



Ministerio de Producción  
Presidencia de la Nación



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## Session E

presentation by

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# LONG-TERM INFLATIONARY SERVICES AND THE PROBLEM OF SECTORIAL MEASUREMENT IN NATIONAL ACCOUNTS

GLOBAL SERVICES FORUM UNCTAD / REDLAS CONFERENCE 2018

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UNITED NATIONS  
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**REDLAS**  
Red Latinoamericana y del Caribe  
para la Investigación en Servicios

# THE MOTIVATION: DEINDUSTRIALIZATION REVISITED

- Revisiting the deindustrialization thesis in light of the manufacturing-services connection
- The decline of the manufacturing sector's share on GDP does not necessarily mean that this sector is losing relevance
- The changing relationship between manufacturing and services is one of the main elements of the 'Third Industrial Revolution' and is behind the global value chains

# THE MOTIVATION: THE US DEINDUSTRIALIZATION REVISITED

- The history of the American (industry) economy is paramount in the world history of the technological and industrial development in both the nineteenth and especially in the twentieth century
- Increasing evidence of re-industrialization (“reshoring”)
- The American case is the most documented, presenting all stylized facts in this matter

# DEINDUSTRIALIZATION: A NATURAL PATH?

*“... the declining share of manufacturing employment appears to mirror the decline in the share of manufacturing value added in GDP. That is, **deindustrialization** appears at first glance to reflect a shift in the pattern of expenditure from **manufacturing to services.**”*

(Rowthorn and Ramaswamy, 1997)

# DEINDUSTRIALIZATION: A NATURAL PATH?

*“Deindustrialization has long been a concern in rich nations, where it is associated with the loss of good jobs, rising inequality, and decline in innovation capacity. For all these and many other reasons, **it should be a much bigger problem for developing countries.**”*

(Rodrik, 2015)

# DEINDUSTRIALIZATION: A MISCONCEPTION?

*“The changing nature of products suggests that the definition and classification of goods in the **national accounts** based on sectors and activities is **obsolete.**”*

(Arbache, 2016)

**Are we using an old lens to  
photograph the new world?**



Photographer Gilles Clement uses 160-year-old camera  
to take beautiful portraits

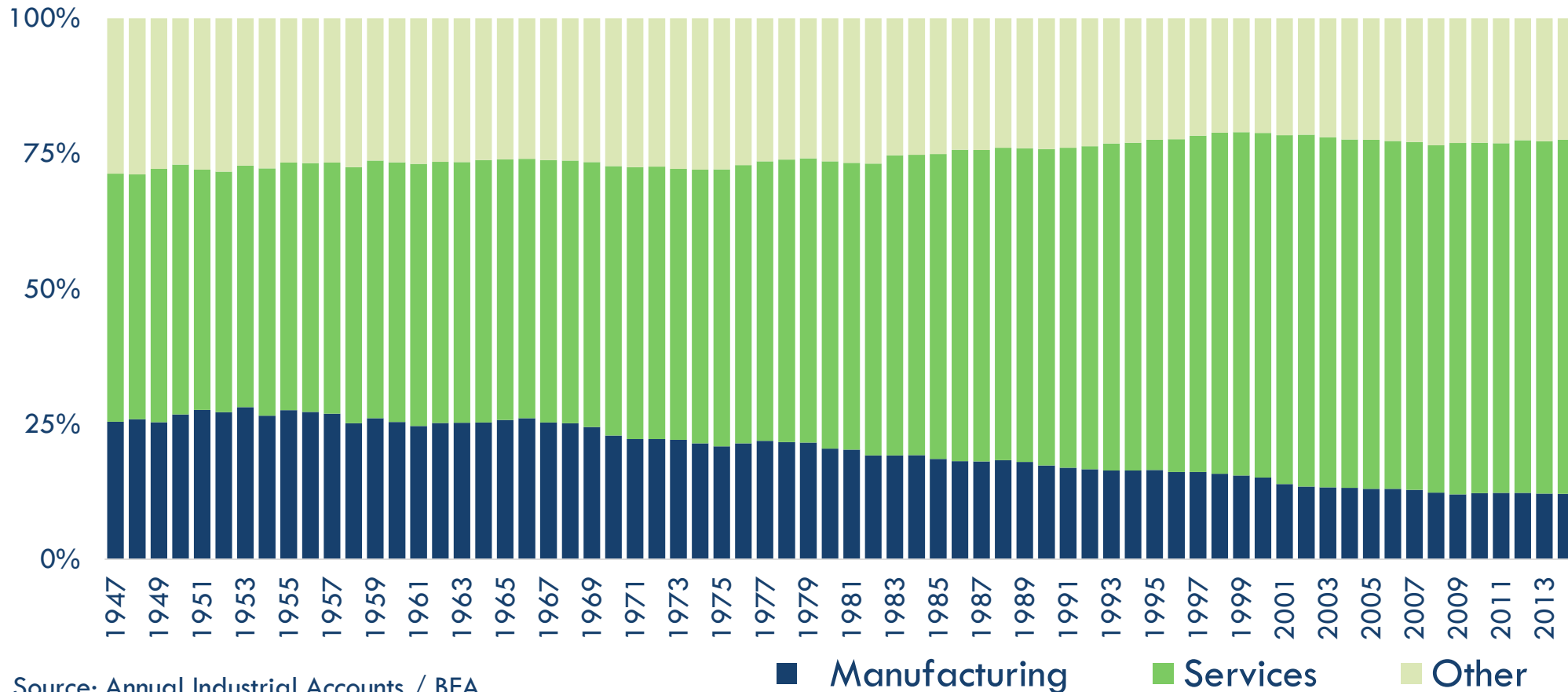


# METHODOLOGY

- Data: Annual Industrial Accounts/Bureau Of Economic Research (BEA)
- Period: 1947 -- 2014
- United States
- Price and quantum indexes to trace manufacturing and services' long-term trends

# DEINDUSTRIALIZATION: THE CONVENCIONAL APPROACH

**Chart 1: US GDP**

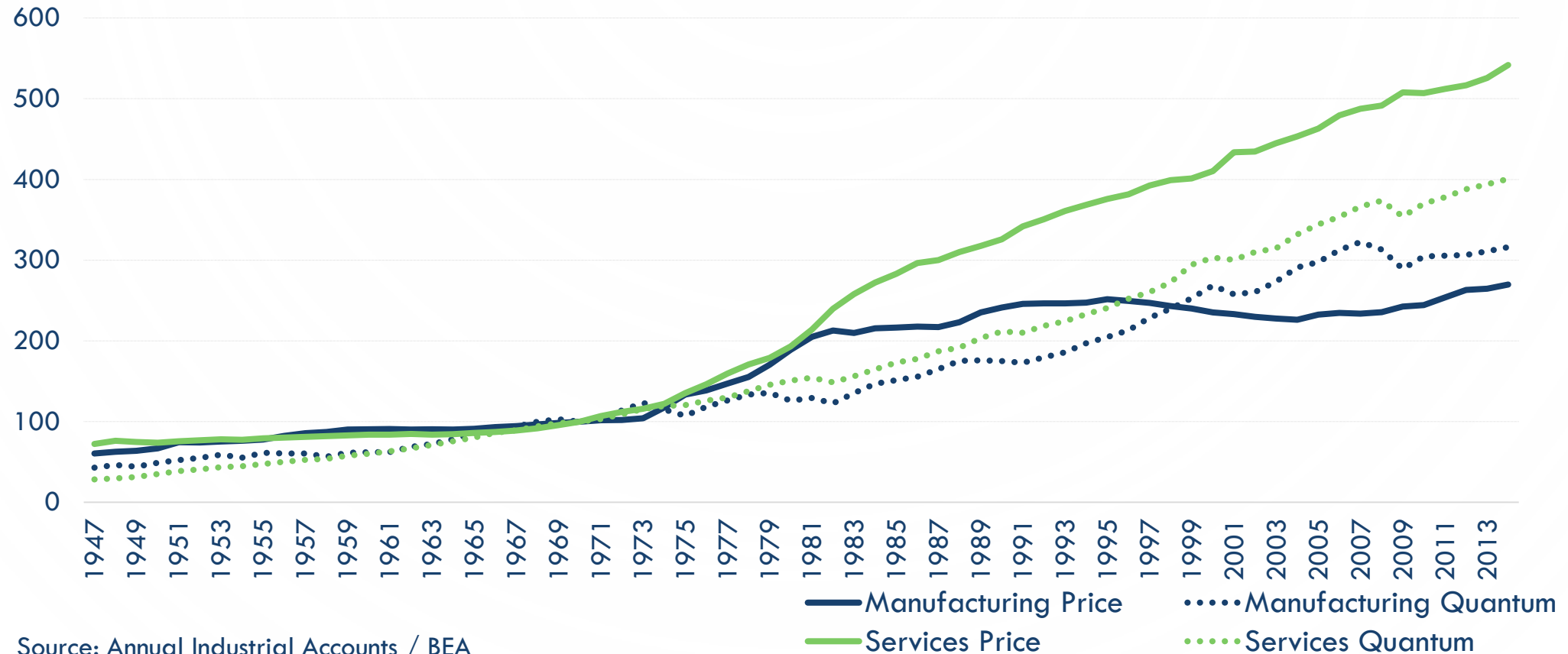


Source: Annual Industrial Accounts / BEA

# DIVERGING PRICES

**Chart 2: US Value-Added Price and Quantum Indexes**

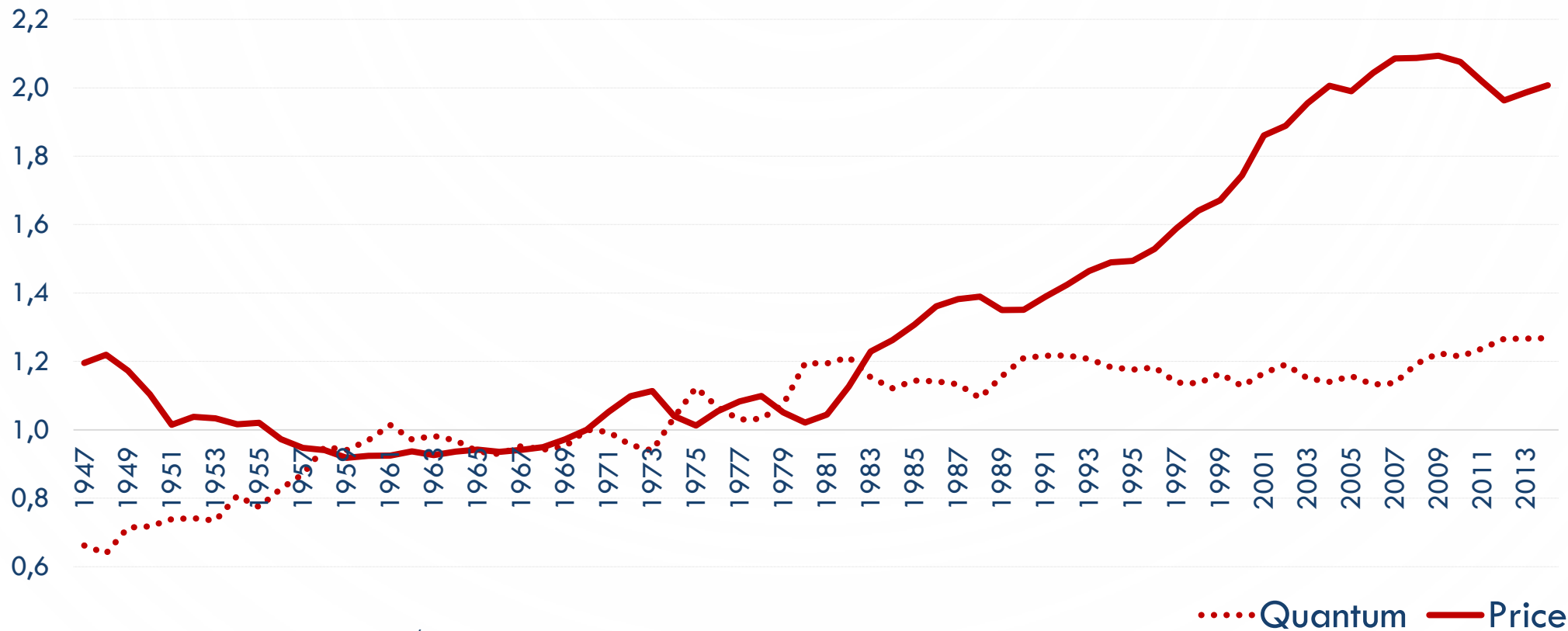
1970 = 100



Source: Annual Industrial Accounts / BEA

# TOGETHER APART: SAME CONTEXT, DIFFERENT STORIES

**Chart 3: US Services/Manufacturing ratio for Price and Quantum Indexes**  
(1970 = 1)

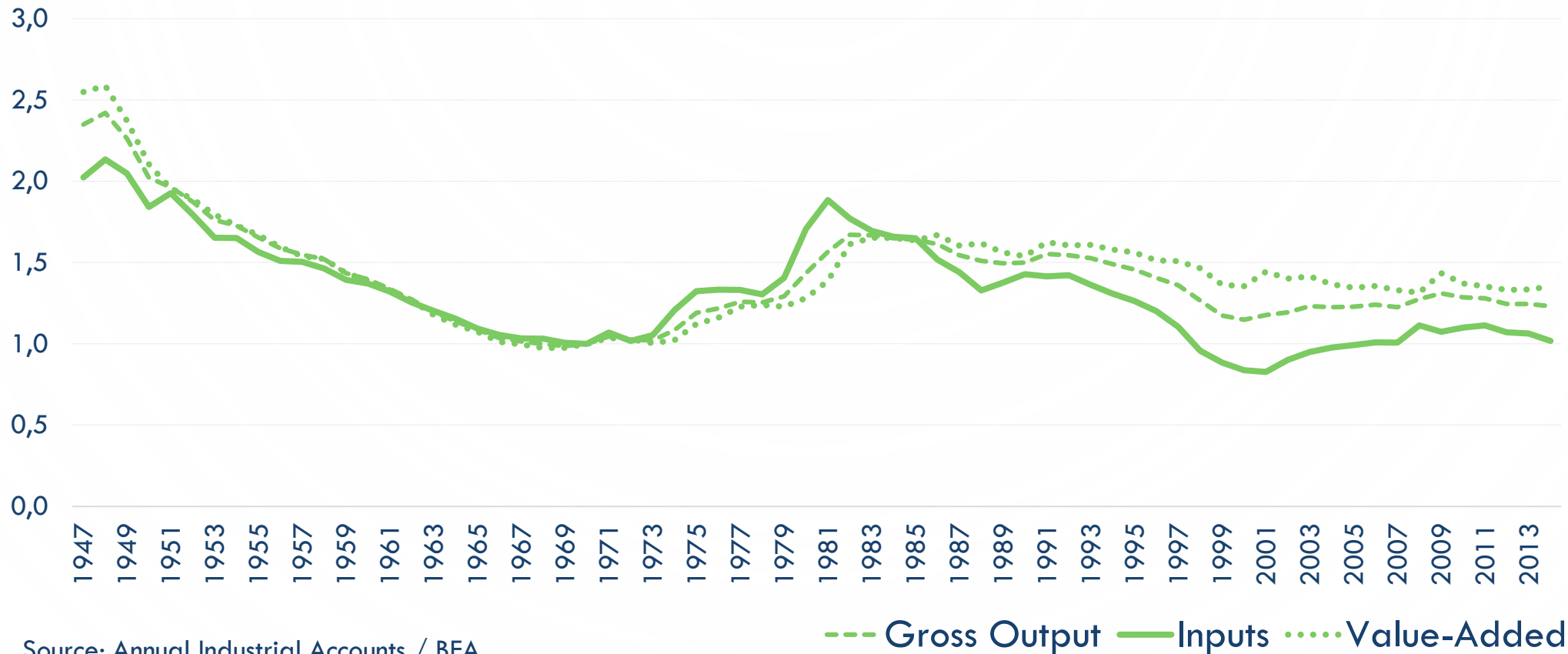


Source: Annual Industrial Accounts / BEA

# PRICES (1): DIFFERENT SECTORS, DIFFERENT TRENDS

**Chart 4: US Price/Quantum ratio for value structure in Services**

(1970 = 100)

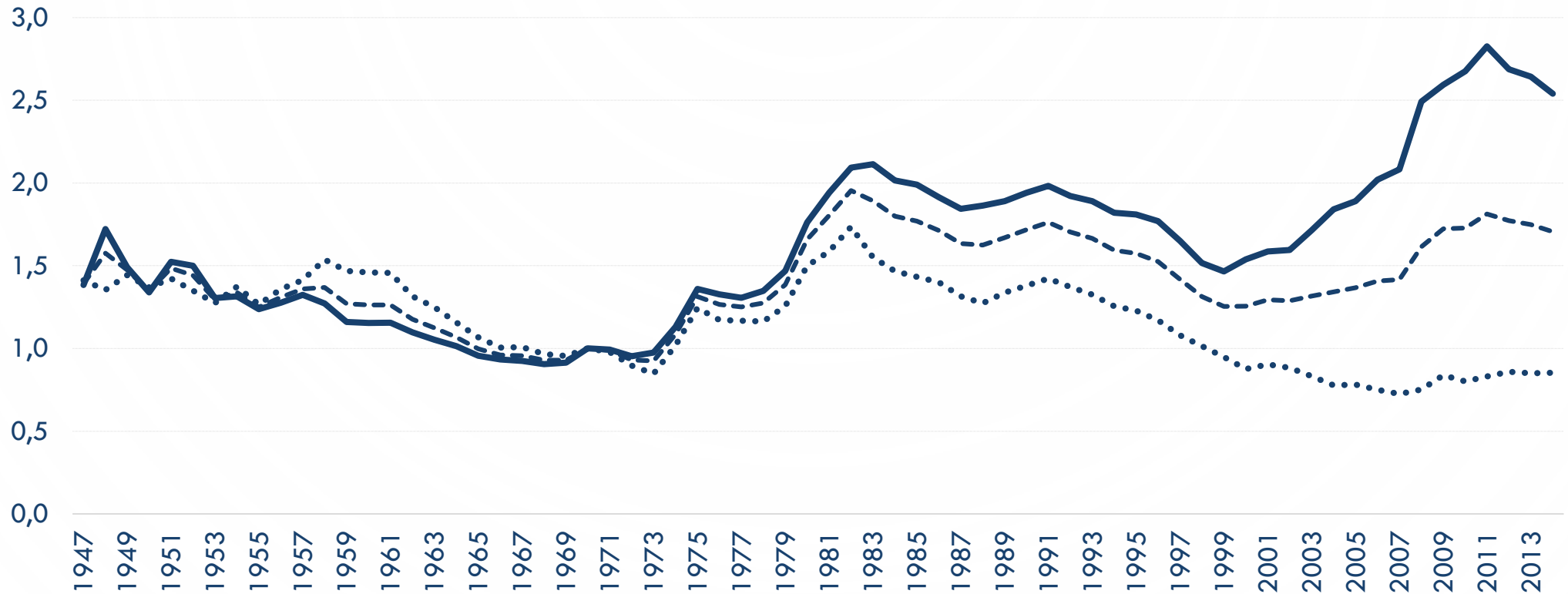


Source: Annual Industrial Accounts / BEA

# PRICES (2): DIFFERENT SECTORS, DIFFERENT TRENDS

**Chart 5: US Price/Quantum ratio for value structure in Manufacturing**

(1970 = 100)



Source: Annual Industrial Accounts / BEA

--- Gross Output — Inputs ..... Value-Added

## PRICES (3): WHY SO DIFFERENT?

### Brainstorming

- Services use services as inputs while manufacturing uses increasing amounts of services as inputs
- Manufacturing tech sophistication demands high-quality solutions; services sector provides them
- High-quality solutions supplied by services improve manufacturing sophistication; a virtuous cycle

## PRICES (4): WHY SO DIFFERENT?

### Brainstorming

- This type of outsourcing that we shall call "netsourcing" is a relevant new concept in the way companies set up themselves for production. Former internal R&D labs of US manufacturing corporations have become collaborative hub amongst corporate networks, government laboratories, and universities, exchanging research agendas and technology solutions (MOWERY & ROSENBERG, 2005), rather than just conducting internal research



## PRICES (5): WHY SO DIFFERENT?

### Brainstorming

- Not being aware of these collaborative networks has led economic research to call 'deindustrialization' a phenomenon of unprecedented industrial sophistication that goes beyond corporate and industry boundaries
- The US manufacturing development generated, throughout the post-war, such a large scale and such a sophisticated need for solutions of all kinds that companies and a whole industry specialized in providing them could flourish

# PRICES (6): WHY SO DIFFERENT?

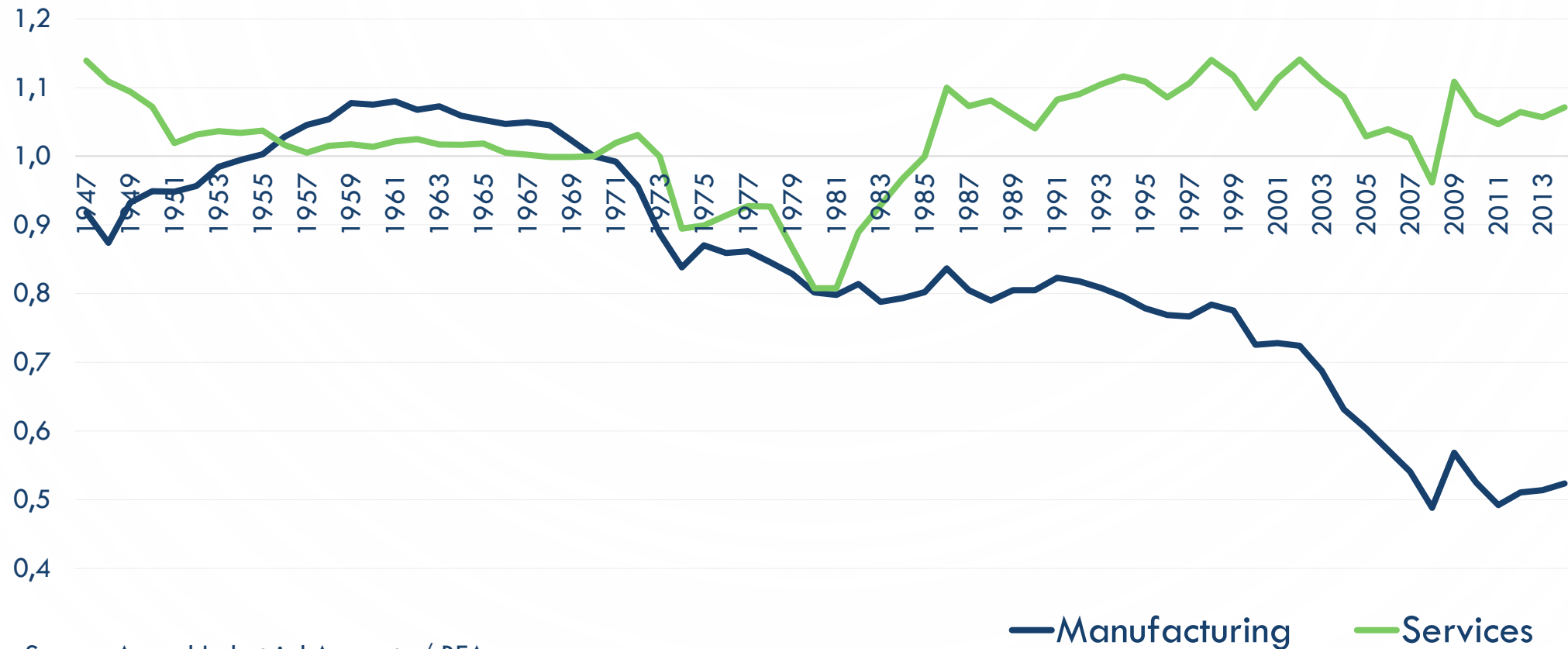
## Brainstorming

- Sophistication often means:
  - Automatization
  - Increasing capital/worker ratio
- Services quite often do not benefit from automatization (not anymore?)
- Services tend to be labor intensive

# PRICES (7): RISING INPUT COSTS

**Chart 6: US Relative Prices Index - Value-Added/Input ratio**

(1970 = 100)

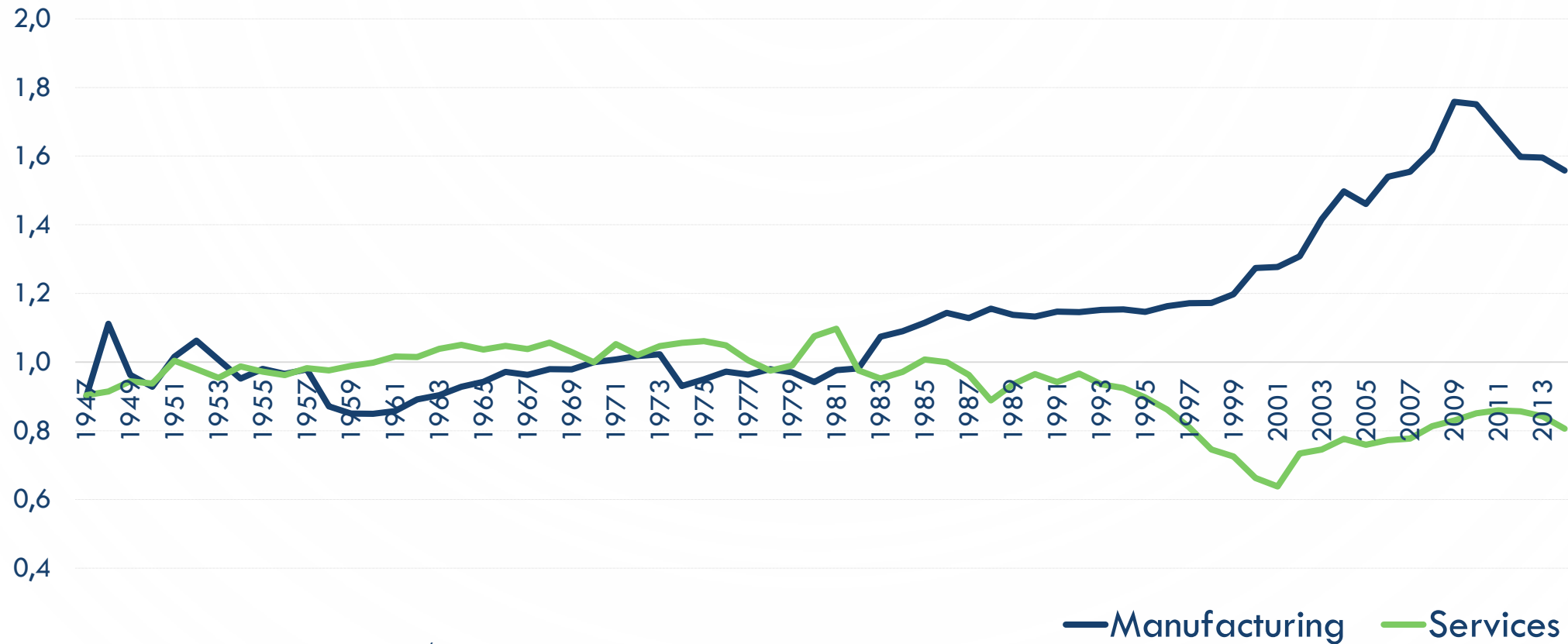


Source: Annual Industrial Accounts / BEA

# PRODUCTIVITY: A WAY OUT OF RISING INPUT COSTS

**Chart 7: US Output efficiency Index - Value-Added/Input ratio**

(1970 = 100)



Source: Annual Industrial Accounts / BEA

# PRODUCTIVITY: A WAY OUT OF RISING INPUT COSTS

## Brainstorming

- **Kaldor-Verdoorn Law:** higher output levels lead to higher productivity levels; or high production leads to higher productivity, hence unitary price deflation
- **Baumol's Cost Disease:** structural long-term productivity differential between services and manufacturing leads to diverging sectoral prices
- Are these two phenomenon connected? They may so

# PRODUCTIVITY: A WAY OUT OF RISING INPUT COSTS

## Brainstorming

- The idea of deindustrialization in the American economy comes from not realizing that sectoral classification and delimitation conceal the very essence of the evolution of industrial production and its relationship with value-adding services. Even more important, this concept disregards productivity differentials that modify the relative price structure

# POLICY IMPLICATIONS

- Empirical evidence of a growing synergetic and symbiotic relationship between manufacturing and service sectors suggests that it is necessary a new way for accounting and classifying economic activities to avoid misclassifications and misunderstandings
- Several policy implications
  - Human capital and infrastructure: must address this relationship
  - Industrial policy: there is no trade-off between service and manufacturing, on the contrary
  - Trade and investment agreements: not addressing the relationship between manufacturing and services leading to poor agreements from the development countries perspective

# CONCLUSIONS

- This paper offers evidence that the so-called deindustrialization is associated with relative price dynamics of manufacturing and services sectors
- Productivity, human capital, technological and managerial changes explain at least part of the dynamics
- The current national accounts system is fast becoming outdated to deal with the modern economic activities
- Several critical policy implications, especially for emerging economies