Jenni Partanen 13.12.2022 - blogpost

# Urban Economics

In these turbulent times with skyrocketing inflation and prices of energy, food, and other amenities, along with lurking risk of stagnation, significance of economics becomes tangible for everybody. For city science, particular field of economics partaking in viability of cities plays a role, namely *urban economics*. Urban economics considers economic spatial processes and patterns that emerge from location decisions of individual people, companies, services and institutions, associations and other groups.

*Viable cities are more than the sum of their actors*

Typically, such individual *urban actors* constantly make dissipated location decisions in the framework of regulations and institutions like plans, laws and contracts, seeking for the best possible locations for their operation. People might seek for a spacious apartment in a good area with a view, with a reasonable price: a company selling heavy machinery might need a large lot for big vehicles and good accessibility to ship the product to the retailers; and a café needs nice, small scale street with steady pedestrian flows and surrounding shops that attracted them. Resulting patterns – clusters, networks and their dynamics – can be surprising: none of the actors can have a complete big picture of the city as a whole. Hence these patterns are often hard to predict or control, although they follow a certain logical order. We all have tacit knowledge of a good street to stop by for shopping and café, of where to explore clothes or kitchenware without having to circle around the city.

For a long time, the spatial logics have been explored and modeled in the field of economic geography. Iconic spatial models of Johann Heinrich von Thunen and Walter Christaller in the 19$^{th}$ and early 20$^{th}$ century to William Alonso's bid-rent model in the 1960s have been followed by dynamic computer simulations capable of replicating real world systems in an increasingly realistic manner. Oftentimes such model simulates so-called *location economics*, a principle in urban economics, referring to actors' tendency to cluster with each other described above. Another important principle in urban economics is agglomeration economics, which means that actors tend to gravitate to diverse metropolitan areas for better opportunities to find educated work force, reduce transport costs and benefit from knowledge spillovers, or for common people to find larger variance in jobs, education, leisure time activities and so on.

*Digital systems, game-changers?*

Digitalization - for example e-shopping and remote-work opportunities - has change these physical dynamics to an extent, but not entirely. Overall, mixing virtual and corporeal presence, digitalization increases the complexity of the urban life, and potentially changes the some of the very premises of location logics. While previously companies gravitated close to their competitors to benefit from the proximity – planning to entice their customers or wanting to collaborate with the neighbor, or both - virtual presence perhaps revokes this necessity. Furthermore, as economic base changes stressing the role of industries related to robotics, AI, and ITC, the 'key players' of the UE game probably also changes, affecting the overall urban form and dynamics.

*Economics 2.0 – accepting complexity and constant change*

It becomes quite apparent that simple, traditional descriptions, such as those assuming reachable system equilibrium between entities like supply and demand, fail in embracing such complex and dynamic system consisting of myriads of actors with multitude of intentions, plans and desires. In recent decades novel perspectives have been embraced in urban economics accepting that permanent equilibrium is often impossible (or even unpreferable), and actors' behavior produces surprising phenomena on the larger scale: perhaps 'supply' is stable every now and then, but as soon as there is a new trend, social movement, or a (economic, energy) crises, it all changes. Crises – either bottom-up or top-down emerging - are not exceptional but a part of the long-term system dynamics. Complexity theories and evolutionary economic

theories help us to understand this dilemma between systems that are, on one hand, deterministic and logical, and on the other, surprising and unpredictable. Currently we start to understand that we cannot fully control the urban economic system: we can just try to accept its fluctuation and turbulence to better guide it. Cities and regions evolve a bit like natural systems – self-organization and path dependency create unique qualities (locally, regionally, or globally) that perhaps cannot be replicated or built from the scratch. More likely, as soon as we recognize it in the positive form, these dynamics must be nourished.

*Restrictions as a factor in freedom*

With that being said, it is necessary to remind that this complexity did not pop up from nowhere. Political economy reminds us that complex dynamics of urban economics (or micro-econonomics in general) does not occur in a vacuum or by accident. Politics always shape economic outcomes by creating the framework of operation for economic actors – these are laws, regulations, governmental policies, and political agendas. Regarding microeconomics, in the late 20$^{th}$ century the political economy enabled the current complex operating environment in cities through the policies of the deregulation, privatization, and liberalization of trade and investment.

However, as is the case in all complex systems, the resulting highly complex networked economic system is irreducible and cannot easily be undone; furthermore, as this complex system behaves nonlinearly, it is nearly impossible to predict and hence difficult to control strictly politically. However, individual actors, states or regions' decoupling from the global networked economy would imply closing access to growth, still today necessary for the economic operation. For free markets to operate, we need appropriate frame for action through political control; similarly, in cities, we do not need precise allocation of all activities for decades to come, but more adaptive planning to guide the land prices, or tackle negative externalities like emission, congestion, or adequate land supply.

*Planning or no planning? Evidence from Tampere, Finland*

The following example, a study of a local master plan evaluation in Tampere, Finland, highlights the necessity of adequate planning tools able to consider the autonomous nature of urban processes. In 2014, City of Tampere, appr. 250 000 inhabitants' growth center, decided to assess to what extent the implementation complied the traditional zoning master plan reinforced in 1998. In practice, they studied how well the actors had complied the directions set by the plan.

It was discovered that, overall, quite poorly; instead, implementation often took place through other, smaller scale, more swiftly means like negotiation, deviations from the plan, and detailed site planning. Many of the plans were adjusted for actors in case they felt they could not otherwise find their spatial niches. Interestingly, several emergent patterns could be recognized resulting from this dissipated activity.

For example, housing appeared to gravitate towards the most attractive places – shore areas of the large lakes, old green residential areas, or old centers – instead of larger infill areas in the suburbs set in the master plan. Industries followed varieties of logics: they were drawn either by the location to well accessible places; towards clusters of the same industry or neighborhoods diverse enough; or to the vicinity of a major (often originally publicly funded) knowledge-based actor like university, media center, or university hospital.

Such a piecemeal way on planning implies that overall progress in the region was hard to steer with a (perhaps outdated) planning instrument. Moreover, it was obviously very burdensome to carry out all these small plans – each still needed their own planning process. Me and my colleague Kaisu Kuusela wrote an article (openly available here) concerning the case of Tampere, in which we conclude that large scale strategic planning is necessary for guiding the overall progress, but we need to recognize the self-organizing urban

processes. Hence, we suggested a novel planning procedure based on tolerant rules, and constant evaluation and monitoring the progress using appropriate digital methods.

*Academy of Architecture research aims at sparring Tallinn to thrive*

Overall, it is apparent that for high quality planning for the future digitalizing city, it is necessary to scrutinize how the dynamics, rules, and key actors are changing, and how to guide the new type of urban dynamics for prosperous and lively cities. With our research group in the TalTech Academy of Architecture and Urban Studies we delve, from the urban economic perspective, into these problematics of changing location preferences of actors, particularly concerning 'key' actors in digitalizing cities. We explore who they are, what makes them move, and does the physical location play a role for them overall. With Tallinn as a case city, it is possible to evaluate to what extent the Estonian progressive stance towards e-services is a factor, and build guidelines of how to entice such actors to help Tallinn maintain its place as one of the world-leading e-communities.