Università degli Studi di Ferrara

DIPARTIMENTO DI ECONOMIA E MANAGEMENT

LM Business | FF.3

Business, Markets, and Competition

LM Econ. man. and pol. for global challenges | AA 2019/2020

7 CFU | SSD SECS-P/06

Lecturers: GIORGIO PRODI, FEDERICO FRATTINI

China in Apple’s GVC

Reference materials

1. Grimes S., Sun Y., 2016, China's evolving role in Apple's global value chain, *Area Development and Policy* 1(1):94–112
2. Thun E, 2014, The Globalization of Production. In Ravenhill J, ed, *Global Political Economy*, Oxford University Press: 283–304

Main Facts on the GVCs in the ICT Industry

Where and What

- the **gravity centre** of value and innovation was moving to Asia, especially China
- relocation follows in part from the **fragmentation** of productive tasks into core and non-core functions
- **non-core functions** can be often outsourced to third companies and even offshored to lower costs

Implications for developing countries – a debate

- local suppliers are given the **opportunity to improve** their own capabilities, so that they can grow as serious competitors of companies in the more developed countries

- a focus on lower-value-added non-core functions can **lock-in** local suppliers and prevent a real upgrading of capabilities and innovativeness

How has China benefited from an increasing involvement in Apple's GVC?

– a key question –

Which functions Chinese suppliers are responsible for within Apple's GVC?

– the key issue –

A Few Facts on the ICT Industry in China

2%

– China’s share of the ICT world export in 1996 –

30%

– China’s share of the ICT world export in 2012 –

China is **an** ICT world
export leader today

The early development of the ICT industry in China was strongly dependent on **Foreign Direct Investments** (mostly offshored from other Asian countries)

A **“structured uncertainty”** keeps limiting that higher-value-added core functions are offshored to China

There are a few national **emerging leaders**, such as Huawei and ZTE (smartphones) and Lenovo (personal computers)

The Geography of Value Added in GVCs

The **higher-value-added functions** at the GVC's opposite ends (design and commercialisation) are usually located in the **more advanced regions**

The **lower-value-added functions** in the between of the chain (non-core activities and assembling) are mainly located in **emerging economies**

Companies in emerging economies try **to climb up the GVC** by developing their own capabilities in higher-value-added functions

Apple’s GVC in 2015

198

– companies –

759

– subsidiaries –

336

China

– out of 759 subsidiaries (44%) –

115

Taiwan

– out of 759 subsidiaries (15%) –

84

Europe and USA

– out of 759 subsidiaries (11%) –

Tangible and intangible functions are strongly **decoupled**

Apple keeps control over the R&D (**one end** of the GVC)

Apple keeps control over branding and marketing (**the other end** of the GVC)

Manufacturing, assembling and testing (in the **between** of the GVC) are mainly outsourced

Apple keeps extended control over the GVC **coordination**

The Geography of Value Added in Apple's GVC

Methodology

1. Apple's list of suppliers is perused
2. Suppliers' **subsidiaries** are located based on the list
3. Suppliers are searched on the web
    a. to locate **companies**
    b. to identify key functions
4. Suppliers are sorted into three main **functional groups**

33%

Japan

– companies –

29%

USA

– companies –

19%

Taiwan

– companies –

4%

China

– companies –

Functional groups

- **core functions**
  display, printed circuits, optical devices, internal memory, ...
- **non-core functions**
  connectors, case, peripheral devices, battery, ...
- **assembling and testing**

48%

core functions

– companies –

38%

non-core functions

– companies –

14%

assembling

– companies –

Social Network Analysis (SNA)

- analysis is performed **by functional group**
- countries of origin (**companies' location**) are taken as key nodes
- countries of location (**subsidiaries' location**) are also taken as key nodes
- **origin–location network** are build

Keys:

- red circles are countries of origin
- blue boxes are countries of location
- circles and boxes are proportioned to the weights of countries in the network
- links are proportioned to the number of company–subsidiary connections between countries
- arrows are oriented from origin to location

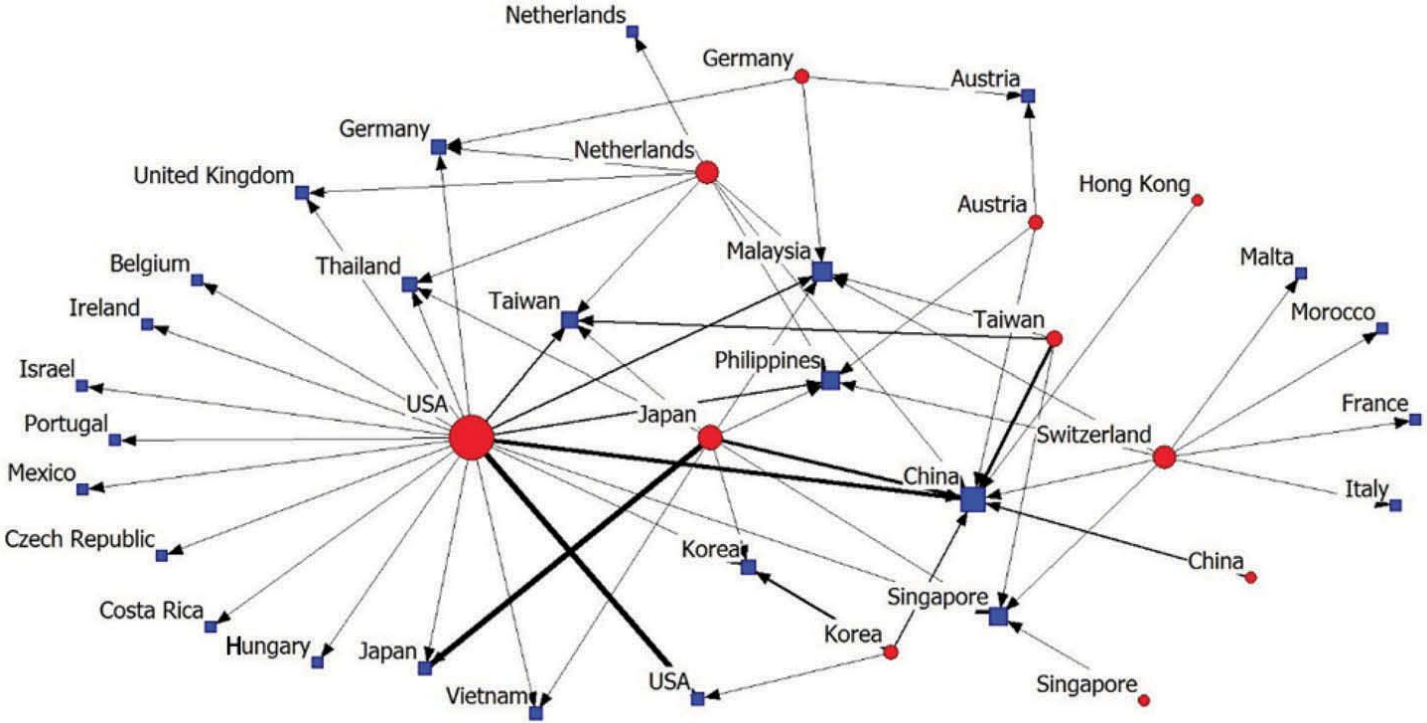

Figure 2. Origin-location network of the core-function suppliers.

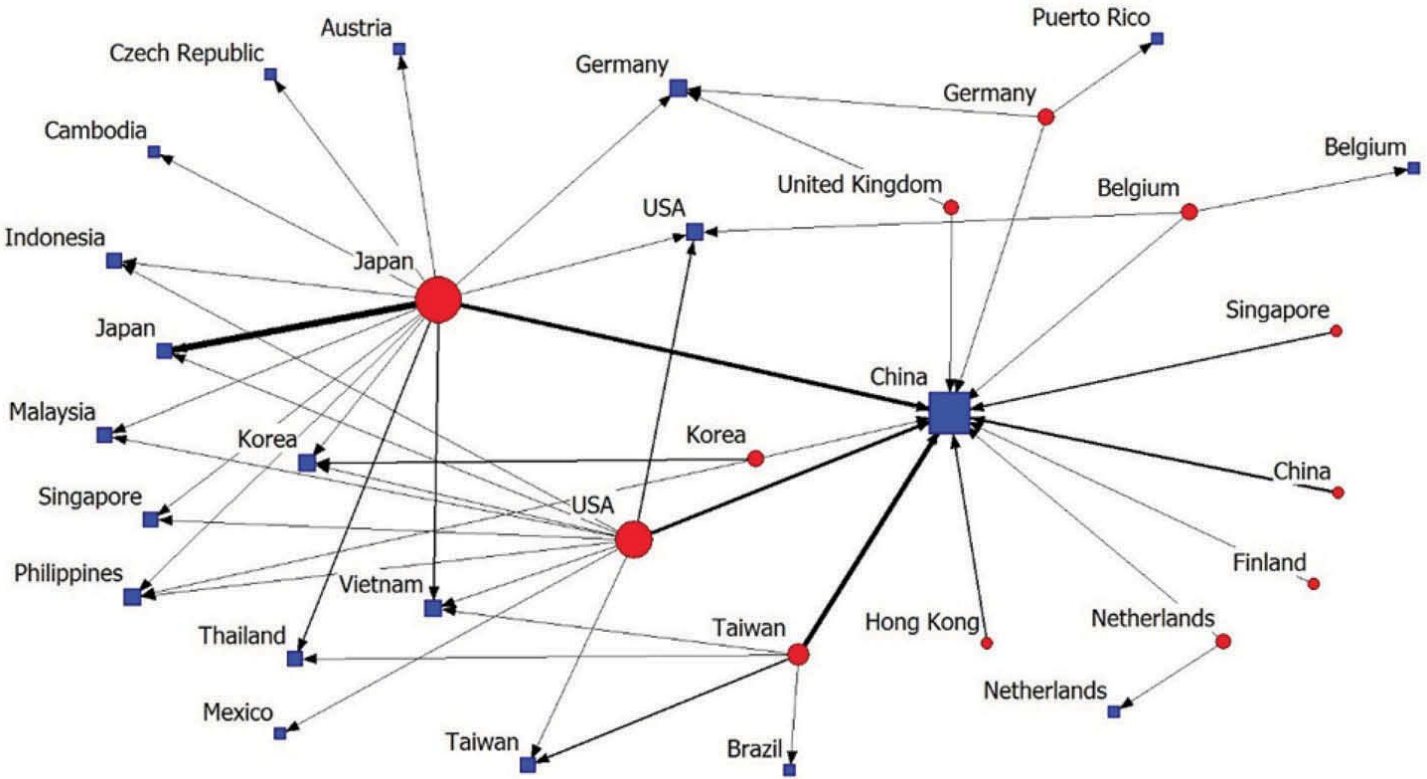

Figure 3. Origin-location network of the non-core-function suppliers.

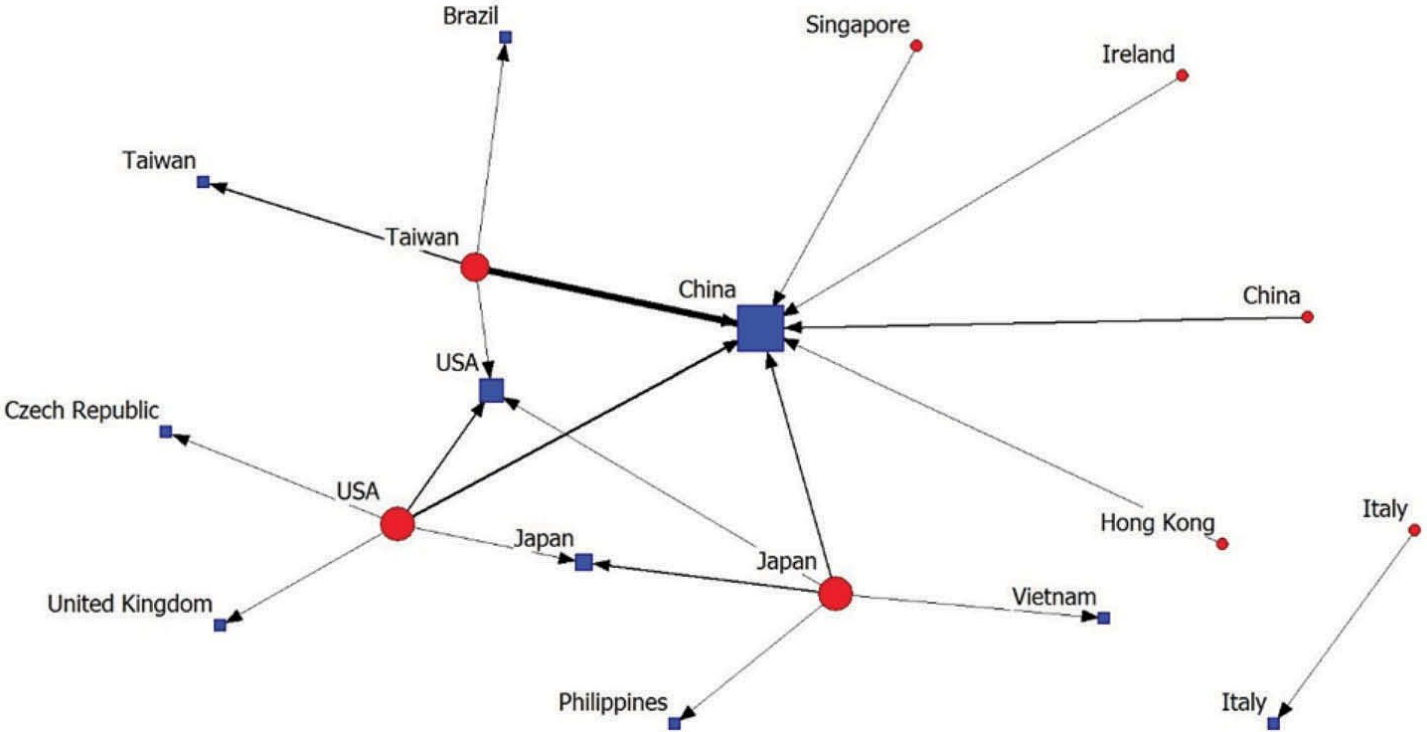

Figure 4. Origin-location network of the assembly suppliers.

It is confirmed that
higher-value-added functions
being located **outside China**
still is a main trend

Incentives to relocate companies to China are still poor, but the agglomeration of final assemblers has generated **a local demand of core and non-core functions**...

This local demand is strong enough, however, to push a **relocation of subsidiaries** to China

China is then expected
a **gradual evolution** within
Apple's GVC

Concluding Remarks

What is given

- there is an evident **separation** between the geography of the intellectual-property generation and the geography of its usage
- the majority of supplier companies is from outside China, although many of their **subsidiaries** are located in China

What is changing

- some Chinese companies started **upgrading** to the supply of core functions within Apple's GVC
- some Chinese companies, such as Huawei, have gained success in the Chinese market and worldwide **challenging** with non-Chinese leader companies in the ICT

Federico Frattini

Department of Economics and Management
University of Ferrara
Via Voltapaletto 11 (piano ammezzato), Ferrara
E-mail: federico.frattini@unife.it