

# **Growth in post-industrial cities: an endogenous model**

Riccardo Cappellin

[cappellin@economia.uniroma2.it](mailto:cappellin@economia.uniroma2.it)

June 2014

## *Abstract*

New knowledge promotes the continuous differentiation of the internal needs and demand of users and the reconversion of the specialized human capabilities and internal supply, thus enhancing the creation of new firms and employment. Economic growth is tightly linked with the turnover of productions and of firms, and it is determined by a Schumpeterian process of creation of new productions, new skills and new preferences which replace traditional productions, skills and preferences. According to this model, the role of national and local governments is to promote the growth of internal demand and to create institutions and physical infrastructures in order to facilitate the process of interactive learning, which leads to knowledge creation in urban areas.

## **Key Words**

Knowledge creation, interactive learning model, public and common goods, endogenous model, urban growth, Schumpeterian and evolutionary theory, European integration, European urban and regional policy

## **JEL classification**

H, O, R

## **1 Introduction**

The severe economic crisis which continues since six years, the extremely high unemployment rates especially among young people and the forecast of a long term stagnation with growth rates below 1% for many years impose that every economic policy and also the urban and infrastructural policies are oriented to promote first of all economic growth and employment creation.

The economic crisis in many European countries is determined by the fall of the internal demand, of consumption and especially of investments, since the firms postpone the productive investments and the households postpone the purchase of houses and durable consumption goods, due to the decrease of incomes, the higher taxes, lower employment and the persistent negative expectations. Therefore, the gross fixed investments by the firms, the households and the public administrations should be increased. But a strategy of national and European growth based on a medium - long term modern industrial policy, adopting a territorial perspective, and a new urban and territorial policy, focusing on innovation, has not even been discussed till now. In fact, public discussions focus on the public budgets and monetary policies, leaving behind the needed attention on the real economy and on other economic policies.

A new strategy, aiming to exploit the potential of the internal European market and the new needs of the European citizens, should be adopted in order to restart the European economy and it should be designed from the bottom or from the territory through integrated industrial and infrastructural projects.

Cities have been severely touched by the crisis due to the fall of the production activity in the construction sector and to the fall in private consumption. Cities of tomorrow should innovate and invest for the needs of their citizens. There is not innovation whenever there is not a need and it is well known that the demand of new goods and services is pulling the innovation process. Therefore, the need for a better wellbeing in the European cities may be a powerful force leading to a recovery of economic development.

This article focuses first on the changes in the structure of the final consumption due to the effect of greater education, experience and free time and on the development of new collective and not individual needs, which are tightly related to the production of “common goods”. Then, it illustrates with a conceptual model the process of interaction between the demand and the supply both in the product markets and in the labor market and it characterizes that as an evolutionary process. Finally, it indicates the territorial dimension of this development model and the key role played by intermediate and “smart” cities. The difference with the other growth models and the implications for European policies are considered in the last section.

## **2 A development strategy based on new needs and the demand of common goods**

A first element of a new growth strategy is the fact that, on the demand side, the change in the economy is increasingly determined by the continuous and increasing faster evolution of the needs of the citizens or the users. New productions are spontaneously emerging as a result of the diversification and specialization process from traditional production specializations. The needs and the behaviors of the citizens and the users are quickly changing and even anticipate the investments by the producers and the policies by the institutions.

There is in Europe an enormous demand for new services and products, stimulated by the unsatisfied need for a better quality of life, which represent an increasingly important driver of innovation. The demand by the consumers does not only depend on the income but also on the increasing levels of education and knowledge and experience and also on the increasing availability of free time, which often represents a constraint on the use of new goods and services.

The saturation of the demand for private or individual goods stimulate the diversification into the productions of “public” or “common goods”, such as mobility infrastructures, environment, culture, health, leisure, housing and other goods or services, which respond to basic collective human needs, such as the need for social interaction and geographical mobility.

In the case of “public goods” it is not possible to exclude anybody from their use and the use by someone does not normally hinder the use by others, but these goods have also other characteristics. Moreover, in the case of the public goods, the same quantity of good is shared by various actors. Therefore, the collective benefit is determined by the vertical summation of the individual benefits or of the individual demand. Public goods determine a benefit for everybody and the owner is not capable to appropriate the economic benefits generated for other people and that makes often but not always necessary that the cost of the goods is financed through the taxes on the citizens.

In particular, the “common goods” or precisely the “club goods” (Buchanan, 1965) are the goods the use of which occurs jointly and it is free, although some time it is possible to exclude from the use those who do not fairly contribute to sustain the cost of these goods. However, there are other forms of financing based on the voluntary contribution (philanthropy, mecenatism, crowdfunding) and no profit behavior of the citizens. The reciprocal trust and the sense of belonging to a common group lead everyone to contribute to the cost of the common good according to his individual benefit or capability to pay.

“Common goods” are often services rather than a product and, as in the case of the services, they have an interactive character, since they require the interaction between the producer and the user. Thus, people do not only enjoy of the “common goods”, but often also participate in different ways to their production, devoting part of their free time or participating as volunteer.

In some case, such in the case of knowledge and of culture, differently from the physical goods there is no congestion or rivalry in the use but rather the opposite. In fact, culture and knowledge are not exhausted with the use, while they are generated and enlarged with the common practice or with the interaction between the various individuals.

Common goods often have the characteristics of “relational goods” (Becchetti et al., 2008), since their use does not occur in individual form by the single actor but rather in collective form as in the case of families, social groups and the overall local community considered. Moreover, those who use and produce them receive a benefit from the fact that others are using them at the same time. Often in this goods the volunteer work is integrated with the professional work.

An important reason is the fact that interaction and sense of belonging represent a basic need and its importance is increasing not only among young people but in general for many urban citizens, as the alienation, emargination and disorientation is a frequent malaise in urban areas.

This need for social interaction determines that the new needs, such as a cleaner environment, emerge as collective needs within associations, cultural movements, communities of people, technical and scientific societies, social networks, with increasingly specialized tacit form of knowledge, a strong common identity and the sharing of common values and of common needs. In fact, the increasing needs of “common goods” is a factor leading to the increasing importance of the so called “sharing economy” and to the creation of networks between users and producers. The continuous interaction lead to more advanced knowledge and to the demand of more specialized product and services.

The new ideas are emerging not from centrally planned research processes, but rather through the informal sharing of information and knowledge and tight interactive learning processes (Lundvall and Johnson 1994, Cappellin and Wink, 2009, Cappellin, 2010) between the actors which belong to the same community.

The social behavior of a person is integrated with the behavior of other people. Communities of citizens have a crucial role in “user innovation” (Von Hippel 1994) and users should be considers as “co-innovators”. The production of modern “common goods” requires a tight user-producer interaction and that indicates the key role of non profit institutions, voluntary associations, professional and scientific associations and informal communities of interest and also universities and research centers. In fact, in a modern society a key role is performed by the various urban non profit associations and by autonomous institutions, such as the universities, which can allow the continuous interaction between the individuals and new ideas to gradually emerge. Also the modern knowledge based services may act as intermediary and co-innovators in the flows of information and knowledge between the actors in a modern city.

For example, culture is a “relational good” where the production and the use occur at the same time between various people who all enjoy a benefit from the relationship. The historic and cultural goods are often a meeting place such as a square or a public building, for the citizens of a given local community, similar to the home for the members of the same family. They create the opportunity for collective events and stimulate the cooperative behaviors within a local community.

The historic cultural goods represent the symbol of the local identity and maintain the unity of a local community. They are a factor of cohesion of the local production system and generate trust, stimulate the embeddedness in the territory by the local firms, facilitate the interactive learning processes between the local actors, contribute to the design of a common local development strategy and improve the attractiveness of the territory with respect to external actors.

The “common goods” are part of the local social capital. Often these goods or services require the self-government within communities of specific producers and users and their governance can not be delegated to the national State but it should be done internally or be left to the experts of the field itself. Therefore, common goods, and in particular historic cultural goods require a joint investment by each individual and not only by the public sector, as all citizens in individual or collective form can or should give a volunteer contribution to the investment for the maintenance or the creation of a common good, such as an infrastructure or applied research center or an historic cultural good.

The recovery of investment by the firms requires a stimulus by the internal demand and the weak growth of export is not sufficient. Moreover, investment depends on innovation since only the technological innovation, knowledge and creativity allow to design innovative investment projects which can have an internal rate of return to attract the institutional investors.

It is increasingly clear that the challenge of the economic and social development in Europe depends on the capability to respond to the new needs of the European consumer and citizen. Therefore, a new strategy of economic development in Europe should start from the internal demand and from the investment in the production of new “common goods” in the cities. Strategic sectors are: the prevention of natural disasters, the management of water resources, the environment and the waste management, the mobility of people and the goods logistics, the energy saving and the development of renewable energy, redevelopment and regeneration of derelict industrial areas and unused buildings in an urban environment, the health, the culture, the tourism and the leisure activities and the European territorial integration and transnational cooperation.

These investments may be an important driver of the aggregate demand and of the growth of the European GDP. Greater investments would stimulate many new industrial sectors and also the activities of the engineering and professional services, where many qualified jobs could be created for an increasing educated young labor force.

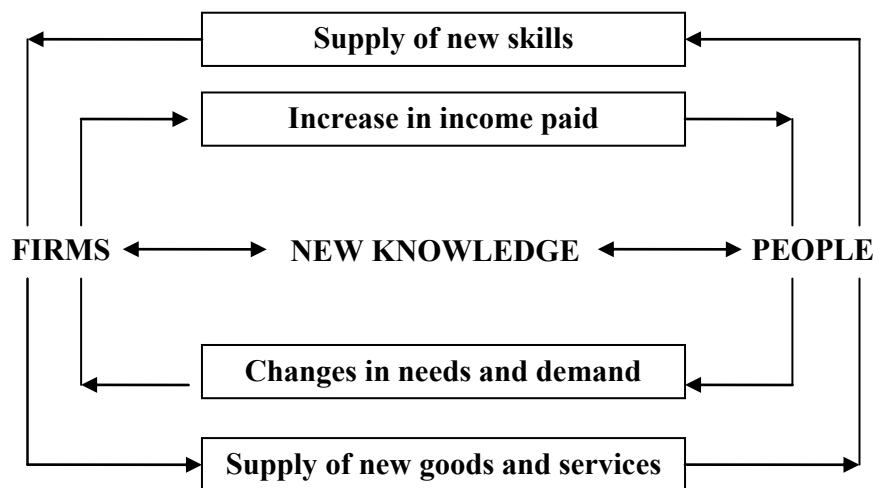
New industrial and regional policies could coordinate the individual urban projects and promote greater public investment in infrastructure and new activities by the public utilities companies. However, these new activities would also be linked to the respective industrial supply chains and to an increase of the production in the sectors of investment and intermediate goods and would lead to the increase of employment in many industrial sectors. These industrial value chains, clusters and networks would be initially oriented to the internal market but may in the future become new sectors of specialization and export. For example, the health services are linked to the biotech and pharmaceutical industries, the construction sector to the new material technologies and the waste disposal services are linked to new energy

production and the energy saving technologies and even the culture and education sectors may be linked to modern media technologies.

### 3 Knowledge and an endogenous model of urban growth

Knowledge is a special good which gets not exhausted with the use, while it can develop gradually together with the same use through the original combination of previous knowledge. This process of knowledge creation is enhanced by the spatial contiguity between the various actors. In this perspective, cities enjoy a competitive advantage with respect to rural areas. The large size of the urban economy allows a greater number of consumers and producers and a great variety of consumer preferences and of labor competencies. Cities have a large market and that insures a great variety of potential clients and a great demand for new activities. Many workers and firms are located in a city and that insures the potential use of a large pool of knowledge or competencies.

The traditional economic approach relates the growth of a city economy to the growth of large industrial firms and the exports of industrial products, such as in the case of automobile productions in Torino, Stuttgart, Paris or Detroit (North, 1955, Tiebout, 1956, Capello, 2007). On the contrary, the process of economic growth in a city may have an endogenous character and the internal demand, made by the local investment and the local consumption of services and goods, may be the driver of the economic growth of a city (Markusen, 2007, Markusen and Schrock 2009) even in the case when exports are not considered. Differently from these previous models, the model of the figure 1 illustrates an endogenous process of economic development within cities, where the driver is represented by knowledge creation or innovation, which affect not only the competitiveness of the supply side but also the structure of the local demand (Cappellin, 2011). In fact, knowledge does not affect only the structure of the “production function” of the firms but also the “utility function” of the people and it affects both the demand of labour of the firms and the demand of goods by the consumers.



**Figure 1: The process of urban growth and the balance between new needs and new skills**

New knowledge has an effect both on the demand for goods/services by people and on the demand for labour skills by firms. It has an effect both on the supply of product innovation by the firms and on the supply of new skills by a more qualified labour force.

First, a greater knowledge has an impact on the demand and the supply of labour in the labour market. Firms exploit the new individual competencies of the workers and combine them in order to adopt the new production technologies needed in the production of new goods or services as also in order to increase the productivity in the traditional productions.

New knowledge leads firms to increase the demand for more qualified occupations and leads the households to supply more educated workers to the firms. The greater productivity of the workers leads to an increase of wages and of the incomes paid by the firms to the workers. These higher wages are crucial for creating the additional demand needed by the firms to produce new products and services.

Second, a greater knowledge has also an impact on the demand and supply in the markets of goods and services. It leads to the development of new needs by the people and to an increase of the demand for more sophisticated and innovative goods and services.

In particular, the success of the new products induces other producers to imitate the first innovators and many other users to adopt the new preferences of the 'lead users' (Von Hippel, 1994). Thus, the new products are selected in the competition with the traditional products and gradually replace them, while they will be replaced in their turn by ever new products in the future.

Firms are stimulated to specialize and to reconvert from the production of traditional products and services to the production of innovative products and services. The tight interaction between the various firms, the availability of a qualified labor force within cities and the combination of their respective competencies stimulate the birth of new firms, which often emerge as spin-off from existing firms.

Thus, the process of development in urban areas is based on the one hand on the increasing differentiation of the local consumption and the growth of new needs by the households and by the firms and, on the other hand, on the continuous reconversion of the firm and of the labor force from traditional services to more modern services.

This process of continuous differentiation of the labor supply and of the production capabilities of the firms together with the differentiation of the pattern of demand by the urban citizens may be defined as a process of "endogenous growth" (Cappellin 2003 and 2011, Cappellin and Wink 2009), since it does not depend on the growth of the external demand and on the attraction of investments from other regions and countries. That makes the economic development in modern metropolitan areas different from the export-led urban development of highly specialized "company towns" during the early industrialization phase of the national economy and also from many small and medium size cities in emerging countries, which base their growth on the attraction of external investments in an increasing globalized economy.

The theories of innovation (Fagerberg, 2005, Chesbrough, 2011) indicate that the changes of the supply are pulled by the changes of the demand by the consumers or the citizens. The diversification of the consumption determines the need for a continuous diversification of productions and the changes of the needs of the users is the main driver of innovation. Thus, the firms have an increasing interest for the new productions, which correspond to the evolution of technology, and the consumers have an increasing interest for the goods, which correspond to their emerging needs, and both these changes lead to the decline of the traditional productions.

Innovations lead to an increase of the demand of the superior goods, such as the demand of services and of the “common goods” discussed in the previous section, and to an increase of the bid price offered by the consumers. Innovations lead also to a decrease of the costs of the firms and to an increase of the quality of the goods or services. On the other hand, new knowledge determines a decrease of the demand and of the relative prices of the more traditional goods and services, such as the individual current consumption goods. That obliges the firms to increase the labor productivity in these productions and when that is impossible the production of traditional goods has to disappear.

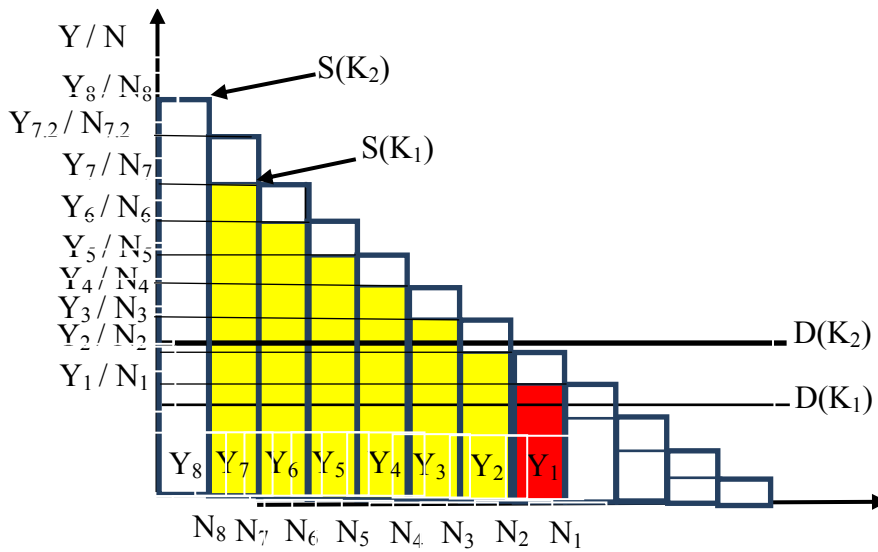
Therefore, the material and immaterial or “cognitive” development of the territory depends on a dynamic and continuously changing balance between the growth of the demand of the innovative users (“lead users”) and the supply of the innovative firms.

Economic growth is determined by a Schumpeterian process of creation of new productions, new skills, and new preferences which replace traditional productions, skills and preferences. In fact, new productions are created and traditional productions are dismissed and a turnover of productions and firms occurs. We may state that the culture, the knowledge, the interaction within the communities of consumers and the users and the increasing experience of trial and error processes are determining a process of “creative destruction, which changes not only the structure of the supply of the various companies but also the structure of the demand by the various consumers. In fact, the new needs are not completely new because new services replace traditional services in order to satisfy the same needs, which already existed although in a less sophisticated form, and new vertically or horizontally diversified services replace traditional services.

The change in the structure of the demand due to the evolution of the needs of the users should correspond to the evolution of the competencies of the producers and the change within the supply from the sectors with lower productivity to sectors with higher productivity. This dynamic process of interdependent development of the demand and of the supply of new productions within an individual city increases the per capita income of the urban areas, quite independently from the effect of the exports to the external markets.

That dynamic balance between the innovative demand and the innovative supply may be represented as a boat with eight rows, there the four left rows pull to the right and the four right rows pull to the left, but their forces are balanced and they jointly fast push the boat forward, while the skipper give the timing and the direction, as also public institutions should do with their regional and industrial policies.

Figure 2 illustrates the tight relationship between the changes in the demand and in the supply in the process of economic growth. The supply schedule ( $S$ ) indicates the productivity level of labor in the various sectors considered according to a decreasing level of productivity. The demand schedule  $D(K_1)$  indicates the minimum productivity level required to insure a competitive price in the case of the traditional goods and indicates the sectors which are competitive and not competitive in the region considered, since their productivity should be higher than the minimum level given the prevailing cost of labor. Thus, the supply schedule  $S(K_1)$  indicates that, in the first period, only seven classes have a productivity greater than the minimum level of productivity that is required by the demand by the users  $D(K_1)$ .



**Figure 2 : The dynamic balance between the structural change of the supply and demand in the economy**

Both the supply and the demand schedule shift higher in time since the productivity increases due to the use of new knowledge or the effect by innovation on the production capabilities of the firm and, on the demand side, due to the changing needs and the greater demand of goods with higher quality by the consumers. In the second period, the greater knowledge ( $K_2$ ) determines an increase of the productivity of all firms in the various classes and the supply schedules become the  $S(K_1)$ . However, also the minimum level of productivity that is required by the demand by the users increases to the new level  $D(K_2)$ . Therefore, greater knowledge determines a parallel shift both of the needs of the users ( $D$ ) and of the capabilities of the firms ( $S$ ). These two shifts interact between them and lead to higher economic growth.

In each period the new superior goods ( $Y_8$ ) are introduced in the market while the production of some traditional goods ( $Y_1$ ) disappear due to the decrease of the respective demand. The firms in the first class ( $Y_1$ ) are obliged to exit from the market and the new employment ( $N_8$ ) in the new productions does not necessarily compensate the lost employment ( $N_1$ ).

The graphical model of figure 2 is only considering a part of the theoretical model indicated in figure 1: i.e. the product market equilibrium. It does not consider the other processes, which are indicated in this latter model, such as the process of interacting learning which is leading to the creation of new knowledge and its impact on firms and people and it does not consider the equilibrium in the labor market of skilled labor.

The total value of production is indicated by the integral of the supply schedule and it increases with time, due to the increase of productivity in those productions which survive in the new period and to the substitution of the more efficient productions to the less efficient productions. Thus, employment shifts from lower to higher productivity productions.

The growth rate of the GDP depends on the contemporaneous changes of the demand and the supply, which tightly interact between them, due to the interactive nature of the learning processes in the innovative communities, made by “lead users” and innovators, and due to the



tight interaction between the producers and the user, which characterizes the service productions.

This process of increasing specialization and market selection is very similar to the creation of variety and the increasing division of labor through the birth of new firms described by the modern evolutionary approach, and also by Marshall (1920) in the case of the 'industrial districts' consisting of small industrial firms, where the division of labour and increasing returns are more the result of a dynamic process of learning, variety creation and specialization than the result of static economies of scale, as in Adam Smith's approach.

This model is also similar to the model developed by Pasinetti (1981 and 1992) that considers the case of producer learning, which results in productivity growth and product innovations, and of consumer learning, which leads to the adoption of new consumer goods and a change in the composition of final demand. The diffusion of new consumer goods requires not only the use of new knowledge in production technologies but also new knowledge among consumers, who learn new preferences and discover new needs. A higher per-capita income entails a qualitative change of preferences, which shift towards higher quality goods and services. It also entails a quantitative increase in the demand for goods which allows the increase of output capacity in the aggregate supply to be balanced by an increase in the aggregate demand.

Differently from Pasinetti's model, however, the preferences of consumers in my model do not depend only on per-capita income according to the Engel's law, but also on the increasing free time allowed by higher labor productivity, and on a process of interactive learning with other consumers which may occur in the long term even if per-capita income remains constant. Moreover, my model considers not only the effect of new knowledge on the behaviors of people as consumers, but also the learning activity of workers occurring within the autonomous professional communities of the workers and leading to improved competencies. This is a process distinct from the learning process within firms, because the latter must introduce product and process innovations, and they must recruit workers with the skills most suitable for use in the production of those new goods and services demanded by a continuously evolving market.

A key problem in the economy is that the new demand for new goods and services does not automatically correspond to an increase in aggregate demand because the demand shifts from the traditional goods and services which enter crisis to new goods and services. Consequently, the new productions should be matched by new demand for those same productions.

This balance between demand and supply of new productions is more easily ensured in the case of services and of "common goods". In fact, in the case of services stocks are not feasible because the delivery of a service by a producer should be accompanied by the use of the same service by the user. In particular, the balance between supply and demand occurs in the case of 'user innovations' (Von Hippel 2001), where an individual actor produces a new good to respond to his/her own specific and important need. A third case is that of the 'innovation communities', where the correspondence between demand and supply is gradually achieved through continuous interactions and a trial and error process, since both producers and users participate in a process of interactive learning and in the development of product innovations.

#### **4 Territorial relationships and the smart cities**

The model of endogenous development which is described in the two previous sections indicates the role of the territory, since the geographical proximity (Cappellin, 1988, Howells,

2002, Boschma, 2005) allows tighter relations between the user and the producers of new goods and services.

The regional embeddedness of modern productions is increasingly less determined by a tight integration through material flows with the suppliers located in the same cluster, while it is increasingly determined by immaterial flows of technology and knowledge.

The greater variety within cities facilitates creativity or the original combination of the previous knowledge of producers and consumers. Moreover, it leads both to the discovery of new improved goods and services by producers and to the development of new needs by users. This process also gives rise to the creation of new firms.

Technological change can thus be interpreted as a gradual or recursive change in the organization of a regional innovation system which induces each producer and each user to identify their best role in the localized network considered (Cappellin 2003). The structure of this network evolves over time from previous structures of the same network and according to physical, organizational/institutional and cognitive proximity among the various nodes of the network.

In this perspective, the starting point of a program of regeneration and reconstruction of the European economy after the crisis is the territory. The success of innovative projects depends on the entrepreneurial capabilities, the competencies and the human and production resources which are embedded in a given territory. However, it is in the territory and in the urban areas that new emerging needs and demand for a better environment and quality of life emerge and create new opportunities of investment into new good and services, such as the “common goods” indicated in the previous sections.

The territory does not perform a passive function as the location of the various activities. On the contrary the territory has a positive role in the development of innovation (Cappellin, 2007). In particular, the territory perform three functions: a) it unites the people between them in the demand and in the development of new services of collective use, b) it connects the firms between them in the development of complex and intersectoral innovations and finally, c) it links the demand by the people to the supply by the firms. In fact the territory unites between them the various consumers and citizens who live in a given territory and that stimulates imitation and diversification processes which determine the creation of new goods and services. The territory connects between them the various producers allowing the combination of the complementary competencies and stimulating the specialization and the development of innovation and new productions. The territory links the production with the demand, since the growth of the demand stimulates the development of the supply and the existence of potential production capabilities induces a change of the existing demand patterns and the growth of the demand of new goods and services.

Due to the original nature of these links between the various actors and of these forms of combination of different pieces of knowledge, the territory may be qualified as “smart territory”. In particular, the smart city is that city which develops by promoting a dynamic and ever new equilibrium between the growth of the demand by the innovative users and the supply of the innovative firms and it is since characterized by innovation. The smart city is not a place where new advanced and costly technologies are applied, but rather in a wider and precise perspective a city where new knowledge is generated and which fast innovate.

The city combines in a creative way the complementary internal and external knowledge to the territory and stimulates the speed interaction between the local actors, leading to interactive learning processes. Moreover, a smart city or territory creates innovation, by combining in a

smart way both the competencies and the different and complementary codified knowledge, which exists in a local system of firms, and also the needs and demand of innovative products and services, which develop in the communities of citizens and users.

Cities are not only production centers, which compete in the global markets with other centers, but also the places of living of the citizens. Cities are the places where the citizens enjoy living together. In fact, cities since the time of the Greek and Roman cities, are characterized by public places such as squares (the agora/forum) or stadium (the theatre). In particular, intermediate cities have a crucial role in the European territory and the economic development. The European intermediate cities are characterized by a high level of wellbeing (Eurostat, 2008) and this latter is the result of a balanced relation between the working time and the leisure time, to be used both for individual need and also for developing the relationships with others. For these reasons, European intermediate cities represent a model or a pattern of living which is different from that which prevails in the global metropolis and also in the intermediate centers of the non-European countries, highly specialized in manufacturing.

Therefore, the intermediate cities represent a paradigmatic case of a new phase of the European economic and social development, when the “common goods” become more important than the export of manufacturing products, as it occurs in the traditional manufacturing towns, or more important than the consumption of standard goods, as it occurs in the global metropolis.

It is possible to conclude that the large metropolitan areas and the intermediate cities perform a fundamental role in the recovery of the European economy. It is possible to identify first in these urban areas before than in other areas the new productions – both industrial and tertiary – which would allow the diversification of the production system in Europe and new specializations in the global competition.

## **5 Conclusions**

The European Union 27 represents more than 30% of the world GDP and the European exports are greater than those of US and of China. It seems highly difficult that Europe can base its growth in the future on the net exports to the rest of the world and that other areas can increase their imports from the EU without also exporting to the EU. Moreover, the trade balance of the EU is roughly in equilibrium or negative and its net contribution to GDP is almost zero or negative. Thus, the economic growth of the European economy should increasingly be based on the growth of the internal demand and on the increase of the aggregate productivity.

In particular, to return the European Community to a growth trajectory comparable to that indicated by the other global areas and countries, such as US, Japan, UK, China and the emerging countries, there is the need of a massive wave of innovation, of finance and of material and immaterial investment capable to up-lift the European production system and take it outside the actual condition of long term stagnation.

Similarly, policy strategies to promote urban competitiveness and growth in large metropolitan areas of modern knowledge economies should differ from the traditional ‘export-led’ strategy usually adopted in smaller traditional industrial cities, as they should focus more on the internal demand. In fact, post-industrial cities, and especially large metropolitan areas, are different from the many small urban centres, where the economy depends on the exports of a few large industrial companies.

Differently from the traditional Keynesian approach and the urban export base model (North 1955), where marginal increases in demand, and especially in exports to other regions and countries, lead to marginal or additional increases in the supply or in GDP, the economy in large metropolitan areas develops according to an 'endogenous model' based on the increasing differentiation both of internal supply and of the internal demand, determined by innovation. That, is a different case from that of growth through import substitution, as indicated also by Tiebout (1956) and others, which consider the increasing competitiveness of the internal supply but does not consider the changes in the demand structure and the reorientation of this latter from the purchase of traditional externally produced goods to that of new advanced services (i.e. the "common goods"), which can only be produced internally and can't be imported. Thus, it is also possible to state that the new engines or drivers of the economy not only in a modern city but also in a much larger area, such as Europe, may be the emerging needs of citizens, rather than exports. According to the endogenous growth illustrated in this article, growth is determined by "change" or by the substitution, not only in the supply but also in the demand, of traditional goods and services by new more efficient goods and services. In fact, it is important to recognize the profound interdependence between the growth of aggregate demand and supply.

In developed countries like those of Europe, there are numerous economic needs and production fields which, from a long and medium-term perspective, seem still underdeveloped and which may represent opportunities for profitable investment by public and private organizations. Thus, the weaknesses of the European cities are indicative of untapped potential not only at the local level but also for re-launching national growth. New investments would not only increase the competitiveness of the national economy in the medium term, they would also have an immediately positive impact on aggregate demand and GDP.

The European cities may be the point of departure for a new approach to the economic policies in the European Union. Since too many years national governments have underinvested in their cities, which suffer a clear problem of undercapitalization, in terms of public investment in infrastructures, modernization of services, maintenance and management. Thus, there is the need of large European programs aiming to the recapitalization of European cities and to the improvement of the wellbeing of their citizens.

The adoption of an European urban policy is a priority, since it could contribute to the recovery of the capital expenditure in infrastructures and in the production of new modern services within cities and that would certainly decrease the actual too high distance between the European institutions and the citizens. A strategy of urban driven European growth is a typical case of non zero sum game, which can increase the thrust on the European institutions, as it would help the many urban areas, which share the same problems.

The European institutions have experimented ad hoc urban policy measure since long time (Urban pilot initiative, European Spatial Development Perspective, Smart Cities program) but a coherent urban policy integrated with the regional policy, the social policy, the transport policy and also the industrial, innovation and macroeconomic policy is still lacking.

The new planning period 2014-2020 of the Community Funds may be useful in order to give and European perspective to the new a new development strategy of the European economy. The strategy of development indicated in this article is compatible with that indicated in the "Europe 2020" communication of the European Union (European Commission 2010).

In particular the measures of the "Urban Agenda" and the increasing focus of the regional policies of the European Union on the urban areas – both the large metropolitan areas and the territorial networks of intermediate and small cities – may be the starting point of a tighter

integration of the industrial policies and the regional and territorial policies. However, both in Italy and in many other countries a “national urban policy”, which could stimulate the national economy through private and public investments at the local and regional level in a strategic framework defined at the national level, is still lacking.

However, a change in the fields of policy action should be also accompanied by changes in the forms of public governance, and by the enhancement of the initiatives by private actors. Germany indicates a policy instrument, which may be adapted to other countries, such as that of the IBA (Internationale Bauausstellung), which is similar to a no-profit engineering company capable to promote large private and public investments for the renewal of large regional and urban areas.

There is also the need to develop new financial intermediaries, who specialize in the financing large infrastructure and industrial innovation projects through “projects bonds” to be sold in the global financial markets, where the interest rates are almost zero. The development of new forms of public – private partnership requires that the public administration perform a specific role in the innovation process by steering the administrative procedures and insuring a privileged and easy path for some selected large and strategic projects by the private actors.

Clearly, the creation of new markets requires coordination at the local level. Cities and regions are closer to people and firms, and they can be more efficient than national governments in aggregating local needs and the capabilities of people and firms, and in stimulating private consumptions and investments. Therefore, the strategy of national development suggested by this article cannot be implemented without a greater role of cities and regions, and it cannot be left only to national governments.

## 6 References

- Becchetti, L., Pelloni, A. and Rossetti, F., 2008, Relational goods, sociability, and happiness, *Kyklos*, Vol 61, Issue 3, 343-363.
- Boschma, R.A., 2005, Proximity and innovation: a critical assessment, *Regional Studies*, Vol 39, 61-73.
- Buchanan, J.M., 1965, An economic theory of clubs, *Economica*, Vol 32, 1-14.
- Capello, R., 2007, *Regional Economics*, London, Routledge.
- Cappellin, R., 2011, Growth, consumption and knowledge cities, *Symphonya. Emerging Issues in Management*, Vol. 2, 6-22.
- Cappellin, R., 1988, Transaction Costs and Urban Agglomeration, *Revue d'Economie Régionale et Urbaine*, Vol. 2, 260-278.
- Cappellin, R., 2003, Networks and technological change in regional clusters, in: Bröcker J., Dohse D.C., Soltwedel R. (eds.), *Innovation Clusters and Interregional Competition*, Berlin, Springer: 52-78.
- Cappellin, R., 2007, Learning, Spatial Changes, and Regional and Urban Policies: the Territorial Dimension of the Knowledge Economy, *American Behavioral Scientist*, Vol. 50, Issue 7, 897-921.
- Cappellin, R., 2010, The governance of regional knowledge networks, *Scienze Regionali*, Vol. 9, Issue3, 5-42.

- Cappellin, R. and Wink, R., 2009, *International Knowledge and Innovation Networks: Knowledge Creation and Innovation in Medium Technology Clusters*, Cheltenham, Edward Elgar Publishing.
- Chesbrough, H., 2011, *Open Services Innovation: Rethinking Your Business to Grow and Compete in a New Era*, Jossey Bass, San Francisco.
- European Commission, 2010, *EUROPE 2020: a strategy for smart, sustainable and inclusive growth*, Communication from the Commission, 3.3.2010
- Eurostat, 2008, The Urban Audit — measuring the quality of life in European cities, General and regional statistics, *Statistics in focus*, Issue 82/2008.
- Fagerberg J., 2005, Innovation. A guide to the literature, in: Fagerberg J., Mowery D.C., Nelson R.R., *The Oxford Handbook of Innovation*, Oxford University Press, Oxford, 1-26.
- Florida, R., 2002, *The Rise of the Creative Class*. Basic Books, New York.
- Howells, J., 2002, Tacit Knowledge, Innovation and Economic Geography, *Urban Studies*, Vol. 39, Issue 5-6, 871-884.
- Lundvall B.A. and Johnson B., 1994, The Learning Economy, *Journal of Industry Studies*, Vol. 1, Issue 2, 23-42.
- Markusen A., 2007, A Consumption Base Theory of Development: An Application to the Rural Cultural Economy, *Agricultural and Resource Economics Review*, Vol. 36, 1-13.
- Markusen A. and Schrock G., 2009, Consumption driven urban development, *Urban Geography*, Vol. 30, Issue 4, 344-367.
- Marshall A., 1920, *Principles of Economics*. London, Macmillan.
- North, D., 1955, Location theory and regional economic growth, *Journal of Political Economy*, Vol. 63, 243-258.
- Pasinetti, L., 1981, *Structural Change and Economic Growth*, Cambridge, Cambridge University Press.
- Pasinetti, L., 1993, *Structural Economic Dynamics - A theory of the economic consequences of human learning*, Cambridge, Cambridge University Press.
- Tiebout, C., 1956, Exports and regional economic growth, *Journal of Political Economy*, Vol. 64, 160-169.
- Von Hippel, E., 1994, *The Sources of Innovation*, Oxford, Oxford University Press.