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Putting space in its place. The assessment of different theoretical traditions

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1. Introduction

A transformation of the world economy is taking place and it has had a crucial impact on the way production is organized in space. Since the mid-1970s, political, economic and social changes have affected all geographical scales – notably international, regional, national and local.

Since the mid-1970s, a new international division of labour has been brought about. Just after the Second World War, it was common to split the world in two great areas, the core and the periphery (Myrdal 1957). Nowadays, the world is a more complex and kaleidoscopic structure, involving the fragmentation of many production processes and their geographical relocation. The global economy can be represented as a system of prosperous polarized regional economies, surrounded by hinterland, ancillary communities, prosperous agricultural zones, and underdeveloped areas. Moreover, the current ‘financialization’ of the economy has contributed to re-shape the economic landscape. Financial flows of capital contribute, or even reinforce, rather than reduce, uneven geographical development (Martin 1999).

At a regional level, an increasing number of regional integration agreements has characterized the last decades¹. Their main aim is a discriminatory trade liberalization in order to lower trade barriers against one another vis-à-vis the rest of the world. This new phase of regionalism is quite different from the old one and presents several distinctive characteristics (Das 2004). The new regionalism creates cross-alliances between developing, emerging and advanced countries; is not limited to neighbouring economies; and it is not exclusive, meaning that one country can simultaneously be a member of more than one regional agreement. This new regionalism helps to bring about changes to the landscape of contemporary capitalism, by creating spaces where the exchange of goods, services and people is simplified, but also by raising barriers against the excluded countries and/or areas.

At a national level, the most important issue related to the reshaping of the world economy is the role of the nation-state. The state must have two main tasks: to contain distinctive

¹ The European Monetary Union (EMU), the North American Free Trade Agreement (NAFTA), the Organization for Asia-Pacific Economic Cooperation (APEC), the Association of South East Asian Nations (ASEAN) and the Mercado Comun del Sur (MERCOSUR), just to cite some.

institutions and practices, and to regulate human interactions at all levels. Except for this general agreement, the literature does not agree about the role of the nation-state. On the one hand, there is the claim of the 'death of the nation state' and the exaltation of the 'borderless economy' (Ohmae 1990). This opinion affirms that state borders are increasingly permeable and no longer contain those distinctive institutions and practices, which used to characterize them. Moreover, international institutions increasingly regulate human interactions and, in this new political system, the nation-state is just one level of a more complex system of overlapping hierarchical powers. On the other hand, the opposing argument affirms that, despite globalization processes, the role of the nation-state is still relevant and important, albeit altered (Jessop 1994, Weiss 1994). This opinion remarks that there is still a national distinctiveness in all aspects of life and, consequently, the nation-state maintains its tasks, although they are performed differently.

At local level, the new information and communication technological paradigm has made the shift towards a more flexible form of production possible. With increasingly sophisticated automated processes and electronically controlled technology, great changes in production processes need not necessarily be associated with increasing scales of production. It has become possible to reduce the scale of production and maintain technological efficiency. The 'post-Fordist' era has begun. Nowadays, the production chain of a single product has increasingly become an international linked sequence of functions in which each stage, most of the time geographically relocated, adds value to the process of the final goods or services. Nevertheless, the 'post-Fordism' phenomenon as a new model of capitalist development is a highly questionable issue. On the one hand, this form of organization, based on smaller organizational units, is seen as a new characteristic of the future capitalist development (Piore and Sabel 1984). On the other hand, less rigid and smaller-scale production has acknowledged to have always co-existed with mass production methods, because this is the way capitalism develops (Harrison 1997, Sayer and Walker 1992).

The aim of this paper is to critically review the current literature dealing with space. In order to do that, I have organised this literature according to their inner theoretical roots, by using a 'bottom-up' approach. All current theoretical developments, related to space, agglomeration economies and external economies, recognised to be indebted to previous theoretical

traditions. The New Economic Geography refers back to the Weberian agglomeration economies; the industrial district literature to the Marshallian external economies of scale; the Marxist economist geographers to the uneven development due to the historical geographical materialism. I have, therefore, grouped the current theoretical approaches into three groups, according to the theoretical roots they declare to be indebted to (Fig. 1). In this way, it is possible to grasp what they have in common, what are their flaws and their advantages, and how they can improve our understanding of ‘space’ in this new phase of capitalism, the global economy.

[Fig. 1 about here]

This review does not claim to be exhaustive in its coverage. However, it shows that space is still important also in the global economy. The paper is structured as follows. Section 2, 3 and 4 cope with space within, respectively, the Walrasian, the Marshallian and the Marxian traditions. Section 5 closes the paper with some general conclusions.

2. Space within the Walrasian tradition

Tab. 1 shows the different theoretical traditions reviewed in the following sections.

[Tab. 1 about here]

2.1 The German School of Location

The General Economic Equilibrium model presents the relations of a *one-point* economy and the conditions for its equilibrium (Walras 1874). The underlying assumptions – i.e zero transport costs, perfect mobility of capital and labour, uniform technical conditions, neglect of local differences in supply and demand and the principle of “pure” competition – are meaningful only when considering an economy abstracting from space as well as time. The same is true for the later inter-temporal version, where Walras’ model is extended to a sequence of periods by assuming the existence of complete markets and perfect forecasting, thus introducing a false conception of “time” (Debreu 1959). Commodities can be

distinguished not only according to their product characteristics and the moment they are available but, also, by the place where they are available and the states of nature. In this way, both time and space are considered but ‘neutralised’. The model is also framed so that present and future coordination is guaranteed, and there is no uncertainty. In fact, in the initial period the destiny of the system is defined once and for all.

The German school of location has introduced space in the general equilibrium framework, by considering ‘space’ in terms of transport costs. Weber’s (1929) identifies the optimum location as the point of overall minimum transport costs, although both labour costs and agglomeration economies can shift the optimal location towards other points. Lösch (1954) and Christaller (1933) share the view that the hexagon is the shape taken by the market expansion of producers (or consumers). The hexagon market principle enables to define equations for the general equilibrium model for location, whose solution gives the optimum location for a firm. Isard (1949, 1956) makes the Weberian approach more dynamic, by introducing external and urbanisations economies. His equilibrium model of an idealised capitalist system is the result of the application of game theory to abstractly defined regions.

These theories of location shared the assumptions necessary to make the models work and give the equations a solution: a *uniform-plain* region with a *uniform* distribution of raw materials, a *uniform* transport surface, a *uniform* distribution of population, *uniform* tastes and preferences, *uniform* technical knowledge and *uniform* production opportunities. Within the general equilibrium framework, geographical dimension can be related only to the choice of the optimum localisation of productive activities, and space can be considered only in terms of geographical distance (i.e. transport costs). Taking the technology as exogenous as well as the demand determined by voluntary households’ choices, the problem is to identify the “best” distribution of productive activities across space and the “right” settlement to minimise costs.

The German school of location is compatible with the neo-liberal argument that a firm is free to choose any location, depending only upon production and transport costs. Capital is seen as ‘footloose’ with the power to move freely across space. Yet, this does not happen in reality, because there are some negative externalities in locating plants everywhere. Relocation is not

always a costless option for firms. High sunk costs in terms of long-run fixed investments, bound to local markets or suppliers, and the need of specific labour supply qualities or local infrastructures, discourage the mobility of firms. Nevertheless, this tradition enforces the idea of the global market as a *homogeneous* space, *spontaneously* created by market forces, where economic development occurs *evenly*. Nothing can be further from the truth.

2.2 The New Economic Geography

In more recent years, the inessentiality of time and space has been considered as a serious limitation by the same authors referring to the general equilibrium. At the same time, other internal limitations of the basic foundations of neoclassical theory have been stressed. I refer to the discovery that the general equilibrium approach, even in its most abstract version- the inter-temporal formulation à la Arrow-Debreu - is globally *unstable*, with *multiple* equilibria, and the very *existence* of equilibrium occurs only under specific and restrictive conditions. All these problems pushed forward a revision of the role of the general economic equilibrium model. The Walrasian world is no longer something which can be *immediately* applied to the analysis of ‘real’ economies. Instead, it is seen just as a solution to an intellectual problem: what are the conditions needed for having ‘coherence’ in a social setting where individual economic agents are ‘dissociated’ and ‘opportunistic’? How may a perfectly competitive market give origin to ‘order’ and ‘equilibrium’ rather than chaos. The fact that the solution to this intellectual problem gives rise to a world where time and space are ‘inessential’ is not to be considered as a ‘failure’ for the theory. Instead, it asks researchers to define those minimal changes in the basic hypothesis of the model, so that time and space ‘matters’.

Several attempts have been made along these lines. I can limit myself here to remind some of them. The elimination of the auctioneer, so that the dichotomy between the phase of ‘bargaining’ and the phase of ‘simultaneous exchanges’ at equilibrium prices no longer hold, and transactions at non-equilibrium prices are allowed. The non-existence of complete markets, so that markets must be thought of as re-opening period after period, and the economy becomes sequential. The impossibility for economic agents to foresee all future states of nature, so that the presence of non-insurable risk or even of true uncertainty are the norm. Not only must uncertainty be taken into consideration, but also the imperfect and

asymmetric distribution of information becomes crucial. In such a world, it is impossible to neglect exogenous shocks, increasing returns, market failures and asymmetric information. Here we are on the terrain of *new economic geography*, where economies of scale, different local demands and externalities are taken into account.

Standard location theory suggests that transport costs will limit geographical concentration. However, firm can benefit from geographical concentration when economies of scale are available. Therefore, transport costs must be assessed in relation to the gains from economies of scale. If the benefits of economies of scale outweigh transport costs, the incentive for firms to cluster will be high (Krugman 1991, 1995). It is often advantageous to locate to a region with the largest market when demand varies between geographical areas and when there are economies of scale (Krugman and Venables 1994, 1995). Moreover, in many cities where the existence of factors such as a natural harbour or navigable rivers leads to geographical concentration, firms discover, accidentally, the benefit of being located close to other firms engagin in similar types of operations and a process of clustering spontaneously emerges (Krugman 1996, Fujita et al. 1999).

Once the process has exogenously started, it is possible to assess its cumulative evolution over time, its mechanisms of adjustment and adaptation, the new equilibrium it will lead to. History, geography and even policy can definitely have a decisive role in the process, thus affecting not only the costs of production but also the transaction and the information costs. Yet, both the existence of multiple equilibria and the more complex representation of the rise and decline of industrial concentration do not modify what remains in substance a ‘static’ approach. Clusters of firms, technological poles, local production systems are evident signs of the presence of increasing returns to scale. The analytical framework is however still a mechanical one and, within it, imperfections are just what the name suggests: a mere ‘deviation’ from the ideal world where economic agents have the same power, the same position in the market, the same information. In other words, perfect equilibrium is again the reference point on which ideally the system is judged and must tend. As a consequence, policy has the task to correct that deviation, and to accelerate the convergence.

I thus reach the current theoretical situation. Even though theoretically weak on many fundamental grounds, and even though from within an individualistic and unhistorical method, the neoclassical paradigm of general equilibrium has shown itself to be so eclectic and greedy as to be able to deal with the very many ‘complications’ of reality, giving room also to the ‘local’ dimension. Here differentiation (among firms, sectors, and also geographical areas) appears as something theoretically marginal, and fortuitous. Yet, this random accident is what explains the structure of economic regions, organisations and territories in their actual and concrete history.

3. Space within the Marshallian tradition

This section deals with the literature that claims to have Marshallian roots based on the concept of external economies of scale. For Marshall (1890) the firm is a tree within the forest which is the *industry*. In the industry, the cluster of firms produces a sufficiently homogeneous commodity so that it is possible to construct a demand curve for it. Industry is, therefore, the *organisational form* of “perfect” competition, without which the formation and determination of price cannot be theoretically constructed.

Each tree has its own life, characterised by different moments such as birth, development, decay and death. Yet, the forest continues to exist nearby individual trees: it is not their simple sum and it survives even when the single units of production, the small firms, disappear. The decay and death of firms is vital to the preservation of perfect competition, otherwise firms would grow bigger and bigger, and perfect competition would transform into monopoly. In the Walrasian system, there is no intermediate agent between the firm and the economic system as a whole. In the Marshallian one, it does exist and it is the industry. The distinction between industry and firm enables Marshall to distinguish between the ‘internal’ and ‘external’ economies.

It is not a task of the present work to criticize the vagueness of Marshall’s definition of industry, or to discuss the difficulties in separating internal from external economies. Instead, what I want to stress are two points. On the one hand, Marshall puts forward a detailed examination of those external economies due to the localization of the industry. On the other

hand, he also depicts the external economies as resulting from the fact that entire groups of intertwined industries develop in close proximity. Marshall's intuition becomes important when two aspects, missing in the Walrasian approach, are taken into consideration. The first one is the fact that industry sets itself as a *systemic* 'fact'. The second is that this element is intermediate between the micro-level of the firm and the macro-level.

From here, the step towards the notion of the *industrial district* is a short one (Becattini 1979, 1987, 1990). Within the same cycle of production, small and medium-sized firms coexist thanks to a positive synergy of know-how and skills, technologies and labour power. In the ensuing literature about industrial districts the focus is on cooperation among firms rather than on mere competition, on the network spread across the territory rather than on concentration and the increasing of scale, on the quality of labour rather than on its cost, on participation rather than on conflict. The belonging to a shared (not only industrial) history and to the same (not only productive) community becomes, at the same time, a competitive asset as well as a barrier to entry. Similar characteristics are also found in other approaches to regional or local economics, such as the *milieu innovateur* (Aydalot 1986, Camagni 1991), the *regional system of innovation* (Braczyk, Cooke, Heidenreich 1998), and the *flexible production system* (Piore and Sabel 1984). Complementarities among firms, spill-overs and externalities are all at the core of the picture. Technology and firm dimension go hand in hand with other advantages which may generate a 'stratification' due to the concentration of professional skills, the presence of specialised suppliers, the facility to access information.

The merit of all these approaches is to reject the idea of the firm as an isolated entity with a maximising behaviour and, instead, consider it as 'embedded' to its territory. Firms are rooted in their territory through the industrial atmosphere created by relations and networks established with other firms, institutions and organisations placed in the same geographical area. Social aspects (Granovetter 1985) as well as institutions (Hodgson 1999) become crucial for the explanation of a firm's behaviour. Social, institutional and territorial variables are the sources of external economies, explaining the reason why firms tend to cluster together. Consequently, space is no longer considered in Euclidean terms, but in relational terms. The distance which matters is not only geographical but mainly economic, social, cultural and institutional.

This literature has led to a florid description of particular situations (Bagella and Becchetti 2000, Belussi et al. 2003, Paniccia 2002, Rabelotti 1997, just to cite some of the many). Yet, they have not produced a radical break with the mainstream, and appear to fall in the same shortcomings of the Neoclassicals tradition. Market-driven capitalist competition is, once again, seen as economically and socially beneficial: the main difference is that there is now a richer (and less individualistic) sociological definition of the actors, which are now the *territories* with their own idiosyncratic assets making that particular place economically unique. ‘Places’ compete among themselves, and the best-endowed ones will survive. Moreover, the role of state and local authorities is very often limited to the correction of market imperfections, by creating proper ‘factors’ which are believed to sustain local growth.

Some deeper perplexities cannot be passed over. To what extent can local systems of production be “built”, if history did not root them in a long-run evolutionary process? To what extent can they be considered a paradigm of industrial and territorial organisation able to become the ‘whole’, rather than just a partial element which can prosper only under particular conditions and macroeconomic policy? Is the cooperative and harmonic view of relationships between firms and other social agents not too idyllic?

4. Space in the Marxian tradition

Marxist economic geographers put ‘space’ at the core of a re-reading of the capitalist process as uneven development (Harvey 1982, Massey 1984, Swyngedouw 2000). They believe that each mode of production creates distinct spatial arrangements, and that a successions of modes of production alter landscape in any give space.

In contrast to the non-monetary general equilibrium of the Neoclassicals, the basic model here is the *cycle of money capital* as described by Marx (1885) in the second volume of *Capital*. The capitalist process is illustrated as a circular sequence sparked off by money capital, leading to the production of more money. Value and surplus value are nothing but the monetary expression of the abstract labour “congealed” in commodities. The production of (surplus) value presupposes a social and physical ‘infrastructure’, which encompasses the legal system, the education system, the state administration, a certain configuration of

transport, environment and cities. The capitalist economy as a production of (more) money by means of money can be reduced neither to a stationary economy, where the surplus value is entirely consumed (“simple reproduction”), nor to a “balanced” proportional growth of the system, with the different branches growing at the same rate.

Following Marx, accumulation must rather be seen as an uneven process where:

- i) the extraction of surplus value comes from a lengthening of the social working day beyond the point where the living labour of wage workers reproduces the value represented in the wage bill;
- ii) technical progress is endogenously driven by the necessity to extract living labour from a potentially conflictual labour power;
- iii) capitalist competition is not expressed only by the ‘homogenising’ tendency among industries, due to the mobility of capital, which leads to an equalisation of the profit rate on the money capital advanced. It is also, and even more fundamentally, the struggle among firms within industries for extra-surplus value (and extra-profits), which is the origin of an unending “differentiation” and “stratification” of units of production of different quality.

It leaps to the eye that such a vision of the capitalist system is opposite in each single element to the Neoclassical theory. The capitalist process is characterised as an economic system where access to money (as capital) is the privilege of one class. The relation of production is antagonistic, and the determination of wage is conflictual. The introduction of innovations is internally forced by a permanent fight to obtain extra-profit and ensure survival. And competition is not just a simple adaptation to the above-mentioned optimum technique. The Marxian starting point has significant consequences. Capitalist development is a process inherently ‘out-of-equilibrium’ generating instability from within. This instability periodically appears during crises which, at the same time, express and solve the inner contradictions of the system. Investments and innovations become embodied in methods of production that use more elements of constant capital (means of production, raw materials, etc.) and expel living labour from production.

Harvey (1975, 1982) is the key author in the 'geopolitical' rewriting of Marxian historical materialism. There is a spatial dimension of the capitalist accumulation. The transformation of space is not only an opportunity to invest. The exploitation of labour power, technical change, and production of commodities is not possible without a coherent territorial structure, a so-called 'spatial fix'. Labour power can be controlled and organised, and the subsistence level of wages can be defined, only within a 'region'. Moreover, within that 'region', infrastructures and fixed social capital are needed in order to enable and, when necessary, to limit the mobility of capital and labour power. The idea is not how economy is reflected in space but, on the contrary, how economy arranges the political, cultural, and social organisation of space.

Along these lines, the capitalist contradiction becomes the dialectic between the spatial, concrete rootedness of capital, on the one hand, and the unlimited expansion of abstract wealth, on the other. At a given point in time, labour, production, innovation and finance can occur only within a limited space, and on the bases of infrastructures with a certain degree of 'fixity' resulting from political and state intervention. Through time, the continuous revolutionary changes due to capital accumulation put those spatial and regional configurations under pressure and create tensions. With this approach, Harvey begins to include space within historical materialism in an essential and systematic way, going beyond the occasional remarks we find in Marx's work.

The capitalist system has a pathological expansionistic logic because capital needs to expand to new markets in order to maintain profits. Newly local patterns and improvements in transportation and communication technology are an inevitable and necessary part of capital accumulation. In fact, the increasing scale of production and the concentration and centralization of capital have been matched by urban agglomeration in a widening international capitalist space. Yet, the collapse of spatial barriers does not imply a decreasing significance of space. On the contrary, diminishing spatial barriers gives capitalists the power to exploit spatial differentiation (Harvey 1989). Local availability of material resources, local variations of market taste, local difference in entrepreneurial ability, venture capital, scientific and technical know-how, local differences in social attitudes and local labour markets consequently become sources of competitive advantage. A geographical dimension can also

be found in the way capitalism answers the recurrent tendency to crises. ‘External’ markets, capital ‘exports’, ‘regional’ alliances, competition among territories are all part of the history of the cyclical dynamics of capitalist accumulation. The State *must* intervene by enhancing the constitution, stability or dissolution of regional spaces. Nevertheless, it can never eliminate the tendency towards crises within the capitalist system of production.

5. Some concluding remarks

In order to understand whether globalisation² has posed any challenges on space, it is necessary to grasp what ‘space’ is. This paper is an initial attempt to clarify the way space has been conceptualised among different theoretical traditions. Needless to say, different conceptualisations necessarily lead to different suggestion of policy.

The Walrasian traditions suggest that uneven development is just a short-term phenomenon, which will disappear as soon as market forces operates freely. State intervention must be limited to the removal of market imperfections in order to permit market forces to spread everywhere in the world, thus leading to homogeneous development and, consequently, space. The Marshallian tradition considers space in relational terms and suggests that ‘localness’ is an important source for competitiveness. The ability of a territory to succeed in global economy is to stress and emphasize its local assets, based on local relationships. ‘Glocal’ – think globally but act locally - has become the new keyword, suggesting that global competition can be won by relying more heavily on local capacity, expertise and competence. Finally, the Marxist economic geographers believe that uneven development is the general rule rather than the exception. Uneven development is intrinsic to capitalist development and not just a temporary out-of-equilibrium situation or the result of market failures. The source of uneven development is related to the division of labor, which is the product of competition between capitals and which perpetually divides places as much as enterprises and people, on the basis on their ability to differentiate their systems of production from those of their

² I just would like to remember that ‘globalisation’ is a very controversial phenomenon, and different points of view are here opposing against each other. On the one hand, the ‘globalists’ consider contemporary globalization as a real and significant phenomenon (Ohmae 1990, 1995 Reich 1991). On the other hand, the ‘sceptics’ think that globalisation is just an ideological and mythical construction with marginal explanatory value (Held and McGrew 2000, Held *et al.* 1999, Hirst and Thompson 1996).

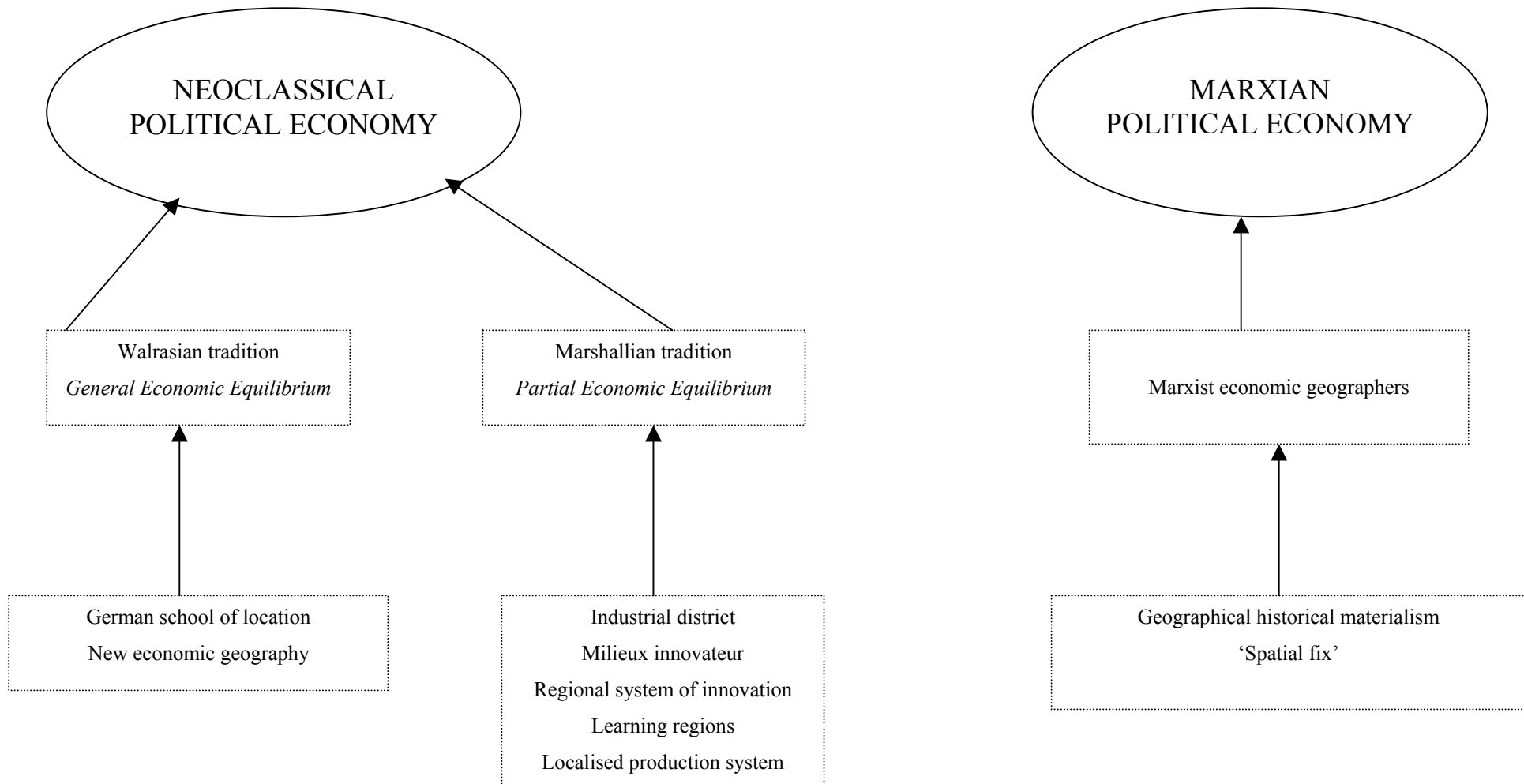
neighbours and competitors. Therefore, uneven development is at the heart of capitalist development, thus enhancing the wealth of some places at the expense of others.

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Fig. 1. Space in different political economy traditions



Tab. 1 Space in different traditions of political economy

	<i>Walrasian tradition</i>	<i>Marshallian tradition</i>	<i>Marxian tradition</i>
Methodology	Individualism (single firm's location choice)	Networks	Class perspective
Kind of behaviour	Perfect rationality (calculation of optimum location)	Bounded rationality (satisfying behaviour)	Endogenous tendency to relative surplus value extraction
Type of competition	Perfect competition among firms Perfect information	Imperfect competition Imperfect information	Dynamic competition
Kind of space	Geometrical distance (i.e. transport costs)	Relational	Spatial-fix needed for production
Implications for globalisation	Homogeneous market	Local assets to compete	Uneven development
Policy suggestions	No intervention or Elimination of market imperfections	Intervention to create local assets And/or Elimination of market imperfections	???