

Sustainable and inclusive growth: the role of cities

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Cities today concentrate more than half of the world population and more than 80% of global GDP. The underlying dynamics explaining their ever increasing importance are the result of a variety of positive externalities (thicker labor markets, knowledge spillovers, input sharing...) generating self-reinforcing effects. These rapid waves of urbanization have key implications for the production of goods and services, environmental quality and human development. The world is one of density spikes and disparities, driven by the unstoppable ascendance of metropolises. Greener and more inclusive cities should be promoted in order for them to remain livable. In this respect, public policies have an important role to play.

By 2050, more than two thirds of the world population will be living in cities. Yet, in OECD countries, these metropolitan areas cover only 4% of land (OECD, 2015). Extreme geographical concentration is raising questions regarding the form that these new megacities should adopt to remain livable environments. Over-crowdedness, pollution and high costs are amongst the main downsides associated with life in the city. Climate change has had profound effects on urban areas with rising health risks and increasingly extreme temperatures.

From the death of distance to industrial decline, cities have faced a multiplicity of challenges and many have pondered whether this form of spatial organization would subsist. The rise of globalization and of the New Economy have revived cities' potential and propelled them to the forefront of the international economic scene. Self-reinforcing waves of urbanization are still ongoing today, mainly the result of positive externalities unique to cities.

With more efficient, more innovative and greener infrastructures, cities remain *the place to be*, so much that new rifts are forming between urban spaces and other territories. Not only have disparities intensified between successful metropolises and lagging places, but within cities as well. Urban areas' exceptional strengths have proven impressive, but the associated benefits have been largely concentrated. It is essential that their organization be rethought in order to alleviate the risk of a rising territorial divide. Public policies have a double aim of stimulating urban strengths while at the same time minimizing the resulting imbalances.

The focus should be put on adopting the right policies. Applying a standard model to city planning is a futile endeavor. Cities' inimitable strengths must be stimulated to the end of a more sustainable and inclusive development. Time has come to encourage a transition towards greener, more accessible and more affordable metropolises.

Analyzing and understanding cities

As cities are spikes in the spatial distribution of individuals, economic activity, innovation, emissions and many more, they are, by definition, unequal. Yet, the process of urbanization is only gaining momentum, exacerbating associated regional disparities. Understanding the

mechanisms underlying the formation and organization of cities is essential to grasp and tackle the resulting challenges.

Cities as trade-offs

Economies of scale and diseconomies inherent to cities coexist and entrench their existence. Krugman (1991), in his theory of New Economic Geography (NEG), sets forth the existence of co-occurring forces of agglomeration and dispersion. These provide the basis for the existence of core-periphery patterns in the distribution of economic activities. Core areas benefit from agglomeration forces and form into large cities. Dispersion forces limit city size and yield alternative places to cities, peripheries.

Agglomeration is first and foremost a concern for firms and is mainly analyzed through the prism of economic activity and production. Such advantages eventually pass onto workers and consumers who benefit from higher wages, increased employment opportunities, as well as greater choice due to product variety on the market. In 1920, Marshall outlined the three key drivers for co-location amongst firms, which are still relevant a century forward:

- Labor pooling: high labor market density allows for better matching efficiency between workers and firms;
- Knowledge spillovers: unintended positive externalities from scientific/technical discoveries stimulate the productivity of neighboring firms;
- Input sharing: the co-location of similar firms allows them to split the costs associated with intermediate goods and spurs the co-location of specialized firms producing these inputs.

To feature all three criteria necessitates a clustered organization of space, which cities provide. Urbanization takes place primarily to exploit the positive externalities associated with geographical proximity.

These externalities can be classified into two types that are simultaneously drivers and consequences of city size. Marshallian externalities, also known as localization economies, are characterized by a phenomenon of specialization within a given spatial area. The co-location of firms pertaining to one specific industry allows for knowledge spillovers among similar enterprises, resulting in an overall productivity increase. Jacobsian externalities, also called urbanization economies,



imply benefits from a process of diversification. The heterogeneity in industries present in the city allows firms at early stages of development to find their optimal production model and to benefit from solid and diversified infrastructure foundations. These two types of externalities require different levels of clustering and thus have different implications for city size. As figure 1 demonstrates, localization economies are features of smaller cities as they rely on less concentration amongst firms and workers. Urbanization economies, because of the diversity of local actors engaged in the process, are characteristics of much larger cities. As these dynamics are self-reinforcing, the presence of one or the other anchors city size.

Marshallian and Jacobsian externalities and city size

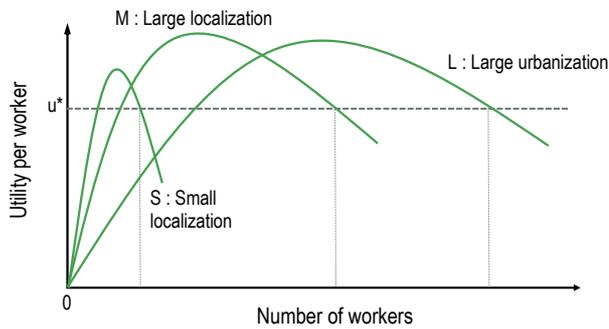


Figure 1 Source: O'Sullivan, 1990

The inverse-U-shaped conceptualization of utility in cities (cf. figure 1) is the result of existing tensions between the positive externalities laid out above and the negative externalities that originate from urban formations. While the clustering of activity provides numerous advantages for both firms and workers, there are associated costs, known as dispersion forces in Krugman's NEG theory.

As cities expand, a variety of disamenities arise. Pollution, congestion, increased competition, greater littering and noise are amongst the main negative externalities found in cities. Regarding inequalities, exclusion by costs of housing and amenities is amplified as cities grow and become increasingly dynamic. Put forward by Alonso (1964), Mills (1967) and Muth (1969), the rent gradient theory models cities as functions of rent, commuting costs and wage. This relies on strong assumptions such as fixed utility and income across the city, a monocentric model, and the exclusive location of jobs in the Central Business District (CBD).

The model has key implications for the organization of cities as it predicts a decreasing rent gradient from the CBD to city edge compensated by increasing commuting costs as one moves further from the city center. An increase in city population leads to an increase in living costs as the rent gradient shifts out (cf. figure 2). City growth is thus, by nature, an exclusionary process.

The rent gradient

Alonso-Muth-Mills model

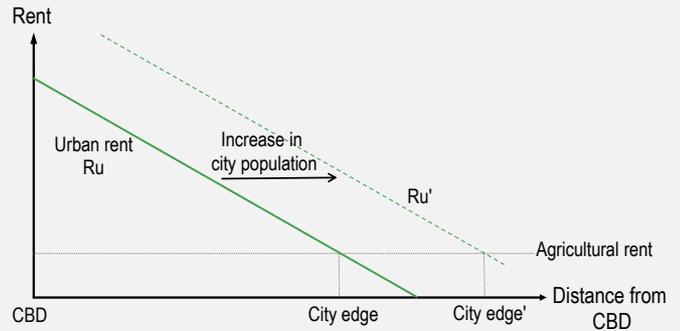


Figure 2 Source: O'Sullivan, 1990

Fixed utility: $V(z, h)$
 Budget constraint: $w(1 - tx) = z + Ph$
 $\Rightarrow z = w - wtx - Ph$
 $\Rightarrow \Delta Ph + wt\Delta x = 0$
 $\Rightarrow \Delta Ph = -wt\Delta x$

with z a numeraire good (fixed), w city wage (fixed), t transport costs (fixed), x distance from city center, P rent and h housing units (fixed)
 The slope of the rent gradient is $\frac{\Delta P}{\Delta x} = \frac{-wt}{h}$, which implies that longer commutes are capitalized into housing prices

If there is an increase in population (N), it raises the rent gradient everywhere and increases city size.

Source: O'Sullivan, 1990

Monocentricism, polycentricism and urban sprawl

While the monocentric city model has a great explanatory power, its applications to real life seem limited by the rise of polycentricism. In today's cities, there often exist multiple CBDs each attracting a distinct labor pool, based on location considerations. Such an organization of the city has been increasingly promoted in order to diversify centers of job and value creation.

French policies, with the aim of promoting a more polycentric and decentralized distribution of economic activity, have sometimes had the unintended effect of promoting urban sprawl and thus of reinforcing monocentricism. There is convincing evidence of such processes in the Paris-Ile-de-France region. Policies of *villes nouvelles* (new cities) starting in the 1960s had for main objective to limit urban concentration in large cities and hamper the expansion of already-metropolitan areas. Nine new cities were introduced, amongst which five were located within a 15-50 kilometer radius from Paris. While the policy aimed at giving autonomy to these new structures, it seems that, in practice, these cities have been overwhelmed by the spreading Parisian



agglomeration and absorbed part of its excess growth. Halbert (2006) argues that this policy did not serve to slow down the rise in Paris' dominance. Quite the opposite took place as the *villes nouvelles* reinforced the monocentric nature of the Parisian agglomeration and were analogous to a phenomenon of urban sprawl at a very large scale.

Urban sprawl is a defining challenge for contemporary cities. As core metropolitan areas become too crowded, city expansion takes place further from the center into the suburbs and lower density areas. Lack of transport infrastructure, as well as distance from core areas concentrating jobs, economic activity and public services, are among the main concerns associated to urban sprawl. Inefficiencies arise from foregoing optimal city size, beyond which urban diseconomies outweigh the benefits. These processes are highly damaging, notably for environmental, efficiency and equity concerns.

Islands of innovative dynamism

Agglomeration economies featured in cities imply a disproportionate localization of activity in metropolitan areas. Perroux's (1981) work on growth poles has led him to the notable conclusion that "growth does not take place everywhere at once". Such a disparate distribution of economic dynamism is exacerbated as societies progressively enter the New Economy era. Increased use and reliance on new technologies as well as a shift towards a more service-based economy have led to the revival of cities. Geographical proximity, allowing for face-to-face contact, provides basis for the production and exchange of highly technical types of knowledge.

Cities as clusters

Clusters are defined as "a strong collection of related companies located in relatively small spatial areas" (Beaudry and Breschi, 2000). They benefit from localization economies within very specific sectors. The main underlying driver of a cluster is knowledge exchange and creation, which geographical proximity allows for. There are two main categories of knowledge: codified and tacit. Codified knowledge has a high cost of production, but a relatively low cost of transmission. It can easily be shared, no matter the distance between the two firms. On the other hand, tacit knowledge has a high cost of production and a high marginal cost of transmission. Sharing it necessitates face-to-face contact (Storper and Venables, 2004). While it has been widely argued that information and communication technologies (ICTs) would imply the *death of distance* (Cairncross, 1997), this dichotomy in knowledge types serves to explain the resilience of cities. As the production and exchange of tacit knowledge requires spatial proximity, it is a key driver of the existence of clusters and of their ever growing importance.

A cluster must feature specific characteristics in order to exist. Places should possess basic human and physical infrastructure, necessary to the production of ideas. This includes capital, technology and human resources. On the basis of these foundations should form a network of suppliers, featuring companies, specialized input providers, research labs and universities. This promotes public-private partnerships, and most specifically university-industry linkages whereby universities

produce fundamental research while labs and companies develop associated market applications. A functioning cluster should ultimately host leading firms with innovation and exporting capacities.

The spatial organization of cities as well as the agglomeration economies from which they benefit allows them to host clusters. Large metropolitan areas, benefiting from urbanization economies, act as incubators for the development of new products (Chinitz, 1961). As a result, urban areas have been the main, if not exclusive, targets of innovation policies in France. Starting in 2004, a competitive poles policy was initiated to promote the formation of clusters through the implantation of specialized research labs near firms and the distribution of subsidies for research and development (R&D). The goal of such policies was to discretionarily promote the natural features of clusters by incentivizing the co-location of fundamental and applied market research production. While the policy has had positive effects regarding innovativeness in targeted places, it has been at the heart of criticism. This top-down initiative spurred excessive specialization within clusters, with implications for places' adaptability to external shocks. According to a study by the CEPREMAP, a policy limiting the obstacles hampering the formation of clusters could have proven more efficient than one arbitrarily promoting their development (Duranton et al., 2008). The discretionary ranking of space is the implicit consequence of the theory of growth poles, which predicts that development will eventually spread to neighboring areas. Considering the still-uneven spatial distribution of economic and innovative activities in France, the theory's applicability can be put into question. It rather seems that competitive poles have had the effect of creating a hierarchy within space, characterized by Garnier (1989) as the opposition between superstar cities and the rest of France.

Local determinants of innovation

A study by the French National Institute of Statistics and Economics Studies (INSEE) finds the determinants of innovation at the regional level to be size, partnerships, public financial support, a skilled labor force, geographical proximity, and the scope of the market (Buisson, 2012). Both internal capacity and external connectivity define the innovative potential of a location. Phenomena of *cathedrals in the desert*, a term coined by Lipietz in 1980 to designate isolated poles lacking external linkages, highlight the need for locations to not only focus on their internal features. However, on the other hand, a study by Delaplace in 2012 on French high-speed trains (TGV) goes to show that external connectivity cannot improve a location's attractiveness on its own either. New rail connections for small and medium cities have limited effects compared to larger cities. This results from usage potential, which is much higher in already-attractive places. Therefore, while external connectivity must not be overlooked, it should not be considered a means-to-an-end either in terms of attractiveness promotion.

The case of the rehabilitation of a train station in Saint-Omer (France) goes to show the complementary nature between external linkages and internal innovativeness. The disused train station of Saint-Omer is to be put back into use as a way to promote the location's attractiveness. Complementarily, this initiative projects to transform the train station into



a place of work and innovation. To do so, the station will feature 3,000 square meters of collaborative space, a Fab Lab offering free training on digital tools and robotics as well as a business incubator, and a museum on digitalization. The “Station” project illustrates the possibilities cities can benefit from in the development of pools of innovativeness. Saint-Omer already possesses infrastructure foundations and features a small agglomeration of people, with 56 trains passing by every day and more than 800,000 annual commuters (Allix, 2019). Local amenities and local actors should be rooted in development so as for initiatives to truly be location-appropriate.

The polarization of space

Natural processes of agglomeration paired with public policies promoting clustering have induced an intense polarization of space. Processes of desertification across regions, to the benefit of cities, have exacerbated regional disparities in terms of production, innovation and employment. Skills have agglomerated within cities, attracted by the multiplicity of opportunities, dedicated infrastructures and co-location of innovative workers. The information economy has favored places with a high concentration of higher-education graduates, to the ultimate benefit of large metropolitan areas (Davezies and Pech, 2014). The process of skill-biased technical change has thus instituted a polarized labor market within urban areas, with eventual repercussions on regional disparities. While new technologies are substitutes for semi-skilled labor, low- and high-skilled employments are harder to automate. As the opportunity cost of high-skilled workers increases due to higher wages, household activities such as cleaning, maintenance, etc. are outsourced to low-skilled workers. Wages at the bottom of the distribution are thus increasingly linked to those at the top. This drives wage differentials upwards all along the income distribution in cities, exacerbating imbalances relative to non-urban areas.

While the classical rural-urban opposition has put great focus on regional disparities, issues of within-city inequalities are increasingly becoming a concern. With two thirds of the households below the poverty line living in urbanized areas (Aerts et al., 2015), French cities have seen the emergence of sharp inequalities. The clear-cut difference between low- and high-skilled workers has led to “sorting effects” as evidenced by Berkes and Gaetani (2019). High skilled-individuals co-locate near their work, which drives the costs of amenities up within these specific areas of the city. As a result, a process of income segregation takes place whereby high-skilled individuals further co-locate together and lower-skilled individuals are excluded from particular neighborhoods. Amplification effects relative to knowledge spillovers further reinforce the benefits enjoyed by the better-off parts of the city. Berkes and Gaetani (2019) find that approximately 20% of the rise in income segregation in US cities can be attributed to the rise of innovation. Heightened mobility in cities has also served to exacerbate social segregation across neighborhoods of metropolitan areas. Modest households are constrained to live at city edges where rents tend to be lower (cf. figure 2). Inclusionary zoning should be increasingly promoted to tackle such a disparate organization of space.

Greening cities

Cities’ share of the burden

Cities are amongst the main culprits when it comes to climate change. While urbanization is extremely restricted in terms of global terrestrial surface covered (~4%), cities still manage to consume 80% of global energy and account for 80% of GHG emissions (World Bank, 2010). Phenomena of urban heat islands (UHI) are amongst the main illustrations of the impact of climate change on cities. Temperatures in cities tend to be higher than that in rural areas, with an extra 3.5 to 4.5°C, reaching up to a 10°C difference in larger cities (OECD, 2010). These imbalances in temperature levels across urban and rural spaces are consequences of reduced areas covered by vegetation and water in cities as well as the heat-trapping effects of high-rise buildings and asphalt roads. Unprecedented spikes in temperatures in the summer of 2019 in France, reaching a record level of 43°C in Paris, are materializations of the UHI effect. Warmer temperatures increase the concentration of air pollutants and exacerbate environmental damage and health risks. Furthermore, vicious effects are associated with UHI for city energy consumption, as warmer temperatures notably lead to a greater use of air conditioning. Energy, building and transport inefficiencies are key areas that must be targeted in order to make urban development more sustainable. Specific city planning decisions can also be taken to promote less polluting forms of urbanization. Cities have both the tools and the capacities to be leaders in the fight against climate change.

Room for maneuver

Cities have more leeway to become green poles and drivers of the ecological transition. As important polluters, a marginal decrease in their emission levels would have large effects on the overall environmental balance of a country. Cities consume 80% of the global energy production (World Bank, 2010); making energy use more efficient is a key lever to make cities more sustainable. Commercial and residential buildings, transport networks, waste management as well as public lighting are amongst the most voracious urban energy consumers. To tackle such issues, cities benefit from economies of scale. Doubling the population of any city requires an approximate 85% increase in physical infrastructure (electrical cables, water pipes, road surface...) according to a study by Bettencourt et al. in 2007. Larger and more developed cities can thus resort to proportionately smaller stocks of infrastructure and reduced energy use. Specific policies and city planning efforts are needed to exploit such economies of scale.

Regarding the building stock, there are many ways to go about to make it increasingly environmentally-friendly. Promoting shallower building forms for natural ventilation and daylight penetration can allow for a clear reduction in air conditioning and artificial lighting uses. Optimizing glazing ratios can also have consequences for the minimization of energy demand. Studies show that in moderate climates, the window to



wall ratio should be of about 20%, whereas in hotter climates it is recommended to be of 10% (Alwetaishi, 2017). Ratios tend to be quite low as larger windows can cause inefficient energy loss and excess heat due to sunlight exposure.

Building renovation is a requirement for any eco-city. In France, the government is aiming for its 35 million dwellings to be labeled *Low Consumption Buildings* (Bâtiment Basse Consommation). With 7.5 million dwellings graded F or G today (the lowest grades on the energy performance scale), there is still a long way to go for the French building stock to become sustainable. The energy and climate law of 2019¹ has introduced an obligation for households to carry out improvement works, in order for all dwellings to reach at least category E on the energy performance scale by 2028. While the building stock is a key lever for the ecological transition, the timespan given to undertake the works as well as the envisioned sanctions for not respecting this obligation seem weak relative to the potential gains. These ambitions still transpire the increasingly central role that building efficiency plays in the fight against climate change. Urban areas' building stocks are disproportionate compared to suburban and rural areas', and detached housing tends to be more polluting than residential buildings. In addition, a study by Maury and Gilbert (2015) has revealed the existence of strong territorial inequalities in terms of energy poverty² and energy vulnerability³, which touches 22% of the French population. As territories are located further from urban poles, the risk of energy vulnerability increases, reaching a maximum of 9.5% in rural areas fully isolated from all urban influence, 3.5 times higher than the national average (Davezies and Rech, 2014). Building sustainable dwellings requires locating them where they will do the least ecological harm. Home to more efficient dwellings, cities have the potential to act as leaders for a greener way of life.

Another key infrastructure on the path toward greener cities is transportation. Considering cities' range of choices in terms of transport options compared to suburban and rural areas, they possess much greater leeway to promote sustainable mobility. Private vehicles consume twice the energy per passenger per kilometer of a train and almost four times that of a bus (Steeemers, 2003). Greater incentives for public transportation use at the expense of private vehicles thus have great implications for overall energy consumption and emissions. Making transport networks more efficient in terms of connectivity, speed and costs to incentivize city residents to favor shared rides to private ones is in the hands of cities. In the absence of such an efficient public transport system, increasing city population and city size will only increase traffic and pollution. This constitutes one of the main challenges associated with urban sprawl. In 2018 in the Paris agglomeration, daily commutes by car reached 0.4 million within the city center, 3.3 million within the inner suburbs and 8.5 million within the outer suburbs (OMNIL, 2019). In the case of the Aix-Marseille metropole, approximately 77% of the population living in suburban

¹ Loi du 8 novembre 2019 relative à l'énergie et au climat

² Loi du 12 juillet 2010. Energy poverty: "situation in which an individual struggles to acquire the necessary energy supply to meet basic needs, due to inadequate resources or housing conditions"

³ Ducharme and Van Lu, 2019. Energy vulnerability: "situation in which a household spends at least 8.2% of its disposable income on energy expenses for its dwelling, corresponding to twice the metropolitan median"

areas outside of Marseille has no access to public transports, 14% has limited access and only 2% has high access (Poelman and Dijkstra, 2014). There is a clear urgency to make public transportation more inclusive and efficient to face the realities of sprawling cities. Making cities denser and more connected can lead to a stronger reliance on public transports, and to shorter and faster commutes (OECD, 2012). Greater accessibility has clear benefits not only for sustainability, but for the promotion of agglomeration economies and the mitigation of inequalities too. Bringing individuals closer together intensifies the positive dynamism that cities benefit from while reducing their energy consumption bill.

Compact cities

Numerous distinct initiatives exist as part of the overarching goal of making cities less energy-voracious. City planning allows for the operation of these different levers as one. Traditional city planning has spurred urban sprawl, which has proven to be largely incompatible with more productive, more innovative and more sustainable forms of urbanization. Reversing such trends necessitates the promotion of a denser way of life. Compact cities have recently emerged as the archetype of the sustainable city. They feature high residential density, mixed land use as well as better accessibility by public transport. A compact city does not necessarily mean a small city: this type of development promotes higher density rather than a more dispersed development as a response to increasing population levels. A compact city does not imply a monocentric model either: polycentricism and compact planning are largely compatible for as long as the distinct centers are effectively linked together by efficient modes of public transportation.

Mixed land-use implies the co-location of residential and commercial activities with green spaces and offices. Such a combination allows for mixed energy demand, which tends to avoid spikes in consumption within the city and to preserve urban open spaces. Better access to amenities promotes face-to-face contact between individuals and limits residential segregation relative to income or work activity. More efficient and developed transport networks, as well as limited amenities for the use of private vehicles incentivize heavier reliance on shared transportation modes. Empirical evidence has further demonstrated that central cities that limit traffic tend to be economically better-off than those with generous parking (Kenworthy, 2006), the main explanation being the attenuation of issues relative to pollution and congestion.

Compact city planning exploits the economies of scale from which urban areas can benefit as the construction and maintenance of infrastructures, such as water supply, drainage, roads, buildings and public transport, use less energy than in a more dispersed setting. By limiting urban sprawl, the compact city also limits soil erosion and losses in biodiversity. Denser cities preserve green spaces within and outside urban areas, restricting the transformation of agricultural areas into new components of the city. In the case of the Ile-de-France region, the Schéma Directeur de la Région Ile-de-France (SDRIF) has adopted a compact logic. Urban development is incentivized to favor places already served by public transportation to further reinforce existing density and connectivity. The scheme also requires municipalities to set



density targets. The goal is to limit the expansion of built infrastructures onto the region's preserved open spaces.

Compact cities, while extremely attractive in theory, have faced challenges in practice. Accessibility and livability concerns are amongst the most prominent issues. Regarding accessibility, the rent gradient theory (cf. figure 2) predicts that higher density and higher population levels will yield higher rents in all parts of the city. Inclusivity is challenged as fewer individuals can access urban areas and their amenities. In terms of livability, strong proximity reduces privacy as well as the availability of open and green spaces. These issues constitute the compact city paradox, which lays out that to be sustainable cities must be highly dense, but that to be livable, cities should be more dispersed. Once again, cities are trade-offs from which result their optimal size and density levels. In order to reach this equilibrium, however, it is essential to limit urban inefficiencies. Better connectivity, more efficient land-use and lower energy consumption make up cities' improvement potential. Cities can be leaders in the energy and ecological transitions, and it is at their scale that efforts should be maximized.

Smart cities

In the continuation of the compact city model, smart cities have emerged as modern and connected forms of urbanization. They rely on the use of ICTs in order to ameliorate the quality and efficiency of urban services at a limited cost. Centralized collection of data is used to improve and tailor urban services to local needs in real time. Multiple initiatives have blossomed around the world. The case of Issy-les-Moulineaux in France is of great interest considering the fast digitalization of the city. Issy-les-Moulineaux first adopted a compact city model with a mixed use of land for housing, commercial areas, green spaces and offices. As a way to further limit congestion and pollution, underground connected systems of waste management have been put in place in order to replace garbage trucks. Energy management has been centralized and the use of new technologies has allowed for a smarter distribution of electricity across the city. This avoids spikes in consumption as energy production is tailored to energy needs in real time. Captors have been installed throughout the city for street lighting to instantaneously modulate supply based on the presence of vehicles and pedestrians, and for available parking spots to be catalogued and booked ahead on a mobile phone application⁴.

Cities are the perfect locations for the development of such solutions thanks to strong innovative capacities and economies of scale in infrastructure production. In the case of the Paris-IDF region, Cap Digital and Advancity⁵ have joined forces to become a key actor on the European stage for the development of the city of the future. With more than 800 start-ups and small and medium enterprises, 70 research labs, schools and universities, and the involvement of 8 local governments, the cluster promotes R&D for more sustainable, inclusive and livable cities.

⁴ <https://somobility.fr>

⁵ <https://advancity.capdigital.com/>

Lagging areas as collateral damage of urbanization

While processes of urbanization have been extremely beneficial in a multiplicity of sectors and for a great number of individuals, issues of within-city inequalities and regional disparities nuance this picture. Metropolitan areas' forces of attraction have resulted in a strong concentration of production, innovativeness, employment and human resources, but also of public services, proximity equipments and digital access infrastructures. This form of territorial organization has spurred a rift between urban spaces and others. In this respect, the OECD has recently insisted on the need for efficient public policies to "make cities work for all" (OECD, 2016).

Geography of discontent

Social movements in several cities around the world are evidence of the new geography of discontent. Coined by McCann in 2016, this term refers to the geographical breakdown whereby multiple places that have faced stagnating or even declining growth hold resentment towards successful locations that have flourished. While manifestations of this discontentment have strong economic roots, they are also deeply driven by growing territorial divides.

In France, the Institute for Public Policies has analyzed the social movement's patterns with regards to territorial variables (accessibility, mobility, average distance between home and work). Their results show that issues of accessibility are strongly correlated to mobilizations, both online and in-person (Boyer et al., 2019). This further conveys of the mobility-hampering nature of commuting times.

Phenomena of spatial mismatches between home and work reinforce concerns of accessibility and income segregation. Employment is highly concentrated in cities, and even more within specific neighborhoods. While Paris counts 1.76 filled jobs per worker, this number drops to 0.97 in the inner suburbs of the city and to 0.75 in the outer suburbs (Gobillon and Selod, 2004). Distance from the CBD is negatively correlated with available information on vacancies (Rogers, 1997) and positively correlated with costs of job search (Ortega, 2000), which serves to explain weaker access to the labor market as one moves further out. This is amplified by insufficient connections of suburban and rural areas to the city center by public transportation as well as the difficulties for individuals with weaker incomes to afford a car (Gobillon and Selod, 2004).

Helping forgotten territories

As one moves out of cities, rich places tend to rarify and poorer areas become more numerous (Maurey and de Nicolay, 2017). While it had long been considered that urban wealth and development would 'trickle down' to the rest of the territory, it has now been widely observed that regional disparities have persisted and have even intensified with globalization and the rise of ICTs. Improving accessibility to successful places and stimulating local endogenous development are instrumental in integrating forgotten territories in the general process of growth.



Providing these territories with the necessary linkages to have access to cities will improve their physical mobility, with direct repercussions on social mobility. This has implications for the management of rail transport networks as location can ultimately become a burden. Territorial determinism should be addressed by public policies. Further to physical mobility, isolated places must also enjoy their own amenities in order to be successful, livable and increasingly self-sufficient. Several initiatives have been instituted by the French government, but in a number of areas little progress has been made.

France's High Speed Plan (Plan France Très Haut Débit), initiated in 2013, has been deemed crucial to tackle the growing digital divide: it aims at providing very high speed coverage to the entire country by 2022. Access to an internet connection and to mobile networks remains very porous in France, with the coexistence of white zones and highly connected places. Indeed, less dense areas benefit from a much weaker connection than do large cities (Monchatre, 2019). To reach its objectives by 2022, France's High Speed Plan must however double hirings (Banque des Territoires, 2019). As administrative procedures are increasingly being digitalized as part of the Public Action 2022 scheme⁶, access to an internet connection is increasingly becoming a discriminatory factor feeding territorial disparities.

To a wider extent, overall access to public services has been highly uneven across different types of locations. Cities' high density provides scale economies for the implementation of public services and their dwellers can thus benefit from easy access to such amenities. In small and medium cities the situation can be very different. For tackling these issues, the financial means of local authorities play a key role. Rodríguez-Pose and Ezcurra (2009) note that, in developed countries, fiscal decentralization has very promising implications for economic convergence. Public actions at the local scale allow public spending to better match the disparate needs of territories compared to top-down approaches.

More recent French policies are increasingly promoting bottom-up approaches and offering tailored support to local actors. As part of the Innovation Territories policy (Territoires d'Innovation), the Biovallée project in Auvergne-Rhône-Alpes promotes transition solutions for rural areas. Developing local energy production, organic farming and training programs matching local needs in skills are amongst the main propositions made to innovate outside of city-clusters.

Reframing cities' potential

The development of cities has spurred significant divergences between urbanized places and their neighbors. In addressing these, in France, an extensive focus has been put on successful places in hope that spillovers would flow onto surrounding populations, and top-down *one size fits all* policies have promoted a centralized approach to specific regional issues. Cities should continue to be promoted, but in redefining their potential, they can be turned into drivers of sustainability and inclusiveness.

⁶ Action publique 2022: target of making 100% of administrative procedures accessible online by 2022, including on smartphones

Cities as drivers of sustainability and inclusiveness

Large cities have the potential to become leaders of the ecological transition. Similarly, cities can review their functioning so as to contribute to the reduction of territorial inequalities. Urbanization can become a beneficial process for individuals in general, irrespective of their location. Accessibility concerns have been widely addressed and are essential to tackle for all dwellers to have equal access to urban amenities and opportunities. A more inclusionary zoning would enable households, irrespective of their income, to locate in cities' productive and well-connected areas. Housing policy thus emerges to be highly complementary to transport policy.

Large cities suffer from an unbalanced housing market, where supply is diluting and demand is high on a sustained basis (APUR, 2007b). The situation is even more complex for modest households. In metropolises, demand for social housing is remarkably higher than in other types of places; for six demands there is, on average, only one attribution of a social dwelling (APUR, 2007b). In the case of the Paris-IDF region, 6% of the municipalities, mainly located outside the city center, gather half of the regional stock of social housing (APUR, 2007a). Low-income individuals living in such types of housing are thus pooled together in segregated parts of the metropolis. This has strong implications for inequalities due to a combination of low mobility and alienation from pools of employment located in the city center (Guilluy, 2014). Social housing policy can thus have the unintended effect of further alienating individuals due to excessive spatial concentration.

Tackling issues of low supply and of spatial concentration would make the city more inclusive and more accessible to low-income households. This would promote stronger social diversity within large cities and address issues of urban expansion. According to APUR (2007a), in building inclusive and sustainable social housing, city planners should resort to vacant housing and urban renewal. Higher density implies better access to labor pools for low-income individuals. The compact city model can thus enhance cities' inclusivity as well as their sustainability if social dwellings are fully integrated to mixed land use planning efforts.

Providing access to larger cities to different income groups through transport and housing policies is a key factor in providing equal access to opportunities. Further to hosting more jobs and more public services, metropolitan areas have clear benefits for upward social mobility and well-being. The density in social and educational supply as well as in job opportunities acts like social insurance for workers (Guilluy, 2014).

The future of development policies

Public policies should combine place-based and people-based approaches, in order to tap into lagging areas' potential (Rodríguez-Pose, 2018) as well as give individuals the possibilities to move towards opportunities (World Bank, 2009). Lower mobility in European countries has exacerbated territorial inequalities (Rodríguez-Pose and Lee, 2013). Reversing this would greatly enhance cities' potential as hubs of innovation, ecology and employment, while limiting resulting territorial



imbalances. This would contribute to a more inclusive growth. According to Maurey and de Nicolay (2017), achieving this goal necessitates a greater focus on the general welfare gains of public investments in infrastructures and transport networks rather than on economic profitability. Meanwhile, sustainability could become a key feature of modern cities if efforts were continued in terms of infrastructure renovation and compact and smart city planning.

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