AUSTRIAN TIME AND MARSHALLIAN DISTRICT ON PROCESS OF LOCALIZATION IN AN OUT OF EQUILIBRIUM ECONOMY

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Summary

The purpose of this paper is to explore the theoretical foundations of marshallian industrial districts in an "economics of time and ignorance" (O'Driscoll and Rizzo, 1985). **Industrial districts are disequilibrium and experimental processes**. In this contribution, our aim is to link in the same analytical framework, the Austrian approach to the temporal structure of production and the Marshallian and Post-Marshallian approach to the growth and organization of productive knowledge. Our purpose is to understand the processes leading to geographical clustering of firms in terms of temporal coordination of productive activities. Following the Austrian tradition, we suggest that economic geography problems are coordination problems. In this light we argue that the process of localization of firms mainly depends on the time dimension of production and innovation interpreted as processes of resources creation and of the consequent coordination failures.

Keywords: Industrial District, Out of Equilibrium, Austrian and Marshallian Traditions, Temporal Coordination.

For the last 10 years, connections between economic geography, theory of innovation and new theory of growth have produced substantial progress in the analysis of processes of spatial clusters. In this context, the economic geography has enabled the study of links between technological innovation and geographical proximity proving that coordination problem of local economic agents is a central theoretical question in the major perspective of an economic analysis of territory as space of coordination. Nevertheless, if these works emphasize diversity and fragility of agglomeration dynamics, the study of processes of coordination in time depends notably on *ad hoc* hypothesis.

Geography matters. Paul Krugman's work (1991) has been very influential in promoting this view. Paradoxically, despite its Marshallian pedigree, the development of economic geography remains mechanistic rather than processual. Paul Krugman focuses on the existence and stability of spatial equilibrium; Marshall on the equilibrating and disequilibrating forces of the industrial district. The study of multiple equilibria is of no help in exploring the coordination over time of the different stages that compose the production process. Processes of disequilibrium adjustment are not only rejected, but also simply ignored.

In other words, failures of coordination are supposed to be immediately resolved: coordination problems are solely understood in terms of equilibrium. If models of economic geography take into account increasing returns, imperfect competition, multiple equilibria,

path dependency, technological spillovers, it is difficult to imagine an out of equilibrium coordination whereby economic agents in radical uncertainty make mistakes or anticipate future divergently. It is advisable to study spatial clusters in a sequential analysis focussing on the time articulation and on the irreversibility of different phases of a process of production and innovation. When knowledge and information are incomplete and dispersed, spatial clusters become disequilibrium processes. So we have to study adjustment processes and no longer to postulate them, in order to show how economic agents, step by step, build a common space to solve, partly, coordination failures in a context of resolution of specific productive problems.

The aim of this short paper is to explore the territorial organization of industry in an out of equilibrium economy, particularly on ideas drawn from Hayek and Lachmann (Austrian economics), and Richardson and Loasby (Post-Marshallian economics). In this analytical framework, the analysis of spatial clusters is fundamentally an analysis of processes in real time and institutions. If this question of time coordination stems from the Austrian tradition, it is no longer strange to the Marshallian industrial districts. According to Alfred Marshall, time viability between production processes and markets activities is capital. We will attempt to bring these two traditions together in order to study out of equilibrium coordination and territorial organization of industry in real time.

The industrial district as a discovery procedure: an Austrian approach to Marshallian puzzle

What is the nature of the Marshallian industrial district? Krugman's approach to Marshallian industrial district is characterised by four major drawbacks:

- A suppression of process and real time;
- The neglect of production;
- The coordination of production plans and knowledge is supposed to be resolved;
- There is no room to conceptualise the discovery process and entrepreneurial action.

Krugman's writings are largely ignorant of real processes leading to spatial clusters of productive activities. Industrial districts are just spatial stereotypes. There is a deep confusion between the geographic concentration of atomistic firms and the territorial organization of industry. The core concern of Marshallian industrial district is with the dynamic process by which firm's localization patterns and the structure and genealogy of production are jointly determined over time. Following B. Loasby (1990, p. 124), we can say "the form of Marshallian's idea triumphed over their substance".

Economic geography models have systematically ignored the time dimension. Production and localization occur in real time. Becattini recognizes (1989, p. 40) that "the industrial district is an instance of a localized realization of a division of labour, which is neither diluted in the general market, nor concentrated in one firm or in just few firms. Here the term localization stands for something other than an accidental concentration in one place of production processes which have been attracted there by pre-existing localising factors. Rather, the firms become rooted in the territory, and this result cannot be conceptualised independently of its historical development". Analytically, process of production cannot be separated from process of localization. The great analytical progress of Becattini's contribution is to show that the question of the industrial district takes part in a global theoretical approach based on a problem of production conceived as the articulation of the production processes and the *ex ante* coordination of plans of production and investment. The spatial cluster of the productive

activities is an integral part of the process of organization of industry considered as a process of coordination of division of labour and division of knowledge (Loasby, 1990). In this perspective, time of production and space of coordination are intrinsically connected.

The core analytical elements of the Marshallian industrial district are the relationships between organization, knowledge and coordination, a focus on creation of resources, a study of the institutions of economic evolution. Formulations in terms of equilibrium are inadequate. Processes cannot be studied with the standard set of equilibrium assumptions. In particular we need to consider *ex ante* coordination and processes in real time. Becattini, in a Marshallian fashion, has paid particular attention to "the existence of deep interactions between community and production processes" (1989, p. 41). The most obvious deficiency in economic geography lies in the production process itself. Krugman has nothing to say about the relationship between production process and localization process, nor about the processes of adjustment of the structure of production over time. These interactions suggest that the industrial district is a process subject to continual change and readjustment, a dual process of economic coordination and discovery. Becattini defines "the industrial district as a socio-territorial entity which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area" (1989, p. 38). Industrial districts are the result of human action, and may be explained in terms of entrepreneurial action, knowledge, and subjective expectations of human actors. The Marshallian industrial district is not a static structure. From an Austrian point of view, the Marshallian industrial district can be defined as a discovery procedure. According to Marshall (1961, p 271), "good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the sources of further new ideas". The Marshallian industrial district is to be thought of, not as a spatial model of efficient allocation of given resources, but as a method of fostering the development of skills and generating other kinds of tacit, subjective and dispersed knowledge. It is a discovery process. The territorial organization of industry is the result of firms' experiments in their own "circumstances of time and place" (Hayek, 1945). **The Austrian conceptualisation of knowledge provides an analytical foundation for the study of the cognitive dimension of the Marshallian industrial district**.

Out of equilibrium localization

The concept of industrial district is inseparable from the idea of time. The logic of localization is no longer defined in terms of an efficient combination of local factors. Spatial clustering is not simply an effect of a given distribution of factors endowments or of an inherent set of local attributes. Firms create their own conditions of localization. This logic appears to be logic of construction of new productive options that is logic of complementarities and interactions over time. Localization processes and production processes must be considered together as complementary elements of a process of change. This means that what is important in the Marshallian industrial district is not the physical characteristics of the production process once it is constructed but the interactions over time between the organization of production and the construction of territory (Lecoq, 1999).

Localization, understood as a process of construction of territory, takes place over time. It implies radical uncertainty, ignorance, and subjective expectations. The equilibrium-obsessed approach to firm's localization reduces Marshallian industrial district to static universe,

without either memory or expectation. Localization is limited to a problem of allocation of given and generic resources. Spatial equilibrium configurations are necessarily efficient solutions interpreted as punctual optimal allocative choices.

Localization is essentially temporal and future-oriented. This is another way of saying that firm's localization is creative. With the passage of time, localization is no more a situation, but a sequential process of discovery of new opportunities to solve specific productive problems. Localization processes are inherently sequential because production processes and the working of markets are sequential too.

Coordination in time

Localization problems are coordination problems (Lecoq, 1999, 2001). The process of revising plans, as well as making plans takes place in time and space. Krugman's approach appears to offer a tautological definition of industrial district and begs the essential question about how industrial districts solve coordination problems. From an analytical point of view, the Marshallian industrial district raises two main questions. Firstly, how does the territorial construction allow firms, when knowledge and information are incomplete and dispersed, to coordinate in time and to adjust their plans of investment out of equilibrium? Secondly, how do relations of proximity allow building a collective framework of action to solve productive problems?

We need to consider how coordination processes are organized. In production logic, the activities by which coordination is achieved must take place outside a general equilibrium framework. Coordination failures are intrinsic to production processes, which necessarily take place over time. Consequently, coordination failures are failures of timing and synchronization between the productive activities and the working of the markets. Thus, the most important analytical problem consists in explaining how actors acquire relevant knowledge and how institutions solve various problems of coordination failures.

Although models of economic geography recognize multiple equilibria, they do not in fact see coordination over time in a world of radical uncertainty and ignorance as fundamental problem. To put it another way, they see Marshallian industrial district as solving various kinds of allocative problems, never as solving a coordination problem. In a fundamental sense, localization and production appear to be simultaneous. The time period is irrelevant. Since production and localization are in effect simultaneous the relevant period of production is zero, and failures of coordination, overinvestment, malinvestment, are supposed instantaneously resolved. In equilibrium, plans are coordinated and expectations are fulfilled.

Production takes time (Amendola and Gaffard, 1992). It is not a purely technical question, a matter of combining given inputs according to known blueprints. In Richardson's words, "the point is not that production is thus dependent on the state of the arts that it has to be undertaken (…) by organisations embodying specifically appropriate experience and skill" (1972, p. 888). Production requires skills and organization. In logic of production, the Marshallian industrial district is a coordination institution. This coordination is neither automatic nor spontaneous. Thus, the notion of coordination is inseparable of the idea of time. The coordination supposes the revision of the plans, the correction of the expectations and the errors of interpretation, the acquisition of new knowledge, the confrontation of the experiments and new ideas. The coordination becomes then a continuous process of experimental adjustments. Agents are in an unending process of discovery. According to

Lachmann (1986, p. 5), the temporal coordination remains then not only imperfect but also inevitably incomplete: "competitive market force will cause discoordination as well as coordination of agent's plan. (…). The fact remains that coordination and discoordination go together. In other words, "all coordination activity must engender some discoordination of existing relations" (1986, p. 11). Coordination processes are always conjectural.

This analytical approach of Marshallian industrial district as a process in real time calls for three remarks.

Firstly, The coordination does not become identified any more with the notion of equilibrium. It becomes a problem of control of successive disequilibria so as to secure a collective framework within which firms can imagine and develop their projects of investment and production.

Second, the radical ignorance of firms and the time dimension of production process lead to disequilibrium localizations. The localization is no longer a state, but a dynamic process of sequential nature of construction, by the firm, of its environment. It is not so reduced to a particular moment of the life of the firm: localization is a process over time. With the passage of time, no tendency towards equilibrium can be established.

Finally, **the territory has existence only in reference to new productive problems**. In models of economic geography, difficulties or failures of coordination are supposed perfectly and at once resolved. It is because the production processes are subject to complementarities over time that the question of localization becomes so important. In the Marshallian industrial district, "market connections" (Richardson, 1960), and "proximity of agents" (Lachmann, 1986), make possible the mutual compatibility of individual actions, a partial convergence of subjective expectations, the harmonization and synchronisation of productive plans and investment projects. Processes of localization allow securing the coordination over time of productive activities understood as a process of quantitative and qualitative transformation of resources (Richardson, 1960). The adjustments of the productive structure over time are not independent from the processes of localization of firms understood as a process of construction of territory.

To sum up, the analytical problem is not to determine the conditions of existence of different equilibria of localization. It is a question of understanding the conditions by which a particular territory can benefit from a growth over time. The main theoretical stake becomes the coordination in particular circumstances of time and space of production processes. From an Austrian point of view, the Marshallian industrial district could be compared to the dynamics of a kaleidoscope.

Suggestions for further research

We need to consider Marshallian industrial district in the economics of time and ignorance (O'Driscoll and Rizzo, 1985). According to Loasby a "theory which takes serious account of time and ignorance must be a theory of processes, not of states – not even dynamic states" (1976, p. 220). While Krugman is concerned with multiple equilibria, Marshall is concern with processes. As Marshall (1961, p. 461) has explained, "economic problems are imperfectly presented when they are treated as problems of statical equilibrium, not of organic growth". Production, interpreted as a sequential process in time, is no longer dissociated from localization. Localization is a dynamic process, a process in time. What is required then,

rather than new or more sophisticated models of economic geography, is to consider the behaviour of local systems of production out of equilibrium. Industrial districts are discovery procedures; **geography matters only in disequilibrium**. Because of the subjectivity of knowledge and expectations, the passage of time, the discovery of new productive options and opportunities, failures of coordination, no tendency towards equilibrium can be established (Lachmann, 1986). The equilibrium-obsessed approach to firm's localization is completely irrelevant. Table 1 summarizes the differences in the two perspectives we have been analysing, the economic geography perspective and a process approach to Marshallian industrial district.

Table 1
Contrasting perspectives

	Economic geography: The new orthodoxy	**Austrian approach to Marshallian district Out of Equilibrium economy**
Nature of economic problem	Logic of allocative of given and generic resources	Logic of production of specific resources
Localization	Logic of choice	Process of localization
Equilibrium	Multiple equilibria of localization	Rejection of any tendency towards equilibrium Out of localization
Knowledge and expectations	Imperfect and asymmetric information Mutually reinforcing expectations	Subjective knowledge Radical ignorance and subjective expectations Possibility of genuine error and surprise
Entrepreneur	No scope for entrepreneurial discovery	Entrepreneurial discovery process
Time	Newtonian time	Dynamics or Bergsonian time Real and historical time
Coordination	Complete and spontaneous coordination of transactions. Plans are consistent with underlying preferences, technology and resources.	Time coordination of activities Coordination failures
Industrial district	Clusters of atomistic firms	A kaleidic view of territorial organization of industry Industrial district as discovery procedure

This implies that the territorial organization of industry is not an instantaneous production structure but a temporally coherent process of gradual error correction and plan revision. The Marshallian industrial district should not be looked at as a geographical agglomeration of atomistic firms whose respective efficiency must be tested with respect to a problem of allocative of generic and given resources, but rather considered as a discovery process whose coherence depends on being able to make a process of creation of new specific resources viable. The essence of the Marshallian industrial district, therefore, is no longer embodied in the spatial structure of a given productive capacity, but lies in the collective ability of local actors, in a world of uncertainty and ignorance, to imagine and to link the division of labour to the division of knowledge. The time structure of production goes hand in hand with the process of localization.

In an out of equilibrium economy, processes of localization are above all speculative activities. With the passage of time, an optimal localization is nonsense. The Marshallian industrial district shows us that the territorial organization of firms depends on the time dimension of production. Similarly, production roundabouts and the time articulation of the phase of construction and that of utilisation of productive activity are direct reflection of localization processes. **Time of production and space of coordination are analytically connected**.

The central object of the Marshallian contribution on industrial district is obviously to understand how coordination of productive activities takes place and evolves in time and space. In this incomplete and speculative contribution, we have suggested a process approach to industrial district. We consider that Austrian and Marshallian approaches provide an original analytical framework for building a different theory of the territorial organization of industry.

As B. Loasby (1989) has long pointed out, Marshallian economics is not the economics of Marshall. For Marshall, industrial district is not a technical relationship between the spatial cluster of firms, technological or pecuniary externalities, and internal and external economies. Far from empirical and theoretical anomalies of the Marshallian categories, A. Marshall suggests a processual approach to economics. With his "characteristically …careful imprecision" (Richardson, 1960, p. 23), A. Marshall provides an original approach to the growth and coordination of productive knowledge in an out of equilibrium economy. **The Marshallian industrial district acts as a Hayekian discovery procedure**.

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