FROM CLIENT TO CITIZEN: UNIVERSAL BASIC INCOME AS AN INNOVATION POLICY PROPOSAL IN URBAN ENVIRONMENTS

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Advanced economies have historically deployed substantial efforts and resources to foster innovation. Innovation is an undoubted force for economic growth and prosperity. Nevertheless, there are growing signs that, although innovation (and, above all, technological development) has given rise in recent years to remarkable results in the generation of wealth, the phenomenon in relation to the distribution of this wealth has not been considered. At present, there is a growing social debate about the possibility of a jobless future (a future of labour shortages and widespread inequality, thanks to the replacement of people with machines). In the middle of this debate emerges the possibility of introducing a universal basic income (UBI for the acronym in English) as a corrective mechanism. The proposal is to offer money for nothing: give every citizen an unconditional cash amount (regardless of the working conditions and level of wealth of the individual), basic (to avoid falling below the threshold of poverty) and universal (for the entire world). This measure is presented as a corrective initiative, after the positive effects of the innovative phenomenon. In our opinion, however, instead of treating it as a corrective measure, we argue that the UBI can become an element of an innovation generating policy, with the capacity to correct inequality and generate new economic value at the same time. With this article, we intend to explore the link between innovation policies and social welfare policies, with the UBI as a common link. We argue that the UBI can become the missing link between innovation policies and those of social welfare, and become a powerful instrument to stimulate innovation if its deployment focuses on local and urban environments. We justify this idea as the point of destination of the logical evolution of innovation policies over the last decades.

Introduction: innovation, economic growth and inequality

Since Schumpeter introduced the term innovation in the modern economy as the phenomenon of introduction of new technologies in the market, this concept has become a mantra for managers and entrepreneurs, and an inevitable need for every economy to achieve growth. Innovation is understood as the "theoretical conception, technical invention and commercial exploitation of new ideas" (Trott, 2008). There is enough economic evidence that correlates the degree of innovation of a country, its economic growth and its personal inco-

me (see, for example, Freeman, 2002), and that establishes causal relationships between these variables.

Under this conceptual framework, governments have been striving for decades to deploy innovation policies. Policies that seek to create institutional environments that encourage the innovation of companies in specific locations have been very successful in the economic development of many countries, regions and local communities, from Israel to South Korea, Taiwan, Singapore, Finland, Germany or the United Kingdom; Silicon Valley has become the paradigm of innovative cluster imitated throughout the entire world. However, social aspects have been separated from the basic conceptions of innovation policies, which in general deal with the problem of wealth creation (letting welfare policies solve wealth distribution failures). The underlying framework of this logic has possibly been the conviction that the first objective of the company is to obtain benefits and, based on economic activity aimed at maximizing business results, positive externalities are generated that flow spontaneously towards society, generating shared wealth.

According to Nobel Prize Milton Friedman (1970), "the sole purpose of a business is to generate profits for its shareholders". For this current of thought, the only social function of the company is limited to the benefits of the shareholder (in fact, the positive impact on society is a derivative of the positive impact on the shareholders' income statement). In his writings, Friedman explicitly mentioned the term social responsibility, believing that by maximizing individual benefits, by stimulating intense competition among companies, the economic system could offer better products and services and satisfy the consumer with a growing degree of excellence. If a company developed activities with explicitly negative social impact, the consumers would stop buying their products. Thus, there is an automatic mechanism of self-regulation driven by the effect of the invisible hand of Adam Smith that would achieve an optimal balance of shared prosperity. With the enlargement of market economy systems, the wealth of nations has grown uninterrupted over the past two centuries. The economy has been driven by the effects of the industrial revolution and market forces, which have lifted millions of people out of poverty and have brought undeniable added benefits to humanity, in all aspects, including education, communication, health, mobility and energy. Public innovation policies reinforce the market economy system, addressing some of the problems of the system (mainly, market failures, where there is a suboptimal behaviour of this, such as research and development), generating public incentives to accelerate technological change, to improve the competitiveness and growth of companies and nations.

However, 2008's great recession, and the post-crisis scenario, have seriously challenged the old paradigm. Despite accelerating technological change, inequality extends into advanced economies. Absolute poverty in the United States (the country with the highest gross investment in R + D in the world) has continued to grow since 1980, and the wealth ratio of 0.1% of the population has increased five times in three decades (Freedman, 2016). Since 1972, the net productivity of the economy has increased by 140.9%, while wages have only increased by 7.8% (Economic Policy Institute, 2013). In recent decades, despite the advances in automation, robotics and big data, among other disruptive technologies, we have witnessed a large decoupling between labour productivity and average income or job growth (Brynjolfsson and McAfee, 2014). The value created by technological change seems to have only been captured by a small segment of the population. Large digital platforms such as Amazon, Facebook, Apple or Google are the paradigm of this dynamic. These companies have unparalleled technological competitive advantages, they have global brands, economies of unbeatable scale and reach, segmented reach to the user and great positive network effects. They are immense machines of generating profits and attracting investment capital, in a feedback effect that expands them, advancing towards growing niches of the old traditional economy. Nevertheless, as digitization and automation spread, employment generation weakens: these technology platforms are less intensive in creating employment than the old analogic leaders. Designed to maximize economic efficiency and reduce costs, digital companies are less able to distribute wealth through employment and wages than traditional manufacturing companies.

In summary, political responsibles face a paradox: on the one hand, developed nations move towards a paradigm of abundance thanks to exponential technological development (Diamandis, 2012). On the other hand, yet, they are witnessing a growing competition for jobs and the threat of a future of scarcity of employment due to the replacement of people by machines (Silva and Lima, 2017). Under the current model, capitalism seems to evolve towards a game of the winner takes it all, in which the richest segments accumulate progressively more wealth, and from which the middle classes, the big losers of the new scenario, are expelled. An illustration of this paradox

is the case of the United States, a country widely recognized as one of the global innovation economies, where levels of inequality exceed those of any other society, anywhere in the world, at any time of the history of humanity (Picketty, 2014). In this context, traditional innovation policies (whose ultimate goal is to accelerate technological change) are no longer a driver of national prosperity. And, while many academics and thinkers still see the creation of economic growth as the ultimate goal of innovation policy, more and more voices are rising (such as the OECD and the United Nations Conference on Trade and Development) that perceive the maximizing of domestic welfare as the end point of innovation policy and technological change (Mytelka and Smith, 2002). This raises the question of how we can redesign these policies, designing new instruments of social innovation, to turn them into an engine of shared prosperity.

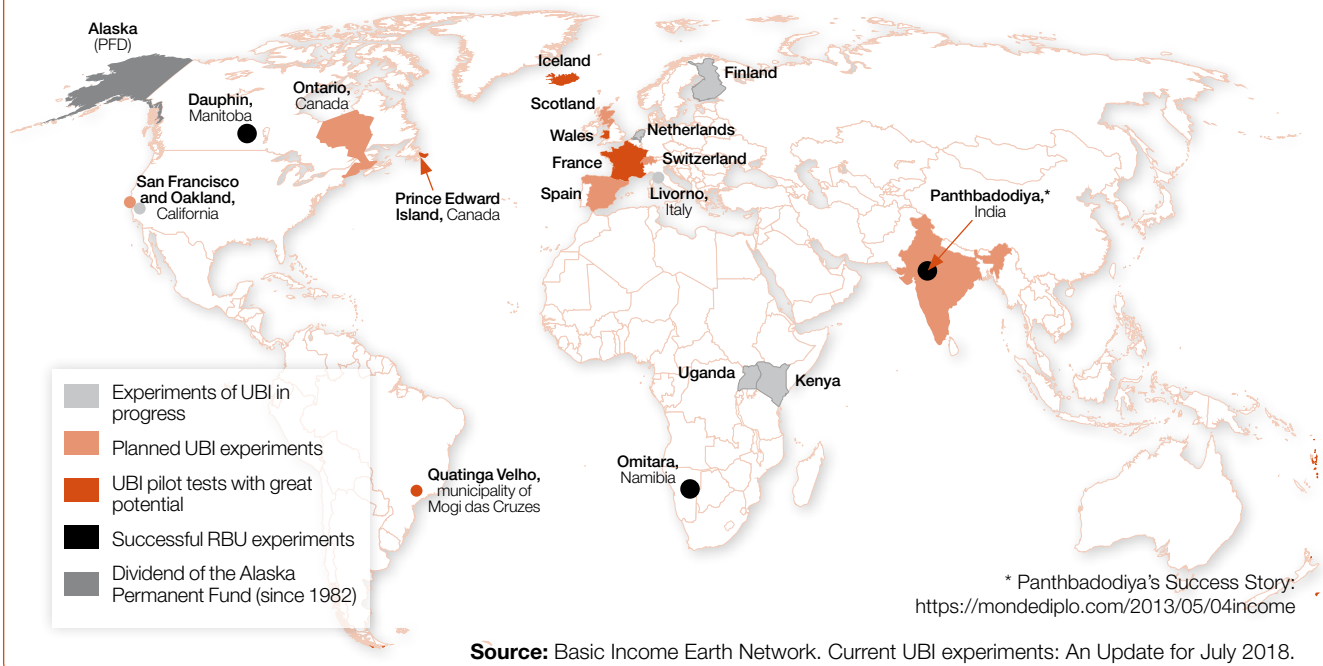
The emergence of the universal basic income concept

Since the crisis of 2008, the idea that innovation should not only be considered an economic concept emerges strongly. Possibly, a more integral innovation policy point of view would have to incorporate the social dimension, taking into account that the balance and the prosperity of the system require both production (offering policies: stimulation of competitiveness and technological change) and the distribution of wealth (stimulation of consumption and elimination of poverty). There is, in fact, a growing consensus on the need to find new forms of innovation that provide economic value and positive social impact to fight against some of the main threats of the capitalist system, such as inequality, weak consumption and populism (Van der Have and Rubalcaba, 2016, Mulgan et al., 2007, Pol and Ville, 2009).

Recently, the concept of universal basic income (UBI) is being proposed as a possible solution to the distribution problems posed by post-crisis capitalism. A UBI implies the provision of a fixed amount of monthly income to each citizen, regardless of the conditions they have (whether of their income, of their estate or whether or not they are employed) (Widerquist et al., 2013). The UBI eliminates three main eligibility criteria common in other schemes of social redistribution: the requirement of a demonstrated willingness to work, the recognition of the family situation and the existence of situations of poverty. The only condition of eligibility is residence in the country where the funds are granted (Vanderborght and Van Parijs, 2005). In most proposed UBI schemes, the monthly payment is designed to ensure that all citizens live at least above the poverty line. In some schemes, the UBI replaces pre-existing social welfare systems, such as unemployment benefits, widowhood, pensions, disability or food vouchers. The defenders of the UBI (existing in all areas of the political spectrum) point out the potential of this system to eliminate the bureaucratic cost of selecting who deserves it or who does not, making it unconditional and universal, and, therefore, much easier to manage. According to its defenders, the UBI would make the social welfare system more agile and consistent, would replace part of the costly (and often inefficient) welfare networks, would avoid the poverty traps (not working to continue receiving the subsidy). It would constitute a direct mechanism of abolition of poverty and stimulate innovation and entrepreneurship by lowering individual risk levels to start new business projects. At the same time, an UBI would solve the potential problems of the systemic collapse due to the failure of the economic demand in the face of a massive technological unemployment scenario favouring the distribution of wealth. For the detractors, the UBI is morally reprehensible (providing money to people who can opt not to develop any economic activity), it is economically unaffordable, it would create uncontrolled inflation and it would increase desirability of the areas where it was offered.

Be that as it may, at present, several pilot tests are under development or have been completed recently, in countries such as Canada, the Netherlands, Finland, India and Namibia (see Figure 1). Knowledge of the direct and indirect economic effects of a UBI is very limited. The attractiveness of the instrument is undoubted, but none of the studies presents the demographic and temporal scale sufficient to obtain significant conclusions. The question that must be answered is, in short, what would be the behaviour of a group of individuals in all the demographic, patrimonial, and income levels, when it is endowed with an unconditional basic income. Critics argue that the unconditional allowance of a monthly income would cause a large number of individuals to stop working, turning them into a kind of social parasite. The defenders of the UBI argue that, in fact, this segment of individuals is already possibly the least productive of the economy, and that the UBI, accompanied by labour market flexibility (preventing social exclusion by defining the same instrument), would mean that the economy was more adaptive and competitive. In the following sections, we support the theoretical and empirical approach to this visi-

Figure 1
UBI programs in the world



Source: Basic Income Earth Network. Current UBI experiments: An Update for July 2018.

on, through the creation of a conceptual framework of connection between the UBI and the capacity for innovation. In fact, we argue that the UBI is at the core of new waves of innovation policies, by stimulating the entrepreneurial spirit and economic activity through reducing the level of risk of potential entrepreneurs (Cohen, 2017).

Is the UBI the missing link between innovation and welfare policies?

It seems clear that the UBI is a promising tool to address the problems of poverty, unemployment and inequality, from a mitigating perspective (Vanderborght and Van Parijs, 2005). In this article, we argue that, properly designed and executed, a UBI could also become a driver of economic value creation. Is there an economic and social opportunity cost generated to focus the UBI as a simple correction instrument, instead of perceiving it as a potential driver of innovation? If so, we question that the UBI is only considered a distributive solution belonging to the field of welfare policies, and we note the need to explore the UBI within the frame of all innovation policies aimed at generating economic growth and shared prosperity. And, if the UBI can be incorporated into the body of innovation policies, then, what is the most efficient approach to do so?

Although the UBI has recently been studied from the perspective of a form of social innovation (Per and Backhaus, 2016), there is no solid link between the innovation research literature and the UBI, nor the contextualization of the UBI in the framework of innovation policies and instruments. Scholars and political responsibles interested in the UBI have considered it primarily as a tool to redesign welfare programs, even as an efficiency tool to reduce costs, minimizing the bureaucracy of state-sponsored social programs. The UBI emerges in a reactive way, as a direct protection against the growing worries about the technological unemployment and the scenarios of the future with lack of work and its precarization (Stern, 2016). Just as most scholars of innovation policy identify their conceptual limits in the creation of wealth, forgetting its redistributive mechanisms as an essential systemic element, the academic community focused on social welfare policies has also largely neglected the analysis of the innovation-inducing effect that could arise from appropriately designed UBI programs. A notable exception are Lucarelli and Fumagalli (2008), who

found that by boosting risk-taking and improving network and learning processes, UBI formulas could induce the promotion of innovation.

There is, in fact, growing empirical evidence of the potential of the UBI as an engine of innovation. The UBI works as a safety net for the most disadvantaged people, but also as a provision of financial resources, which would give them the opportunity to start entrepreneurial activities through the direct provision of minimum cash funds. In one of the first documented experiments of UBI, executed in Namibia during a period of two years between January 2008 and December 2009, there was a significant increase in the number of small businesses in the community generated with the additional income that allowed new brick operators, bakeries and clothing. Competition and productive specialization were stimulated. In addition, small businesses in the community obtained an increase of 300% in total income, distributed among its residents, due to the increase in available cash (Haarman et al., 2009). It seems clear that the UBI increases small-scale investments in impoverished local communities (Standing, 2013). The help in cash results in more business activity and also leads to the creation of employment, a fact that generates an occasional shift of paid employment towards self-employment and entrepreneurship, with less tendency towards migration. A UBI is also an engine for small businesses. Facilitating cash flow stimulates rural economies by increasing demand, with administrative costs significantly lower than other instruments of social inclusion (Noteboom, 1987, Hanton, 2004). The UBI "would serve as compensation for diseconomies of small scale production and generate increases in scale, concentration and growth" (Nootebom, 1987). In advanced economies, the provision of a UBI would stimulate entrepreneurship by reducing the levels of personal risk, with an emergence of new innovative and creative business models.

However, the discourse on the UBI in political and academic circles has been inclined towards a macroeconomic and national approach (Widerquist et al., 2013). The disconnection between macroeconomic approaches to policy development and the study and implementation of solutions with objective impact at micro scale has been high, as has been the disconnection between UBI approaches and the proposals for new instruments in the field of innovation policy. It is assumed that basic revenues have to be paid (and, therefore, financed) by macro-structures like the national state,

> *"When production and consumption are closer, more benefits and impact are generated"*

from top to bottom, and that the political debate takes place at the national level. This diversion has been evidenced by the choice of names such as tax regime, state bonus, national dividend or citizen salary for the different variants and approaches to the UBI (Van Parijs, 2004, Fridman, 2013). Even so, if we start from the hypothesis of considering the UBI not as a mitigating instrument (pertaining to the sphere of social welfare and equality policies), but as an instrument of innovation policies, aimed at stimulating economic growth, then we arrive at a surprising conceptual construction: we argue that the UBI has to be provided at city or local community scale. Temporary innovation policies have followed an evolution from the national or supranational level to the local or urban level. From national, or continental, systems of innovation, to local systems. In this evolution, policies have changed their approach, from predominantly techpush dynamics to predominantly market-pull dynamics. The deployment of local policies, of a market-pull nature, responds to the closest needs of the citizen. Since innovation policy and even innovation and entrepreneurship are increasingly an urban phenomena (Cohen, 2016), it seems appropriate to review the mix of existing policies at local scale, extend the logic of innovation to logic of creation and distribution of wealth, identify the link between local innovation policy and local welfare policies, and place the UBI at the centre of this discourse. We argue that, under certain conditions (namely the local or urban approach) and the use of specific instruments (local currency), the UBI can become a driver of innovation and citizen welfare. When production and consumption are geographically closer, more benefits and impact are generated (New Economics Foundation, 2006). Providing the UBI at local scale would mean a new leap, from a customer-centred market innovation policy to a citizen-centred social innovation policy.

The evolution of innovation policies: towards local approaches

Alongside the intensification of global competition, the globalization of markets and the acceleration of technological chan-

ge, companies have undergone a greater strategic pressure to innovate, differentiate and obtain superior corporate margins that allow them to reinvest and grow. There is a broad consensus in the academic literature on the importance of knowledge, technology and innovation in economic growth and in the welfare of countries (Tödtling and Trippl, 2005). Nevertheless, the competitiveness of companies depends not only on their individual strategy, but also on the quality of the environment in which they compete (Portero, 1999). In this sense, the location in an innovative cluster facilitates the absorption of knowledge and good practices by companies. Thus, the actions of governments count on innovation: the innovative capacity of companies depends on the ability of governments to create institutional frameworks that encourage the emergence of innovative clusters and to make long-term policies and strategic investments to share and reduce innovation risk (Mazzucato, 2013).

Supranational or state innovation policy approaches have been developed implicitly under the linear R + D model: it is assumed that once new sources of knowledge are generated, this will be disclosed as a natural and spontaneous process towards the economy and society. The programs proposed at national or supranational level are tech-push programs, which generate large scientific or technological capacities. In general, they are large research programs, initiatives that are not concerned with stimulating the absorption capacity of companies (Tödtling and Trippl, 2005), and which are aimed at solving major technological, strategic or geopolitical challenges (many of them induced by logics of defence). These efforts have not been considered by a large part of the economic status quo, which conceptualized innovation as the pure result of market dynamics. The fact that the more orthodox conventional wisdom has questioned or neglected the real effect of public investments in R + D in the economy, Mazzucato (2013) demonstrates how the state intervention in the promotion of disruptive technologies (mainly, through long-term investments in specific strategic areas) is capable of creating technological competencies that, through the subsequent action of entrepreneurs, give rise to new generations of transforming products (see the case of the iPhone, which incorporates a set of twelve key technologies fully developed with public resources of the U.S. Government). According to Mazzucato, great transformative innovations such as mobile communications, GPS or Internet are spillovers of public R & D investments that are not market oriented.

Especially since the year 2000, with the famous Lisbon Summit, in which the EU Member States commit themselves to transform Europe into "the most competitive economy in the world based on knowledge", new approaches to innovation policies led from national and regional levels emerge. National innovation systems (NIS) are defined as "the network of public and private institutions within an economy that fund and perform R&D, translate the results of R&D into commercial innovations and affect the diffusion of new technologies"(Lundvall et al., 1988, Nelson, 1993, Mowery, 1994). The first approaches to the concept of NIS go back to the ideas of Friedrich List on "the national system of political economy" (1841), which proposed a series of systemic measures (of the set of agents of the economy) to accelerate the technological change in Germany at that time, concerned about the emerging English economic power since the first industrial revolution (Freeman, 1995). The progression of innovation policy research in the 90s shows evidence that the acceleration of technological change and the economic growth of nations depends more on the diffusion and efficient adoption of innovations than on leadership in the generation of new disruptive knowledge (Freeman, 1995). The case of the USSR is paradigmatic: a leading nation in its time in mathematics, physics and aerospace technology was absolutely inefficient in converting this frontier science into economic growth and welfare for real citizenship because of the lack of an adequate institutional framework of interconnection between agents and economic incentive systems to make innovations reach the end user. Innovation is not a linear process that depends on brute force in R + D, nor on isolated tech-push dynamics. Innovation has a systemic and evolutionary character (Edquist, 1997) and requires intense communication and interaction between groups of agents (companies, entrepreneurs, universities, financial institutions and public bodies). Innovation is a phenomenon of proximity and interaction between technological capabilities and the needs of the market. The type of interactions and information flows that generate successful innovations are especially efficient in physical proximity (Boschma, 2005). Thus, while the development of pioneering scientific knowledge capable of generating a flow of disruptive technologies is triggered by global, supranational or national dynamics, its efficient conversion into commercial competitive advantages occurs in the proximity, in local environments, and in close contact with the clients.

Since the late 1990s, academics have given increasing importance to sub national regional and local approaches to innova-

tion policy (Ratti et al., 1997, Autio, 1998, Cooke et al., 1997). Since 2000, the European Commission itself established the region as a valid analysis unit in innovation policies, for its theoretical historical, cultural and business homogeneity; and urged the Member States to implement regional innovation strategies (RIS) based on the intelligent specialization at regional level. In fact, regions have an essential role in the coordination and implementation of policies (Morgan and Cooke, 1998).

Nevertheless, regions are often artificial entities, defined by political institutions, and borders are generally determined by history. They are not necessarily homogeneous economic realities and their validity as a unit of analysis in the competitiveness policy has been widely criticized for their possible heterogeneity (Lagendijk, 2004). Before the emergence of the RIS concepts, Porter (1990) introduced the concept of cluster as a "geographic concentration of interconnected companies and institutions operating in the same sector of the economy". The clusters respond to another theoretical framework and to a geographic scope generally inferior to the RIS or NIS approaches. Business concentrations are pre-existing economic phenomena, independent of administrative divisions, which often define policies according to political criteria. These concentrations are generally local, and are revealed as optimal environments for the diffusion of innovations, cooperation between companies and interaction and dialogue with administrations. The clusters are especially appropriate for the development of innovation and competitiveness policies of SMEs because of the cultural and strategic homogeneity of the companies. The concepts of the cluster of Michael Porter and its models of competitive forces have been widely used by regional and local public administrations to boost the concentrations of SMEs, but also to encourage high-tech companies and accelerate the emergence of innovation districts in urban areas or high technology areas (Keeble and Wilkinson, 2000).

Finally, the success of the innovative process also depends on the experience and expectations of the consumer, forgotten in all the tech-push / top-down approaches to innovation policies. The dynamic market-pull is decisive in the efficient conversion of new knowledge and ideas in products and services. As innovation becomes more and more a collaborative and open process, its success depends on efficient interaction with users (Morgan and Cooke, 1998, Chesbrough, 2003). Social capital and tacit knowledge of the market are a key factor in obtaining good results in the introduction of new products and

> *"The unit of analysis in innovation policy has progressively moved to the local and urban level"*

services (Morgan and Cooke, 1998). Sub regional spaces (cities and urban environments) are the optimal spaces for interaction with the user. The tacit knowledge (non-codifiable) is transmitted in the short distance, in the face to face. This allows a more local approach to innovation policies. In recent years, the unit of analysis in innovation policy has progressively moved to the local and urban level. In this way, a national or national innovation system is made up of different clusters, innovation districts and local innovation systems, which form autonomous learning units (Muscio, 2006).

The design of local policies to support innovation continues to be an active and still unresolved debate among the academic community (Beaudry and Schiffauerova, 2009), especially regarding the dialectic between homogenization and diversity: what is better, the cluster of local specialization recommended by Marshall (1890) and Goalkeeper (2003) or the diversity benefits of pioneering urban environments by Jacobs (1969)? Nylund and Cohen (2016) agree with Jacobs and introduce the construction of collision density, relative to the urban advantages that allow a high frequency of interdisciplinary interactions among several innovation actors in high concentration areas. Regardless of the paradigmatic differences in regulatory approaches to foster the growth of urban innovation and entrepreneurship ecosystems, at least three factors have converged to accelerate local change: the massive urbanization that is being produced all over the world, the growing collaborative character of innovation among entrepreneurs, corporations, universities and local governments, and the democratization of innovation and entrepreneurship tools (3D printing and fab labs, co-work spaces, crowd funding, cloud computing and more), which are highly accessible in high urban density environments (Cohen, 2016).

The collaborative character of innovation and the emergence of local innovation systems have generated new concepts and tools for testing, interacting and experimenting new technologies with the end user (smart cities, living labs, spaces of collective work, workshops maker) to capture the tacit

knowledge of users, encourage their interaction and reduce the barriers of entrepreneurship to urban areas. Citizen innovation and the capacity of public bodies to generate new services aimed at improving the quality of life of citizens has grown in recent years as the political community deploys tools such as contracting for innovation (public purchasing) (Edquist and Zabala-Iturriagagoitia, 2012), civic crowd funding and citizen entrepreneurship programs (Muñoz and Cohen, 2016).

Then, since their conception, innovation policy approaches have evolved from tech-push logic to market-pull logic; from top-down designs to collaborative and co-creation designs with the user; from supranational perspectives to local perspectives, and from economic growth objectives to needs for inclusive growth. At the same time, the UBI approaches have gone from logical, mitigating and social welfare to logics of stimulus instruments of demand, innovation and entrepreneurship. The point of convergence, then, seems conceptually clear: our hypothesis is that the UBI has to be identified as an instrument of innovation policy and must be placed as the culmination of a new generation of urban or local innovation policies, market-pull and cooperatives, with a final recipient who stops being the consumer to become the citizen.

Conclusions and future lines of research

To close the discussion, we are missing a pragmatic debate on the implementation of the instrument. We suggest starting prospective research on the following idea: provide the UBI in local digital currency. The provision of resources in the form of local currency stimulates local employment, increases salaries

Table
Innovation policies according to its scope

Scope	Tools	Underlying driving forces	Objective	Beneficiaries	Types of innovation dynamics
Global	Scientific networks	Scientific rationality	Creation of knowledge	Humanity	Tech-push
Supranational	R & D framework programs (Europe) Long-term technology plans (US, Russia, China)	Technological innovation	Defence Technological leadership Industrial leadership	Political system	Tech-push
Global	National agencies (DARPA, NASA, TEKES, MATIPMOP) Technology Infrastructures (Fraunhofer, Catapult) Tax Policy Financing in industrial R & D (grants and loans) Public procurement Industry regulation	Technological innovation Economic freedom	National growth	National Competitiveness Large Companies	Tech-push
Local	Cluster policy Smart specialization University technology transfer	Economic freedom	Regional growth Competitiveness of SMEs	SMEs Clients	Market-pull
Regional	Living labs, Innovation districts Smart cities Incubators and accelerators Maker movement **Local universal basic income**	Democracy	Promotion of entrepreneurship Improve the life of citizens	Entrepreneurs Citizens	Market-pull

and social capital (Schussman, 2007). The currency is a socially constructed institution that can be modulated to create the right incentive system to stimulate economic growth in specific communities (Seyfang and Longhurst, 2013). Local currencies have already been used to provide liquidity in poor areas (Slay, 2011). The local currency has a multiplier effect when it circulates in a closed environment, with no possibility of escape, creating specific richness in the local context. It would stimulate consumption and local production, since for some authors "the most rational way to produce is to provide local resources for local needs" (Schumacher, 2011, Jacobs, 2016). The key elements to ensure basic levels of life, housing, food, energy, water, transport and education, among others, are mainly given and have local experience. There are academic trends who claim to reorganize economic structures to respond to local needs (Swann and Witt, 1995). A UBI in the form of a local currency would have the double virtue of eliminating poverty and generating local wealth at the same time, stimulating local demand (in a similar way as innovative public purchasing actions stimulate the supply of local innovation). The local currency does not substitute, but complements the national currency and solves the problem of the autonomous lack of sustainability of the communities, at least in terms of wealth generation (Douthwaite, 1996 and 2012). Finally, alternative currencies such as crypto currency (for example, bitcoin or ethereum), local paper currencies and timebanks have grown in recent years as a response in part to the growing financing of national and supranational economies (Cohen, 2016).

In this article we propose a revision of an emerging instrument (the UBI) within the framework of innovation policies, as a measure to eliminate poverty and simultaneously generate economic growth. We suggest a conceptual formula to solve one of the problems of modern innovation policies (inequality), specifying the scope of implementation (at the urban scale) and the potential mechanism (local currencies). If wealth accumulates in a small number of large global digital platforms and growing trends towards automation continue, the large decoupling between labour productivity and income and labour growth documented by Brynjolfsson and McAfee (2014) is likely to grow in the future. This article creates a theoretical framework for the confluence of innovation policies and social welfare policies, and conceptualizes UBI as the mechanism that induces economic growth and corrects inequalities. We have omitted the connection of the microeconomic formula with the macroeconomic monetary system. Additional research on local currencies and UBIs is needed to analyze the impact of these measures at macro scale. ■

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