Urbanization, cities and economic growth: trends, recent evidence and policy implications

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Susanne Frick re-examines ideas about the link between urban agglomeration and economic development and suggests new policy thinking is needed to stimulate economic growth in developed and developing countries.

:Introduction:

How do urbanization and cities impact economic development?

This question has long attracted attention from both academics and policy-

makers. The tenor and policy descriptions in most parts of the economics literature have been clear:

Urbanization, and more specifically large scale cities, boost people's productivity and hence drive economic growth. Policy-makers should thus favour large cities and concentrated urban structures over a more dispersed spatial development.

In recent years, however, this assertion has come under increasing scrutiny. Researchers from different disciplines have painted a more nuanced picture in which city size plays an important role, but not one without limits and only under certain circumstances. The unprecedented city growth in the developing world has further called into question the mantra that cities are always growth enhancing. This idea has been mainly based on developed country evidence, but urban performance in the developing world has not always necessarily followed the same pattern.

The following article examines the fundamental changes that have occurred over the past sixty years in terms of urbanization and city growth, discusses the recent literature on the topic, and lays out the implications for policy-makers.

It argues that dogmatic policy prescriptions, uniformly favouring big cities and agglomerations, are too simplistic and can often lead to sub-optimal outcomes. A realistic and effective response to this important topic will need to be more multifaceted and involve policy action both at the local and national level.

Urbanization and city development in a historical perspective

Over the past 60 years, the world has undergone an unprecedented transformation in terms of urbanization patterns and city development. Looking around the globe today, urbanization rates are at unforeseen levels with large cities virtually anywhere in the world – including many African, Asian and Latin American countries. In fact, the majority of the world's largest cities are now in developing countries. However, up to the 1950s, the world looked very different. For most of history, cities and urbanization were closely intertwined with economic success and/ or political dominance. Only in the economically and politically most advanced nations, the growth of large cities was possible and in turn, large cities further brought about development. A few examples include

Alexandria around 200BC, Rome in 1AD or Chang'an in China in 800AD (Chandler, 1987).

This rule was still very much in evidence in the 1950s. At that time, the majority of the world's biggest cities – 20 out of 30 – were indeed located in high income countries (United Nations, 2014). The few exceptions to the rule were a handful of large cities in big developing countries, such as China, Mexico, and Brazil. The poorest countries in the world at the time lacked, in general, very large cities. Things have, however, changed over the past sixty years. Driven by galloping urbanization, the number of people living in cities increased from less than 1 billion people in 1950 to 4 billion in 2015 (United Nations, 2014).

Since 2007, for the first time in history, more people live in cites than in rural areas.

The surprising element within this structural shift is the change in the geographical pattern of urbanization. Up until 1950, urbanization had mainly taken place in richer countries of Western Europe, North America and Australia. Poorer countries, in contrast, saw stagnating rates. This pattern has, however, reversed since then with the strongest urban growth occurring in developing countries. The comparative world maps for the years 1960 and 2011 in Figure 1 illustrate well these changes.

Figure 1. Urbanization and city population. *Source*: World Urbanization Prospects, 2011

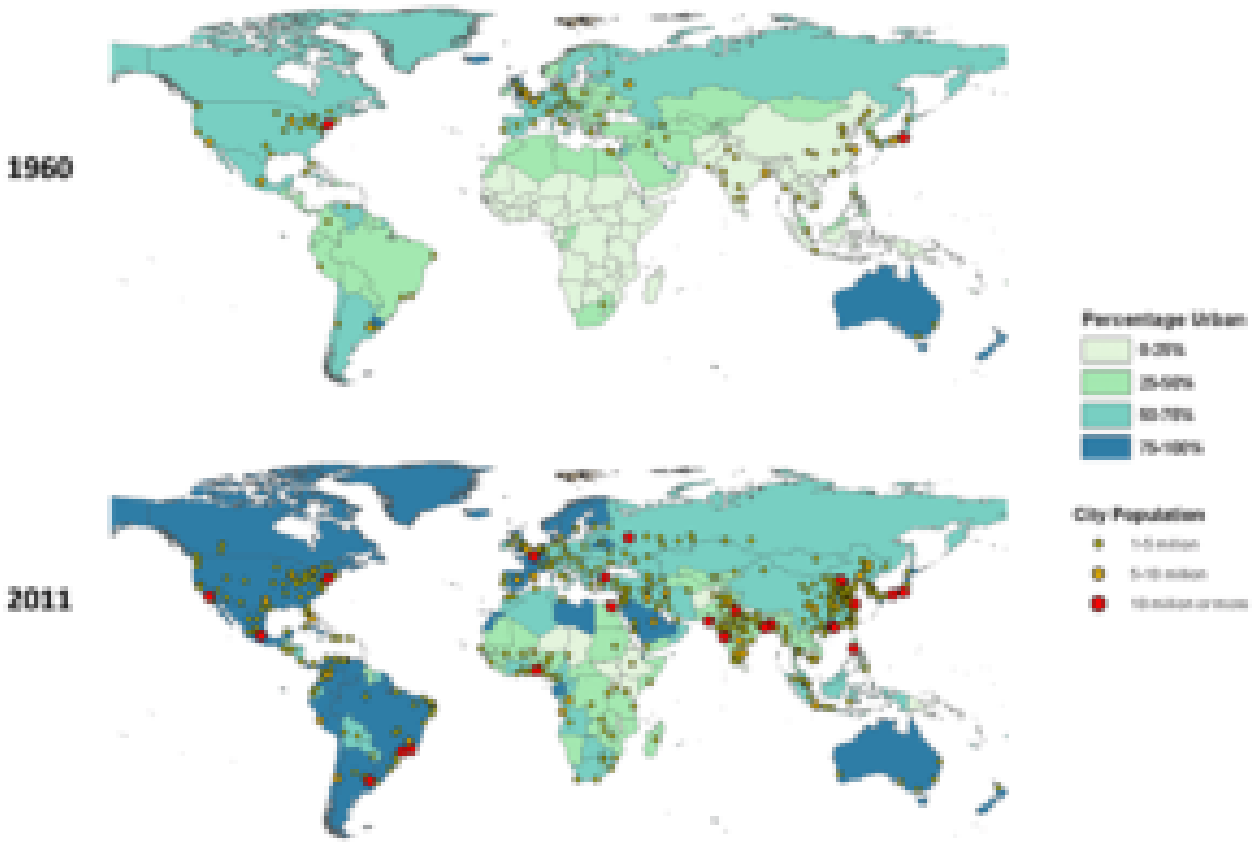
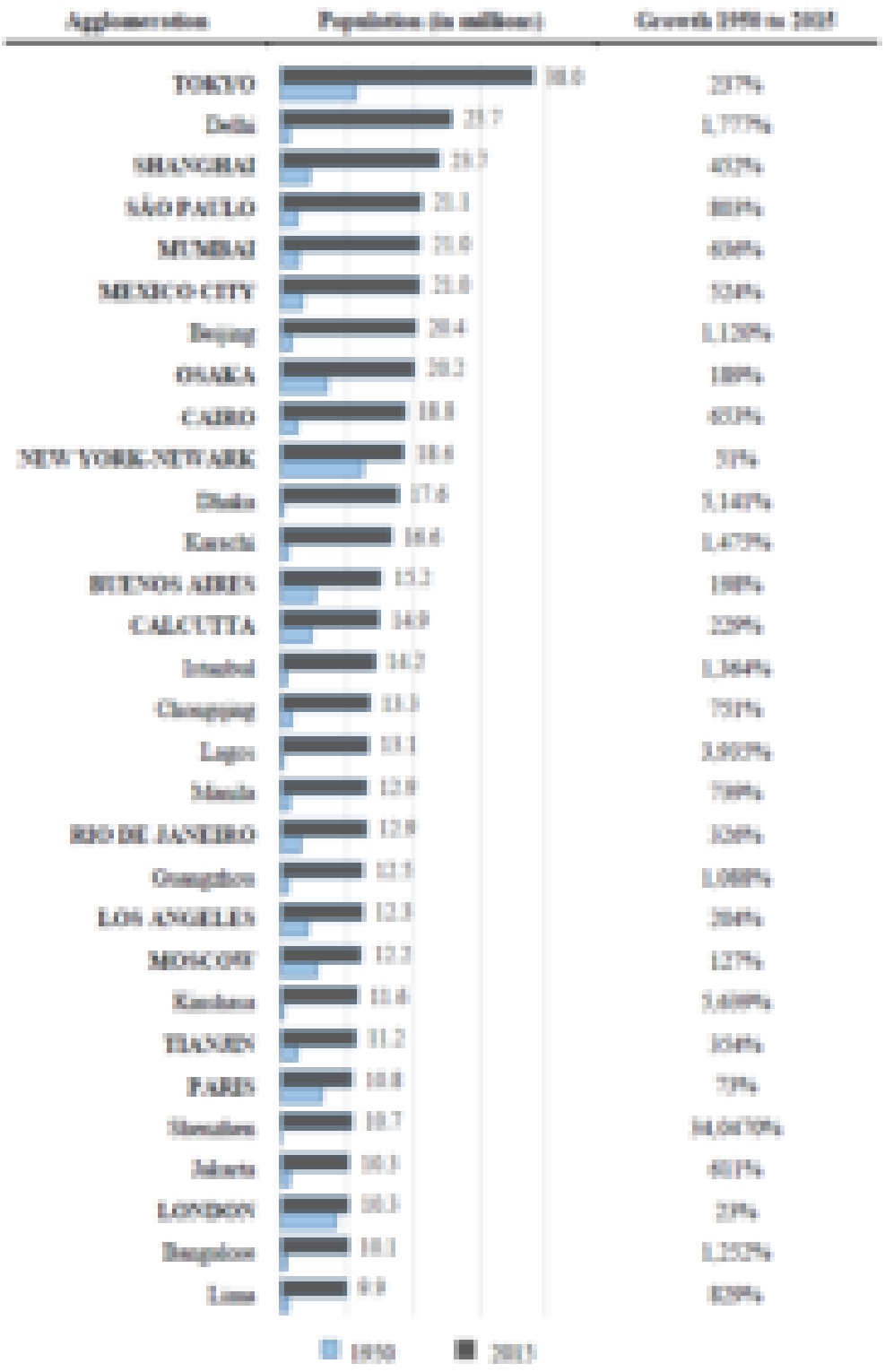


Figure 1 reveals another interesting and maybe even more striking development: the emergence of a vast number of mega cities of more than 10 million inhabitants, the majority of them yet again located in the developing world. While there were only 2 cities of such size in 1960, their number increased more than ten-fold to 25 by 2011 (indicated by the red dots).

The number of cities of 5 to 10 million inhabitants grew in parallel from merely 9 in 1960 to 44 in 2015 (displayed by the orange dots). Again, changes are most visible in the developing world. The large majority of mega cities with more than 10 million inhabitants can be found in the populous countries of Asia. Even across the still relatively less developed and less urbanized countries across the African continent, massive agglomerations of 5 million inhabitants and above have emerged.

Figure 2. 30 largest agglomerations in 2015 (Bold capitalized cities were among the 30 largest agglomeration in 1950).



Source: Own elaboration based on World Urbanization Prospects 2014

In addition to this increase in the number of cities, cities have also grown considerably in size (Figure 2). The average population of the world's largest thirty agglomerations quadrupled from 1950 to 2015: while the average was around 4 million inhabitants in 1950, it now stands at 16 million (United Nations,

2014). Some cities, in particular in emerging countries, have seen an even more dramatic increase in their population. Almost half of the thirty largest cities in 2015 were not included in the 1950 list (those cities not capitalized in Figure 2), most of them having grown between ten to fifty times over the past decades, with Shenzhen reaching 340 times its 1950 size.

The growth of the large metropolis in countries with relatively low levels of economic development has brought about another phenomenon which has received much attention in the literature: the spatial concentration of people and economic activity in few cities and the associated spatial disparities between primary urban areas and lagging regions. Urban primacy, the share of a country's urban population living in the largest city, is a frequently used indicator to measure this spatial concentration. In the developed countries of Europe and North America, primacy reaches average levels between 10% and 15%. In contrast, many developing countries, in particular low income countries, display urban primacy rates of over 30% (Primacy numbers are sourced from the World Development Indicators). Similarly, the ratio between the largest and second largest city is on average 2.7 for developed countries, while it raises to 3.9 for the developing countries' average and reaches over 10 in a number of cases, such as Kabul, Addis Ababa, Lima and Buenos Aires [Own calculations based on (United Nations, 2014)].

We are thus living in a world which is – independent of income levels – consistently more urban than 60 years ago, and where urbanization and the formation of large cities seems at least partially disconnected from economic development. In contrast to the mid-20th century, the majority of urban development is happening in the developing world at an unprecedented scale.

Urbanization, cities and economic development

The aforementioned changes are striking not only because of their sheer scale, but also because they challenge traditional economic theory on urbanization and cities. First, they question the prevailing explanations posited by economists on the mechanisms triggering urbanization. Second, they have sparked a growing debate on whether cities in developing countries have the same catalytic effect on economic development as in developed countries.

On the first point, as described above, urbanization and the existence of large

cities in a country were closely connected to the economic development process throughout much of history. Traditionally, economists explain the urbanization process with a structural shift from an agricultural to a manufacturing based economy (Bertinelli and Black, 2004; Davis and Henderson, 2003). On the one hand, a sufficiently productive agricultural sector is needed to shift from full absorbance of labour by subsistence farming to available surplus labour in the countryside. On the other hand, it assumes that higher (expected) wages in a growing industrial sector, which is quintessentially urban, attracts former rural workers and stimulates migration from rural areas to cities (Harris and Todaro, 1970; Henderson, 2003; Lewis, 1954). Hence, urbanization becomes a by-product of industrialization. This mechanism, in fact, reflects rather well the development processes at work in today's developed countries: urbanization and city growth were strongly tied to the industrialization of their economies and economic growth (Jedwab and Vollrath, 2015).

This traditional explanation is, however, somewhat at odds with the developments the world has witnessed over the past decades.

Many countries with relatively low levels of economic development are far more urbanized today than developed countries had been decades ago at similar stages of economic development.

Developing countries have, thus, urbanized without the accompanying industrialization process. Fay and Opal (2000) describe this situation as 'urbanization without growth'.

A diverse number of factors has been put forward as potential mechanisms triggering urbanization in developing countries in addition to the structural transformation argument. So-called rural push factors drive people from the rural countryside into cities. Push factors include conflicts in rural areas (Glaeser and Shapiro, 2002) as well as negative agricultural shocks and rural poverty which decrease rural wages and thus incentivize an outward migration to cities (Fay and Opal, 2000; Jedwab and Vollrath, 2015). Urban pull factors, in contrast, are those drivers which make cities more attractive to people. They include urban amenities, such as better urban living conditions through improved access to public services as well as a political urban bias (Ades and Glaeser, 1995; Davis and Henderson, 2003). And finally, urban push factors are related to the natural population growth within cities following from decreased mortality within urban

areas (Jedwab et al., 2017).

The second point, which has been increasingly called into question by the developments over the past 60 years, are the productivity gains arising from cities. Whether we look at the endogenous growth theory, urban economics or (new) economic geography, cities are supposed to bring productivity gains through agglomeration economies. While the explicit mechanisms and emphasis within the different schools of thought differ, the underlying concepts go back to the same basic ideas:

Bringing people together in cities and agglomerating economic activity causes efficiency gains through the generation of thick labour markets, forward and backward linkages and knowledge spill-overs.

Thick labour markets are created in cities as a larger pool of people facilitates firms to find employees with the required skill-sets. Conversely, a large number of companies located in their vicinity eases the job search for employees and reduces the risk of unemployment. Forward and backward linkages arise through the benefits for firms by being located closer to their markets and suppliers (Krugman, 1991). In the presence of increasing returns to scale, closeness to markets brings about efficiency as it allows the firms to reduce transport costs. Furthermore, a network of suppliers is formed which can cater to the firm's specific needs. This is particularly the case for clusters of specific industries. And finally, external economies (Rosenthal and Strange, 2004) facilitate information flows and interactions between different actors. Proximity, which is created through cities, is key to these sorts of knowledge spill-overs as they have shown to have a strong distance decay effect (Fischer et al., 2009; Jaffe et al., 1993).

Besides these general claims on the advantages of cities, there has been an increasing focus on praising the catalytic effect of large cities in particular. Empirical evidence in the urban economics tradition has stressed the productivity gains from increasing city size: a doubling of city size is accompanied by a 3% to 8% increase in the productivity of the urban worker (Duranton and Puga, 2004; Rosenthal and Strange, 2004). Similarly, more concentrated urban structures are considered growth inducing at the country level since the agglomeration economies generated by the concentration of people increase the overall productivity (Brülhart and Sbergami, 2009; Fujita and Thisse, 2003; Henderson, 2003; Martin and Ottaviano, 2001). These findings imply, holding the population

constant, that larger cities are indeed strongly beneficial from an economic growth point of view.

This stream of literature has been influential in policy discussions over the past decades, leading to a set of well-defined policy descriptions. Agglomeration and thus the concentration of people in few large cities is deemed beneficial for growth. Developing countries, in particular, should avoid attempting to reduce spatial disparities between more and less developed regions. Instead, promoting agglomeration is considered the fastest and most direct path for development, since the presence of a large city will multiply growth opportunities. As the World Bank (2009) put it most prominently in its 2009 World Development Report: "Economic growth is seldom balanced. Efforts to spread it prematurely will jeopardize progress" (p. 5-6). Based on this logic, the rationale and usefulness of spatial policies, which aim to promote the development of secondary cities, have been called into question.

The universal validity of such statements, however, has been increasingly disputed for a variety of reasons. First, our improved understanding of the factors driving urbanization in developing countries makes it questionable that processes which are – at least partially – influenced by such different forces should lead to the same outcome. Gollin et al. (2016) for instance suggest that many cities in the developing world are less likely to have the same productivity inducing effect as cities in developed countries, since most people work in non-tradable sectors, and not manufacturing, where there are less possibilities for on-the-job learning. This is supported by recent evidence from Castells-Quintana (2017) and Frick and Rodríguez-Pose (2016) who show that agglomeration and city size are not related to economic growth in large parts of the developing world.

Second, the sheer magnitude of urbanization and city development in the developing world is unprecedented in history. Developed country's cities, on which most of the empirical evidence is based, are frequently multiple times smaller, so that a one-to-one application of the principle of 'the bigger the better' seems unlikely to hold. In fact, McCann and Acs (2011) show that almost 40% of the 75 most productive cities in the world have a population of less than 3 million inhabitants and only very few cities that would be considered as megacities make it on the list. Frick and Rodriguez-Pose (forthcoming) furthermore find that a larger share of the urban population living in cities below 3 million is growth promoting.

Finally, researchers also emphasize the role of a multitude of other factors besides size behind city-level productivity (Camagni et al., 2013, 2015). A city's sectorial specialization, in particular, has attracted considerable attention: tradable services, such as finance, and high-tech manufacturing profit more strongly from large cities than other industries. Hence, countries with a strong presence of such sectors benefit more from large cities than countries with a more mature manufacturing industry base. Furthermore, city context specific elements are important determinants for urban productivity levels, in particular in developing countries. Castells-Quintana (2017), for instance, shows that in countries with insufficiently developed urban infrastructure, urban concentration is growth inhibiting instead of growth promoting. Other authors (Ahrend et al., 2014; Frick and Rodriguez-Pose, forthcoming; Glaeser, 2014) highlight the importance of institutional capacity, in order to reduce negative externalities, which arise following rapid city growth. Cities of the same size thus do not necessarily have the same productivity inducing effect given that these factors differ city by city.

Conclusion and policy implications

What do these findings imply for policy formulation, in particular in developing countries?

While it would be tempting to resort to a simple and clear message – advising policy-makers to discard the big city idea entirely and solely focus on promoting growth in smaller secondary cities, the answer certainly needs to be more nuanced than that. Agglomeration and large cities can indeed be important loci for economic growth. However, the city size-economic-growth relationship is far from uniform and small and medium-sized cities also have an important role to play. The relationship is, furthermore, shaped by a diversity of contextual factors, such as sector specialization, urban infrastructure, and government effectiveness. Only if these factors are favourable, larger cities and agglomeration can have a catalytic effect for growth.

On average, many high-income countries provide this favourable environment and hence may benefit from larger cities. In developing countries, by contrast, economies are frequently dominated by industries which do not benefit to the same degree from agglomeration economies, infrastructure is less developed and government effectiveness tends to be lower. And crucially, cities and

concentration levels are already much higher than in developed countries. A focus on large cities may, thus, be misplaced in this context. It is, however, not impossible for developing countries to benefit from large cities and agglomeration, provided that a conducive enabling environment is developed. It is also important to acknowledge that the world continues to evolve and so will the city-growth-link. New technologies and industries will emerge and shape this relationship. Whether the trigger will be transport technologies that make larger cities more efficient or communication technologies that reduce the importance of agglomeration remains to be seen.

The resulting policy prescription is thus – and perhaps inconveniently – much less clear than a dogmatic emphasis on large cities. First, the frequently postulated trade-off between economic efficiency arising through agglomeration and equity may play less of a role than hitherto assumed. Indeed, for many countries it may be economically efficient and equitable to promote a territorially more balanced development as opposed to promoting more agglomeration. Second, the importance of improving urban infrastructure and government capacities in order to reduce urban diseconomies arising in large cities cannot be underestimated. As cities are highly persistent over time and massive cities are already in existence, this policy area will require particular priority.

The real dilemma for decision-makers, thus, lies in assessing whether a country or city is in a position to benefit from increasing agglomeration or whether the focus should be on decreasing concentration.

Such a decision will have to be made on a case by case basis and, unfortunately, few tools are available for this purpose. While specific urban concentration or city size thresholds based on empirical evidence may be able to provide some guidance, they cannot represent authoritative benchmarks given the multifaceted nature of the topic and an ever evolving context. A realistic policy approach thus needs to involve coordinated efforts at both local and national level. Local policies should aim to improve the attractiveness of secondary towns as well as to reduce congestion in primary cities in order to reap potential agglomeration benefits. National policies, in contrast, should play an orchestrating role by assessing the urban system as a whole, providing guidance on strategic priorities and coordinating between the different local policies.

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