Class. Industrial Policy Definition, instruments and evolution since 1945

IPS

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Foreword: reasons for government intervention in markets

Firms' strategic decisions and competitiveness are influenced by public intervention: industrial policy, fiscal policy, innovation policy, regulation and antitrust, etc.

What are the reasons for public policy?

In standard Economics the main justification is that of market failures: let's see them

1. **Internalities**

$\Leftrightarrow$ Information asymmetry between the parties of a transaction

Examples:

- a patient that cannot assess whether a doctor is competent before being cured
- a worker signing a wage contract and then finding disastrous working conditions

$\Rightarrow$ public intervention: regulation (of products, labour, health)

2. **Externalities**

⇔ Information asymmetry arising in a transaction but felt by a third party

Examples:

- Honey producer close to a flower producer (+)
- Factory located upstream that pollutes the river and damages fish production downstream (-)

⇒ Public intervention: internalisation of externalities (e.g. the polluter is induced to take the negative effects of his activity on third parties into account in his business decisions), with various instruments: taxes, regulation, voluntary agreements

3. **Market power**

Market power is a problem when it induces abuse of dominant position by firms or when it derives from anti-competitive behaviour (then social welfare reduces)

The natural monopoly is a form of market power (due to the structure of technology and costs) that requires a specific public policy

4. **Public goods**

$\Leftrightarrow$ Goods that nobody wants to produce because they are non rival and non excludable

$\Rightarrow$ The only solution is public production of these goods (defence, education, light in the streets, etc.)

POLICIES AIMING AT CORRECTING MARKET FAILURES:

INTERNALITIES: **regulation** (of products, of the labour market, etc.)

EXTERNALITIES: essentially **environmental policies**; but also **innovation policy** (knowledge spillovers)

POLICIES AIMING AT CORRECTING MARKET FAILURES:

MARKET POWER: **competition policy** (also called antitrust)

PUBLIC GOODS: public provision of these goods; for industry particularly important are **infrastructures** (transport: roads, ports, railways, ...; communication: e.g. importance of having 4G – broadband – infrastructure, etc.)

INDUSTRIAL POLICIES REGARD MARKETS:

FIRMS PRODUCING GOODS SOLD ON MARKETS IN A COMPETITIVE CONTEXT

IF THERE ARE MARKET FAILURES SOCIAL WELFARE WILL NOT BE OPTIMAL AND INDUSTRIAL DEVELOPMENT COULD BE BELOW POTENTIAL

HENCE INDUSTRIAL POLICIES

HOWEVER, WE WILL SEE THAT INDUSTRIAL POLICY ALSO HAS TO BE DEFINED BEYOND FOCUS ON MARKET FAILURES

INDUSTRY SPECIALISATION CAN ALSO BE INFLUENCED AND IF A COUNTRY’S INDUSTRIAL SYSTEM IS FOCUSED ON OLD INDUSTRIES IT MIGHT BE GOOD TO FAVOUR THE DEVELOPMENT OF NEW INDUSTRIES

⇔ THIS IS THE FOCUS OF THE NEW INDUSTRIAL POLICIES

Introduction

1980s and 1990s: nobody talks about industrial policy; it is a term that has to be avoided, both among academics and policy-makers

Why?

- Old industrial policies (1945 to 1979) proved costly and ineffective
- Liberal wave (Reagan, Thatcher, ...)
- Neoclassical Economics: industrial policy is useless, firms will develop and be competitive if they implement the right strategies; otherwise they'd better leave the market

Introduction

NOW: INDUSTRIAL POLICY HAS RETURNED

- Heads of States have been praising industrial policy (Chirac and Schroeder in 2002; Obama and others after the financial crisis...)

- EU: Communications of the European Commission on industrial policy (2002 to 2014)

- Industrial policy is again a discussed topic in academia (even on the American Economic Review)

Why this ‘return’?

What does it mean?

How is industrial policy defined and implemented today?

This class aims at providing answers to these questions, discussing different aspects:

I. Concept
II. History (1945 to today)
III. Normative issues

I. Concept of industrial policy: definition and measure

1. Definition

There is not ONE definition of industrial policy in the economic literature but many

Definitions range from restrictive conceptualisations:

"Government policies aimed at a direct effect on an industry or a specific firm" (McFetridge, 1985)

"policies aimed at particular industries but with expected effects on the whole economy" (Chang, 1994)

…to wider conceptualisations

"Industrial policy includes all government actions that affect the industry, such as investment, innovation, trade policy, regional and labour policies, environmental aspects and other aspects" (Donges, 1980)

"Industrial policies comprise all policies the government can use to promote or impede structural change" (Curzon Price, 1981)

“Industrial policy must be distinguished from national planning. It is rather a formula to make the economy adaptable and dynamic” (Reich, 1982)

“Government efforts which change the industrial structure in order to strengthen productivity-based growth” (World Bank, 1993)

"Industrial policies comprise all government actions aimed at favouring industrial development beyond what allowed by a free market system" (Lall, 1994)

"A set of public interventions such as subsidies, taxes and regulation of products and production processes which aim at modifying the allocation of resources that results from market forces" (Gual, 1995)

⇒ Variety: is it industrial policy or industrial policies? Are they specific or not?

⇒ Industrial policy always HAS TO DO WITH STRUCTURAL CHANGES

⇒ their objective generally is industrial development and therefore rise in the wealth of nations (generally it is assumed through growth)

In fact an economy constantly changes:

- GDP level and distribution varies
- Changes in demand, technology, market structure, …
- Sudden loss (or gain) of competitiveness, e.g. due to the emergence of new competitors
- Development of new industries and decline of old ones
- scale effects and externalities
- and so on.

⇒ Necessity of economic adjustments = resource re-allocation across industries, jobs, territories, …

⇒ Firm restructuring for which firms often call the government for accompanying measures

Why asking for accompanying policies?

- The government guarantees the rules of the competitive game (e.g. property rights, antitrust, and so on)
- Innovation and new technology adoption: resolving the trade-off between appropriation and diffusion and other market failures
- Restructuring is costly, and there are social costs which governments should deal with: temporary unemployment, training for allowing workers to develop new skills, etc.

Two opposite approaches regarding government intervention in industries:

- “interventionist” approach: structural change can be promoted through government actions, in particular the structure of specialisations of a country can be influenced (choosing a development path)

- “Liberal” approach: better letting free market forces play, although the government has a role in defining the rules of the game

2. Debate of the role of industrial policies in the development of Asian countries, including Korea, Taiwan, Singapore (Asian Tigers)

- Neoclassical economists argue that industrial policy did not play a role (arguments in the World Bank Report of 1993)
-'Heteredox' economists argue that industrial policy was key in favouring "climbing the ladder" (Robert Wade, Alice Amsden, Sanjaya Lall, Ha-Joon Chang)

This debate is a bit useless:

- It focuses on methodological issues of the studies: how to estimate the effects of industrial policy; this is difficult to do since industrial policy is made of many measures (R&D subsidies, infrastructure building, education and training, and so on) and industrial development has many determinants which are difficult to isolate (macroeconomic policies also have an effect)

-Industrial policy is defined in a restrictive manner. Only interventions which are specific to firms or industries, not other measures such as horizontal R&D programmes, training, promotion of university-industry relations

- In addition, industrial policy implemented after WWII has not always been the same, even in Asian countries; there are different phases where implemented measures do change.

-Different approaches have been adopted in the various countries: from Korea which has been rather interventionist to Singapore which is usually considered as more liberal.

=> The issue is not whether industrial policy has been effective or not; rather the issue should be what mix of instruments has been adopted? How did this mix change through time? There are similarities between policies adopted in various countries? What is the prevailing mix used today?

➔ Evidence is that no country in the world has started industrialisation without a strong policy (industrial policy) to support it

➔ Even the pioneer in the first industrial revolution, i.e. the UK (perhaps unintentionally)

➔ France, Germany, Italy, the US and Japan had industrial policy to industrialise

➔ Asian countries after WWII too

3. Taxonomy of industrial policies

Industrial policies are here defined as policy mix aiming at promoting structural changes in industries

In order to define a taxonomy of industrial policies, we consider:

1. Policies NOT aimed at industry but which have an effect on industries (macroeconomic stability, agricultural policy, fiscal policies, and so on);
2. Policies FOR industry:

⇔Industrial policies: rules, horizontal and vertical policies.

(Source: International Handbook of Industrial Policy, Bianchi e Labory (eds.), chapter by J. Pelkmans)

1. **POLICIES NOT FOR INDUSTRY BUT AFFECTING INDUSTRIES:**

- Macroeconomic policy
- Fiscal policies
- Labour market policies (wages, trade unions, …)
- Agriculture and fisheries
- Welfare policies
- Territorial policies
- Infrastructure policies
- Energy policy (e.g. favouring new energy sources)

2. **POLICIES FOR INDUSTRY:**

a) Non industrial policies:

- National product promotion campaigns
- Price control
- Export promotion
- Aid to development
- Environmental policies
- banking and financial sector (help industry finds financing for investments)

b) INDUSTRIAL POLICIES:

Rules:

- Single market (EU)
- Competition policy: state aids, antitrust, network industries
- Patents / protection of IPR
- Regulation
- State ownership

Horizontal industrial policies (apply to all firms and sectors):

- Research strategies
- Innovation promotion
- Entrepreneurship and venture capital
- Policies for SMEs / clusters
- Human capital and skills
- Restructuring
- Public procurement

Vertical industrial policies (specific to some firms or some sectors):

- Interventions in sectors
- Policies for sectors: Airbus, shipbuilding, ecc.
- Trade policy (e.g. VERs in specific sectors)
- Specific aspects of territorial and cohesion policies
- Technological policies
- Public procurement in defence industries

WHAT IS INDUSTRIAL POLICY?

= SET OF MEASURES AIMED AT FAVOURING STRUCTURAL CHANGE (UPGRADING, ADAPTATION) IN INDUSTRIES

= THERE ARE MANY POSSIBLE MEASURES AND ACTIONS: COMPLEXITY

WHAT IS INDUSTRIAL POLICY?

MAIN ELEMENTS OF INDUSTRIAL POLICY?

1. Competition policy (rules of the game)
2. Regulation (rules of the game)
3. Innovation policy (new products and production processes, upgrading and adaptation)

WHAT IS INDUSTRIAL POLICY?

4. Do small firms require specific industrial policy?

We will see that there are reasons for policies specific to SMEs

II. History: evolution of industrial policy from 1945 to today

Analysis of 8 countries in order to identify both mostly used instruments and possible common trends in industrial policy implementation.

Countries:

4 Asian: Japan, Korea, Taiwan and Singapore

(Rapid industrial development; variety of government approaches)

4 European: Italy, France, Germany and the UK

(variety of approaches and effects of economic integration process)

Results:

- There are some common mix of instruments adopted by all countries
- All countries experience some interventionist phases: particularly at earlier stages of development or reconstruction after catastrophes such as a world war
- Industrial policy results much different across countries if one looks at the detailed measures; the appropriate mix therefore depends on the specific social, economic and political context.

Policy mixes

- •Infant industry protection (import barriers, investment subsidies);
- •Export promotion (subsidies or rewards to exporting firms)
- •Nationalisation (state-ownership in the manufacturing sector)
- •Support to large firms (e.g. measures aimed at favouring the creation of large firms such as F&A promotion, public procurement to increase the extent of the firms' markets, …) Support to SMEs (e.g. support to entrepreneurship, access to finance, simplification of procedures to create a new firm, networking with other firms or other institutions)
- •Firm *Governance* : promotion of capital markets, stock exchange, relationship between industry and banking sector, etc.

- Inward FDI attraction (fiscal allowances, subsidies or other measures to foreign multinationals making FDI in the country)
- Scientific and technological research programmes (promotion of research at university, R&D subsidies to firms, collaboration on R&D, U-I relationships, …)
- Training of high skills (promotion of tertiary education, especially in scientific disciplines)
- Intermediate skills training (apprenticeship, technical schools, etc.)
- Promotion of strategic industries (definition of the technologies and/or industries of the future and support to their development)

	Japan	Korea	Taiwan	Singapore
Infant industry protection	**Very strong**	**Very strong**	**Very strong**	**None**
Export promotion	**Strong**	**Very strong**	**Very strong**	**Strong but indirect**
State-ownership	**None**	**Yes, in some strategic sectors**	**Strong**	**Yes, capital intensive sectors**
Promotion large firms in the private sector	**Strong (Keiretsu)**	**Strong (chaebols)**	**Discouraged (large firms are state-owned)**	**None**
SMEs promotion	**Some (suppliers)**	**little**	**strong**	**little**

	Japan	Korea	Taiwan	Singapore
Governance	weak	strong	strong	weak
FDI attraction	discouraged	discouraged	Encouraged in some sectors	Encouraged in some sectors
R&D programmes	Driven by the private sector	Driven by the private sector	Driven by the public sector	Driven by the public sector
Training of high skills	strong	strong	strong	strong
Training of intermediate skills	strong	strong	strong	strong
Promotion strategic industries	strong	strong	strong	weak

	Italy	France	Germany	UK
Infant industry protection	Very strong	Very strong	Very strong	Very strong
Export promotion	strong	strong	strong	strong
State ownership	strong	strong	strong	Mainly for utilities
Large firm support	Some cases (e.g. FIAT)	strong	none	none
SMEs	yes	yes	yes	yes
FDI attraction	marginal	marginal	marginal	yes
R&D programmes	yes	yes	yes	yes
High skills	Strong?	strong	strong	strong
Strategic industry	weak	strong	strong	strong

These are broad tendencies but they have many nuances given the length of the considered period!!!

Implementation varied across countries

Examples

- *governance*:

Japan, Korea: favour the development of big groups of firms (zaibatsus and chaebols respectively)

France, Italy, Taiwan: large state-owned firms

- Development of high tech sectors:

Singapore, Ireland: favour FDI in high tech sectors

Korea, Taiwan: acquisition of knowledge from imported products (product re-engineering) or from personnel trained in advanced countries; rapid acquisition of autonomy in R&D

Broadly two types of measures were adopted:

- Rules: measures aimed at defining the rules of the competitive game (antitrust, property rights, contract law, regulation…)
- *Capabilities*: measures aimed at promoting the participation in the competitive game (horizontal and vertical measures such as R&D and training, SME policy, etc.)

Identification of phases of implementation of industrial policy according to types of measures:

	Interventionist phase	Liberal phase	Pragmatic phase
Rules:			
Antitrust	**Weak implementation**	**Strong impl.**	**Strong impl.**
Network industries	**Strong link government - industry**	**Independent regulators**	**Independent regulators**
Capabilities: industry specialisation	**Strong (stress on vertical measures)**	**Medium (stress on horizontal measures)**	**Strong (all types of measures are considered)**

<u>Interventionist phase: 1945 – end 1970s</u>

⇔ Reconstruction for European countries and Japan

⇔ Industrialisation for Asian countries

The government strongly and directly intervenes in markets; support to specific industries (strategic sectors such as energy, transport and infrastructure, etc.); regulation is of the 'command and control' type (standard is imposed by the state and firms or other agents have to comply

Weak implementation of competition policy in all those countries

Idea of 'picking the winner'

Liberal phase 1980s and 1990s

Industrial policy is useless; important thing is macro stability

Market liberalisation

Regulatory reform of network industries

Regulation is incentive-based

Antitrust stringently applied (esp. USA, UK)

All countries adopt liberal policies, although to different degrees

From 2000 pragmatic phase

Industrial policy as orientation of industrial development towards specific paths (particularly high tech sectors)

Although importance of fair competition on markets is still stressed (antitrust, open trade policy, incentive-based regulation)

All types of measures are considered beyond ideology: vertical and horizontal

From 2000 pragmatic phase

⇒ Prevailing definition of industrial policy in the 1990s: Industrial policy (called competitiveness or enterprise policy) aims at providing an environment favourable to industrial development or to firm competitiveness

⇒ From 2000 the definition is the same but besides providing conditions for competition some measures specific to sectors can be implemented, since each sector has different characteristics

III. Normative aspect: what are the characteristics of the new industrial policy at the turn of the 21st century?

We've seen the phases of implementation of industrial policy; now let's analyse the third phase in more details asking:

- If a new industrial policy exists nowadays, what are its main characteristics?
- Why a new industrial policy?

1. Characteristics of the new industrial policy?

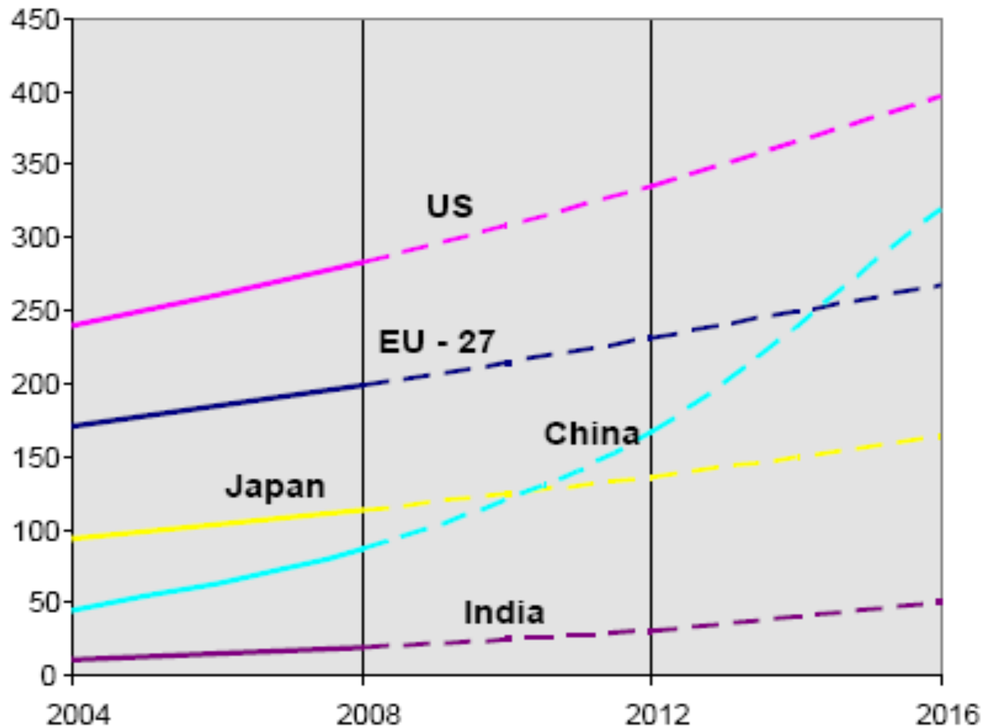
Analysis of European and Asian countries, as well as the USA shows that:

- The development of new, preferably high tech sectors, ensures a certain level of competitiveness for the country: Asian tigers are investing strongly in new sectors; the USA and Japan are continuing their long-term effort in this sense
- Europe: competitiveness gap relative to Japan and the USA since the 1990s; difficulty in developing new sectors, and it is still very strong in low tech sectors

The EU is slowly falling behind on R&D

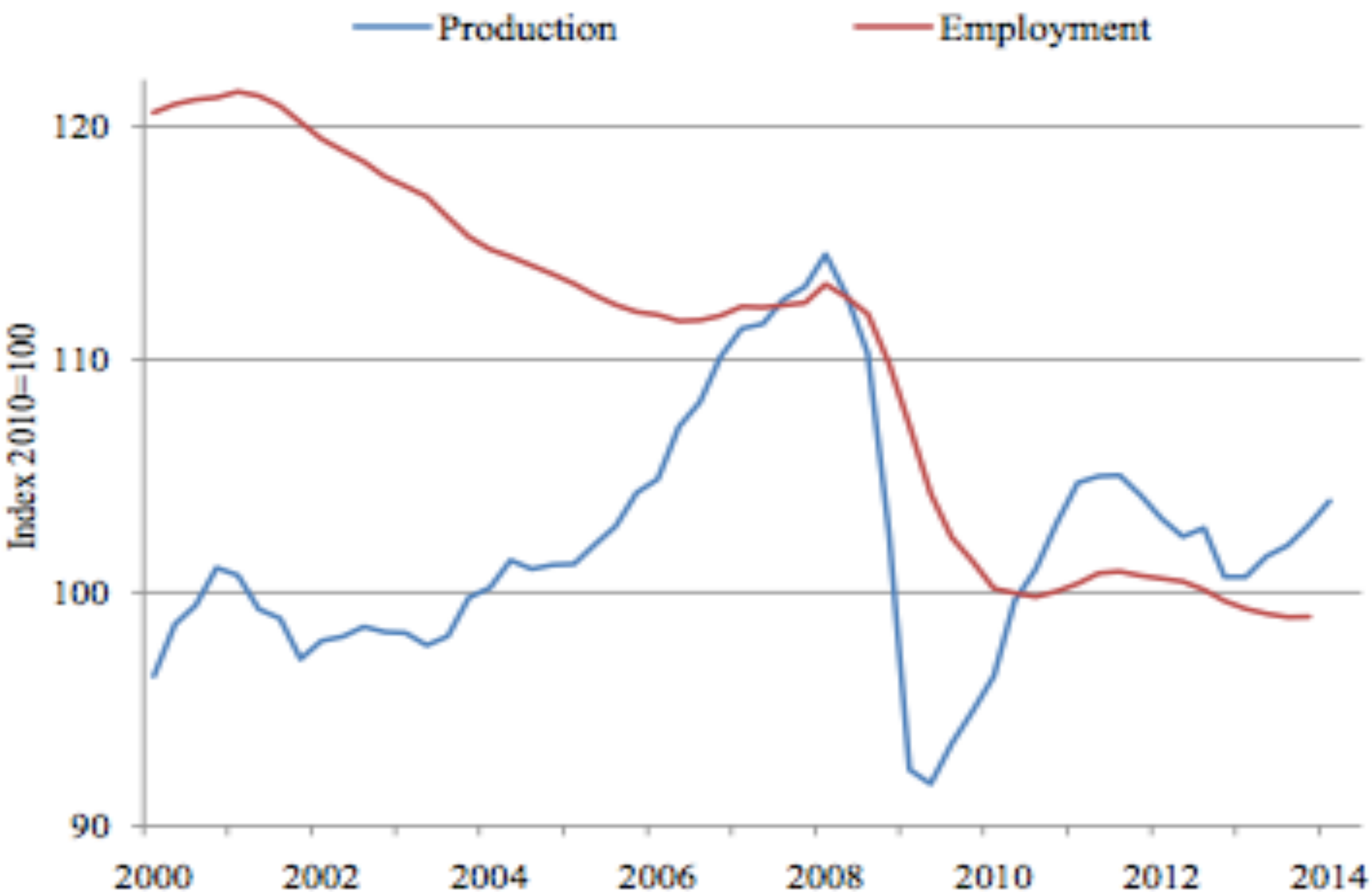
Evolution of world R&D expenditure in real terms

(in € billion at 2000 prices)



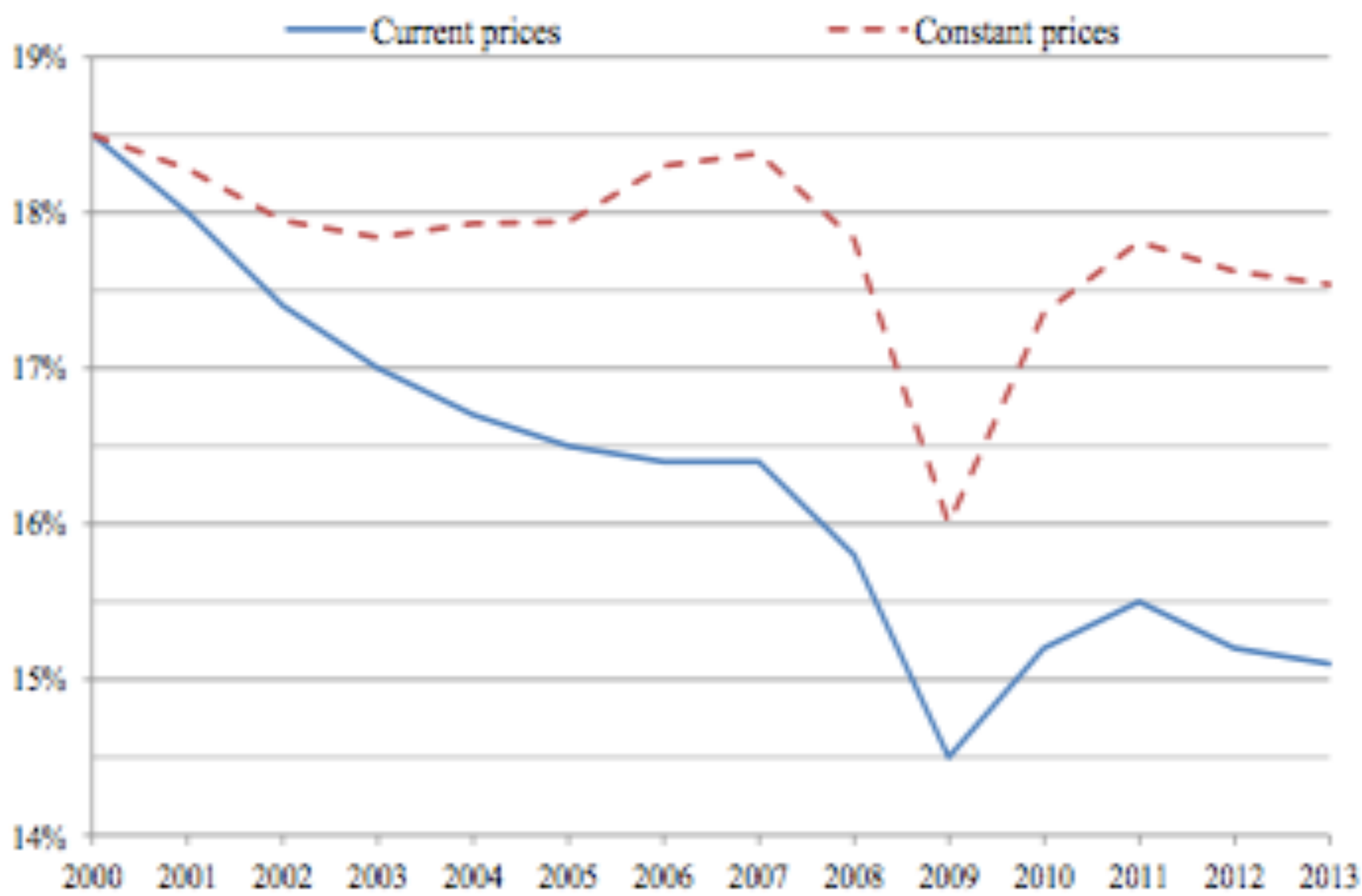
Source: European Commission

Figure 1.1: Production and employment in EU manufacturing, 2000–2014



Source: Eurostat

Figure 1.8: Manufacturing share of total value added in the EU in constant and current prices



Main reason for industrial policy today is big structural changes implied by the 4th Industrial revolution

What policies are implemented in advanced countries?

Japan and the USA:
Stress on new sectors with:

- R&D programmes;
- Training and education especially in scientific disciplines;
- Emphasis on applied R&D (often concentrated on territorial poles);
- Protection of intellectual property (new models with *open source*)
- Knowledge transfer between universities and business (e.g. Bayh-Dole Act, 1980, USA) and government (Japan: Scientific and Technological Basic Plan, 2000)

Europe?

- Support to traditional sectors absorbs large part of aids
- There is innovation but lack of transformation of innovation into commercial success
- Variety across European countries: from Finland investing a lot in R&D and competitive to transition countries in Eastern and Central Europe, and Italy which does not invest enough.

Europe?

- France: different attempts to relaunch industry (from 2005: poles de competitivité, La France Industrielle, to promotion of smart manufacturing)
- Germany: from bioRegio to Industrie 4.0
- Italy: no national industrial policy

Italy: absence of a strategy for industrial development

[Gallo, Silva 2005; Zara 2005; Gobbo, Pozzi 2005; Pozzi, Bianchi, 2010, Cappellin et al. 2014]

Italian industrial policy has consisted in reduction of direct involvement in markets (privatisations and IRI closing in the 90s);

No national strategy has emerged despite many different governments from 2000 to 2016; one exception is industrial policy of Prodi government in 2008 but not implemented due to short life of the government.

However, Industria 4.0 adopted in November 2016

Only industrial policy in Italy: at regional level

Reforms of the Constitution in the 1990s (title V) has given more legislative power to regions which can implement industrial policy

How? Generally use of European regional funds to finance industrial policy

We will see example of the ER region

However, coordination at national level to exploit synergies and avoid duplications could be useful

2. Why is industrial policy necessary nowadays?

Because there have been important changes in competitive conditions which have induced necessity for firms to restructure

Megatrends: particularly **globalisation** and **digitalisation (4th industrial revolution)** + **societal challenges such as sustainability**

Imply rising world-wide competition, necessity to innovate and adopt new technologies

Consequences for sectors:

1. Importance of high tech sectors:
   - generate more value added and have higher growth potential
   - their technologies can be used in other sectors in order to improve products
2. Increasing difficulties of traditional sectors:
   - competition from countries with low labour costs

- Need to internationalise to sell on all world markets

3. All sectors must set up production processes intensive in intangible capital; i.e. they have to restructure and often they call for industrial policy to help

⇒ Fourth industrial revolution inducing some countries to implement industrial policies to promote changes (Germany)

⇒ Hence return of industrial policy

⇒ Issue in particular of the structure of specialisation of the country