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Economia della Regolamentazione e della Concorrenza
(Economia e Politica Industriale)

Docente
Prof. Riccardo Cappellin

LEZIONE 8

IL PROCESSO DI SVILUPPO NEI SISTEMI PRODUTTIVI REGIONALI

Quattro approcci alla crescita economica

1) La crescita economica secondo un modello d'offerta:

$$\frac{Y}{P} = \frac{Y}{L} * \frac{L}{P}$$

Y = prodotto
P = popolazione
L = occupazione

Il prodotto pro-capite dipende dalla produttività e dal tasso di occupazione della popolazione.

Implicazioni di politica economica:

maggiore **flessibilità del lavoro** – minori salari e **maggiore produttività** - maggiore **domanda di lavoro** – maggiore **capacità produttiva** – **maggiori esportazioni** – **surplus commerciale** – **rivalutazione** del cambio – **cambiamento della specializzazione produttiva** e processi di **ristrutturazione** e di riconversione produttiva – necessità di maggiore **flessibilità del lavoro**.

2) La crescita economica secondo un modello da domanda:

$$Y = C + I + G + X - M$$

Implicazioni di politica economica:

crescita del prodotto – **maggiore capacità produttiva utilizzata** - sfruttamento delle **economie di scala** – **maggiori investimenti** (“**acceleratore**”) - maggiore **produttività e minori costi** – maggiore **competitività** – crescita delle **esportazioni** – **crescita del prodotto**.

3) Un approccio non aggregato: tre interpretazioni della crescita economica compatibili con il modello dei network territoriali.

$$\frac{Y}{L} = \sum_i \frac{Y_i}{L_i} * \frac{L_i}{L} \quad i = \text{settore } i$$

oppure

$$Y = \sum_i \frac{Y_i}{L_i} * L_i \quad i = \text{settore } i$$

La produttività media dell'economia dipende dalla **produttività dei singoli settori** e dalla quota dei settori a più alta produttività sul totale della occupazione.

$$\Delta Y = Y_{\text{imprese nate}} + \text{Diff. } Y_{\text{imprese persistenti}} - Y_{\text{imprese morte}}$$

La crescita del prodotto nazionale dipende dalla produzione nelle **nuove imprese**, più la variazione positiva o negativa delle produzioni nelle **imprese persistenti**, meno la produzione nelle **imprese che sono scomparse**.

$$\Delta (Y / N) = f(\Delta \text{ conoscenze})$$

La crescita della **produttività** dipende dal processo di crescita della **conoscenza** e dall'**innovazione** e questo dipende da **fattori diversi**, tra i quali possono essere indicati: competenze individuali, diversità degli attori, costi di transazione e sviluppo delle **reti materiali ed immateriali**, **investimento privato e pubblico** in RS e formazione e nei processi di **apprendimento interattivo** a scala locale e anche a scala nazionale e internazionale.

L'equilibrio tra domanda e offerta aggregate: $\Delta Y_S = \Delta Y_D$

La crescita della offerta deve essere parallela alla crescita della domanda interna e la crescita delle esportazioni deve essere accompagnata da una crescita delle importazioni di tutti i paesi mondiali compreso quello considerato.

$\Delta Y_S = \sum_i \Delta Y_{iS}$ nei singoli settori

$\Delta Y_D = \sum_i \Delta Y_{iD}$ nei singoli settori

$\Delta Y_{iS} = \Delta Y_{iD}$ l'equilibrio tra domanda e offerta nei singoli settori (a scala mondiale)

Le politiche di espansione delle capacità produttive nelle singoli produzioni devono essere accompagnate o persino **anticipate da politiche di espansione della domanda interna verso le stesse produzioni.**

Eventuali scompensi della domanda rispetto all'offerta in un singolo paese sono compensati dalle **importazioni** o viceversa dell'offerta rispetto alla domanda sono compensati dalle **esportazioni**.

Anche a livello mondiale è inevitabile che vi sia equilibrio tra domanda e offerta dato che il valore delle esportazioni di un singolo paese corrisponde a quello delle importazioni di tutti gli altri paesi dal paese considerato o che **il valore totale delle esportazioni mondiali è uguale a quello delle importazioni mondiali.**

Le politica di crescita « export led » porta a aumentare le tensioni politiche internazionali, dato che un attivo della bilancia dei pagamenti comporta un aumento delle attività finanziarie dei paesi esportatori e quindi un impoverimento dei paesi importatori, che sono costretti a **finanziare le loro importazioni** (superiori alle loro esportazioni) **con la vendita di ricchezza finanziaria (titoli pubblici - debito) o attività reali (svendita di imprese) e con la riduzione dei salari**, come è avvenuto dal caso dei rapporti tra Grecia e Germania.

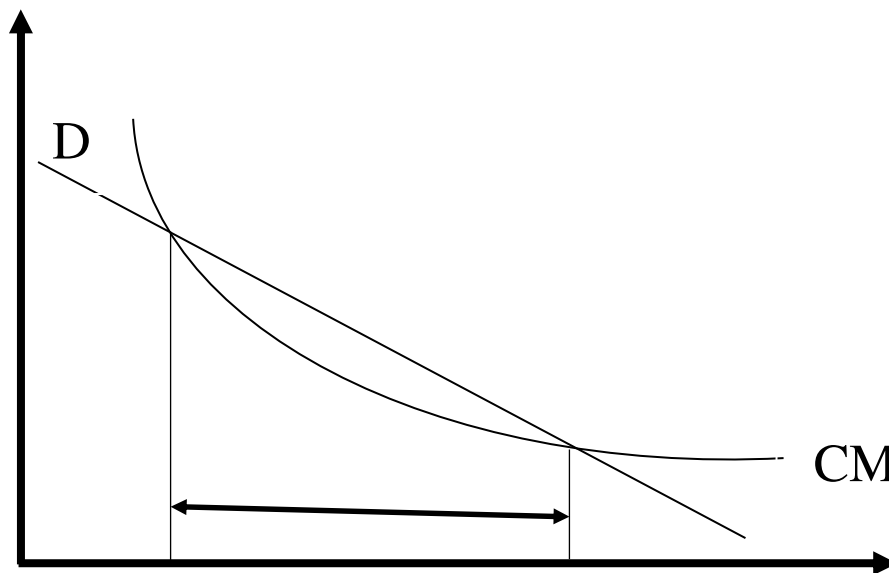
Confronta il modello analitico indicato successivamente.

Il modello delle barriere all'entrata mostra l'interdipendenza tra domanda e offerta.

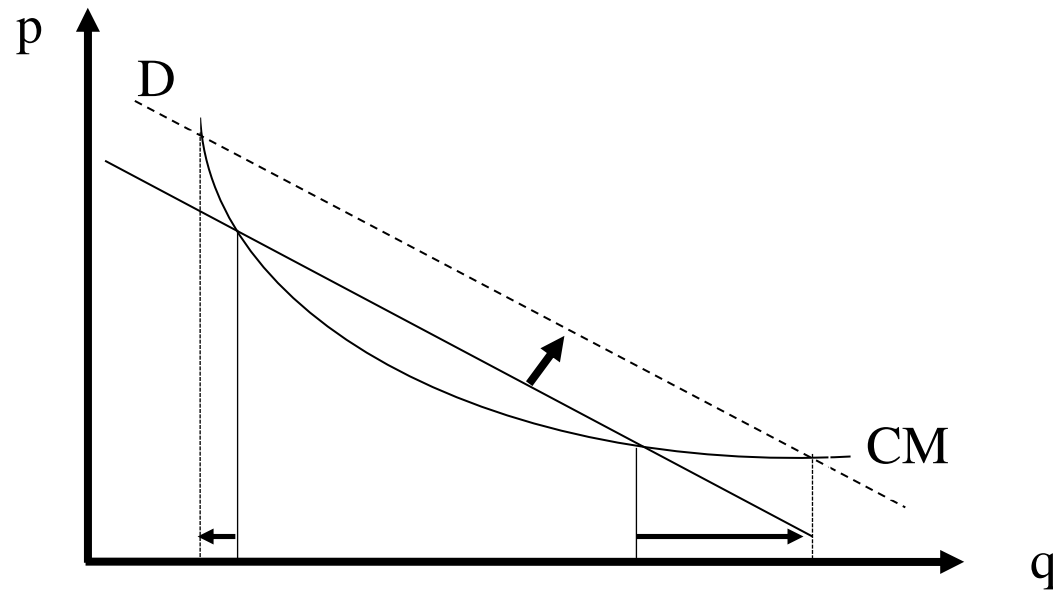
La politica industriale e del bilancio pubblico (fisco e spesa pubblica) deve **alzare la curva di domanda** in modo da assicurare la possibilità di produzione da parte di nuove imprese.

In alternativa, è necessario aumentare la produttività e **abbassare la curva dei costi medi**.

La condizione di profitti non negativi o che il prezzo sia superiore al costo medio: $p > CM$



a) The level of production which allows a no negative profit



b) The increase of production due to an increase of the demand

In un approccio disaggregato allo sviluppo sono importanti le seguenti **indicazioni di politica economica**:

POLITICHE DELL'OFFERTA

- E' necessario promuovere la **riconversione delle risorse dai settori a minore a quelli a maggiore produttività**,
- E' necessario promuovere la **creazione di imprese nuove** che compensino la diminuzione della produzione nelle **imprese che vengono chiuse** e la diminuzione eventuale della produzione nelle **imprese che sono in crisi**,
- E' necessario aumentare la **produttività** e promuovere **l'innovazione nelle singole imprese** e dei singoli settori tramite una **maggiore velocità** dei processi di **apprendimento** e di creazione delle **conoscenze**.

POLITICHE DELLA DOMANDA

- E' necessario con **politiche fiscali e di spesa pubblica** adeguate stimolare la il cambiamento strutturale della domanda e la **crescita della domanda interna in nuove produzioni che rispondono ai nuovi bisogni dei cittadini e che sono caratterizzate da una maggiore produttività o un'alta domanda di lavoro**.

Table 1

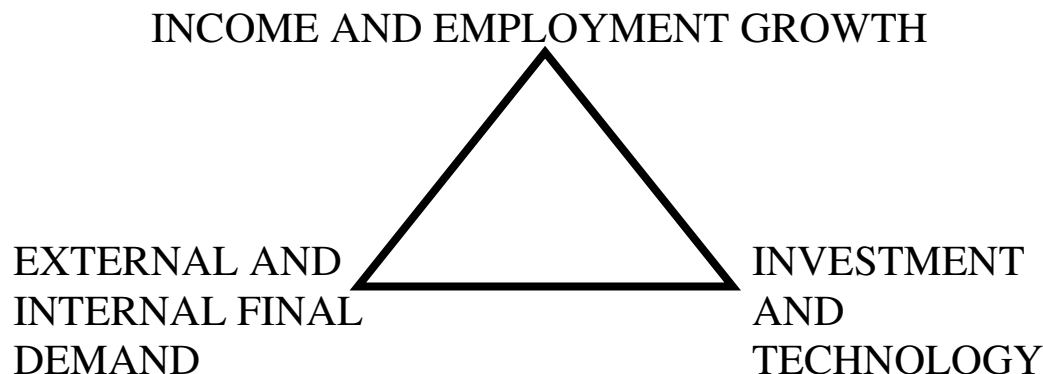
THREE MODELS OF DEVELOPMENT

I. DEMAND DRIVEN MODEL: Keynesian and planning approach

Income growth is determined by the growth in exports, imports, private and public consumption and private and public investments and economies of scale insure greater productivity and international competitiveness

II.SUPPLY DRIVEN MODEL: neoliberal approach

Percapita income growth is determined by productivity, employment and population growth and by external and internal financial constraints (external deficit and public deficit and “competition-flexibility and structural reforms”).



III. THE ENDOGENOUS -INDUSTRIAL MODEL: “local networks approach”

Income and employment growth is determined by 7 factors:

- external and internal final demand,
- investment and technology,
- knowledge creation and human capital,
- creation and closure of firms,
- networking between the local firms and actors,
- urban and territorial quality,
- institutions and governance.

THE GROWTH OF GDP DEPENDS ON THE CREATION OF NEW PRODUCTIONS AND THAT REQUIRES THE PROFITABILITY OF INVESTMENTS AND THE ADOPTION OF INNOVATION

Current price GDP depends according to the **following identity** on
a) prices, b) productivity, c) sectoral structure, d) total employment

$$\text{GDP} = [\sum p_i (Y_i / N_i) * (N_i / N) * N] / p$$

Where :

$N_i = f$ (material and immaterial investments and THE CREATION OF NEW FIRMS)

$Y_i / N_i = f$ (product and process INNOVATION WITHIN FIRMS)

For creating new employment (L_i) new investment are needed

For increasing productivity (Y_i/L_i) new investment are needed

Therefore, GDP growth depends on:

- a) the **increase of productivity and of employment within the existing productions**
- b) the **creation of new productions, as structural change increases average aggregate productivity**

VEDASI ANCHE LE PAGINE SEGUENTI IN INGLESE PER LE IMPLICAZIONI DI POLITICA MACROECONOMICA

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https://drive.google.com/file/d/1xLTnV8X3Xo-Drwu6leXC4fzGMNffsMwV/view?usp=drive_link

ABSTRACT

This essay¹-has aimed to indicate some new important emerging policy problems, which have characterised the Covid crisis in the European economy during 2020 and then the bounce-back in 2021. The paper has illustrated an economic theoretical framework focused on innovation and structural changes, according to a Schumpeterian and evolutionary or neo-institutional approach, which seems more appropriate than the traditional neoclassical and macroeconomic models, as the basis for a “new industrial strategy” in the European Union. The mainstream economic models are static and point-like, as they do not consider the role of time and of space, such as the existence of asymmetric information and external economies and also the interdependence between the companies and the other “stakeholders” in the process of economic development. On the contrary, the theoretical framework of this paper considers the factors that act on the structural changes according to four different and interdependent dimensions: the final demand, the intermediate productions and also the supply of labour and the endowment of natural resources. Finally, some preliminary indications on the organisation of a new industrial strategy at the European scale are discussed, different from the focus on just the digital and green technologies, as indicated by the NGEU program by the European Commission.

Keywords: European integration; employment creation; industrial policy; innovation policy; urban and regional planning; macroeconomic policies; export-led growth; EU internal market; Covid-19 crisis

¹ I thank Professor Manas Chatterij and the Graduate Institute of Geneva, for having organised this large interdisciplinary conference on the economic, social and demographic problems after the Covid crisis.

1. Introduction

The increase of the economic and political competition between the largest world powers and between the large industrial and financial international companies is stimulating internal social and economic divides and also military civil conflicts within many countries. Armed conflicts within and between countries in Europe and in the world (Ukraine, Afghanistan, Iraq, Syria, Israel, Central Africa, Kosovo, etc) may have been stimulated by economic, commercial and financial factors. However, I believe that the most important factors are not the economic factors, but rather political factors such as the will of political hegemony and the defence of the individual cultural identity of specific groups of people. On the contrary, economic growth may be the most important factor leading to international cooperation and to prevent military conflicts, as the experience of the European Union has demonstrated in the case of the European continent.

Recently, the fragmentation of the global economy has been increased by the global pandemics, which has led to tighter immigration restrictions, to greater national self-reliance, by reshoring of strategic productions, constraints on import and on foreign investments in the case of strategic goods and resources. The disruptions of the supply chains and the emergence of sectoral bottlenecks have led to price increases in the industrial but also in the service sectors. Moreover, the large increase of income and wealth inequality have led to social and political discontent. That is driving to an increase of State intervention in the economy and to a change of the neoliberal paradigm widely diffused in economic policies since the Reagan's and Thatcher's years in favour of a greater State interventionism leading to the call for an explicit national industrial strategy (Aiginger & Rodrik 2020, Bellandi & De Propriis 2017, Bianchi, Ruiz Durán C. & Labory 2019, Cappellin 2020a and 2020b, Rodrik, 2020).

Thus, there is the need to reconsider the economic development strategy also in the most developed countries, such as Europe and the USA. The theoretical framework illustrated in this contribution is different from that of the neoclassical and of the Keynesian economic models and it could be the basis for the design of a “new industrial strategy” appropriate to the actual and specific context of national and regional economies in Europe. In particular, this contribution first considers development models indicated in the economic literature and which focus on external trade, such as the export-led and the globalisation model. Then, it considers the endogenous growth models focused on the relationships between the internal demand and supply. Moreover, this contribution aims to illustrate the factors that act on the structural changes, in a medium-term perspective, on four different and interdependent dimensions: not only the final demand and the intermediate productions, but also the supply of labour and the endowment of natural resources. Finally, this contribution presents some preliminary indications on the organisation at the European scale of a new industrial strategy, which should represent the institutional framework for business decisions

2.The Mercantilism Export-Led Model

According to the traditional export-led growth model (Thirlwall 1979 and 2011), which is similar to the mercantilist development strategy, the internal productions are oriented to the foreign demand and their level is determined by the international competitiveness of the companies. In fact, according to a Keynesian model (Cappellin, 2011, 2012, 2016a, 2016b), the GDP is determined by the exports and imports and not only by the internal demand:

$$Y = (C + I + G) + X - M$$

That growth strategy implies that companies should aim to lower costs, higher productivity and also to lower wage and to industrial restructuring in order to increase their competitiveness and that is leading to employment decrease within the firms and often to low employment increases and high unemployment in the overall national economy.

The “export led” growth model is leading to an excess of supply on the internal demand and to a trade balance surplus. It also implies a lower internal demand and an excess of national savings on domestic investments, as indicated by the following national accounting identity:

$$I = S - (X - M)$$

In particular, the export led model implies that economic policy focuses on exports and not on internal private and public investments and that the high national saving pushes the internal financial funds to finance investment abroad. Thus, the export led model implies a continuous outflow of financial funds and that is hindering a larger increase of the production capacity in the net exporting country.

This model has an unbalanced nature and leads to extending the economic, political and often also military hegemony of largest countries on smaller countries. In fact, the increase of the trade surplus in few net exporting countries, accompanied by fast growth and a re-evaluation of the currency, is attracting foreign financial funds and that leads to an increase of the foreign debt in the net-importing countries. Moreover, the export led model of growth is tightly related to an increase of the imports of mineral resources in the exporting countries, required by their industrial productions, and also to the immigration of skilled and unskilled labour and also to the attraction of foreign saving due to lower fiscal rates on capital incomes and to the revaluation of the currency.

Therefore, the “export led” growth policy has led to an increase in international political tensions, as it implies an increase in the financial assets of exporting countries with a surplus of the balance of payments. That impoverishes the importing countries, which are forced to finance their imports not with exports, but with an increase of foreign debt and with the sale of financial assets (public securities) or real assets (sale of companies and of properties), as it has occurred in the Greece vs Germany case after the great 2008-2009 financial crisis.

The export led model increases tensions within the European Union. On the contrary, the growth of the overall European economy can be promoted by an increasing orientation of the European productions toward the European internal market. That policy does not imply a decrease of exports, as it can also favour a new long term competitive advantage in international markets, as the demand by consumers in the emerging countries may in the future be increasingly oriented towards the European high quality services and goods, which are typically linked to the higher standards of living of European citizens, with respect to the more traditional goods locally produced in Asia and in low wage countries.

3.The Neoliberal Globalisation Model

Starting from the 1980s, the traditional export led growth model in the most developed countries evolved into the neo-liberal model of globalisation, that characterised the period up to the great financial crisis of 2008-09 and it entered into a final crisis with the recession due to Covid in 2020 (Cyert & March 1963, Alchian & Demsetz 1972, World Economic Forum 1973 and 2019, Garofoli & Holland 2017, Holland 2016, Pisani-Ferry 2021a and 2021b, Business Roundtable 2019, Murray 2019, Blackrock 2022).

Large multinational industrial and financial companies conquered foreign markets not only with the exports of products and services, but also with their investments abroad, the M&A of local companies, the export of profits in tax havens, the lobbying of national and also European institutions in order to change the national rules (so called “structural reforms”) and to increase their economic advantage and the influence on the public opinion.

Even in leading countries, such as the USA and Europe, the neo-liberal model of globalisation has had negative effects, leading to an increase in income and wealth disparities, a decrease in social mobility, a low growth of consumer demand, a decrease of fixed corporate investments and in research investments due to the focus on financial investments, the decrease of public spending in social services and these effects have led to a decrease of the political support for the ruling conservative political parties, which have supported this model. In smaller less developed countries the neo-liberal model has led to forms of economic-financial neo-colonization (“crony capitalism”), with the political support of the privileged social classes in these countries, such as the private economic elites and the public technocracies.

Where that was not possible, “democracy” has been exported with military invasions and the destruction of the same political-institutional organisation of small and weak states, such as Iraq, Libya and Afghanistan. These invasions have led to civil or internal wars in the small invaded countries, as well to military tensions with the other more powerful neighbouring countries, such as Turkey, Iran, Russia, etc..

The globalisation process and the establishment of foreign subsidiaries of multinational companies have been the instrument for the adoption of the traditional export-led policies in many smaller intermediate-development countries in Eastern Europe, Asia and Latin America, and that have in fact succeeded in increasing their economic growth. However, these countries found themselves in a “middle income trap”, being specialised in traditional manufacturing sectors, while the more advanced service sectors and activities are increasingly concentrated in the larger countries, as the small size of the local market in these countries prevents the development of modern service productions.

4. The “Endogenous Model of Growth” Model and the Changes of Internal Demand and Supply

The globalisation model and the export led model have been criticised by many economists and also by various governments. An alternative model may be called the “endogenous model of growth”, since the drivers of growth are not represented by the international demand, but by internal structural changes which are determined by the interaction between the internal demand and the internal supply in the various sectors of the national or regional economy.

In particular, according to the endogenous development model, it is important to ensure a simultaneous growth of the aggregate demand and of the aggregate supply, which in the long term should evolve together:

$$\Delta YS = \Delta YD$$

Both demand and supply are determined by the growth of the production in the various sectors (i), as:

$$\Delta YS = \sum_i \Delta Y_i S$$

$$\Delta YD = \sum_i \Delta Y_i D$$

and the supply and demand in the individual sectors should be balanced in the long term:

$$\Delta Y_i S = \Delta Y_i D$$

The interdependence between the growth of supply and of demand within the individual productions may be illustrated by the “barriers to entry” model, which indicates that the level of production in each individual sector must ensure the condition of non-negative profits or the condition that the price is higher than the average cost: $p > CM$, in order to insure the financial feasibility of the individual firms. This condition of financial feasibility of a specific production implies a comparative static perspective, but it does not explain the evolution or growth of the various productions in a medium term perspective. That required the analysis of the various internal and external factors which affect the demand and the supply of the various productions.

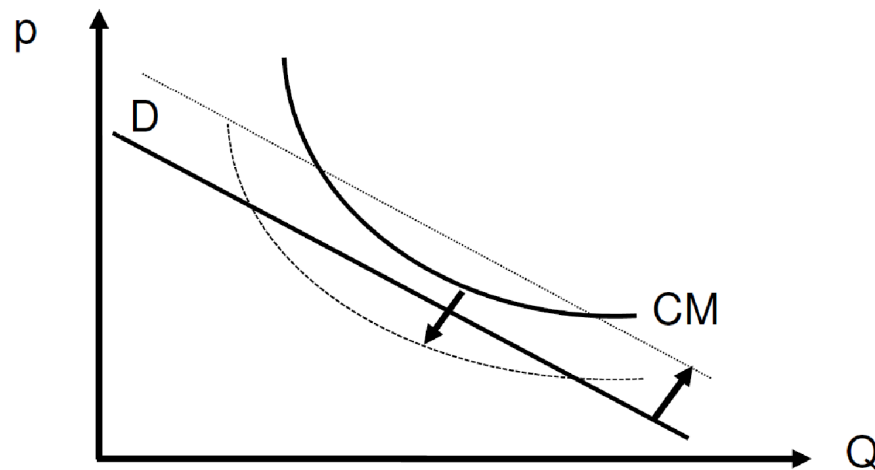


Fig. 1. The Model of the Barriers to Entry and the Evolution of the Demand and Cost Schedules

When the price that the consumers are willing to pay is lower than the production costs, companies in order to survive should either increase the productivity of the used resources and lower the costs or should shift to new products, which are more appreciated by the consumers. The financial viability of a production is not insured by the “invisible hand of the market” and the automatic changes in prices, but by the explicit choices of the producers.

It must be underlined that, when a disequilibrium arises between the demand and the supply of a product, the key role is not played by the price but rather by the quantity adjustments. In fact, when supply is greater than demand, that determines in the short term an increase of the stocks. Thus firms are later constrained to the disposal of these stocks because of the costs of their conservation and deterioration and that leads to a decrease in the excess supply. On the other hand, when demand is greater than supply, that leads immediately to a scarcity and to the appearance of queues, thus the customers are induced to save the previously bought goods by decreasing their needs of the product considered or to shift their needs to other products. These quantity changes may occur almost immediately, while the price adjustment, which is indicated in a neoclassical model of equilibrium, implies the effect of the price change on the demand and supply. That change may be very slow and uncertain, since both demand and supply are constrained by organisational costs and institutional norms.

In fact, the changes in demand and supply in the medium term do not depend only on the price, but rather on the changes in the geographical and “cognitive” proximity and on the existence of external economies between the companies within the same sectors and in the relations between customers and suppliers. These adjustment processes occur over time, as companies learn from each other and from the contacts with their respective customers and suppliers. In particular, the changes in the supply depend on the investments made in previous periods, on the technology in use, on the skills of the workers and suppliers and gradually evolve over time on the basis of the relationships between the company and the surrounding environment or territory.

On the other hand, the changes in demand depend on the compatibility of the technical characteristics of the products and services sold by the company with the needs of the users and on the gradual evolution of the latter over time.

Therefore, the growth of demand and supply is connected with the territorial proximity of current and potential users and producers and it develops over time due to interactive learning processes between the various users and producers.

It must be noted that any imbalances between the internal demand and the internal supply within an individual country can be compensated by imports or by exports. However, the model described in the above equations is valid at a global level, since it is inevitable that there is a balance between supply and demand for each individual production at the global level, as the value of exports or the supply of a specific product by a single country necessarily corresponds to that of the imports or the demand by all other countries.

According to an endogenous growth model, the national industrial strategy should aim to avoid excessive dependence in specific strategic productions, which may represent a bottleneck in the productions of other goods, due to the importance of inter-sectoral linkages, as the case of the microchips or of energy productions has recently indicated.

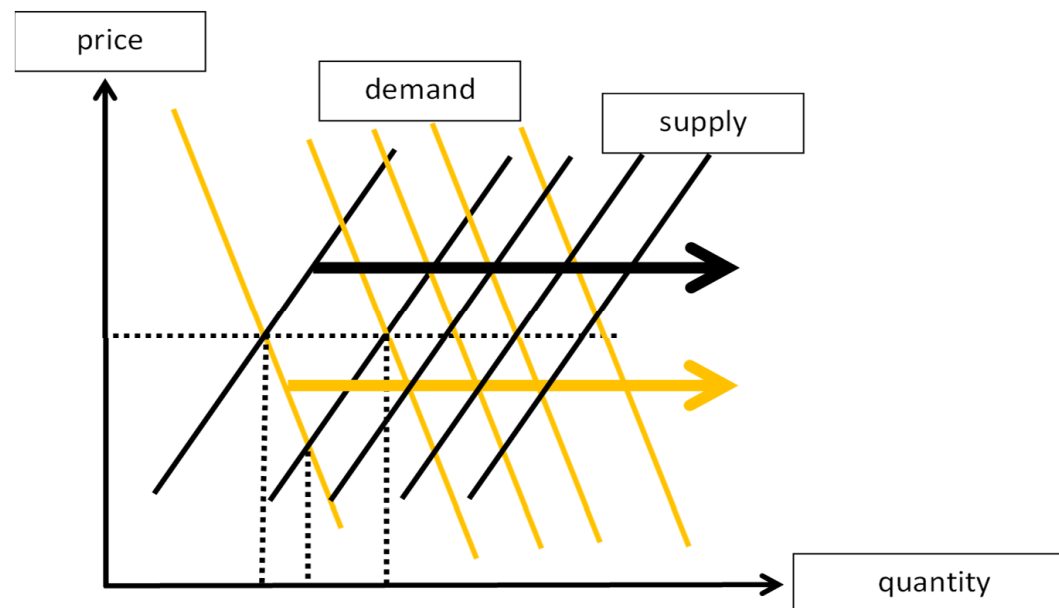
Quantity adjustments are important especially in the specific case of “collective goods”, since the individual private demand may not be sufficient to stimulate the production for these goods. Thus, due to the existence of “externalities in consumption”, the emerging needs of these goods may remain latent or unsatisfied for a long time, as these goods must be produced jointly and require the aggregation of the demand by a rather large group of local/regional or contiguous users. Thus, the demand by individual users must be replaced by public demand and by public action financed through the public budget, as the increase of the supply requires new production structures, which can't be built in the absence of public intervention, public investments and social and institutional innovation.

The endogenous model of growth does not hinder a partial or temporary disequilibrium between the internal supply and the demand, while it aims to focus the attention by the policymakers on the need of specific measures of industrial policy insuring a long term balance of the growth of internal demand and supply in the various sectors of the economy in order to avoid structural imbalances between the various countries.

A crucial role in this re-equilibrium process may be played by the industrial policy, which may directly increase the demand of the new productions through fiscal incentives to the users or through direct public purchase by the institutions and that leads to an increase of the demand curve. On the other hand, looking to the supply side, industrial policy measures may be oriented to finance the investments needed to create new production capacity in new sectors or they may increase the productivity of the companies and that leads to a decrease of the cost curve and will insure the condition for no-negative profits which allow (but does not automatically determine) the entry. Therefore, the policies aiming to the expansion of the production capacities in the individual productions must be accompanied or even be anticipated by policies of expansion of the internal demand towards the same productions.

In this respect traditional macroeconomic policies are not sufficient and the European Union must use not only monetary policy or public budget policy, but also a third and tightly complementary instrument of economic policy, which may be called a “new European industrial strategy”, which is aimed to orient the investments of private companies, with loans and grants and also with public equity participations and public investments, towards those new strategic productions, which can diversify the European economy and respond to the new societal needs.

Fig. 2. The Growth of Investment Determines a Shift of the Sectoral Demand and Supply



5.The Co-Evolution of the Demand Patterns and of the Supply Structure

The changes in the sectoral structure of the European economy largely correspond to the changes in private consumption patterns in the euro area. In particular, the needs and priorities by the citizens have profoundly changed, as indicated by the increasing role of the demand for services.

A new industrial strategy in Europe should respond to the emerging basic needs of the European citizens, such as the needs of:

- good nutrition,
- good mobility,
- good cities,
- good free time, culture and entertainment,
- good health and training,
- good environmental quality and fewer natural disasters.

In this perspective, the growth of the “demand” (determined by the citizens) should clearly be confronted with the constraints of the “supply” (determined by the companies). This latter is represented by the “frontier of possibilities” between the various productions and it depends on the financial resources available for the investments by the State and the private companies, as also by the capabilities and quantity of the labour force and the new available technologies.

In the current post-Covid situation, a new European industrial strategy should reorient both the production supply by the companies and the demand by the users (i.e. citizens and businesses) from the traditional goods/services, that are addressed to the demand by the individual consumers, towards new goods and services, that have a collective character (i.e. “common goods” or “collective services”, as indicated in Figure 3).

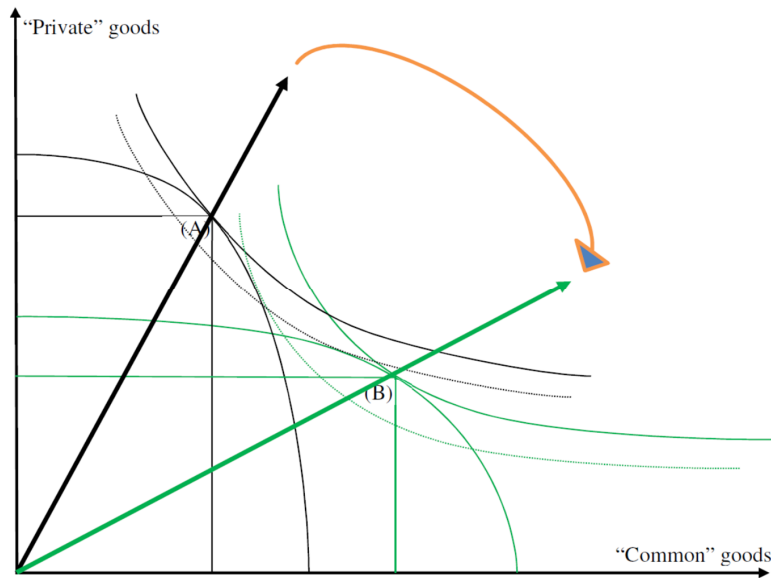


Fig. 3. “Private” Goods and “Common” Goods

Thus, the changes of the demand are tightly linked to the restructuring of the supply side of the economy towards new innovative productions and that enhances an increase of the aggregate productivity and of the citizen’s wellbeing (Aiginger & Rodrik 2020, Rodrik 2014 and 2020, Cappellin & Wink 2009, Cappellin 2010).

The selective stimulus of demand guides industrial strategy, public spending and taxation, private finance and the intangible and material investments of companies towards ESG - Environment-Social-Governance objectives of sustainable development.

A SCHUMPETERIAN APPROACH: THE MODEL OF CROSS-SECTORAL DEMAND AND SUPPLY



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**INDUSTRIAL POLICIES PROMOTE A DYNAMIC BALANCE
BETWEEN THE NEW DEMAND BY THE INNOVATIVE CONSUMERS AND
THE NEW SUPPLY BY THE INNOVATING FIRMS**

UN APPROCCIO CROSS-SETTORIALE ALLA CRESCITA

La crescita dipende dalla creazione di nuovi comparti produttivi e di nuove imprese, dalle innovazioni di prodotto e di processo e organizzative interne alle imprese e da **una forte integrazione delle singole imprese** sia nelle filiere produttive globali che nel sistema produttivo territoriale.

Le politiche industriali “orizzontali” (le “politiche industriali per fattori”), come la distribuzione di aiuti fiscali alle PMI (minore IRAP) possono servire a margine o come sfondo per **la parte meno dinamica dell’economia**, mentre solo **politiche industriali strategiche e selettive** possono sostenere **le produzioni più innovative e dinamiche**, che siano in grado di trainare l’economia complessiva.

La crescita economica dipende da **un processo dinamico in cui interagiscono sia la domanda che l'offerta delle nuove produzioni** (Cappellin 2014a, 2014b).

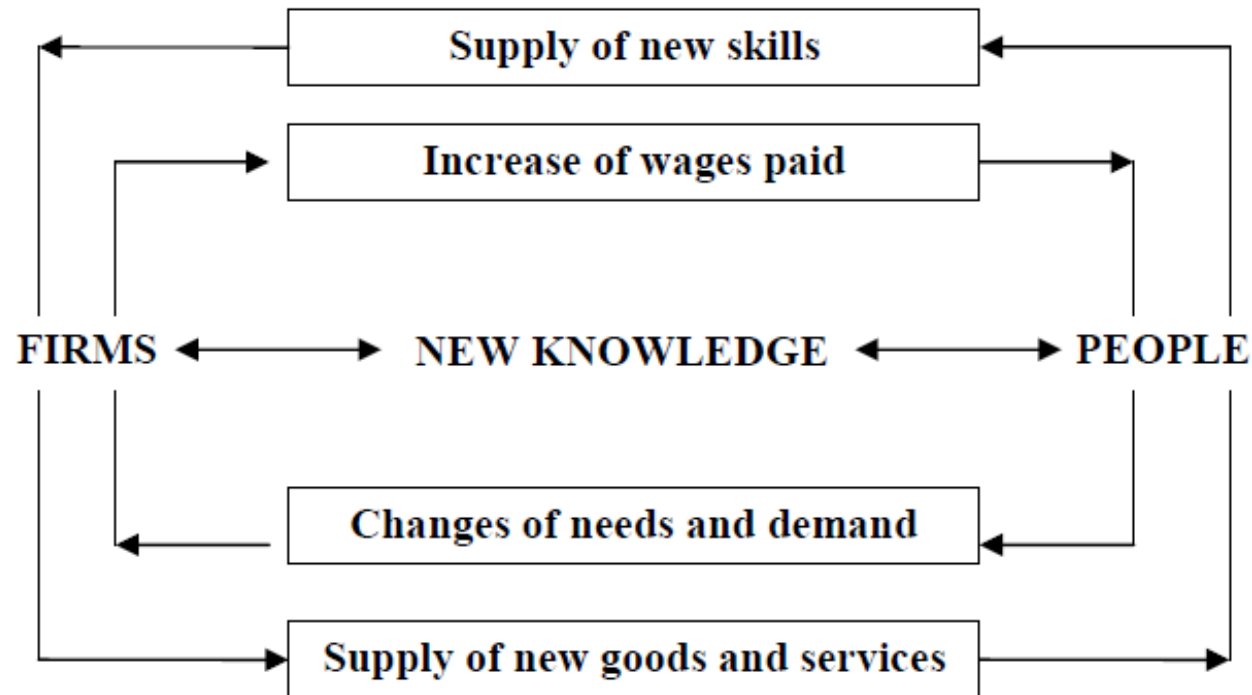
Da un lato, **lo sviluppo di nuove capacità produttive** nei beni e servizi innovativi da parte delle imprese più innovative **aumenta l'occupazione e il reddito nazionale e stimola la domanda finale** da parte dei consumatori e la domanda intermedia delle imprese a sperimentare tali nuovi beni e servizi.

D'altro lato, **l'emergere di nuovi bisogni da parte delle comunità di utilizzatori innovativi ("lead users")** e delle imprese, che hanno bisogno di nuovi prodotti intermedi **traina la domanda di mercato delle imprese** e induce i produttori a modificare le produzioni di beni e servizi tradizionali.

I veri driver della crescita in una "nuova politica industriale" sono

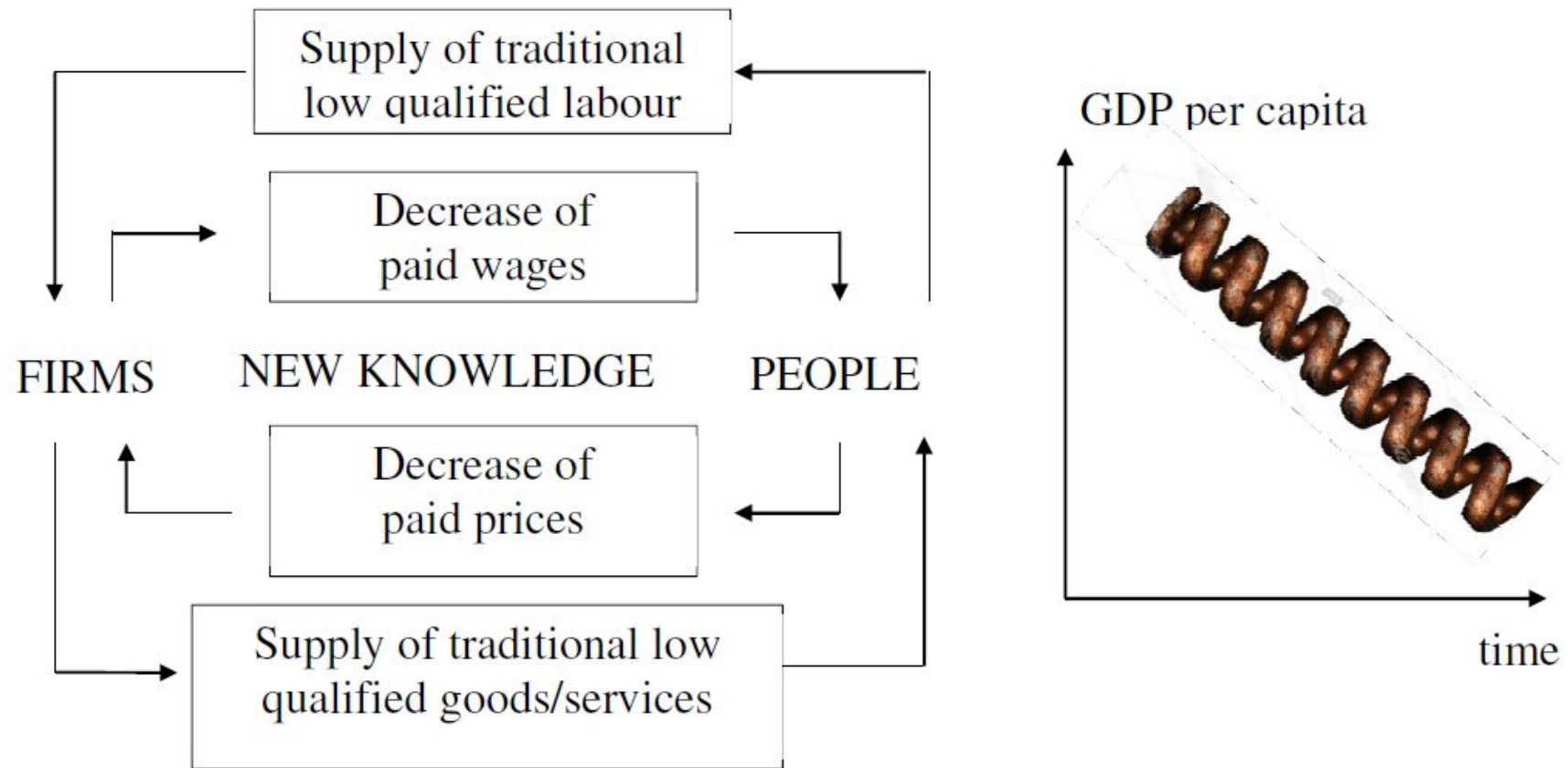
- **la conoscenza e l'innovazione,**
- **gli investimenti privati e pubblici,**
- **le nuove preferenze dei consumatori,**
- **la *governance* pubblica dei cambiamenti e delle relazioni tra gli attori economici.**

Figure 2: The Process of Urban Growth and the Creation of New Needs and New Skills



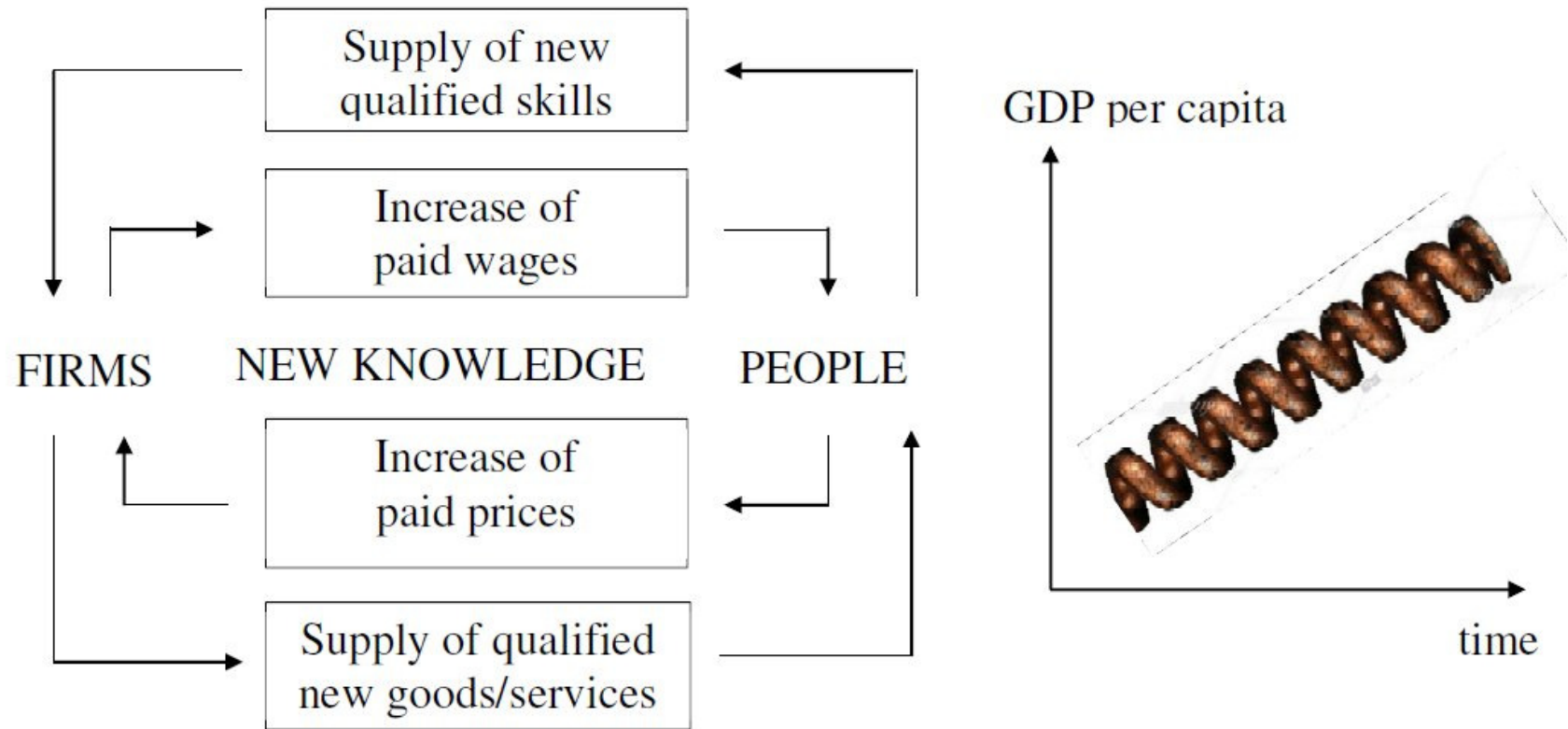
**LA STRUTTURA “SQUILIBRATA” DELLA
DOMANDA: LEAD USERS - UTILIZZATORI TRADIZIONALI
(INNOVATION DEMAND LEAD)
OFFERTA: IMPRESE INNOVATIVE - IMPRESE TRADIZIONALI
(INNOVATION TECHNOLOGY PUSH)**

Figure 1 - A vicious spiral of development:
greater cost competitiveness and saving



Source: Cappellin R., in conference on: Globalization, COVID-19, Economy, Security, International Migrations and Governance, The Graduate Institute of Geneva, 2021.

Figure 2 - A virtuous spiral of development:
the creation of new needs and skills



Source: Cappellin R., in conference on: Globalization, COVID-19, Economy, Security, International Migrations and Governance, The Graduate Institute of Geneva, 2021.

A perverse cycle is occurring both in the labour market and in the market of goods/services

The demand of labour services:

- corporate survival strategies focused on cost reduction,
- concentration of investment in technological process innovation,
- increase of demand for less qualified labour,
- relocation of traditional companies to other countries with low cost labour.

The supply of labour services:

- high youth unemployment,
- emigration of the young qualified labour.

The supply of goods and services:

- the lack of innovation,
- decrease of the supply of qualified products by the national companies,
- increase of the imports of qualified products from abroad.

The demand of goods and services:

- national consumers reorient their demand to more innovative foreign productions,
- decrease of the internal demand of traditional productions,
- lower revenues for the local firms

A virtuous model of development implies a structural change both in the market of goods/services and in the labour market.

The demand of goods and services:

- higher knowledge by the users/consumers of new product/services,
- more qualified needs and higher incomes and also more free time,
- users/consumers willing to pay higher prices for new products/services.

The supply of goods and services:

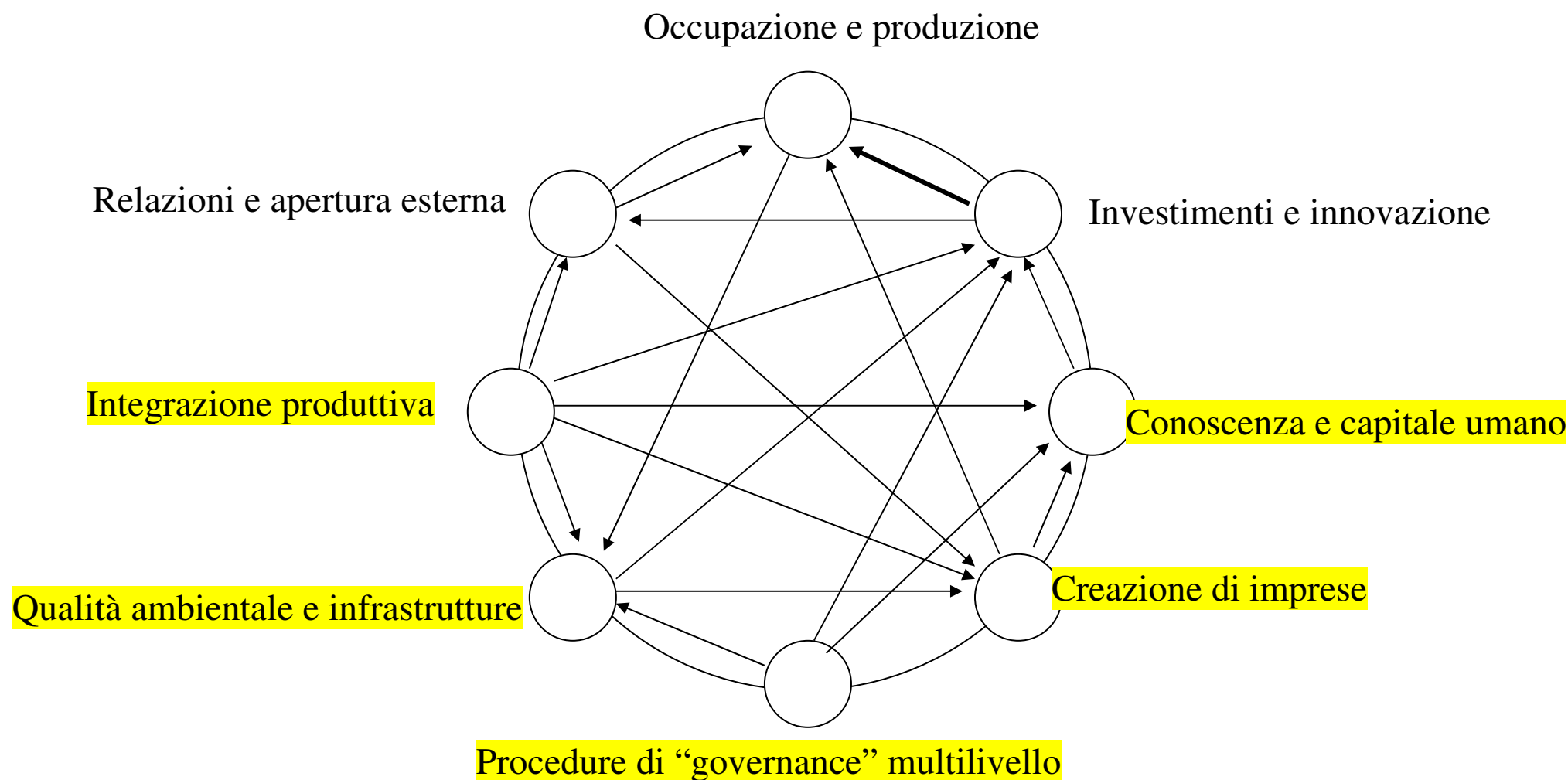
- higher knowledge, higher material investments in technology and equipment,
- immaterial investments in continuous education and R&D and technical design,
- production processes with higher speed of execution and improved quality of the productions,
- increase of the selling prices of products/services.

The supply of labour services:

- young persons are characterized by higher education,
- workers are involved in intense interactive learning processes (e.g. social networks),
- the young people require higher wages being more expert and educated.

The demand of labour services:

- innovative companies specialise in new advanced productions demand new competencies,
- companies are willing to invest in the hiring of new more qualified workers,
- companies are willing to pay higher wages to qualified workers.



Cappellin, R. and Wink, R. (2009), **International Knowledge and Innovation Networks: Knowledge Creation and Innovation in Medium Technology Clusters**. Cheltenham: Edward Elgar Publishing.

http://books.google.it/books?id=1BpcJGekx18C&printsec=frontcover&source=gbs_navlinks_s#v=onepage&q=&f=false

Cap. 4.11, pp. 123-127

11. The role of networking and knowledge creation in regional development

The process of economic development is the result of the tight interaction between the following **eight blocks of variables (Cappellin, 2003)**:

- growth of regional product and employment,
- interregional and international networking and competitiveness,
- local networking between the various sectors and firms,
- birth, growth and closure of local firms,
- investments, product and process innovation, productivity increase,
- knowledge creation, learning processes, competencies and human capital,
- quality of the physical environmental,
- policy framework and multi-level governance.

Increased networking between local firms and sectors promotes interactive learning, knowledge creation and the growth of human capital (**figure 7.1**). These latter processes promote investments, innovation and then the productivity increase within firms. That promotes international competitiveness and exports, which determine output and employment growth. This latter promote the creation of new firms, which further increase the local networks and the process of interactive learning and the growth of local know how. These latter processes are also stimulated by the international openness and the contacts with actors external to the region. Environmental quality is affected by the growth of the regional economy and it facilitates the networking between local firms through the provision of infrastructures and it facilitates the growth of knowledge creation by attracting qualified workers in the region. Finally, policies adopted in a multilevel governance framework through the

negotiations between the various local actors may affect directly and indirectly all the above indicated variables and processes.

This model may also be used to explain why the openness to the international economy may determine the crisis of a local economy and a spiral of cumulative decline, as often indicated by the critics of the

The case of the old industrialized regions (figure 7.2).

The case of many economic lagging regions (figure 7.3).

In the perspective of the knowledge economy, it is important to facilitate the reciprocal interactions between the process of learning and knowledge creation and all the other variables, indicated in the figure 7. In particular, increased knowledge promotes greater international openness, through the participation to international innovation programs and international technology transfers. Increased knowledge promotes regional networking through the diffusion of technology spill-over, and it is promoted by it through the creation of local innovation networks. Increased knowledge promotes the turnover of firms, as it stimulates the creation of science start-ups, while these latter increase the diversity of the industrial environment and stimulate the creation of new knowledge. Finally, increased knowledge promotes investments in structures and the adoption of innovation, as it provides the capabilities to design new projects and it is promoted by the investments in R&D and the demand of new competencies.

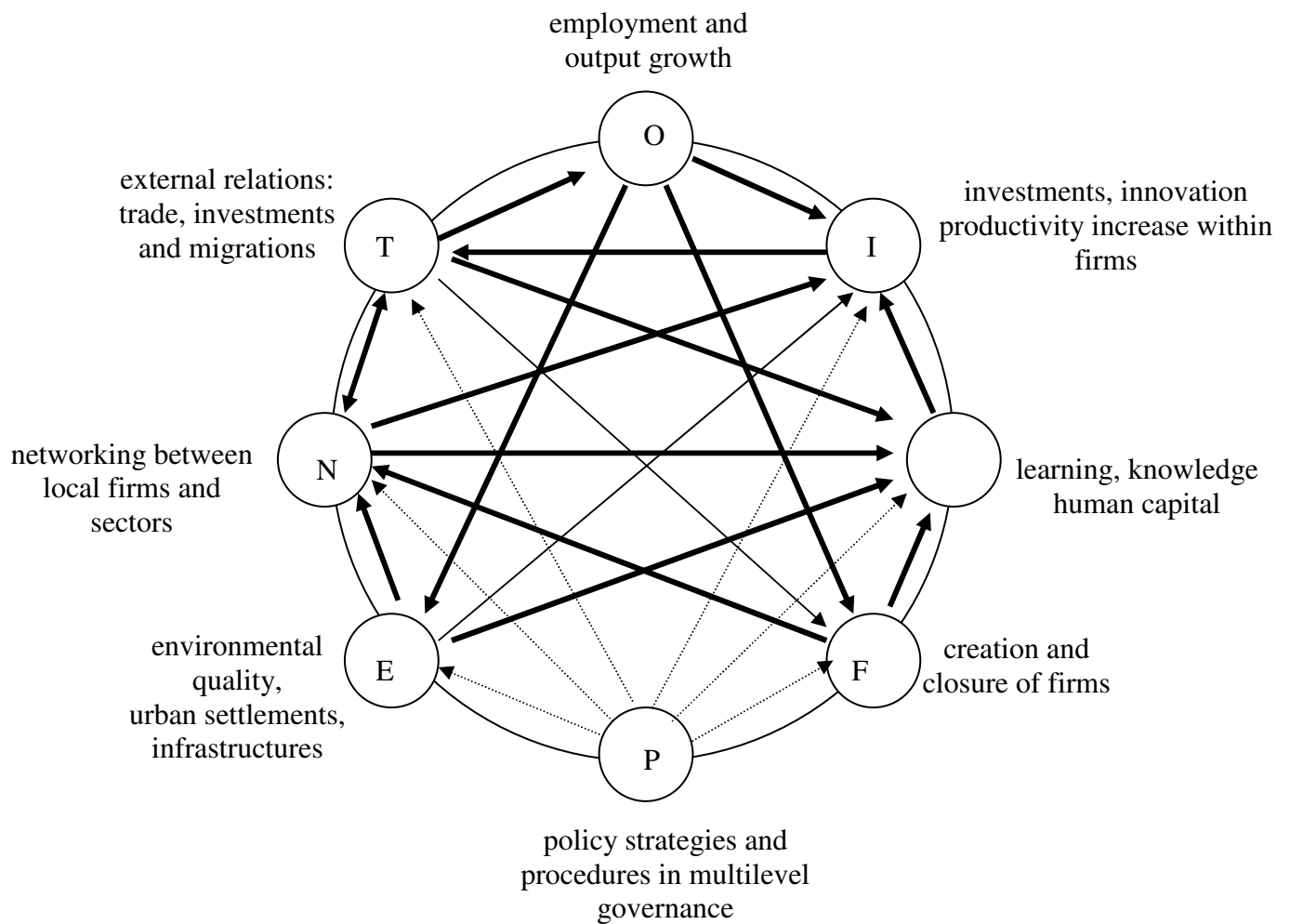
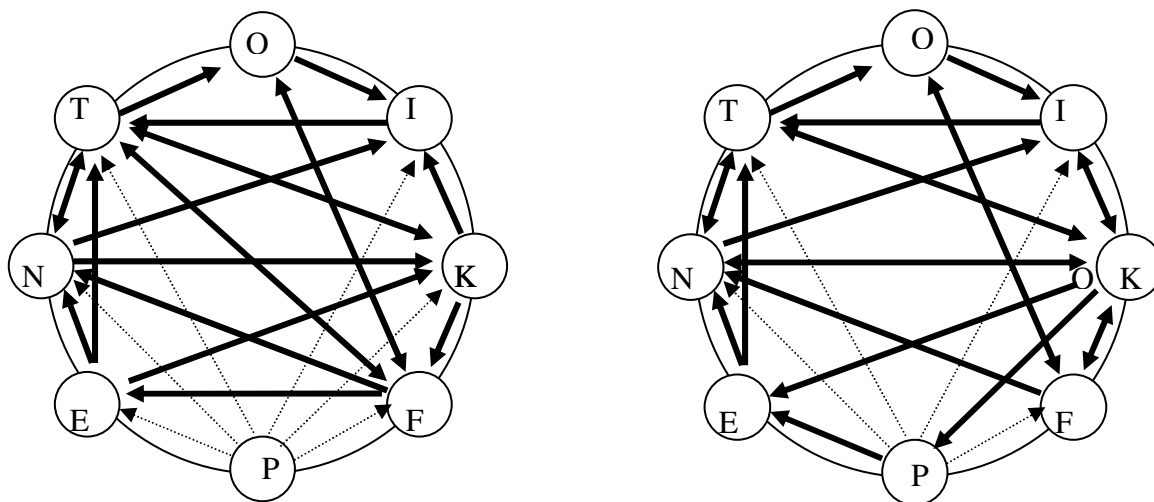


Figure 7.1: Factors and key links in the process of socio-economic development



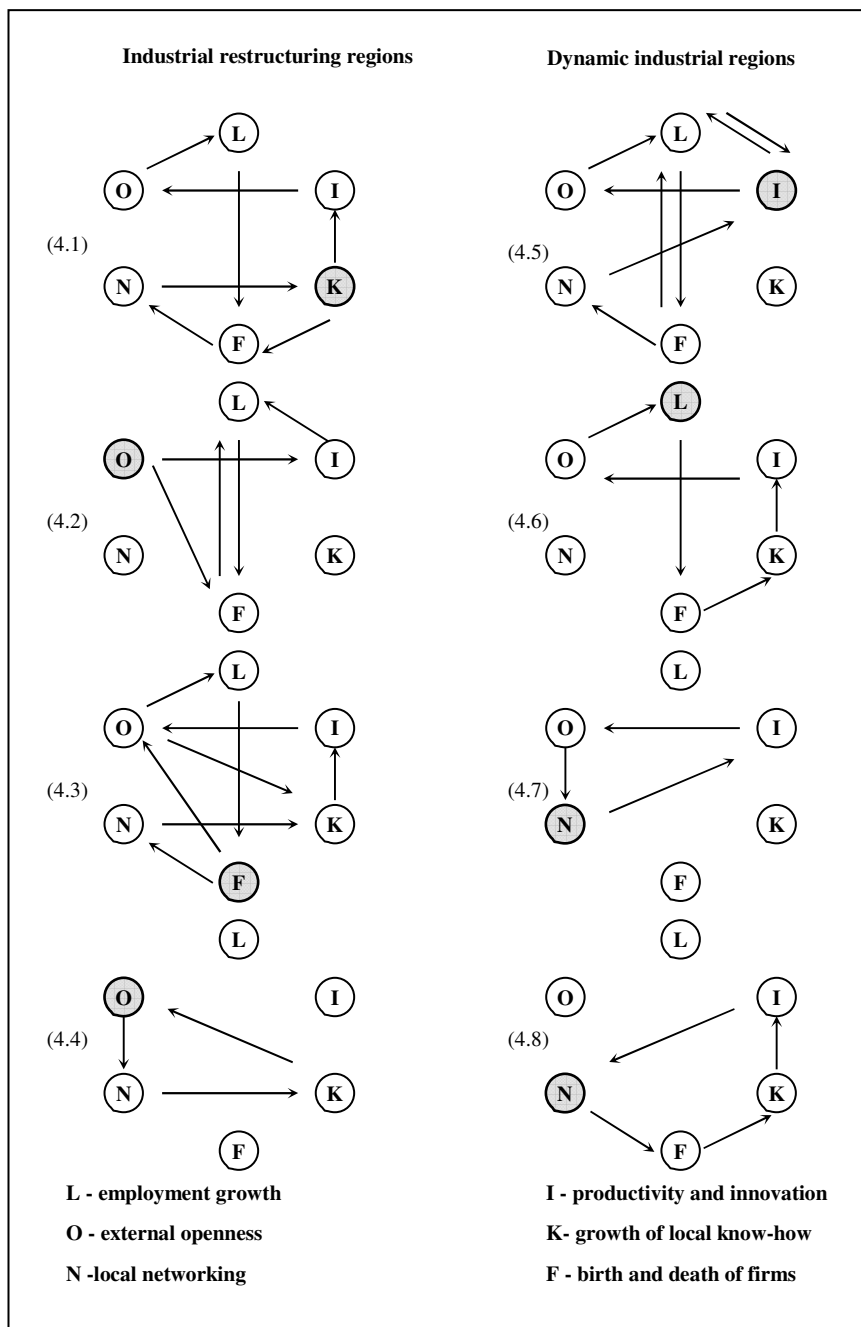


Figure 10: Sviluppo regionale, apertura esterna e networks locali

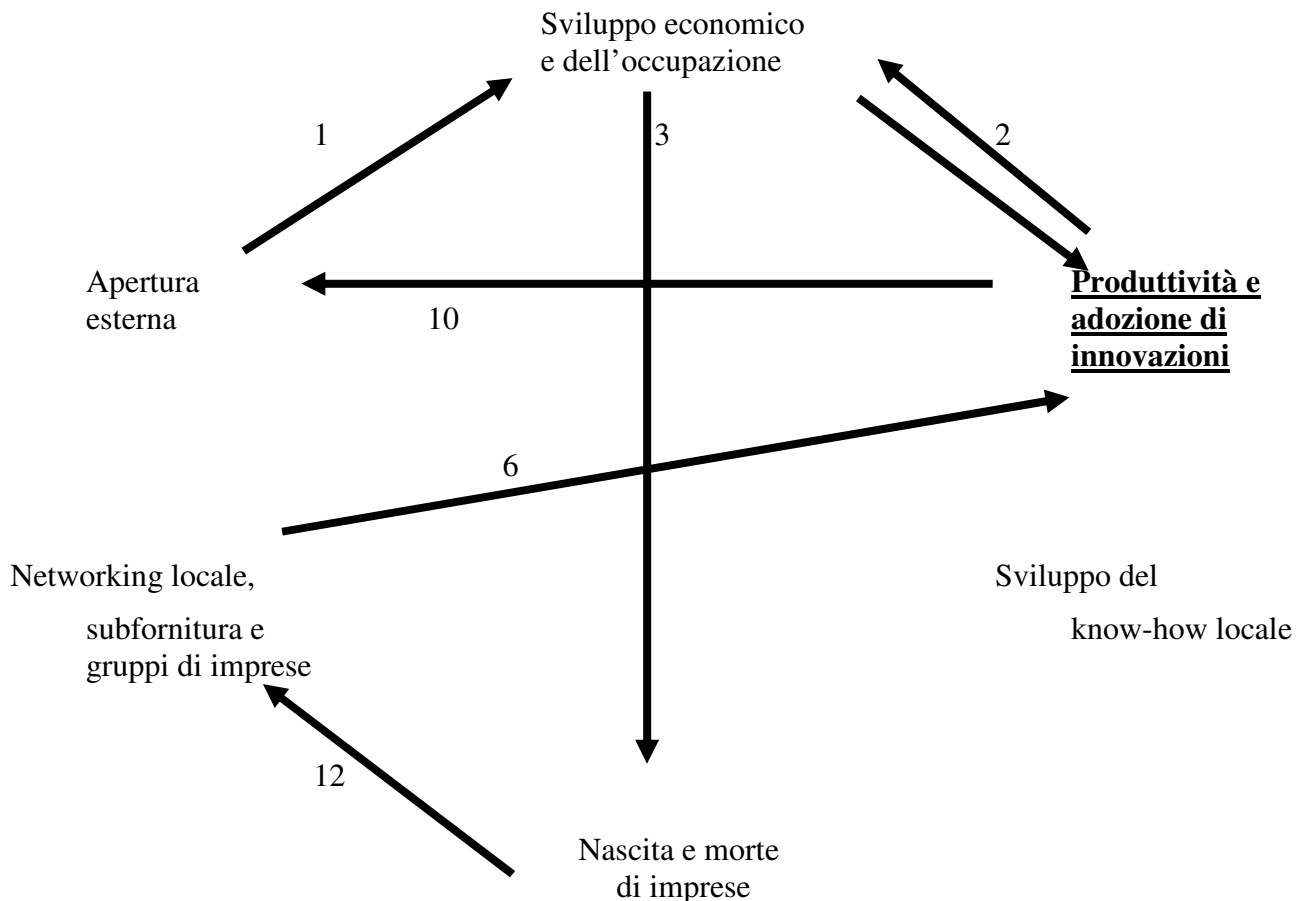


Figura 2: Effetti cumulativi dello sviluppo delle capacità innovative

L'adozione di innovazioni di processo e la crescita della produttività porta ad una diminuzione della domanda di lavoro e ad un aumento dei profitti delle imprese con effetti positivi sull'investimento e soprattutto sulla creazione di nuove imprese, che permettono un reimpiego della forza lavoro e delle risorse produttive provvisoriamente inutilizzate.

Il mantenimento di bassi tassi di disoccupazione determina un elevato consenso sociale e attenua le resistenze all'adozione di innovazioni da parte dei lavoratori e quindi sostiene la crescita della produttività (effetti: 2b-3a-3b-2a).

La creazione di nuove imprese promuove l'integrazione-diversificazione del sistema produttivo locale, che a sua volta riduce gli ostacoli all'adozione di innovazioni nelle imprese. Questa determina un aumento della competitività e quindi dell'occupazione locale (effetti 2b-3a-12a -6b -10b-1a-2a).

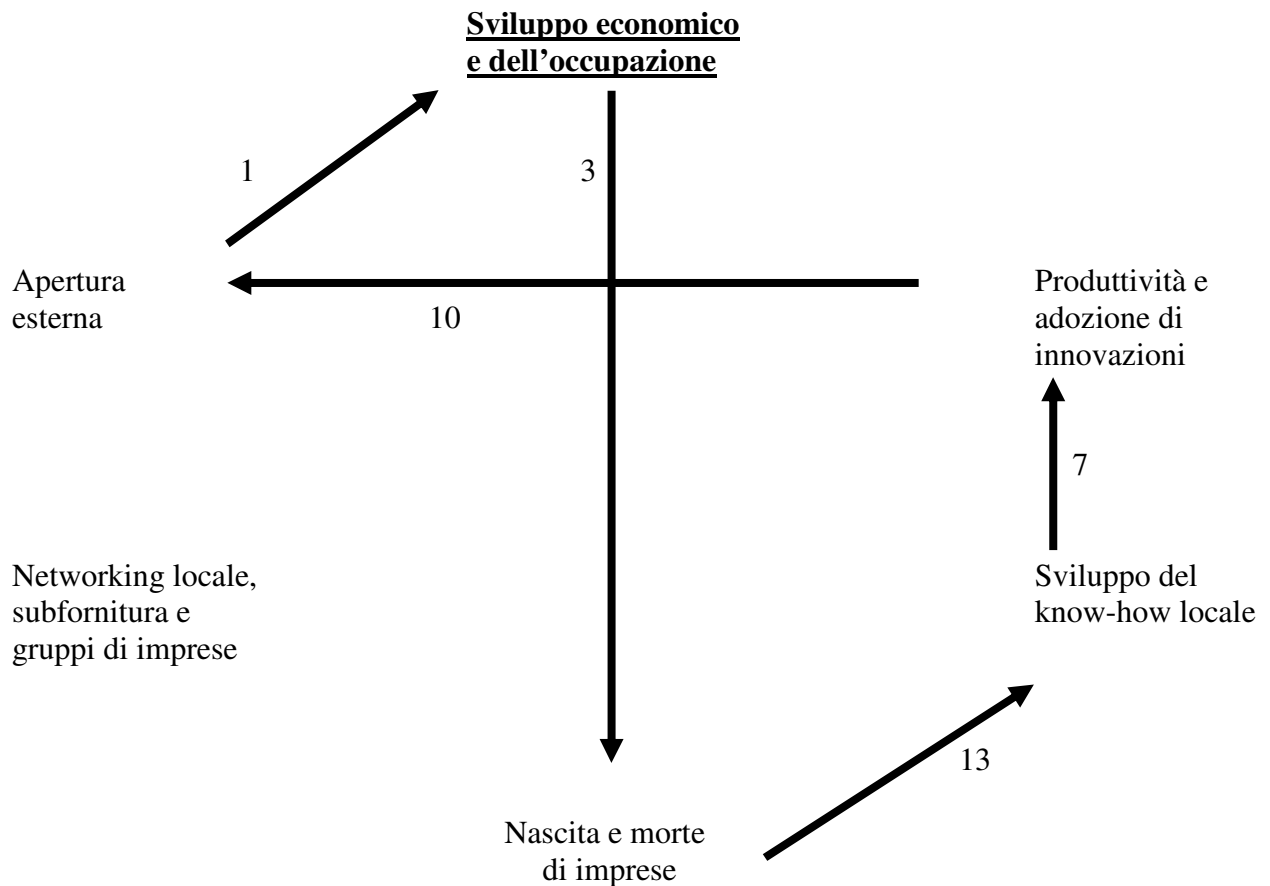


Figura 3: Effetti cumulativi della crescita dell'occupazione e della produzione

Lo sviluppo dell'economia locale stimola la domanda a scala locale di servizi alla popolazione e di subfornitura specialistica alle imprese esistenti e favorisce quindi la creazione di nuove imprese. L'elevata numerosità delle imprese esistenti comporta una maggiore competizione tra le stesse, una maggiore diversificazione delle capacità tecnologiche e organizzative e chiaramente lo sviluppo delle capacità imprenditoriali locali. Questo stimola l'adozione di innovazioni di prodotto, la qualificazione delle produzioni locali e la competitività delle imprese locali sui mercati esterni e quindi la crescita delle esportazioni che rappresentano la componente cruciale della domanda delle produzioni locali e dello sviluppo locale (effetti: 3a-13b-7b-10b-1a).

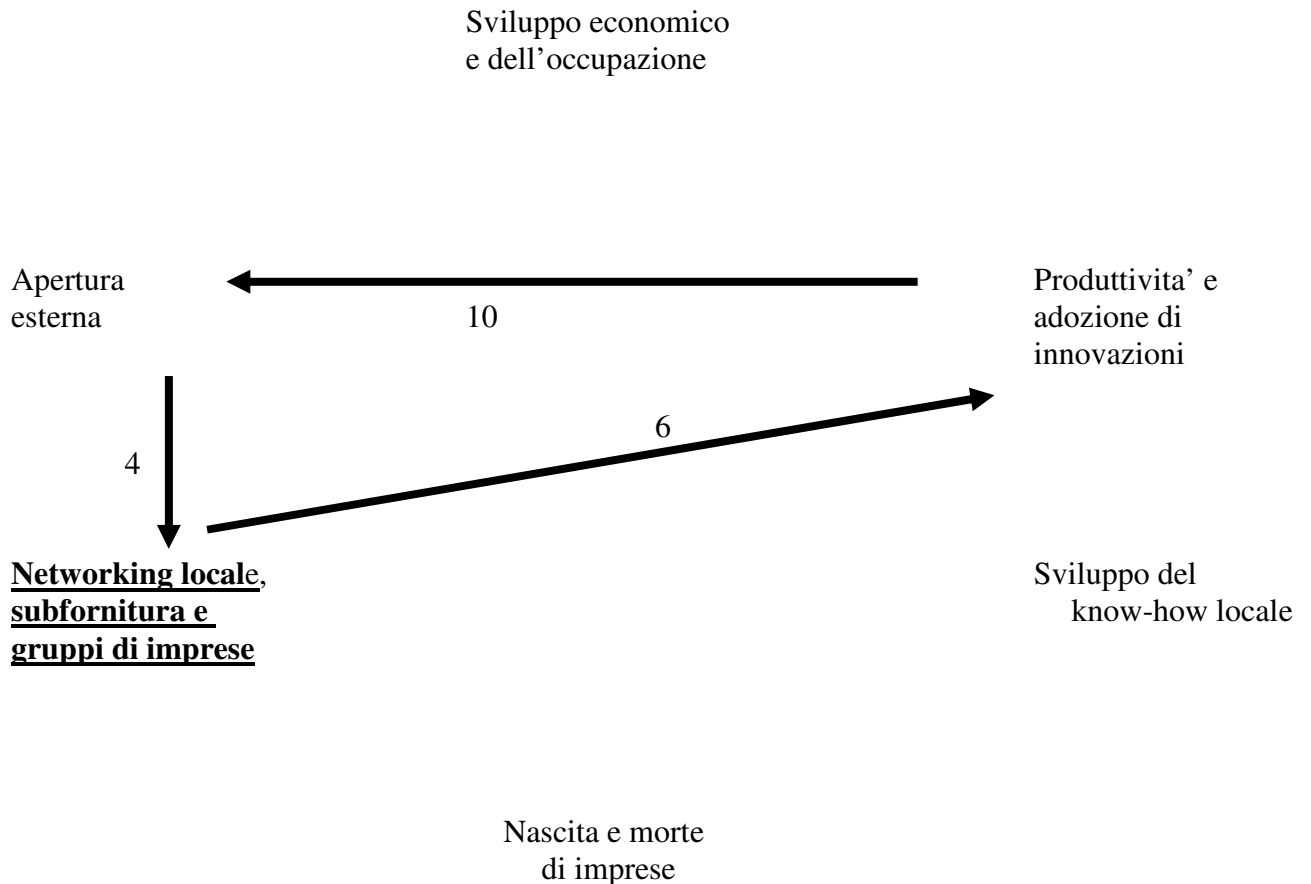


Figura 4: Effetti cumulativi della cooperazione tra le imprese locali

La stretta integrazione tra le imprese locali nelle relazioni di subfornitura e la complementarietà tra le imprese locali aumenta l'efficienza del sistema produttivo locale e favorisce i processi innovativi e quindi la competitività delle esportazioni locali. D'altro lato, la maggiore apertura verso l'economia internazionale stimola la cooperazione tra le imprese locali per fare fronte alle sfide della competizione internazionale (effetti: 6b-10b-4b)

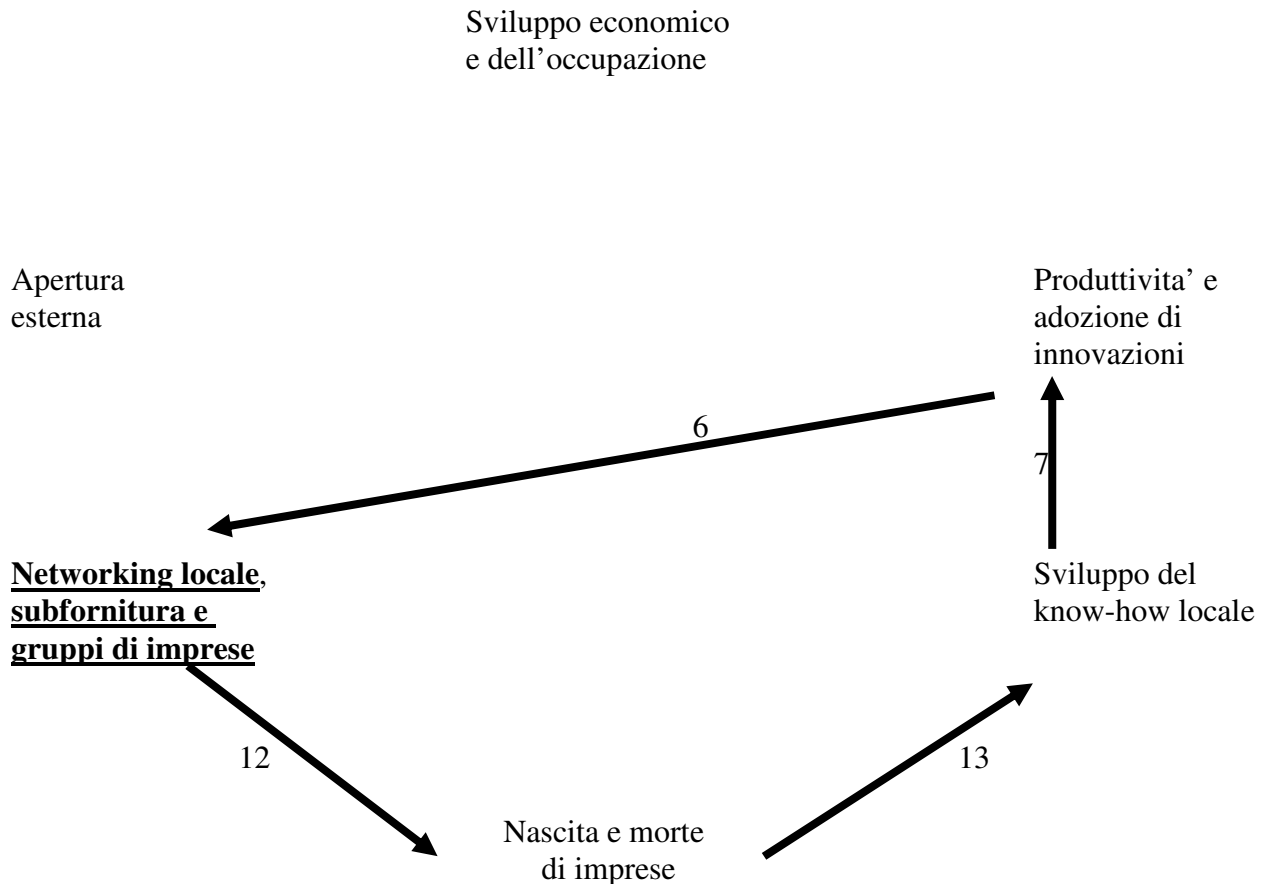


Figura 5: Effetti cumulativi della cooperazione tra le imprese locali

Lo sviluppo delle reti di subfornitura e del networking tra le imprese locali facilita la nascita di nuove imprese e promuove la diversità del know-how tecnologico e produttivo e delle capacità imprenditoriali, che favoriscono la dinamica innovativa. D'altro lato l'accelerazione del processo di cambiamento tecnologico a sua volta stimola la cooperazione o il networking tra le imprese locali, tramite uno sviluppo ulteriore dei processi di esternalizzazione e delle relazioni di subfornitura (effetti: 12b-13b-7b-6a).

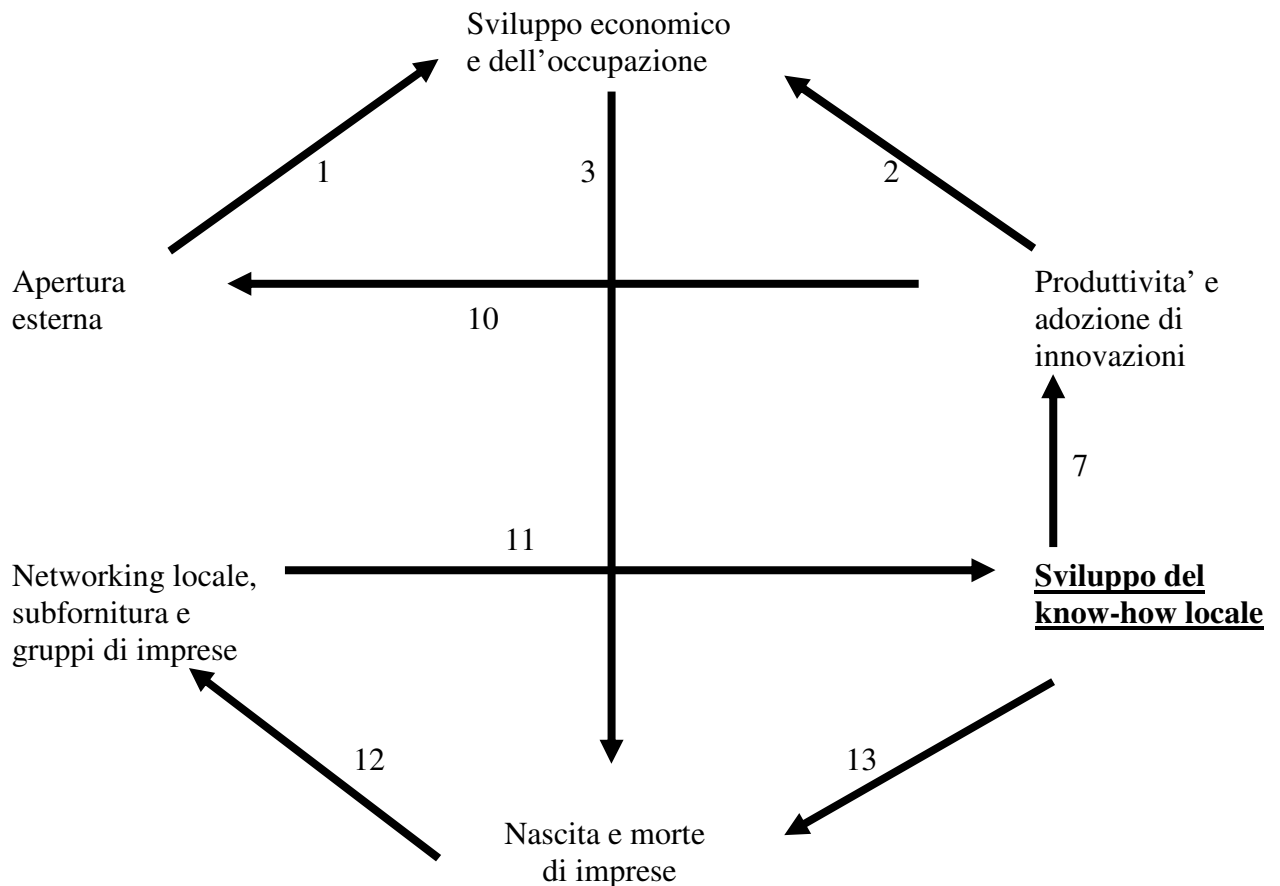


Figura 6: Effetti cumulativi dell'esaurirsi del know-how locale

Il progressivo inaridirsi del know-how produttivo locale dovuto al fatto che esso si basa essenzialmente su processi di apprendimento interni alle singole imprese e non su espliciti investimenti in ricerca né sull'utilizzo di corsi di formazione continua dei lavoratori riduce le innovazioni e la dinamica della produttività. Questo comporta una minore competitività delle produzioni locali, una maggiore dipendenza tecnologica dall'esterno e quindi un minore tasso di crescita delle esportazioni e del prodotto lordo locale. D'altro lato, la minore dinamica della produttività delle risorse endogene locali riduce le capacità produttive locali e comporta un minore tasso di crescita del prodotto (effetti 7b, 2b, e 10b, 1a, 3a).

Inoltre, l'indebolirsi delle capacità tecnologiche e imprenditoriali locali e la minore crescita dell'economia locale comportano una riduzione del tasso di natalità delle imprese e soprattutto delle imprese tecnologicamente innovative ed un aumento del tasso di mortalità. Questo determina una crescente concentrazione settoriale tra le imprese e quindi l'adozione di forme di tipo gerarchico che indeboliscono il processo di "networking" locale.

Infine, anche la forte concorrenza tra le imprese che operano in produzioni molto simili riduce le possibilità di cooperazione produttiva e tecnologica locale. Questo forte individualismo ostacola uno sforzo congiunto nello sviluppo del know-how produttivo locale in termini di attività di ricerca congiunta e l'adozione di innovazioni importanti nei prodotti (effetti 13a, 12a, 11a).

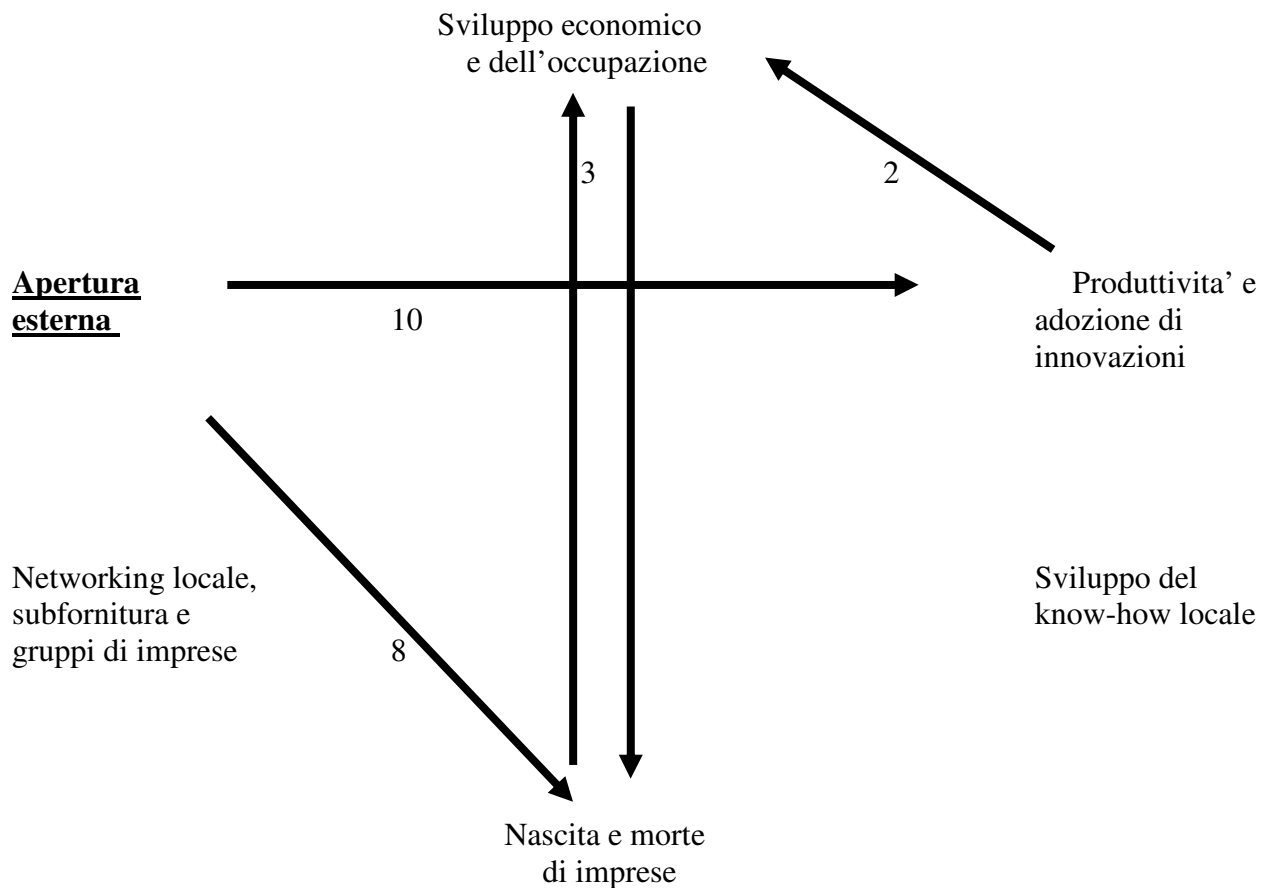


Figura 7: Effetti negativi della globalizzazione sull'economia locale

Il processo di globalizzazione e la crescente concorrenza internazionale possono da un lato determinare la crisi di alcune imprese locali e dall'altro costringere le imprese esistenti a processi di ristrutturazione, con effetti negativi sulle capacità produttive e sull'occupazione locale. (effetti 10a, 2b, e 8b).

In termini negativi sulla nascita di nuove imprese può agire anche la concorrenza esercitata sul mercato del lavoro locale del pendolarismo verso le aree contigue con maggiore tasso di sviluppo. Questo comprime le motivazioni soprattutto da parte dei giovani ad una scelta imprenditoriale.

Questo mette in moto un processo moltiplicativo negativo sui redditi e sull'occupazione tramite la crisi di molte imprese rivolte al mercato locale (3a e 3b). In particolare i quadri tecnici ed i lavoratori licenziati dalle imprese che hanno chiuso possono essere indotti a creare imprese molto piccole che conducono una vita relativamente precaria, senza un mercato consolidato e un know-how distintivo.

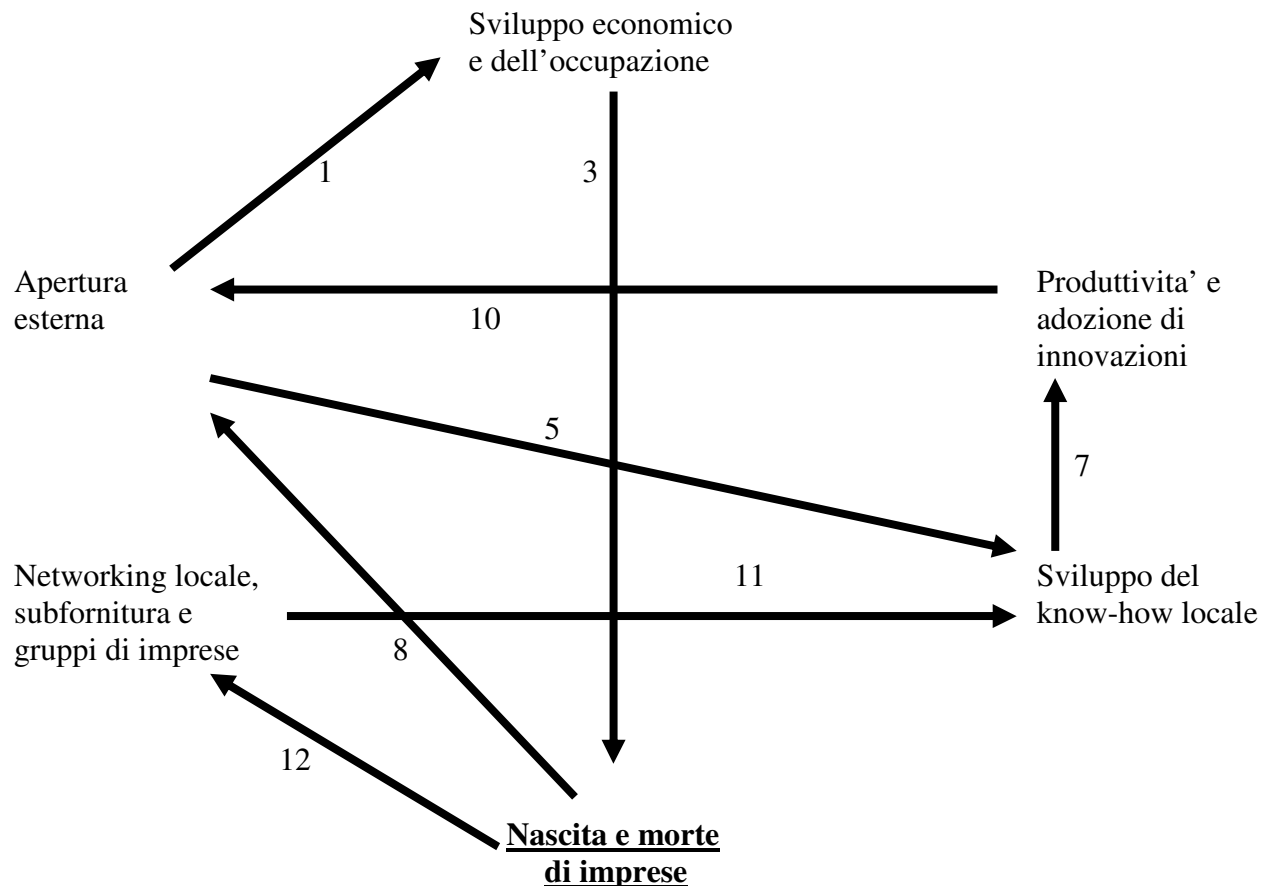


Figura 8: Effetti cumulativi della crisi di imprese locali

La chiusura di alcune di grandi imprese e di molte imprese intermedie mette in crisi il sistema della fornitura, introduce un elemento di rottura nell'organizzazione della rete di rapporti tra le imprese locali.

Questo limita lo sviluppo del know-how tecnologico e la diversificazione dello stesso, rispetto a quello che sarebbe necessario per poter introdurre innovazioni più sistematiche e profonde nelle produzioni tradizionali.

Inoltre, la crisi di alcune imprese locali che attivavano forti flussi di esportazioni comporta una rottura delle relazioni con l'esterno. Anche lo sviluppo inadeguato delle esportazioni e l'orientamento sempre maggiore verso il mercato locale rende più difficile lo sviluppo di rapporti di collaborazione tecnologica con imprese estere, che sarebbe cruciale in un settore condizionato dai rapidi sviluppi delle tecnologie elettroniche e informatiche.

Questo ripiegarsi delle imprese locali su modelli di tipo localistico riduce la velocità di adozione delle innovazioni. La minore adozione di innovazioni determina una minore competitività delle produzioni locali e quindi un rallentamento del tasso di crescita, che a sua volta ostacola la nascita di nuove imprese e quindi isola ancora di più l'economia locale (effetti 5a, 7b, 10b, 1b, 3a, 8a).

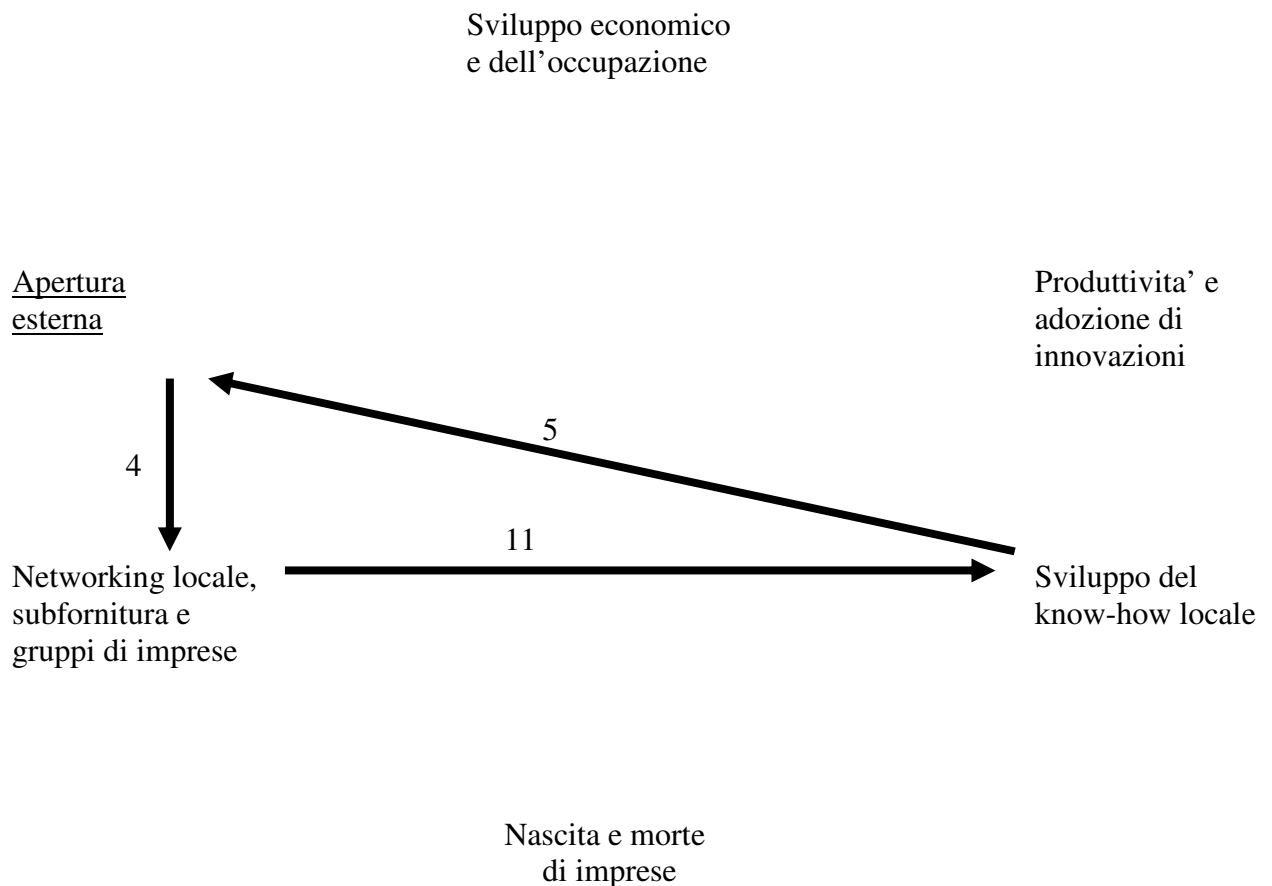


Figura 9: Effetti cumulativi della crescente dipendenza esterna

L'acquisizione di imprese locali da parte di gruppi internazionali comporta una crescente dipendenza dall'esterno e indebolisce il ruolo degli attori locali. Ne segue una riduzione delle forme di cooperazione a scala locale che porta ad un ulteriore indebolimento del processo di produzione autonoma delle conoscenze a scala locale, che aumenta la dipendenza dall'esterno (effetti 4b, 11a, 5b).

In particular, regional income and employment growth is determined by seven factors:

- 1) the stimulus coming from the external openness and the foreign demand as also from the changes in the internal final demand,
- 2) the growth of the production capacity linked to the use of new technologies, the innovation and the investment,
- 3) the process of knowledge creation and learning which improve the human and organizational capital in the local firms,
- 4) the process of firm turnover of the firms or the creation of new firms and the closure of old firms,
- 5) the network relations between the local firms and actors, due to flows of technological and organizational information, capital and people,
- 6) the characteristics of the regional territory and of the regional urban system, the structure of the transport networks and the urban and territorial quality,
- 7) the institutions, the social capital and the forms of governance of the relationships between the various local private and public actors.

The analysis of regional development in Europe indicate that these seven factors interact between them and lead to a continuous increase of employment, production and also of the quality of life in the area.

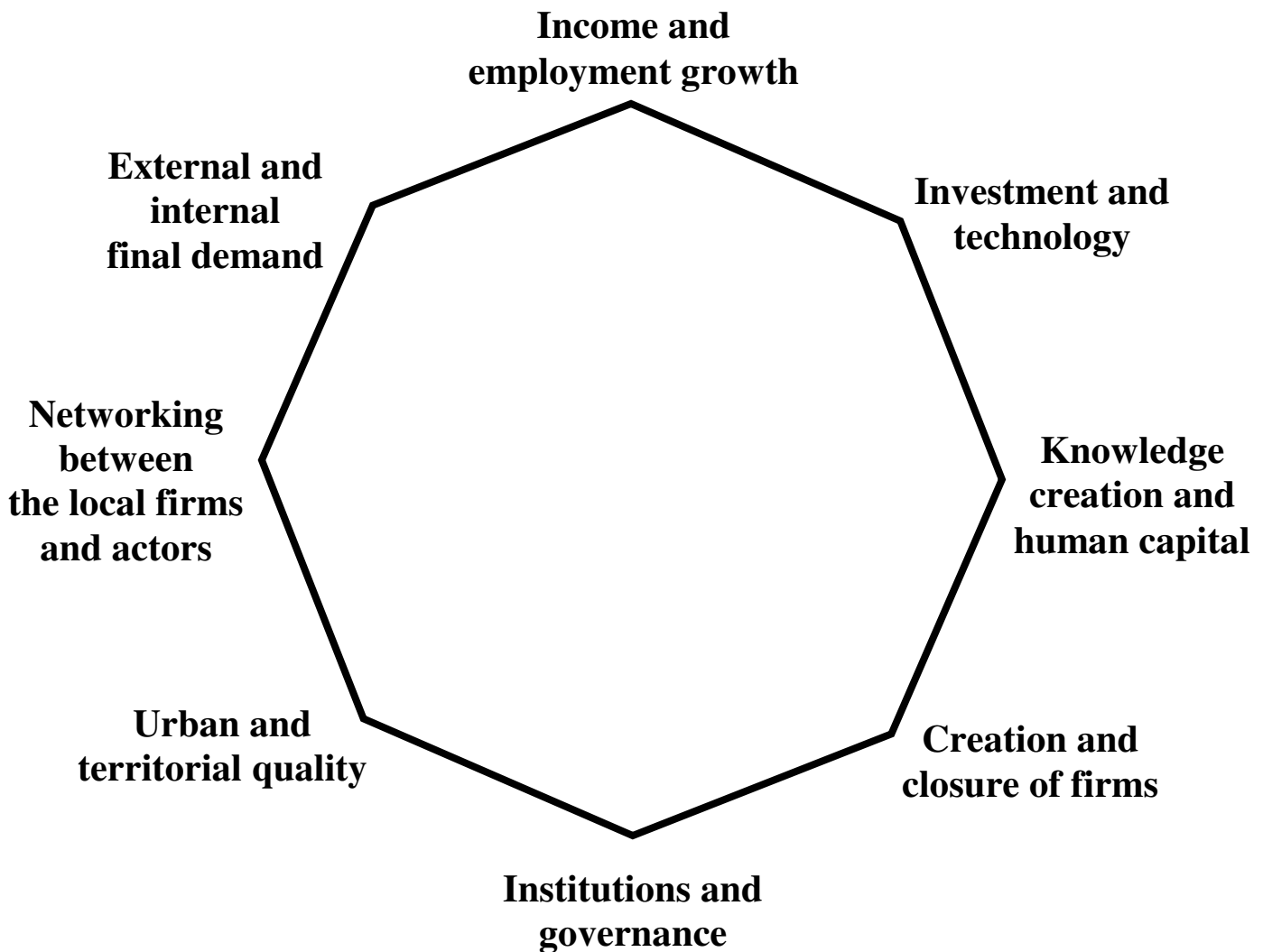
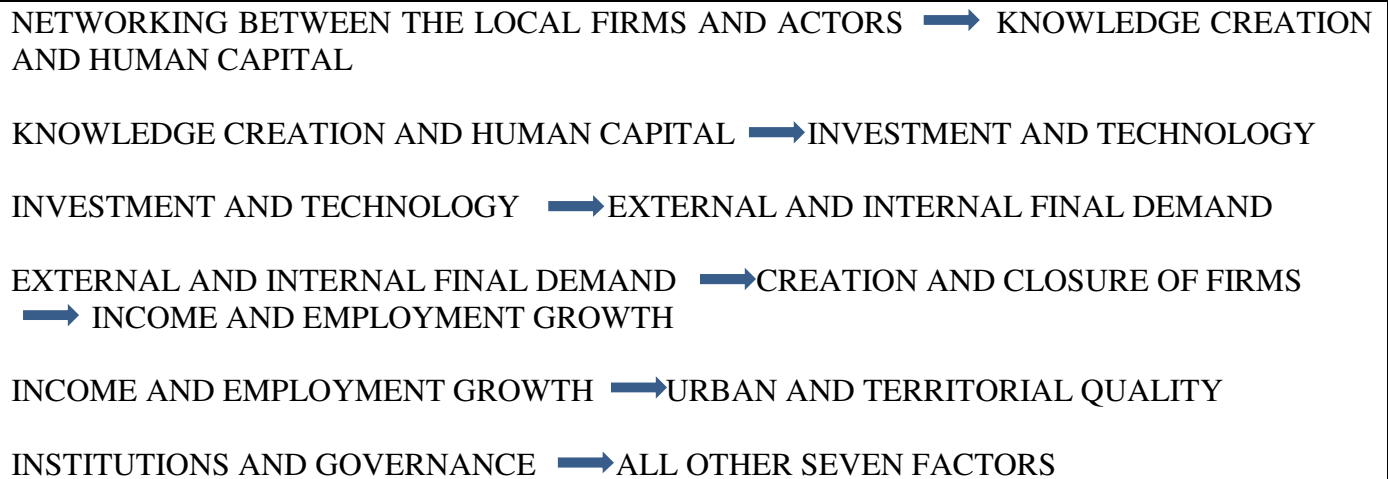


Figure 1
The local network model of regional development
Source: Cappellin and Wink, 2009



In fact, an increase of the network relations between the local firms leads to the development of learning processes by the workers and entrepreneurs and to the creation of new knowledge. That promotes innovation, the change of technologies and new investments in the firms.

That increases and attractiveness of the local economy and the growth of exports and the attraction of foreign capitals as also of external entrepreneurial capabilities.

Networking between the local firms and actors stimulates the growth of new firms in new productions and these firms substitute the firms which naturally close being specialized in obsolete productions.

The economic development of the region modifies the structure of the territory, determines the sprawl of the urban centers and stimulates the improvement of the transport infrastructures, but it may also have negative effects on the natural environment and on the quality of life in the urban areas.

Finally, local policies and the governance of the relations between the local actors should not only positively intervene on the individual factors indicated above, but they should also adjust the relationships between these factors in order to activate a virtuous cycle of development.

In particular, the first three variables in this local network model of regional development:

- a) income and employment growth,
- b) external and internal final demand,
- c) investment and technology.

are considered also in the more traditional demand model and in the supply model, which usually highlights the following relationships.

First, according to a demand perspective, investment and innovation determine international competitiveness and exports and these latter determine income and employment growth, which on their turn stimulate investments and innovation.

On the other hand, according to a supply perspective, investment and innovation increase production capacity and employment and that leads to an increase of exports in perfectly competitive markets and to the increase of foreign reserves and flows of international capitals which lead to greater investments and innovation.

While traditional theories have focused on the role of exports as the driver of regional growth, the internal demand, such as investment in housing and infrastructure or personal consumption, can also be a crucial autonomous factor of employment and GDP growth especially in large urban areas (Cappellin 2012b).

However, what makes the regional/industrial model different from the two aggregated model of demand driven or supply driven growth are the other five variables indicated in the figure 1: knowledge creation and human capital, creation and closure of firms, networking between the local firms and actors, urban and territorial quality, governance and institutions.

KNOWLEDGE CREATION AND HUMAN CAPITAL

- ➡ CREATION AND CLOSURE OF FIRMS
- ➡ INVESTMENT AND TECHNOLOGY
- ➡ NETWORKING BETWEEN THE LOCAL FIRMS AND ACTORS
- ➡ EXTERNAL AND INTERNAL FINAL DEMAND
- ➡ URBAN AND TERRITORIAL QUALITY

First, the knowledge creation and the human capital is the key factor in determining the birth of new firms and the growth of the existing firms, as also in hindering the closure of old firms.

Often the growth of firms is not limited by the constraints of financial funds for investment but by the lack of knowledge of the entrepreneurs and the workers, as that hinders the adoption of modern technology, which would insure the profitability of investments.

In that perspective, knowledge creation and the human capital play a crucial role in the transformation of the firms in the informal economy which may be considered as the incubator of modern activities. That requires a gradual learning processes and the complex combination of tacit with codified knowledge and of artistic, organizational, engineering and scientific knowledge.

Knowledge and learning are the result and also stimulate the networking between the local firms and actors in the framework of "innovation networks", as the increase of the capabilities of the external suppliers leads firms to increase the outsourcing of the non strategic activities to the former. That leads to a continuous diversification and growth of the local economy, as in the Marshall's industrial districts (Cappellin, 2012).

Knowledge creation and learning are also important in the continuous changes of the preferences and needs of the final users and citizens and that may stimulate the growth of new firms in new collective services, such as health, culture, leisure services.

Finally, knowledge creation and learning are important in the management of many public services and in the design of public policies and that has a positive impact on urban and territorial quality.

CREATION AND CLOSURE OF FIRMS

- ➡ INCOME AND EMPLOYMENT GROWTH
- ➡ INVESTMENT AND TECHNOLOGY
- ➡ NETWORKING BETWEEN THE LOCAL FIRMS AND ACTORS

Second, the creation and closure or turnover of firms, is crucial in order to allow an increase of employment and a decrease of unemployment rates between the youths. The creation of new firms is occurring first of all in the informal economy and then these firms gradually move into the formal economy, as they become more efficient and adopt technological and organizational innovation.

The creation of new more productive firms and the closure of less productive firms is stimulating the adoption of innovation and of new technologies.

The creation of new firms is also related to the increasing outsourcing of specific production phases from existing firms, to the diversification of the production systems, and to the creation of network relationships between the firms.

NETWORKING BETWEEN THE LOCAL FIRMS AND ACTORS

- ➡ KNOWLEDGE CREATION AND HUMAN CAPITAL
- ➡ EXTERNAL AND INTERNAL FINAL DEMAND
- ➡ URBAN AND TERRITORIAL QUALITY
- ➡ CREATION AND CLOSURE OF FIRMS

Third, the networking between the local firms and actors is leading to various forms of interactive learning and creation of new knowledge, which is the prerequisite for innovation and adoption of new technologies within the firms.

The networking between the local firms and actors is related to the development of the “social capital” or the “relational capital”, such as various forms of associations, and it increases the social integration and it decreases social disparities. These associations are crucial for the management of “common goods”, such as water and green areas, and also for the production of specific “club goods”, such as private health and education services. That is especially important as there is a continuous evolution of the social needs of the citizens and these types of goods are important in order to tackle the problems of urban poverty and unemployment.

The networking between people is also leading to changes in the final demand by the citizens and by the firms. In fact, major factors of economic and also political changes are the changes of customs by the people and especially those of young people. The process of networking and the combination of market and non-market relationships allow the gradual development of new services and soft infrastructures, which were initially produced within the family or the communities and then evolve into specialized market activities. The networking between the actors requires and stimulates the development of public services and of modern bank and credit institutions, which perform the role of soft or immaterial infrastructures in the relationships between the local actors.

URBAN AND TERRITORIAL QUALITY

- ➡ EXTERNAL AND INTERNAL FINAL DEMAND
- ➡ NETWORKING BETWEEN THE LOCAL FIRMS AND ACTORS
- ➡ CREATION AND CLOSURE OF FIRMS

Fourth, an increase of urban and territorial infrastructures, such as: energy production, ports and highways, and also housing, hospitals and schools, is leading to a greater public expenditures and this latter stimulates production and employment in the public sector and in the economy.

An increase of urban and territorial infrastructures facilitates the cohesion among actors, increases the networking between the local actors and it decreases social inequalities and improves the quality of life.

An increase of urban and territorial infrastructures decreases the agglomeration diseconomies, allows the availability of industrial areas and it facilitates the formation of new firms.

An increase of urban and territorial infrastructures can be financed by greater taxes on income and employment growth but it should also be complemented by the design of more effective taxes on the huge and increasing land rents which are accruing to the real estate sector and determine huge wealth and income disparities, but may also become a key source of infrastructure financing.