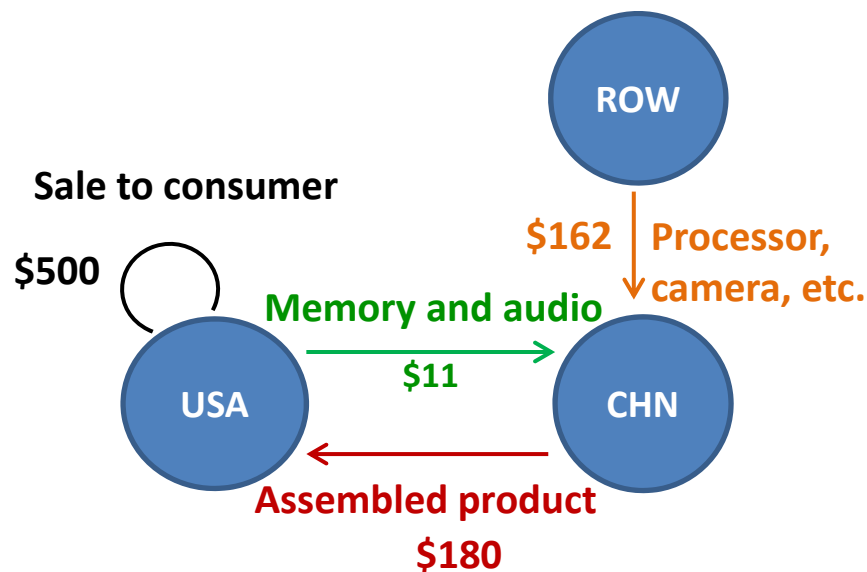
A U.S. consumer purchases an iPhone for \$500: How are trade flows recorded?



- iPhone is purchased by a U.S. consumer for \$500

Measuring trade flows in global supply chains: conventional approach

A U.S. consumer purchases an iPhone for \$500: How are trade flows recorded?



- The transaction yields a trade deficit between U.S. and China
- Implied **gross** trade deficit b/w U.S. and China: $\$180 - \$11 = \underline{\underline{\$169}}$

Value added in production

- Change in the value of an article during a stage of production
- Example: Assembling an iPhone
 - Value of assembled iPhone: **\$180**
 - Intermediate inputs: Processor, memory, Bluetooth, etc.: **\$162 + \$11 = \$173**
 - Assembly using physical capital and labor: **\$7**

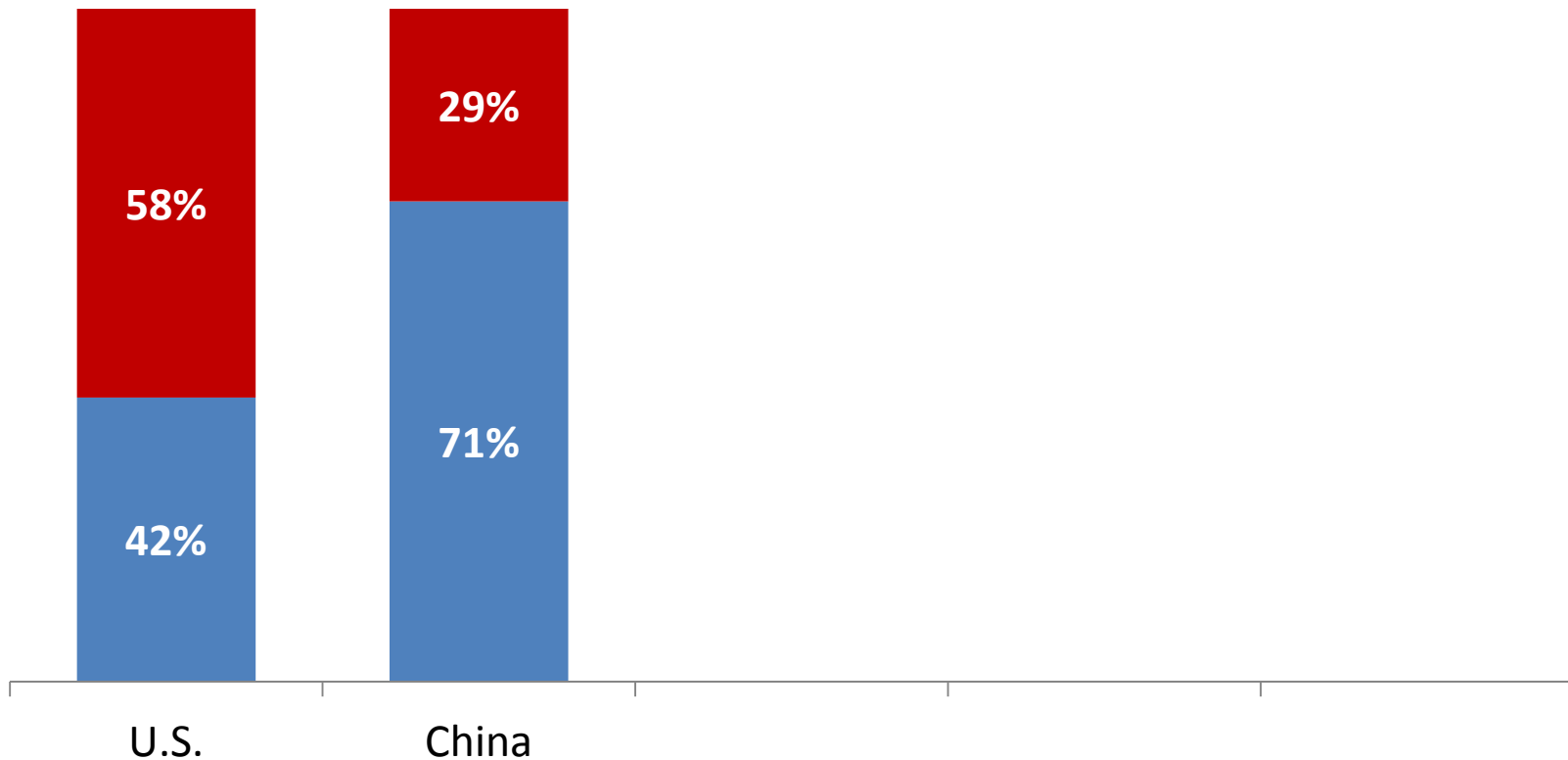
Why does the position in the global supply chain matter?

- U.S. and China are on different ends of global supply chain
 - Intermediate inputs are *double-counted* at each stage of production
 - Beginning of supply chain, *high* value-added
 - End of supply chain, *low* value-added

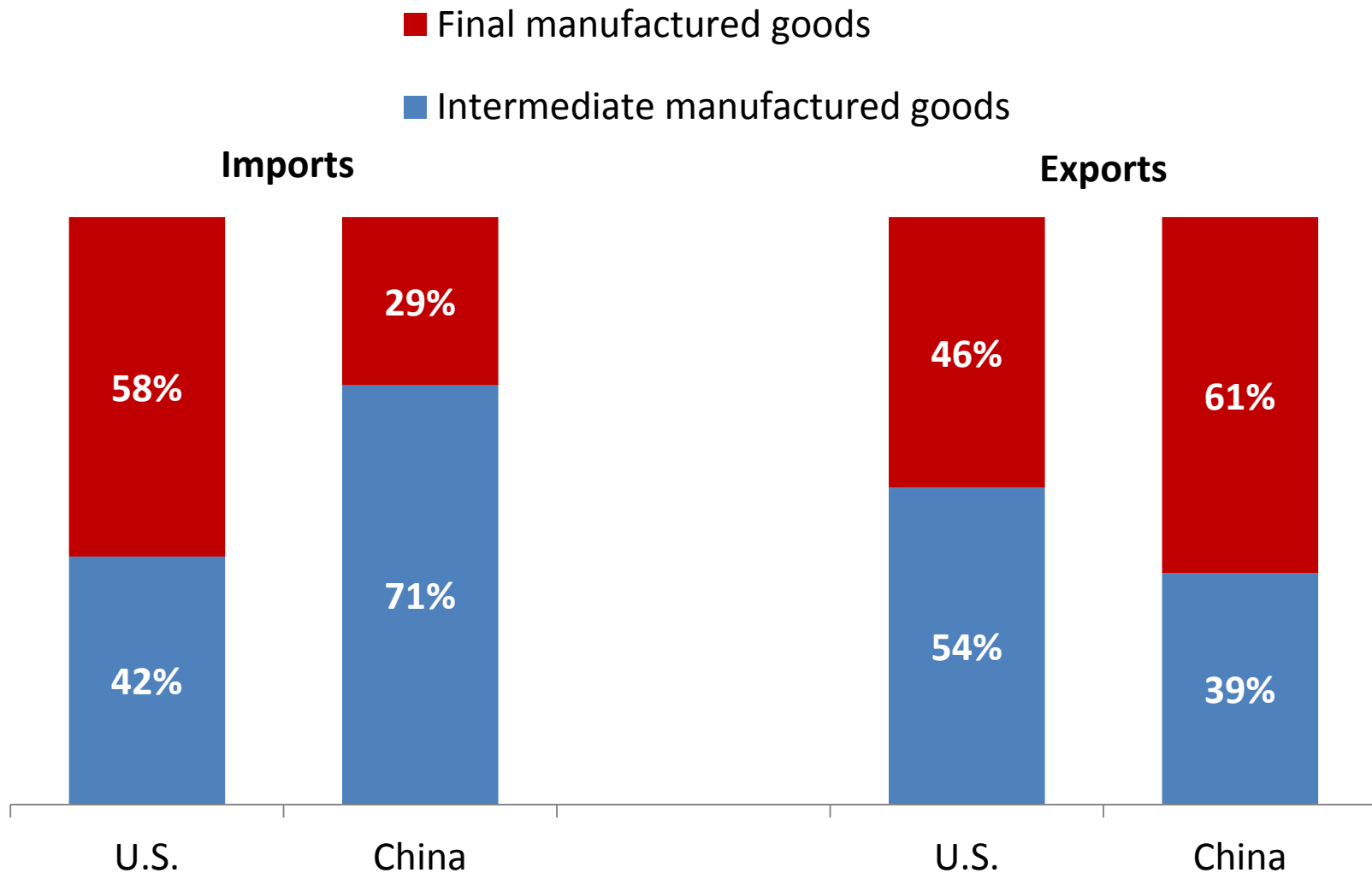
The U.S. and China are on different ends of the global supply chain

- Final manufactured goods
- Intermediate manufactured goods

Imports

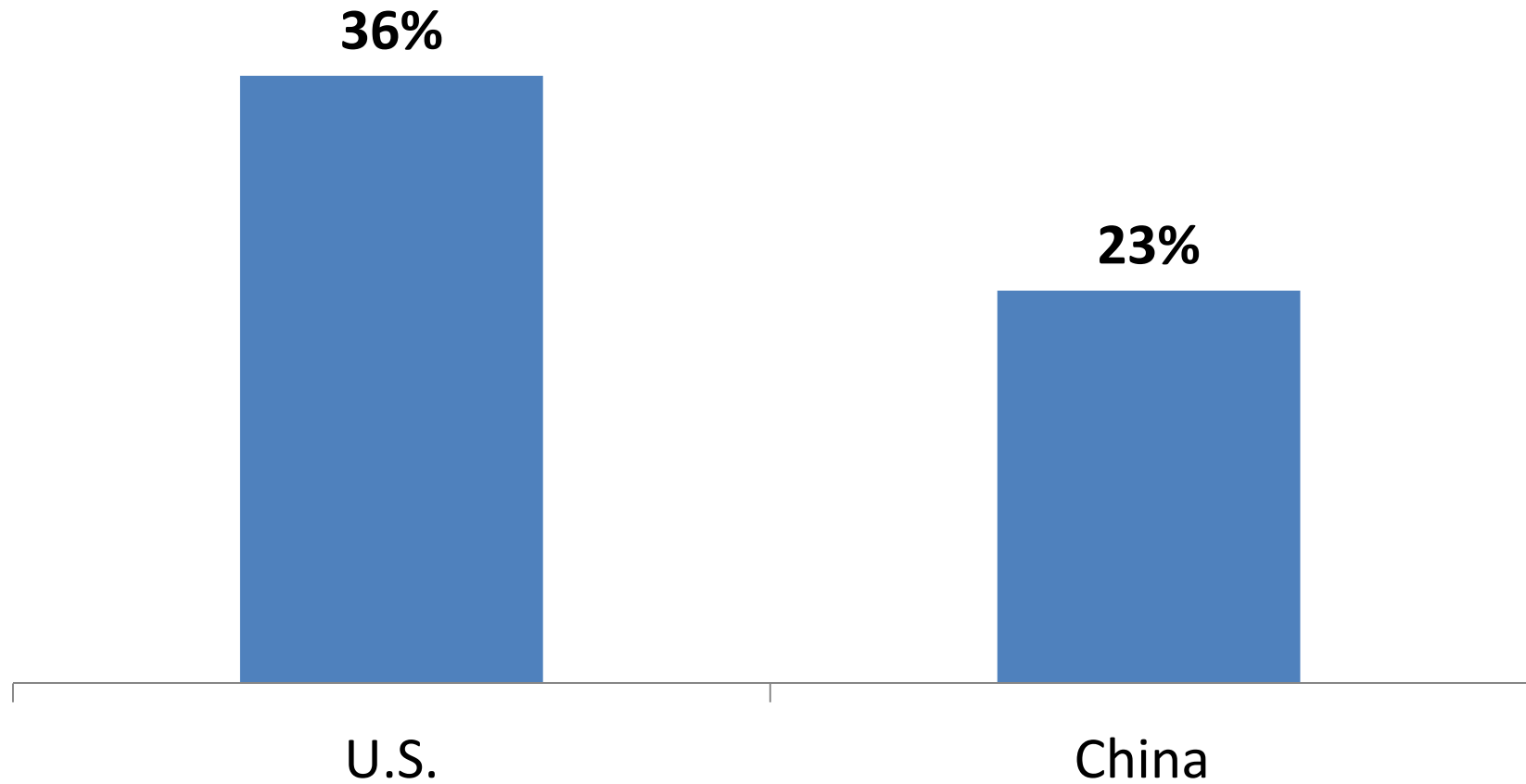


The U.S. and China are on different ends of the global supply chain



Where is value being added?

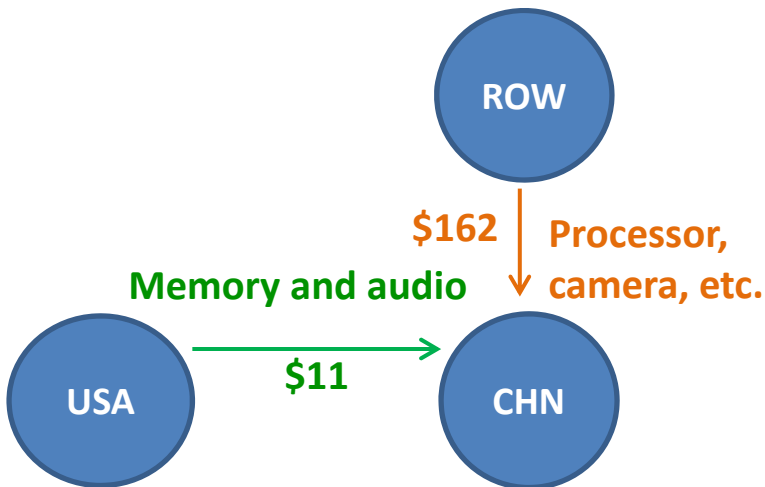
Share of value-added relative to gross manufacturing



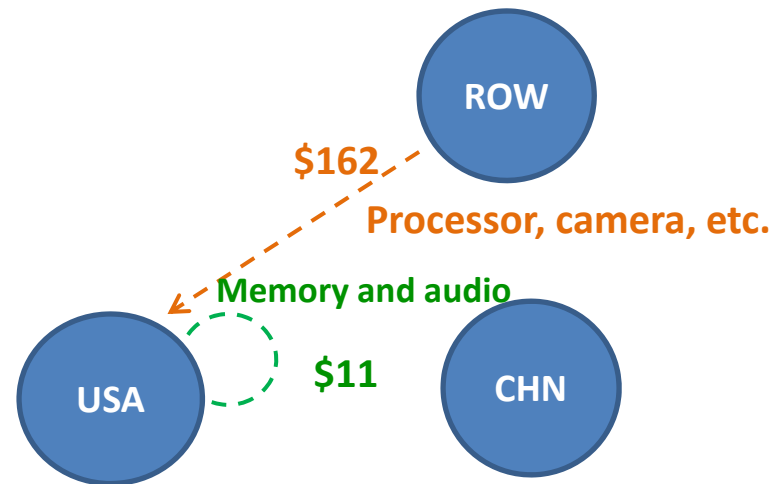
Measuring trade flows in global supply chains: value-added approach

A U.S. consumer purchases an iPhone for \$500: How is the value-added distributed?

Recording the transaction in gross terms



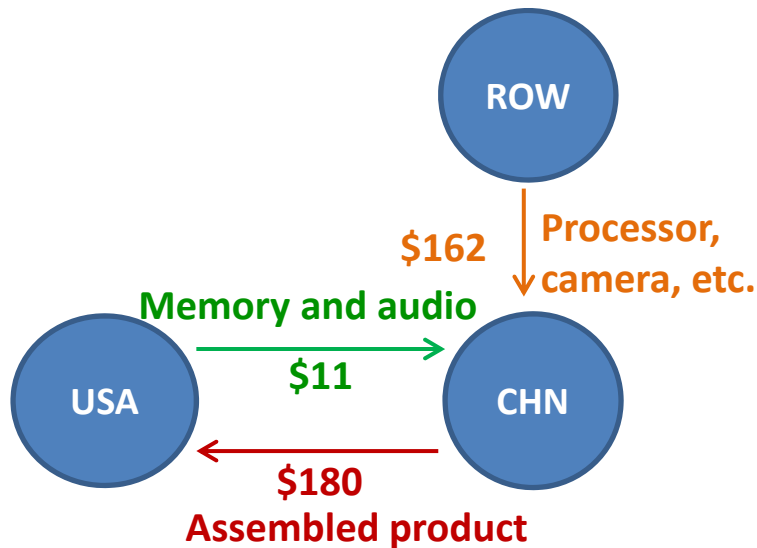
Trade in intermediate goods gets repatriated to original source



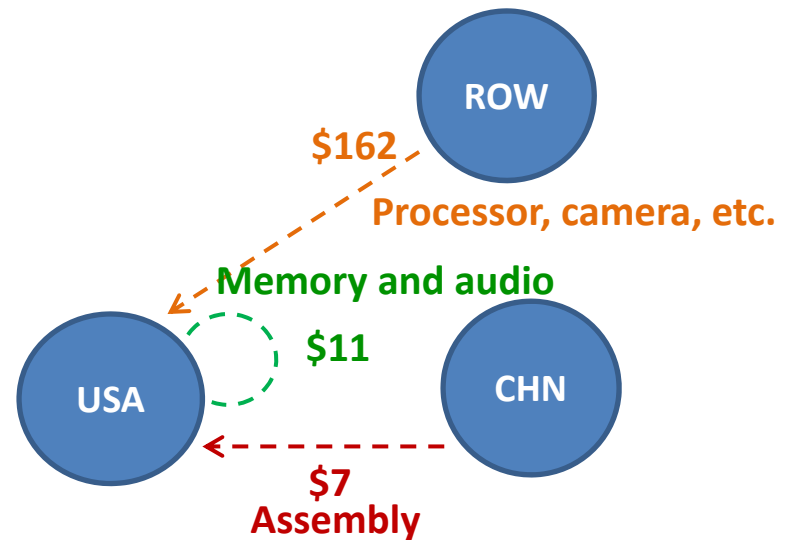
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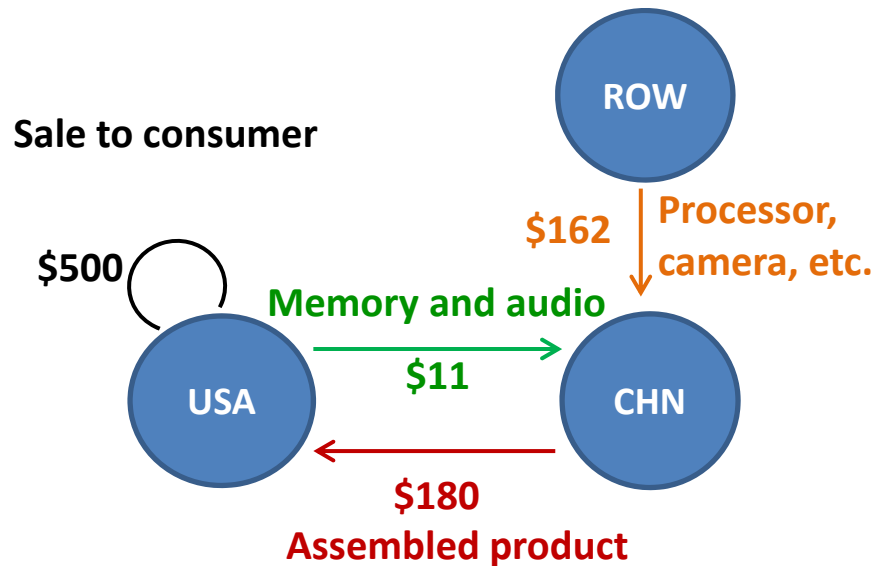
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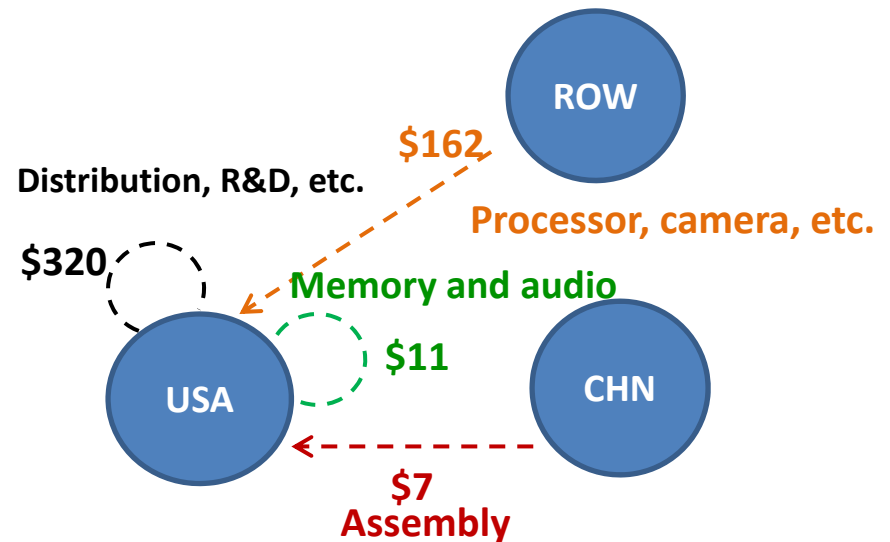
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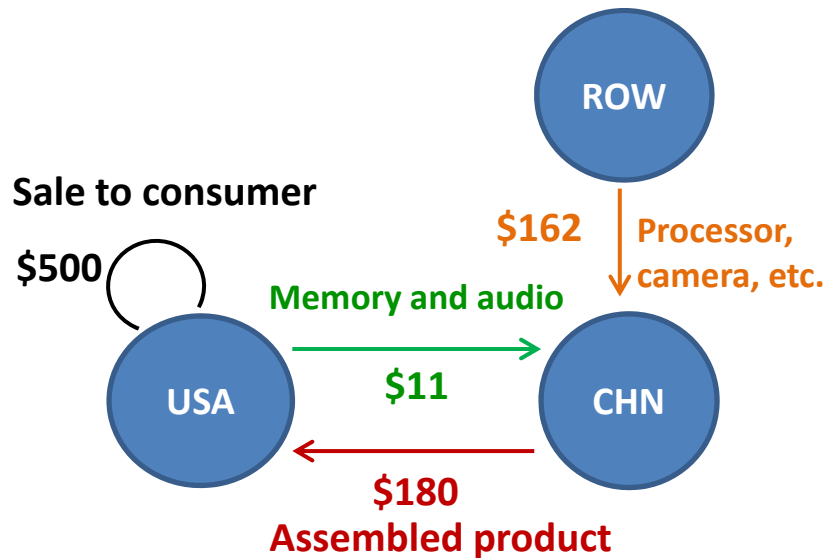
Remaining value of the iPhone sale covers distribution, R&D, and other value-added by Apple



Measuring trade flows in global supply chains: value-added approach

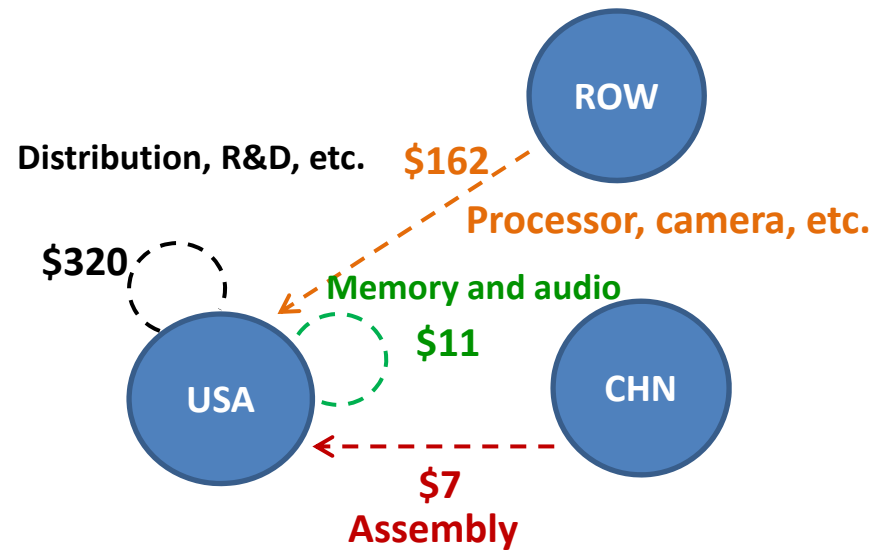
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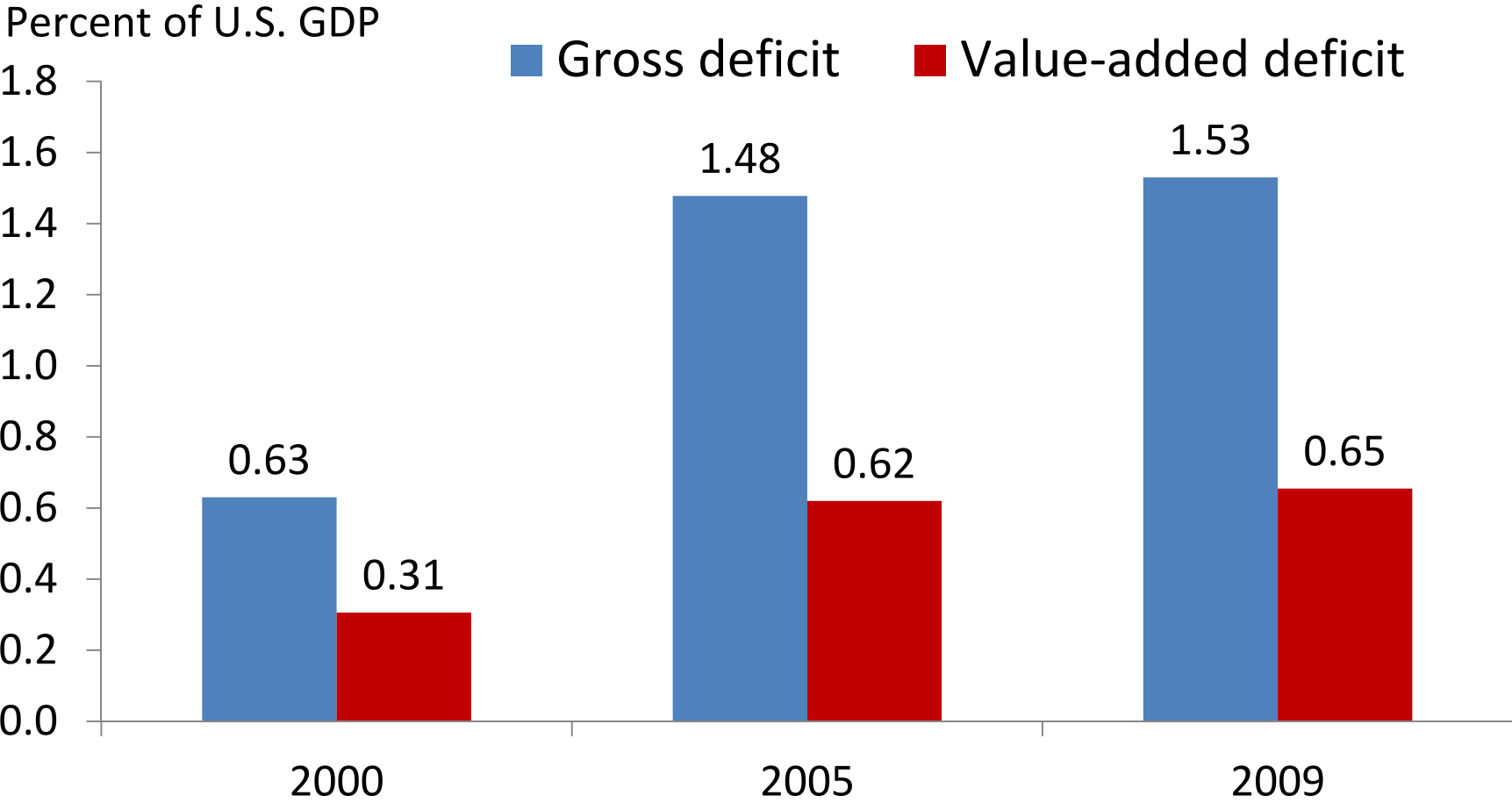
Implied **gross** trade deficit b/w U.S. and China: **\$169**

Recording the transaction in value-added terms



Implied **value-added** trade deficit b/w U.S. and China: **\$7**

U.S.-China manufacturing trade deficit in value-added terms



Summary

- Conventional trade data suggest that U.S. is very dependent on imports from China
- Understanding global supply chain changes the picture
 - China specializes in low value-added at end of global supply chain: gross exports *inflated*
 - U.S. specializes in high value-added at beginning of supply chain
- U.S. not as dependent on China as suggested by conventional measures of trade

Implications

- Inflation in U.S.
 - How does wage growth in China affect prices in U.S.?
 - Chinese factors account for small share of value added
- Currency wars and policy
 - Should U.S. worry about a devaluation in Chinese yuan?
 - May not be strategically optimal for China: imports a lot of intermediates