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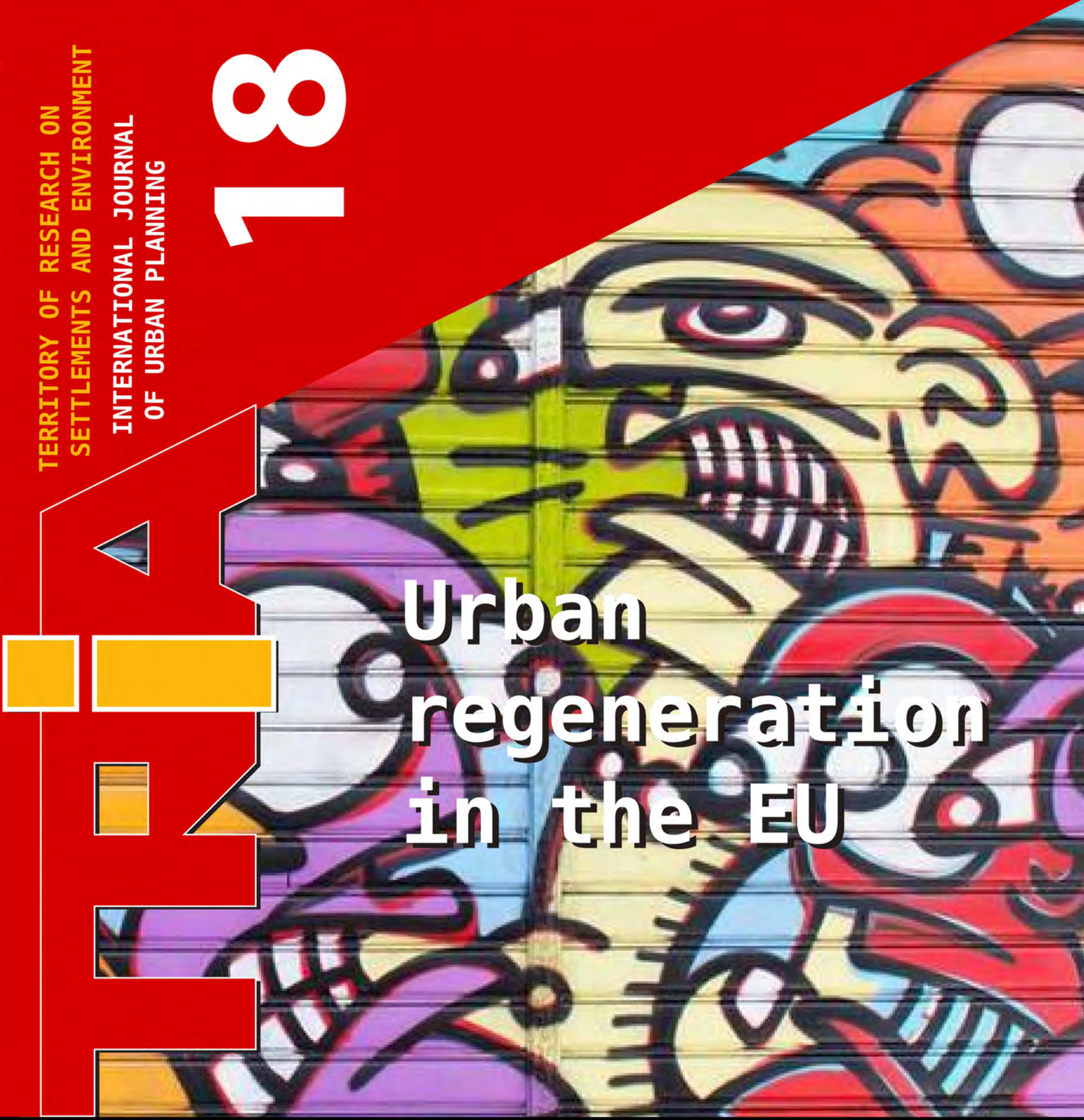

Urban regeneration in the EU

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Sonia De Gregorio Hurtado coordinated this issue with the editorial board

sommario

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abstract

Urban regeneration in the UE through the reciprocal relationship between greenfield FDI and smart cities

Stefano de Falco

Abstract

During the last three decades, the European Union has paid increasing attention to the key role that cities play in the development of the European territory and their potential contribution to addressing the economic, climate, environmental and social challenges that the UE continues to face .

This tendency to place cities within broader, even supranational, scenarios is due to the fact that the phenomena of globalization and the predominance of an economy now more based on the intangible than on the exchange of physical goods has led to a dis-integration vertical of productive processes, which apparently could weaken the role of

the cities themselves, but at the same time triggered a great concentration of resources in the nodes of management of supranational processes, with consequent amplification of urban value. These nodes are made up of cities with certain characteristics that make them, even through urban regeneration processes, intelligent cities.

This theme can be approached with different metrics and from different points of view. In the proposed work, the path of analysis followed is given from the research regarding the eventual mutual correlation between FDI, Foreign Direct Investments and urban regeneration driven by a smart cities perspective.

Key Words

Geography of innovation, urban regeneration, smart city, FDI foreign direct investments.

La rigenerazione urbana nell'UE attraverso la relazione tra investimenti diretti esteri (FDI) e le smart cities

Negli ultimi tre decenni l'Unione europea ha prestato sempre più attenzione al ruolo fondamentale che le città svolgono nello sviluppo del territorio europeo e il loro potenziale contributo per affrontare le sfide economiche, climatiche, ambientali e sociali con le quali l'UE continua a confrontarsi.

Questa tendenza a collocare le città all'interno di scenari più ampi, anche sovranazionali, è imputabile al fatto che i fenomeni di globalizzazione e il predominio di un'economia ormai basata più sull'intangibile che sullo scambio di beni fisici, ha determinato una disintegrazione verticale di processi produttivi, cosa che apparentemente avrebbe potuto indebolire il ruolo delle città stesse, ma contemporaneamente ha innescato una iper-concentrazione di risorse nei nodi di gestione dei processi sovranazionali, con una conseguente amplificazione della valenza urbana. Tali nodi sono costituiti da città con determinate caratteristiche che le rendono, anche attraverso processi di rigenerazione urbana, città intelligenti.

Tale tema può essere approcciato con diverse metriche e sotto diversi punti di vista. Nel lavoro proposto l'analisi seguita è quella della ricerca della eventuale mutua correlazione tra investimenti diretti esteri e rigenerazione urbana secondo la prospettiva delle smart cities.

Parole Chiave

Geografia della innovazione, rigenerazione urbana, città intelligenti, investimenti diretti esteri.

Urban regeneration in the UE through the reciprocal relationship between greenfield FDI and smart cities

Stefano de Falco

1. Introduction. From Urban regeneration to smart cities

The past few years have been characterized by very high growth of FDI that have exceeded both world output and world trade. The growth of international production is driven by economic and technological forces. It is also driven by the ongoing liberalization of FDI and trade policies. In this context, globalization offers an unprecedented opportunity for developing countries to achieve faster economic growth through trade and investment (Osano and Koine, 2016) . In the period of 1970s, international trade grew more rapidly than FDI, and thus, international trade was more popular than other important international economic activities (Rutihinda 2007). This situation changed dramatically in the middle of the 1980s, when world FDI started to increase sharply. In this period, the world FDI has increased its importance by transferring knowledge and technologies and establishing marketing and procuring networks for efficient production and sales internationally (Swenson 2004). Through FDI, foreign investors benefit from utilizing their assets and resources efficiently, while FDI recipients benefit from acquiring knowledge and technologies and from getting involved in international production and trade networks. In the past, the determining factor for a particular firm to establish production facilities abroad has been the prospect of earning higher profit which has induced firms to invest abroad, primarily because of lower labor costs whereas traditional theories on trade and investment assumed that factors of production, such as labor and capital, were not internationally traded (Rutihinda 2007).

Damooei and Tavakoli (2006) argue that FDI is critical as it provides a major source of capital which brings with it up-to-date technology contributing to economic growth.

It would be difficult to generate this capital through domestic savings, and even if it were not, it would still be difficult to import the necessary technology from abroad, since the transfer of technology to firms with no previous experience and high knowledge of using it is difficult, risky, and expensive (Sharma and Gan, 2004).

So, in this frame, it seems evident that a city to become smart city, based both on the more advanced technologies and both on the more high knowledge, must attract FDI.

A multitude of definitions of smart city exist, however, none are universally acknowledged (Wall and Stavropoulos, 2016). Previous analogies include intelligent city, knowledge city, ubiquitous city, sustainable city and digital city (Cocchia 2014). More importantly, in terms of content, strong differences exist, e.g. the role of technology in linking people and institutions (Belissent and Giron 2013; Nam and Pardo 2011; Coe, Paquet, and Roy 2000); the importance of human capital in bridging the gap between education

and productivity (Florida and Mellander 2012; Storper and Scott 2009; Shapiro 2005); and the need for greater environmental consideration in city planning (Fitzgerald 2010). Most of these definitions are based on standard indicators, such as education levels, creative class, mobility, ICT and environmental quality (Caragliu, Del Bo, and Nijkamp 2011), and do not specifically differ from previous conceptions of urban progress, e.g. sustainable cities. More importantly, these definitions are unable to accommodate the contemporary urgency for cities to understand their changing position within a highly globalized economic system. Therefore, it is evident that a unique, academic smart city definition does not yet exist (Hemment and Townsend 2013. A tentative bridge between these literatures is found in treating smart cities as multilayered territorial systems to maximize problem-solving capacities (Komninos 2002, 2006).

Smart city literature generally defines social, economic, technological political and environmental characteristics that make a city smarter than others (Caragliu, Del Bo, and Nijkamp 2011), while world city network literature stresses that the success of a city is increasingly conditional to its relative position within worldwide networks, in which cities are connected through multiple globalized flows, comprising inter-urban movements of capital, knowledge, information, people and ideas (Sassen 1991; Knox and Taylor 1995; Alderson and Beckfield 2004; Coe et al. 2004; Derudder et al. 2010; Wall and van der Knaap 2011). FDI play a key role in global network in which cities can competitively excel (Grimwade 2000; Rugman and Verbeke 2005). The higher a city's relative position in FDI attraction, the more stable its economy, and the more likely investors will continue to invest there in future (Wall and Burger 2013; Wall et al. 2015). In network studies, this characteristic is known as preferential attachment (Barabási 2003; Boschma and Ter Wal 2009) and can be derived from network centrality measures acknowledged (Wall and Stavropoulos, 2016). Nonetheless, besides network measures, urban 'smartness' will also persist to be conditional to territorial characteristics, e.g. social, economic, technological, political and environmental location factors (Kitson, Martin, and Tyler 2004; Wall and Burger 2013).

The concept of urban regeneration through the reciprocal relationship between greenfield FDI and smart cities could be analyzed starting from the settlement of this question: for which strategic geographic location's choice it could be better to opt for FDI targeting? The choice related to the opportunity to contribute to the efficiency of an already existing city with enormous potential level of innovation and rich in human capital, creativity, and relationships to make it an innovative city with efficient services, or to search for a new city already built according to modern smart criteria with already efficient services but without a city identity and without native citizens? In both cases there are advantages and disadvantages.

Let's start to consider the fact that, on average, greenfield projects have a budget up to ten times greater than the brownfield project budget (Alcatel-Lucent, 2011), therefore, they require generous investments and industrial policy choices (Alawadhi et al., 2012; Copenhagen Cleantech Cluster, 2012). Furthermore, consider the exclusive excellence of maximum efficiency as the polar star for a new city, could lead to numerous negative

externalities that would hardly make the city a sustainable city, such as those related to social issues, such as social cohesion and quality of life, (Angelidou 2014, 2015; Bria, 2012; Lind, 2012; Ratti & Townsend, 2011).

The phase related to the fruition of high efficiency services does not provide for a purely technological dependence, easily replicable in other urban contexts, but it is closely linked to the human factor, the habits of citizens, ethical, moral, religious, and behavioral that change themselves from town to town and therefore the choice to design an innovative city without consider those who will be their citizens, is a process affected by many risks (Pike Research, 2011; Sassen, 2011; Townsend, Maguire, Liebhold, & Crawford, 2010).

In existing cities with a strong vocation to innovation but with low efficiency and smartness of their urban services, they could be discovered the benefits just deriving from an already consolidated stakeholder ecosystem (Robinson, 2012), which highlights commitment and the will of the citizens to make their city more smart but also characterized by better life, ie socially sustainable (Bria, 2012; Paskaleva, 2011; Sassen, 2011; Townsend et al., 2010).

The design of innovative actions in existing cities consists into targeted and thought-out actions for citizens' services (platforms and applications) without the need of large investments in smart infrastructures (Garner and Dornan, 2011; Walravens , 2011).

Finally, to close the critical / opportunity framework of existing cities in which to implement actions to make them more smart, some of the opposing elements to which these actions have to face, are also reported:

- the complex ecosystems made by people, institutions and stakeholders need major organizational efforts in the first phase and significant disciplinary efforts in the regime situation where it is necessary to educate citizens to new behaviors and to new ways of fruition of urban services (Angelidou 2014, 2015; Bélissent , 2010; Ratti & Townsend, 2011);
- the use, by revamping, of an existing city's infrastructure could be an obstacle to the creation of a smart urban morphology (Angelidou 2014, 2015; Bélissent, 2010; Pentikousis, Zhu, & Wang, 2011);
- unlike new implementations where the priorities of intervention actions are set at the design stage by simulation tools that optimize their efficaciousness and their effciency, in existing cities the order of priorities comes from real needs already consolidated in the community and this can lead to a non-linear development (Bélissent, 2010).

Beyond the assessments based on the advantages and disadvantages summarized, FDI orientation strategy towards some territories rather than others is linked to urban regeneration phenomena through the knowledge workers also named k-workers (De Falco, 2014, 2015).

In internationalization processes, companies seek places where the k-workers wish to live because, as Moretti (2013) argues, in this knowledge economy, the past Fordist paradigm that the workers follow the business it is not more realistic, but now are the companies that prefer as a strategy to follow the workers, particularly the k-workers.

Therefore, the virtuous circle that links FDI to urban regeneration closes with the assertion that K-workers are creative and oriented towards modern and sustainable scenarios, such as those offered by cities in which regeneration processes or newly established smart cities are in progress.

An example of newly urban kernels already thought, designed and realized according to sustainable criteria, is that of the green community near Amsterdam.

It is a fully-fledged community that can generate its own energy, produce its own organic food and recycle waste, towards a new paradigm of sustainable living. The pilot shipyard now ready is in Almere at the gates of Amsterdam. Californian ReGen Villages, the promoter of the operation, will extend the concept in Sweden, Norway, Denmark and Germany.

ReGen means regeneration, in which the outputs of a system open up other ports. In response to resource shortages, the growing global food crisis and security and CO2 emissions, the concept has a holistic approach that combines a variety of innovative technologies: renewable energies, local organic food production, vertical aquaculture agriculture, recycling waste and water management, towards a new ecosystem.

In this scenario it could be useful classify the topic regarding the development of a smart city in which FDI could be oriented.

Osano and Koine (2016) summarized the characteristics proper to a smart city as follows:

1. The "utilization of networked infrastructure to improve economic and political efficiency and enable social, cultural, and urban development," (Hollands, 2008), where the term "infrastructure" indicates business services, housing, leisure, and lifestyle services, and ICTs (mobile and fixed phones, computer networks, e-commerce, and Internet services).

2. An "underlying emphasis on business-led urban development" (Hollands, 2008). According to several critiques of the concept of the smart city, this idea of neo-liberal urban spaces, where business-friendly cities would aim to attract new businesses, would be misleading. However, although caveats on the potential risks associated with putting an excessive weight on economic values as the sole driver of urban development may be worth noting, the data actually shows that business-oriented cities are indeed among those with a satisfactory socio-economic performance.

3. A strong focus on the aim of achieving the social inclusion of various urban residents in public services (e.g., Southampton's smartcard). This prompts researchers and policy makers to give attention to the crucial issue of equitable urban growth.

4. A stress on the crucial role of high-tech and creative industries in long-run urban growth. This factor, along with "soft infrastructure" (knowledge networks, voluntary organizations, crime-free environments), is the core of Richard Florida's research (1995, 2002). The basic idea in this case is that "creative occupations are growing and firms now orient themselves to attract the creative" (Hollands, 2008: 309). Employers now prod their hires onto greater bursts of inspiration.

5. Profound attention to the role of social and relational capital in urban development.

A smart city will be a city whose community has learned to learn, adapt, and innovate (Coe et al., 2001). People need to be able to use technology in order to benefit from it: this refers to the absorptive capacity literature. This concept has been applied to different economic relations at different levels of spatial aggregation.

6. Finally, social and environmental sustainability as a major strategic component of smart cities. In a world where resources are scarce and where cities are increasingly basing their development and wealth on tourism and natural resources, their exploitation must guarantee the safe and renewable use of natural heritage. This last point is linked to the third item, because the wise balance of growth-enhancing measures, on the one hand, and the protection of weak links, on the other, is a cornerstone for sustainable urban development.

2. FDI in Europe

According to neoclassical theory, foreign direct investments contribute to the increase in capital accumulation in the countries that attract them, making their primary production more efficient by the transfer of advanced technologies. According to the endogenous growth's theory, FDI are the "carrier", expressed by advanced technologies, of spillover on the accumulation of new production know-how.

As a result of their relevant effects, numerous empirical studies have been carried out on FDI over the past fifteen years to verify the existence of their alleged "virtuous relationships" with growth. These studies do not always show the existence of a positive correlation between FDI and the phenomenon of economic growth. The inconcludence of the results of empirical studies is due particularly to the heterogeneity of the aggregate FDI without considering the difference between the two categories of investment: greenfield investments characterized by their use in new productive activities, and those that were used for the acquisition, through shareholdings, of proprietary control by multinational companies of preexisting production activities. The two structurally different FDI categories have a different impact on economic growth: greenfield investments generate new "assets," while those that translate into equity holdings contribute to create only a change in the ownership structure of existing assets. In other words, greenfield investments contribute to increasing physical capital, while equity investments usually increase the efficiency of the participating productive activities. For this reason, the governments of the countries attracting foreign direct investments are generally favored towards greenfield investments, but tend to close to the takeover of shareholdings by foreign multinationals, for fear that the managerial decisions of the latter may cause loss of jobs, local resources and national sovereignty over productive activities considered strategic. With reference to all "new production facilities and/or R&D facilities (which are also close to existing but not the only extension of the latter), which the foreign multinationals carried out in the Italian manufacturing industry sectors, in the time window between 1998 and 2012, it has been estimated that greenfield investments

weighed 88.40%, while those in R&D activities weighed for 11.60% (Mariotti and Mutinelli, 2016). The fall, over the period considered, has been marked and the contraction of the number of initiatives has been estimated at about 68% of the total. The decline in greenfield investments was no different from the overall fall in FDI, estimated at 66% of the total. According to Mariotti and Mutinelli, the negative trend of overall IDEs (those realized in new activities and those realized in changes in the ownership control of pre-existing assets), rather than deriving from the propensity of external multinationals to prefer greenfield investments than those participating in assets Existing productions were due to the sharp deterioration of the country's attractiveness, not only the current crisis, but also the complex of decline that characterized the complex evolution of the

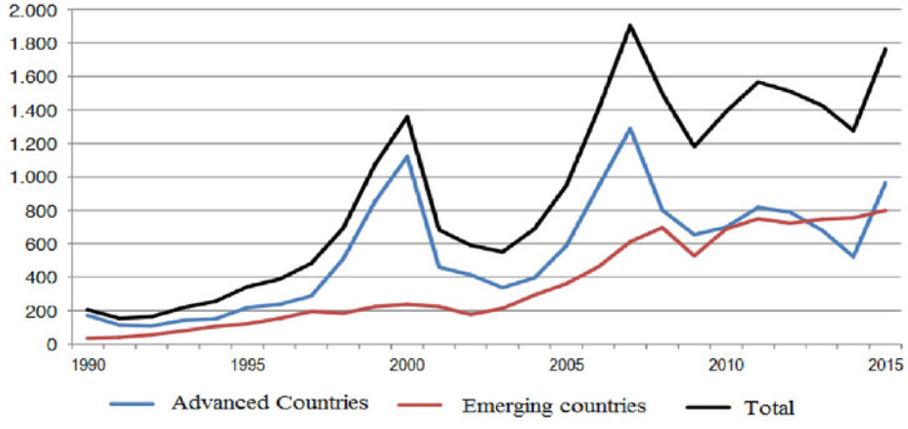

Fig. 1 - Worldwide FDI input streams and their breakdown by group of Economies, 1990 2015 (USD billions). Source: Istituto nazionale per il Commercio Estero, elaborations on UNCTAD data (2016).

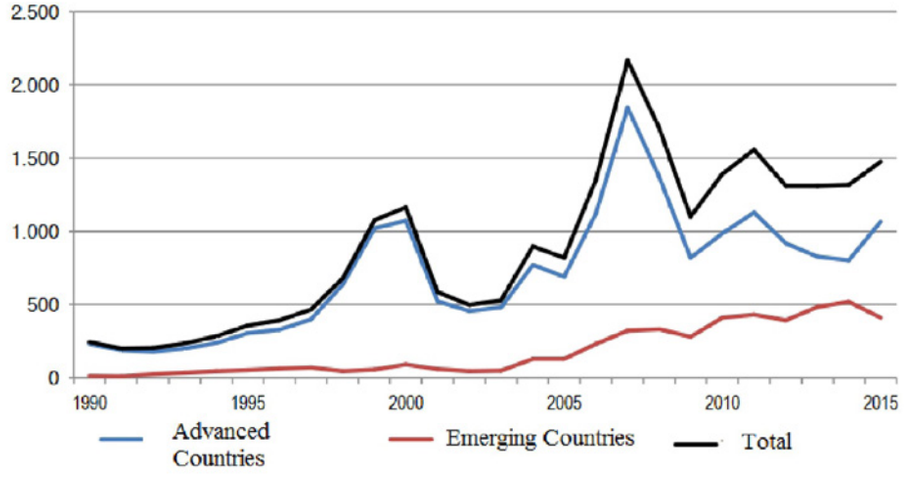

Fig. 2 - Worldwide FDI output streams and their breakdown by group of Economies, 1990 2015 (USD billions).
Source: Istituto nazionale per il Commercio Estero, elaborations on UNCTAD data (2016).

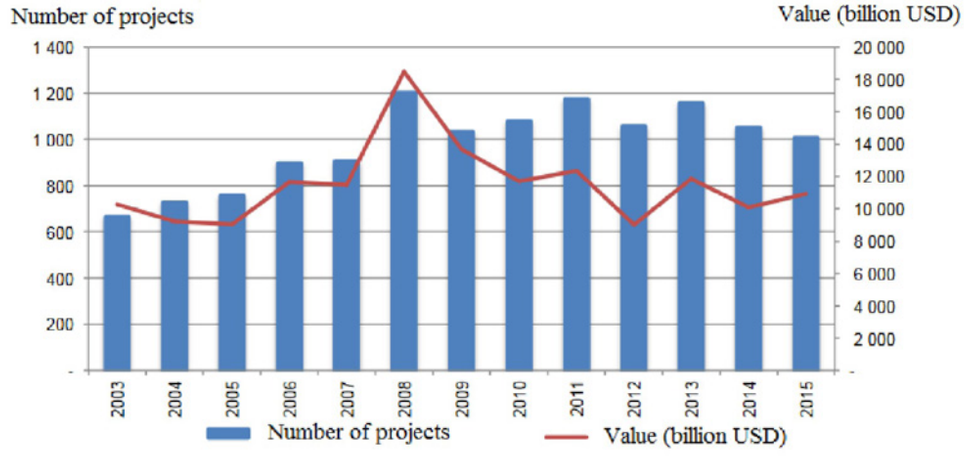

Fig. 3 - Number of direct greenfield investment projects and expanding into the world and their value, 2003-2015. Istituto nazionale per il Commercio Estero, elaborations on FDI Markets UNCTAD data (2016).

economic situation since the end of the Second World War, Italy at the margins of large global investment flows.

Other characteristics of greenfield investments made in Italy and highlighted relate to origin: those originating from foreign-country households in Europe (EU15) amounted to 61.70% of the total, followed by those of subjects with mother-house in the USA (17.80%) and mother-house in Asia (8.10%), mostly of Japanese origin, considering that China and India have started the industrial shopping in Italy alone in recent years (Mariotti and Mutinelli, 2016). From the point of view of the production sector, FDI were mainly oriented towards the branches of the chemical-pharmaceutical and to the computers and electronic and optical products, while from the point of view of their geographical destination, the total of FDI (identical to new assets and shareholdings in pre-existing assets) have been predominantly localized in the Northeast regions of the country, less in the Center and more Less in the South and in the Islands. Greenfield investments should, in fact, deserve special attention, given that those who carry them could play a complementary role to national entrepreneurship, whose decline is partly due to the fact that it has long been preferable to the certainty of its propensity to capture rents, rather than producing profits.

We see now the European situation.

Greenfield FDI flows into UE countries account for a non-negligible share of total UE FDI. They create new capital assets and additional production capacity which are important elements to support the transition to a stronger European growth path (Canton & Solera, 2016). Investments in tangible and non-tangible assets are an important driver of economic growth. While the European economic recovery is ongoing, total investment remains weak in most UE Member States. This is worrying because investment is both a key component of the economy's production capacity and an important source of aggregate demand. Total FDI flows (i.e. greenfield investments and mergers & acquisitions) show a rapid increase in the pre-crisis period between 2004 and 2007,

followed by a sharp fall during the global financial crisis and a further reduction during the euro area crisis. In 2013, total FDI in the UE amounted to 1.4% of UE GDP, which was substantially below the pre-crisis peak. Greenfield FDI has been decreasing almost continuously since 2008, but the decline has been more gradual than for total FDI. Also the gap between greenfield FDI and total FDI has diminished abruptly, suggesting more limited M&A activities in recent years. When we look at the composition of greenfield FDI flows in terms of origin's region, the scenario shows that since 2012 the largest share of FDI has come from outside the UE. Indeed, during the 2004- 2011 period intra-UE flows were larger than flows from non-UE countries but the share coming from non-UE countries has steadily risen since 2007, going from 37% in 2007 to 54% in 2014. This could be explained by two facts. First, the economic recession may have halted European firms' expansion plans. Second, the declining share of intra-UE greenfield FDI may also reflect the natural adjustment after an exceptional increase in intra-UE FDI flows caused by UE enlargement in 2004 and 2007, combined with strong economic growth during that period. In fact, Poland, Romania, Bulgaria and Hungary were among the ten main recipients of UE greenfield FDI flows over the period 2004-2008 (e.g. PL attracted the second largest share of UE greenfield FDI). Greenfield FDI peaked in 2008. This seems an atypical year with an unexpected greenfield FDI boom.

In 2008 the UK attracted the largest volume of inflows, followed by RO, DE and PL. Most of the greenfield FDI projects in the UK were in the electricity and construction sectors (30% and 22%, respectively, of total greenfield FDI flows to the UK). Those investments mainly came from European countries. In the case of electricity they were directed to the wind electric power subsector, with companies such as RWE, Iberdrola and Dong Energy being the main investors. The United Kingdom has been by far the largest beneficiary of greenfield FDI in Europe, followed by Spain and Poland. Furthermore, the UK managed to expand its share in 2014 to almost one third of total greenfield FDI in the UE. Germany only appears fourth. Interesting is the case of Italy that attracts less FDI than its size would suggest (though in 2014 greenfield FDI inflows grew by 31% compared to 2013). Zooming into extra-EU greenfield FDI inflows into European economies, the US is the largest investor in the EU, accounting for around 50% of total extra-EU greenfield FDI inflows, followed by China, Japan, Switzerland and India. China has been steadily increasing its share over the last years, from a share close to zero in 2003 to more than 10% in 2014. It has thereby surpassed Japan, India and Russia. The main UE recipient of Chinese greenfield FDI is the UK (accounting for 50% of Chinese FDI into the EU). These patterns show that there is a growing volume of investments coming from new sources of FDI such as China and India. These countries are becoming increasingly active in Europe through FDI, and not only via exports. As highlighted by Coconi, Sapir and Zanardi (2010), this is a natural path in which FDI follows previously developed export activities. Nevertheless, despite the more intensive investment activity coming from these emerging countries, the general trend in greenfield inward FDI to EU is still driven by traditional investors: US and main European investors DE, FR, UK, NL and ES. Flows are very volatile from year to year which makes the analysis of

short-term developments in FDI difficult. During the economic recession the volume of investments fell well below pre-crisis levels, except for the UK, and the recovery over the 2013-2014 period seems to be modest. If the economic recession had been the only explanation for the decline of greenfield FDI, one could expect these declines to be concentrated in the sub-set of EU countries that have been through financial market stress and/or under financial assistance (e.g. Ireland, Greece, Portugal and Spain). This has, however, not been the case. The decline in greenfield FDI has also been concentrated in some of the traditional main FDI recipients (DE and FR) and largest economies.

Today, greenfield FDI flows remain 50% below the peak levels reached in 2008. Nonetheless there have been significant differences between countries and regions. European countries (with the exception of UK) saw the biggest decline while the US is experiencing a quick recovery. It would therefore not be accurate to view the large decline of FDI flows into European countries as a purely cyclical or crisis-related phenomenon. In addition, some EU countries were not able to attract substantial FDI flows even before the crisis. A more appropriate explanation is that the low inflow of investments into Europe may be linked to structural competitiveness deficits. Therefore, more FDI could be attracted through improvements in the innovative climate offered by smart cities. Indeed, the environment in which smart cities operate is particularly relevant for investment decisions. This is particularly true for greenfield investments decisions as they generally reflect long-term strategic planning. Measures to reduce red tape and improve the regulatory framework could foster investment, and thus lift growth in the long run, but also boost economic activity and help the recovery in the short run.

This has important implications for formulating appropriate policy responses to get Europe back on a healthy investment path based on urban regeneration.

The main questions on which base the analysis on the relationship between FDI and smart cities are the following: when the positive impacts of FDI become evident? When the economic, social and technological growth could be clearly detected? According to Klein and Rosengren (1994), economic growth is the increase of per per capita GDP or other measures of aggregate income, typically reported as the annual rate of change in real GDP. Economic growth is driven mainly by improvements in productivity, which involves producing more goods and services with the same inputs of labor, capital, energy, and materials. Economists draw a distinction between short term economic stabilization and long-term economic growth. The topic of economic growth is primarily concerned with the long run. The short-run variation of economic growth is termed the business cycle. The overall state of the economy fluctuates in all countries (Phillips and Obwana 2000). An economy can be characterized by innumerable statistics on its demographic, economic, technological and institutional features (Sharma and Gani 2004). The stock of knowledge includes not only the scientific knowledge, its distribution in the operations, and its application to solving problems of economic changes but also the beliefs that influence the choices made to mitigate the effects of economic changes. That stock of knowledge determines the potential upper bound of the well-being of the service industry specifically on the banks (Melitz and Gianmarco 2008). A smart city could

be able to catch the attention of foreign investors if it become a hub status in financial services, trade, shipping, and logistics. Policy makers and scholars have argued that FDI can have important positive effects on a host country's development effort already in the short period (Damooei and Tavakoli 2006). Over a long period of time, FDI are able to create many externalities in the economy in the form of benefits available to the whole economy through transfers of general knowledge, specific technologies in production and distribution, industrial upgrading, work experience for the labor force and the establishment of finance-related and trading networks, and the upgrading of telecommunications services.

3. Greenfield FDI: the case of "Industrie Cartarie Tronchetti S.p.A. (ICT S.p.A.)"

In the past paragraphs we highlighted the need of cities becoming smart cities to improve their wealth level. Caragliu (2016) and other authors showed the strongly relationship between the availability of public transportation (normalized by the city area) and the level of wealth measured with per capita GDP in PPS. They analyzed European smart cities and in their analysis the city of Stockholm was excluded from the original dataset as it behaved as an outlier, with an outstandingly high density of public transportation. With the inclusion of Stockholm the interpolation line between these two factors would became even steeper. It is quite evident that an efficient net of public transportation is associated with high levels of wealth. Although the direction of causality in this relation may went both ways, it seems reasonable to think that a dense public transportation network may help to reverse the negative effects of urban density, thus at least partly releasing the pressure this exerts on the urban landscape and reducing the costs associated with congestion.

To propose a real case useful to disclosure the relationship between this highlighted value of transportation system, smart city and FDI, the case of "Industrie Cartarie Tronchetti S.p.A. (ICT S.p.A.)" sounds perfect.

Since its inception, ICT has chosen to adopt a Greenfield construction policy that has multiple effects: new wealth generation for the territory; the use of the latest generation technology, with particular attention to environmental sustainability; creation of a strong and lasting bond with the local territory through the employment, in every country, of only staff and management of the site; organic and not-speculative development driven step by step by the local company in a coherent way with the community that hosts it.

ICT has focused its strategy on building new plants in strategic areas close to consumers and offering space for future expansions in which realize establishments with the best available frontier technology to deliver the highest quality products.

In 2000, all ICT production capacity, equal to 180,000 tonnes per year, was largely concentrated near Lucca, Italy. Since 2001, new production plants have been built in

Poland, Spain and, most recently, in France, which have led to the production of ICTs up to 470,000 tonnes per year.

Towards the end of the 1990s, ICTs realized that, to continue to grow throughout Europe, it had to move the infrastructure productions closest to the large urban agglomerations and the markets that up to now had provided from Lucca (Italy). Like other Tuscan fabric companies, ICT has developed a strong export-oriented business, so that in 2000 over 40% of its production is destined abroad.

The transaction proved to be unprofitable, long distances involved transport costs that would affect profit margins and it was not possible to maintain market exports based in Italy.

As a result, ICT has developed a systematic expansion plan abroad to fill a growing European market. This has resulted in the creation of new tissue establishments in strategic strategies that would substantially cover the whole of Europe from four sites. The first site selected was in Poland, Kostrzyn, 80 km east of Berlin, Germany.

The requirement of strategic areas was related to smart cities able of offering efficient urban services and presenting a scenario of urban growth related to urban development.

The choice of ICT was for Kostrzyn because it allowed to reach two markets with a good potential business. The first was of course the big German market, which ICT was already supplying from Italy, while the second was the Polish one, with great potential for growth.

Poland, in the Union since 2004, was the first in the ranking of Sie, European Structural Funds and European Investment Funds, the big frame that encapsulates the various EU funding instruments. Italy was the second nation.

Poland is also the first nation to catalyze the largest resources (40.2 billion, 20% of the total) for both FESR, the European Regional Development Fund and the ESF, the European Social Fund.

Raising the Polish budget is also the Cohesion Fund for the 15 European countries with a per capita GDP of less than 90% of the EU average. Italy and the other leading countries are out of range. Thanks to this instrument, Warsaw receives 23.2 billion more, followed by Romania and the Czech Republic.

After just over 10 years of joining the EU, drawing up an advisory review of the use of European structural funds, it emerges that Poland, in term of urban regeneration's actions, has managed to create more than 300,000 jobs, 25,000 new businesses, and build 11,000 Km of roads and bridges, 1661 km of railway lines, renovating the local public transport, fleet and refurbishing peripheral districts, opening new public schools and a science museum, digitized hospitals and a wind tunnel. In addition, 40,000 kilometers of broadband internet lines have been created and investments made in the field of scientific research and development.

Particularly characteristic of Poland is its ability to act as a logistic and distribution hub for central and extra European companies.

In this scenario, the convergence between smart city and FDI is clear: the more a city became smart and the more it can attract FDI and so on in a virtual loop, the more in a

city are invested FDI and the more it holds to became smarter.

Continuing with the analysis, in 2001 a 5.5 meter wide machine was started with a processing plant at ICT Poland. The plant was soon recognized as one of the most modern manufacturing sites in the world in terms of cost-effective production costs (figure 4).

The centers of action and sorting of ICT activities, each with a radius of about 600 km, are located on Lucca-Italy, Kostrzyn - Poland, Zaragoza - Spain and Montargis - France. From these four ICT points it has calculated that it can supply nearly 80% of the European population.

Through FDI, ICT covers almost all central and western Europe, with the exception of Ireland, the North of the UK and Northern Scandinavia.

Based on the encouraging results of Poland, ICT has then built a greenfield similar to Zaragoza, Spain, between Madrid and Barcelona, where a 5.5m wide machine was started, which began producing tissues at the end of 2005.

Considering that the Polish factory was working very well, that the urban system became more and more smart in the various urban services with particular reference to transport, ICT has realized a second greenfield factory in Kostrzyn in 2008 that doubled its planting capacity until it reached 140,000 tons annually.

Thus, over the space of seven years, from 2001 to 2008, ICT has reached a total production level of 400,000 tons annually. ICT turnover in 2010 was Euro 500 million, approximately 1,100 employees, of which more than half are outside Italy.

To complement its European coverage plan with neighboring market manufacturing facilities, ICT then set the target on France.

Since 1999, ICT had a commercial structure in Paris to serve French customers. In order to support it more with an on-site facility, ICT has started its newest plant in Montargis, about an hour south of Paris. For this facility, a machine of 5.6 meters was chosen, for an investment of 110 million Euros.

ICT is a family business that has been able to base its strategy on FDI in areas where fast-growing smart cities were being developed to be able to take on k-workers, the creative workers of this new knowledge economy and to find the availability of different and efficient urban and extra-urban services.

Fig. 4 - ICT Poland (Souurce: http://www.ictgroup.net/it)

So, as showed and demonstrated in the deal case of ICT, the optimal condition able to influence the choice for FDI destination, overcome the technology layer and are regarded to a wider frame in which the creative positive urban climate plays a key role.

3.1. Behind technological dimension of urban regeneration: the role of knowledge and creative climate

An important aspect to reflect on this analysis in which we are assessing the correlation between FDI and urban regeneration oriented to creating smarter cities is that this phenomenon is not only a technical one. Urban regeneration also in the case regarding smart cities' actions, is a cultural regeneration first of all based on the knowledge's growth.

Knowledge is by its nature a complex concept, multi-faceted, that has fascinated, starting from ancient Greece, the minds of philosophers and eminent scholars, who addressed this theme looking at the knowledge from different points of view, thus producing multiple approaches that drive the focus on different aspects of development and knowledge management (De Falco & Germano, 2011).

The enhancement of knowledge, on the urban scale, not only translates into the ability of an area to be able to generate new ideas and new knowledge, but also requires the ability to spread this new knowledge through coded processes capable of generating innovative services for citizens in a city, and, more generally, for many people in a community.

An approach to the relationship between the city and knowledge can be supplied from the hierarchical view data-information-knowledge, under which the shared knowledge within a city is the result of an elementary data encoding process realized by people present in the city itself. To understand how the city creates knowledge, it is necessary to clarify the difference between data, information and knowledge. The data are the set of distinct, objective, facts referring to a specific event, which, by themselves, have limited utility as they are limited to describing only a part of the event, without giving judgments or interpretations, or a sustainable basis for the action (Davenport, 1997). They are symbols (numbers, letters, codes, images), facts or events devoid of meaning and utility, such as demographics, income, competitive and other statistics relating to the market. If the data are interpreted, contextualized and related to each other are obtained the information or data with attributes of relevance and purpose (Drucker, 1993), because, unlike the data, they shall contain a meaning and are organized for a specific purpose. The information, therefore, is the interpretation of the data, in a reference context (contextualization), organized in relation with other data (synthesis). Finally, the knowledge, that is an abstract concept, consciously or unconsciously constructed through the interpretation of a set of information acquired through experience and meditation on the same (Polanyi, 1962).

Knowledge is represented by a set of information, performed by individuals in a particular context: the interpretation of the information, new and existing, which changes

from individual to individual, determines the knowledge's development. It derives from a combination of experiences, values, contextual information and specialist expertise that provides a framework for the assessment and assimilation of new experience and new information (Davenport and Prusak, 1998). It is essential not to consider the information and knowledge as two synonyms: the information can become knowledge when citizens add value to it, transforming the "raw" data in benefits for the economy and local development. Confuse information with knowledge is like confuse grape, simple and abundant raw material, with wine, wise fruit distillate deriving from human work. Unfortunately, this error is frequent, with a mass of simple information, such as messages, reports, procedures, lists, considered as knowledge. The knowledge, however, must be understood as the result of a synthesis process between the information, which are derived from data, and the experience of citizens belonging to a certain community. This type of knowledge therefore has a dynamic nature since it has the effect of making data and information, characterized by a static nature, instead, useful and productive . Since it was said so far, one can not help but notice a certain intersection of knowledge and information: the question arises whether it is possible to establish a demarcation line between the two concepts. Actually it is impossible to identify a policy or a rule of distinction between knowledge, since we do not have in the literature of numerous theoretical foundations. The difference between the two concepts, therefore, does not reside in the respective objects, but rather in their guiding principles. In fact, information management aims to reduce uncertainty and limit the choice of the members of a city or a community, defining the information necessary and sufficient to perform the tasks and functions optimally; while knowledge management aims innovation, ie the growth of new and existing knowledge in order to enhance creativity and learning abilities.

The case discussed in the previous paragraph on Poland as a best location chosen by ICT spa for their FDI, is a real proof of these concepts, for example, with the Muranów district of Warsaw.

Housed for decades mainly by Jews and for this part of the ghetto of Warsaw during the German occupation, Muranów is today an immense residential neighborhood that hosts 40,000 people. Compared to Krakow's Kazimierz or other Jewish districts in Europe, Muranów district was designed to make it a residential complex designed as a monument to the ghetto. It was partly built on its own ruins (Warsaw was almost totally destroyed during World War II) and stands on artificial hills made up of rubble. Even human remains have been buried there forever. This feature has influenced life in the neighborhood.

Today something is changing, in fact many non-governmental organizations have put their home there, and so are bars, restaurants and the Polin Museum on the history of the Poles. Several vitality and creativity have been injected by the Stacja Muranów Association, inspired by this same criticism and after organizing the Future City Game, a laboratory promoted by the British Council for locals, locals and activists to meet to identify and solve an urban area, entitled "wake up Muranów"'.

After the phase in which the residents were too little active to support neighborhood

initiatives, the latter now attracts people from all over Warsaw and also from the surrounding area for the beauty of its murals.

A few years ago the name "Muranów" was not very well known outside the city, now it has become synonymous with "Jewish Quarter".

In some cases this so rapid urban regeneration led to the total gentrification of the area as happened in Kazimierz, Cracow, where residents have been forced to move because everything has become artificial and aimed at tourists. In Muranów however, this is difficult to happen for two factors: first because Muranów is a residential neighborhood and second for his dimensions.

Muranów is a phenomenon that can be recognized globally and serves as an example of a story related to memory and urban and architectural exploration.

Finally, it is clear from the above that the iterative virtuous circle that needs to be pursued as positive corollary of the relationship between greenfield FDI and smart cities is the following: FDI is oriented toward the cities-destination characterized by the efficiency of urban services and by a creative and positive urban climate in which k-workers can express their own potential. The more FDI increase towards those cities and more such cities become smart and in turn attract other FDI.

4. Conclusions

Whatever the issue we can face regarding the cities, the first point of discussion from which it's necessary to start is to quote real data, which shows that 10 percent of the world's population lives in 30 major metropolises, 600 cities welcome the world's people and now half of the total population lives in cities, so the world is an unprecedented level of urbanization.

The presence of a creative class, the quality of and dedicated attention to the urban environment, the level of education, and the accessibility to and use of ICTs technologies for public administration are all positively correlated with urban wealth. This result prompts the formulation of a new strategic agenda for European cities that will allow them to achieve sustainable urban development and a better urban landscape.

What is the European level orientation on this topic and on such data?

On past 30 may 2016, in Amsterdam, an informal ministerial meeting approved the Amsterdam Treaty, which establishes the European Union's Urban Agenda, fixes the fundamental themes and identifies a timing of action from here until the end of 2017.

A plan to reinforce the urban dimension and thus support the cities that today are faced with ever-growing problems. Challenges such as poverty, spatiality and segregation, demographic change and the use of renewable energies.

A new urban geography is drawn that considers technological, organizational, social innovation as a lever of local development and a meta-instrument that can break the ideological world that has come to create between citizens and Europe.

In this framework, the present work has sought to give a contribution from a different

prospective for the analysis of the phenomenon, that of correlation between foreign direct investment and urban regeneration interventions aimed at making cities more and more intelligent.

From a theoretical point of view, it has been highlighted the mutual positive iterative correlation between the two factors and, from a practical point of view, a real case demonstrating it, is been proposed.

Finally, it has been stressed that any urban regeneration has to be developed also through a culture regeneration based mainly on knowledge's growth and not only through a technological one.

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