The Sources of Economic Inequality and Regional Integration

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Key Words

Abstract

The aim of this paper is to investigate the mechanism of economic inequality and regional integration within the new economic geography (NEG) literature. The assumption is that firm's localisation decision is the result of the interplay of migratory inflows, input-output linkages, increasing firms' returns to scale and transportation costs. Under autarchy, firms spread around regions in order to be close to their customers. When trade costs fall under a critical threshold, pecuniary externalities emerge encouraging firms to cluster together within a large market. Industrialise and deindustrialise regions are generated. When trade costs are low enough, the vicinity to market becomes less relevant in firms' localisation decisions. As a result firms choose the region with cheaper cost of immobile factors fostering footloose firms from core to periphery fulfilling the gap. Inter-regional economic transactions increase and it generates regional integration. In this framework, regional specialisation may occur by the fact that firms choose a location where they can exploit sectorial demand and cost linkages creating specialised economic agglomerations within regions.

Introduction

The academic attention to economic agglomeration phenomenon has been growing over time due to its significant impact on socio-economic development within countries, regions and cities. For several centuries there has been a tendency of urbanisation across the world and it is mainly due to migratory flows from rural to urban areas. Nowadays, for the first time in history more people around the world live in urban centers than in rural areas with 3.5 billion of people in 2010 equal to 51.6% of the world's population (United Nations, Department of Economic and Social Affairs, Population Division 2011). The urbanisation is expected to grow up to 67.2% by 2050. Before 1950, developed countries had a faster urbanisation than developing nations; afterwards this tendency has been inverted. Indeed between 1950 and 2010, the urban concentration was growing more rapidly in developing regions (around 30%) than in developed areas (around 20%). This trend is expected to continue in the future. This phenomenon can be explained by the fact that people move into urban centers from rural areas in order to increase, for instance, salary, welfare, job and standard of living. Consequently, firms are encouraged to relocate into the populated centers to exploit labour pool and external economies within large market. Concentration of workers and firms foster the level of urbanisation, which is an unavoidable achievement of development of nations, regions, and cities, though different regions make the urban transition at different times and with various urban and economic growth patterns (UN-HABITAT, 2010). Empirical evidence demonstrates that there is a correlation between urbanisation dimension and economic development, as GDP per capita tends to rise in more urbanised countries, regions and cities (UN-HABITAT, 2010). China is a clear and recent example of this linkage, in particular its fast urbanisation is fostering the socio-economic development and contributing to poverty reduction, higher welfare and standard of living (UN-HABITAT, 2012). However when an economic agglomeration overcomes a certain level of over-concentration, a reduction of business activities take place due to, for instance, high level of rents and congestion (Fujita & Thisse, 2002; Krugman, 1991a, 1991c). It provokes a migratory outflows of workers and firms towards other locations considered more economically attractive (Krugman, 1998b).

Numerous scholars have tried to identify and investigate the agglomeration and dispersion forces in order to explain the formation and development of economic clusters over time. They point out why some places, even with identical characteristics, grow faster than others generating asymmetry of spatial economic agglomeration across locations. The aim of this paper is to investigate the major drivers of

regional divergence and convergence within the new economic geography literature. First of all, the main peculiarities of NEG will be examined. Then, the economic pro-concentration and anti-concentration forces will be investigated linking them to the circular cumulative causality in order to describe their path-dependence effects. Afterwards, the regional integration mechanism will be proposed. Finally conclusions, limitations and direction for further research will be discussed.

Literature review
1)   The main peculiarities of the new economic geography

Recently, a new area of study has emerged named the new economic geography, which greatly influenced the agglomeration and location theories. The first concept was elaborated by Kugman (1991a, 1991c), an economist who investigated the question of how agglomerations are formed and under what conditions they are (un) stable. Afterwards, numerous researchers, such as Richard Baldwin, Masahisa Fujita, Tomoya Mori, Hideaki Ogawa, Gianmarco Ottaviano, Diego Puga, Jacques François Thisse and Anthony J. Venables, have focused their studies in this new area of research. However, NEG's formulation and orientation mainly derived from the important works of Fujita (1988), Krugman (Krugman, 1991a, 1991c, 1995) and Venables (1996), which led and shaped the field. The new economic geography studies a variety of economic agglomeration spatially distributed in terms of localisation, distribution and organisation within nations, regions and cities across the world (Fujita & Krugman, 2004). In particular, researchers try to answer "what", "where" and "why" production and commercial activities tend to be concentrated in certain areas over time (Hoover & Giarratani, 1989, p. 4). The new economic geography adopts numerous concepts borrowed from the early location and agglomeration theories (see, for instance,

Hoover, 1937; Lösch, 1940; Marshall, 1890; Thünen, 1826; Weber, 1909). The past theories mainly assumed

that the entire spatial structure is given by the trade-off between increasing firms' return to scale and transportation costs; firms choose a location within a large market; the proximity of enterprises fosters concentration of workers, specialised labour and differentiated products; and dispersion is due to higher transportation costs, wages and land rents. These assumptions are also the main ingredients of the new economic geography, which reinterpreted and unified them under a new field of study. Though NEG has a little new in comparison to the early location and agglomeration theories, it overcomes their limitations (see, for instance, Fujita, 2011; Krugman, 1998b). Below the main peculiarities of the new economic geography will be explored.

Full general equilibrium through endogenous growth and non-monocentric urban models. The new economic geography takes into account the full general equilibrium models (see, for instance, Martin, 1999) considering that all market processes and firms' returns are generated endogenously (Ogawa & Fujita, 1980) fostering external economies of agglomeration (Krugman, 1998a, 1998b). Krugman (1998b, p. 3) argues that the general equilibrium emerges due to invisible-hand dynamic processes between agents' decision of location, which are oriented to maximize their welfare, and decisions made by others. It generates a self-organization mechanism by the constant interaction between agglomeration and dispersion forces creating equilibrium within the system and multiple equilibria among locations (Krugman, 1998b, p. 9). Furthermore, the new economic geography adopts the non-monocentric urban models (see, for instance, Fujita & Ogawa, 1982; Ogawa & Fujita, 1989) overcoming the limitations of the monocentric urban models (see, for instance, Alonso, 1964; Mills, 1972; Muth, 1969) used by the early theories (Fujita, 2011, p. 12).

Imperfect competition, increasing returns to scale at the firm level and the "iceberg" transportation costs. NEG assumes that single firms choose a location to increase their returns achievable within a large imperfectly competitive market due to the presence of economies of scale and lower transportation costs (Krugman, 1998a, p. 6). In this framework, the new economic geography models take into account imperfect market adopting the monopolistic and oligopolistic competition (Fujita & Thisse, 2002, p. 217). This assumption preserves the increasing firms' returns to scale (Fujita & Krugman, 2004, p. 142). Another

peculiarity of the new economic geography is the adoption of, in almost all models, the "iceberg" transportation costs which has been originally introduced by Samuelson (1954). Transportation costs are computed as a constant percentage of the Free-On Board (FOB) price between two locations, and any increase in price of transported products imply a proportional increase in shipment costs (Krugman, 1998b, p. 11). However, several researchers have criticized the "iceberg" transportation costs, they argue that it is inapplicable in many real situations. Thus, alternative ways to calculate shipment costs have been developed (see, for instance, Ottaviano, Tabuchi, & Thisse, 2002).

Agglomeration and dispersion forces through the circular cumulative causation. NEG's researchers have investigated the agglomeration and dispersion forces, which cause the formation and development of economic concentration. It assumes that if agglomeration sources are stronger than dispersion forces, they lead agglomeration and imbalance among places. On the contrary, dispersion sources favor deconcentration of economic activities causing migratory outflows of firms and workers towards other locations considered more economically attractive. Furthermore, NEG connects those forces to the circular cumulative causality in order to describe their path-dependence effects upon agglomeration process. In the next two sections, the main agglomeration and dispersion forces, and the circular cumulative causation will be investigated.

2)   The main forces of economic agglomeration and dispersion

From over a century, numerous scholars have focused their attention to pro-concentration and anti-concentration forces in order to explain economic inequalities and regional integration. They point out and investigated pull (agglomeration) and push (dispersion) forces, which foster economic agents to be in or out of a certain place (see, for instace, Fujita & Thisse, 2002; Krugman, 1991a, 1991c; Ottaviano & Thisse, 2003).

Marshall (1890) introduced the concept of external economies in order to explain the formation of economic agglomeration. He asserted that economic concentrations within the same and related industries generate externalities favoring further clustering. The Marshallian external economies are related to mass production (identical as economy of scale at the firm level), availability of specialise inputs, concentration of workers, specialised labour, knowledge spillover, and modern infrastructures. Firms choose a location if they can exploit mass production achievable by firms' specialisation within large local economy. It allows producers to reduce their production costs and increase their returns. The proximity of firms also fosters concentration of workers and specialised labour due to the availability of jobs. Additionally, employers can exploit a large and heterogeneous labour market within the economic agglomeration. Furthermore, concentration of firms generates inter-firms networks creating information spillover with positive implications for innovation, creativity, and ideas, among other aspects. Finally, modern infrastructures ease business transactions among agents.

Furthermore, numerous authors (see, for instance, Cronon, 1991; Krugman, 1993; Ottaviano & Thisse, 2003) argue that spatial imbalance among locations is explainable by the first nature and the second nature. They assert that natural endowments are distributed unevenly among places generating irregular spatial distribution. It is call the first nature, which is related to climate, topography, natural resource, and communication ways, among other factors. Moreover, they argue that economic agglomeration asymmetry is not only due to the first nature, as many clusters are less natural resources dependent such as Chicago, which became the central city of the America heartland without any natural competitive advantage (Cronon, 1991, pp. 46-54; Krugman, 1993, p. 129). Thus, the second nature, which is related to human behaviours, has to be considered in order to fully explain the formation and development of economic agglomeration. The new economic geography adopts the full general equilibrium under microeconomic foundations in order to study the spatial economic agglomerations. In the rest of the paper the second nature will be only investigated.

Krugman, in his seminal contribution (Krugman, 1991a, 1991c), identifies centripetal forces which favor spatial concentration of economic activities, and centrifugal forces which discourage such

agglomeration. Krugman's petal forces are the typical Marshallian (1890) sources as follows: market-size effects (linkages), thick labour markets and pure external economies. The market-size effect through linkages is fostered by migratory inflows of workers, which increase the final demand. The large market attracts firms into the place due to economy of scale (backward linkages). Furthermore, firms can take advantage of downstream lowering trading costs due to proximity of agents (forward linkages) (Krugman, 1998b, p. 8). Nevertheless, when transportation costs are low enough, some firms might choose to be located in a smaller market far from competitors avoiding price competition (Ottaviano & Thisse, 2003, p. 13). The second petal source is the labour market effect. The proximity of firms eases concentration of workers and specialised skills due to more working opportunities and higher wages in the region; as a result firms can exploit large labour market and skillful workers. Whereas, the pure external economies lead for instance, knowledge spillover fostering innovation, creativity within an inter-firms network concentrated. In contrast, the centrifugal forces ease dispersion of workers and firms towards other locations. Krugman identifies three fugal sources as follows: immobile factors, high land rents and pure external diseconomies. Immobile factors are related to lands, natural resources, and people in international context due to difficulty by firms to recruit workers from others countries. High demand of lands increases the level of rents making the region less competitive for firms' delocalisation. The last centrifugal force is the pure external diseconomies, which lead dispersion of economic activities due to, for instance, local congestion of firms.

Krugman and Venables (1995, pp. 857-860), and Venables (1996, pp. 341-342) argue that vertical linkages between upstream and downstream industries under imperfect competition can have the same agglomeration role as migratory inflows of workers. Krugman and Venables state that if industries are vertically connected within input-output configuration, downstream market shapes upstream industries determining the market size of intermediate products. The backward and forward linkages among industries are generated. In other words, many downstream firms create a large market of intermediate goods (demand linkages) favoring suppliers' delocalisation. Consequently, the localisation of upstream industries allows downstream firms to have less transportation and inputs costs (cost linkages) leading further relocation. However within a large proximity of industries, firms would pay higher salary due to market labour competition. It leads further workers immigration due to income differential between regions. Firms still incentive to drive their business in a given location if the increasing firms' returns to scale within a large market support higher wages. On the contrary, it might generate dispersion of economic activities towards other locations with higher returns to scale. Krugman and Venables (1995), and Venables (1996) argue that equilibrium between concentration and spread forces mainly depends on the trade off between transportation costs among locations and the strength of vertical upstream and downstream linkages under imperfect competition. Several researchers (see, for instance, Ottaviano & Puga, 1997, p. 10; Puga, 1999, p. 304; Venables, 1996, p. 356) argue that the input-output vertical linkages model is more applicable within EU due to lower internal mobility of workers than US despite EU has substantial inter-country wage differences. Instead, the model based on labour migratory flows is more suitable to US where the movement of labour forces among states is higher than EU.

Puga and Venables (1998, p. 224) state that firms choose a location in order to exploit short-run profitability originated by spatial inequalities of economic agglomeration. They identify four forces affecting positively and negatively firms' short-run profitability as follows: cost linkages and demand linkages, which foster industrialisation; factor-market competition and product-market competition, which lead deindustrialisation. Cost (forward) linkages foster economic concentration due to proximity of suppliers. The availability of intermediate products reduces firms' input outlays. As a result, firms' short-run profitability increases making the location more attractive to other enterprises. The second agglomeration force is the demand (backward) linkages, which reflect the market-size effect (Krugman, 1991a, 1991c). The concentration of firms increases the local demand of intermediate products and firms' profitability encouraging further delocalisation within the economic cluster. Puga and Venables argue that firms prefer a location where they can maximise their short-run returns by exploiting the availability of cheap inputs, low transportation costs and input-output linkages within a large market. On the other hand, factor-market competition generates economic dispersion due to the increase of rivalry for labour.

As a result, it increases the level of wages and consequently firms' production costs. Whilst, product-market competition is related to the degree of market rivalry, as high concentration of firms fosters fierce competition affecting negatively their returns. Puga and Venables assert that the degree of market rivalry mainly depends on trade barriers. Free trade fosters global rivalry raising the competition. In this case the proximity to market is less relevant because imported goods from other regions will be inexpensive. Contrary, autarchy eases local market competition, in this context firms spread across locations and the industrialisation is not favored (Puga & Venables, 1998, p. 225). They argue that agglomeration is fostered when the trade freeness is between these two extremes. Puga and Venables state that factor-market competition and product-market competition lead economic dispersion, as firms prefer a location with cheaper labour costs and lower competition.

Moreover, Baldwin et al. (2003) identify several effects related to trade freeness level as follows: home market magnification, hump-shaped agglomeration rents, endogenous asymmetry, catastrophic agglomeration, location hysteresis, and overlap and self-fulfilling expectations; where the circular cumulative causality plays an important role in the agglomeration and dispersion process. The home market magnification is defined as the magnify consequences of the market expansion due to low trade barriers. Whereas, the hump-shaped agglomeration rents has a concave function of trade freeness. When firms move into the region due to low trade barriers, the agglomeration rents increase proportionally to trade freeness. The rent curve falls when the level of trade barriers overcomes a critical threshold. Firms are more motivated to move into a place at intermediate rent level. The endogenous asymmetry is caused by the trade freeness level differential between locations generating economic inequality. This imbalance could generate a catastrophic agglomeration when all firms move into the more profitable place leaving empty of economic activities other locations. Location hysteresis is related to a shock in the region, for instance by trade barriers differential, causing all firms moving into the location. It is notable that temporary shocks might lead permanent changes in the agglomeration landscape and it may be not reversible. Overlap and self-fulfilling expectations happen when agents move in or out of a particular place based on their positive or negative expectations of a specific event, for instance, agglomeration rents and market expansion. Krugman (1991b, pp. 651-652) argues that capital accumulation in a given location generates external economies and consequently historical accidents self-enforcing fulfilling expectations. Krugman (1991b) and Marshall (1890) assert that firms move into place due to the presence of increasing firms' returns and the relocation is costly. Thus, firms' localisation decision involves cost-benefit analysis, in other words they compare their relocation costs to their current and future returns within the place of destination. The prediction of rewards depends on accumulation allocation decisions made by agents and overlap expectations. Thus, firms are encouraged to leave a weak economy in case of convergence of agents' expectation (Matsuyama, 1991, p. 619). This mechanism may determine multiple equilibria due to the trade off between history and expectations, though agglomeration may also happen in absence of past accidents.

3) The circular cumulative causation as self-enforcing mechanism

In this section, the circular cumulative causation mechanism will be discussed and analysed by linking the agglomeration and dispersion sources illustrated in the previous section. The circular cumulative causation has been introduced by Gunnar Myrdal (1957) an institutional economist, and afterwards numerous researchers have adapted and applied it to a variety of fields as within the new economic geography. The circular cumulative causation is a multi-causal approach and the idea underling it is that the persistent and accumulative variations of forces produce several changes in the environment. NEG assumes that the constant interaction of agglomeration and dispersion forces modifies the economic landscape self-enforcing economic asymmetry and symmetry. In the figure below the agglomeration's circular cumulative causality will be shown.
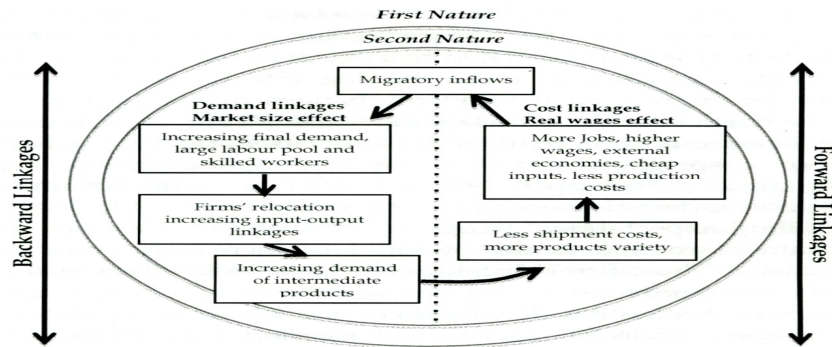
Figure 1. The agglomeration's circular cumulative causality

The figure highlights two important factors, which cause several cumulative effects related to backward linkages. The first factor is the migratory inflows which mainly depend on the mobility of workers due to real wages differential across locations (Krugman, 1991a, 1991c). It increases the final demand of products and services, concentration of labour and skillful workers within the place. However, in absence of migratory inflows of workers, economic concentration may occur due to downstream and upstream vertical linkages (Krugman & Venables, 1995; Venables, 1996). The second factor is the mobility of firms, which is correlated to the increasing returns to scale achievable within a large market. It increases the demand of intermediate products and firms' profits in the area (Puga & Venables, 1998, p. 224). The input-output connections have a positive impact on firms' external economies such as knowledge spillover, input prices and transportation costs reduction. The effects of migratory inflows and firms' localisation are related to the demand linkages (Puga & Venables, 1998) and the market size effect (Krugman, 1991a, 1991c). As a result, forward linkages arise reducing production costs and transportation costs due to proximity of agents. Additionally, firms can exploit large labour pool and specialised skills within the location. In the same time, workers can take advantage of availability of jobs, lower prices and higher salaries increasing their real wages. As a result the variety of products consumed increases due to the effect of real salaries; consequently firms produce more diverse goods in order to fulfill heterogeneity customers' needs. Product differentiation fosters further agglomeration and enterprises can avoid price competition (Fujita & Thisse, 2002, p. 343). Large market allows firms to increase their profits, though wages accrue due to the cost linkages (Puga & Venables, 1998) and the real wages effect (Fujita & Thisse, 2002; Krugman, 1991a, 1991c). Nevertheless, firms are willing to be in a location until when benefits related to the increase of firms' returns to scale overcome the drawbacks related to higher nominal wages. On the contrary, the negative forward linkages foster dispersion of economic agglomeration. The dispersion's circular cumulative causation will be illustrated in the figure below.
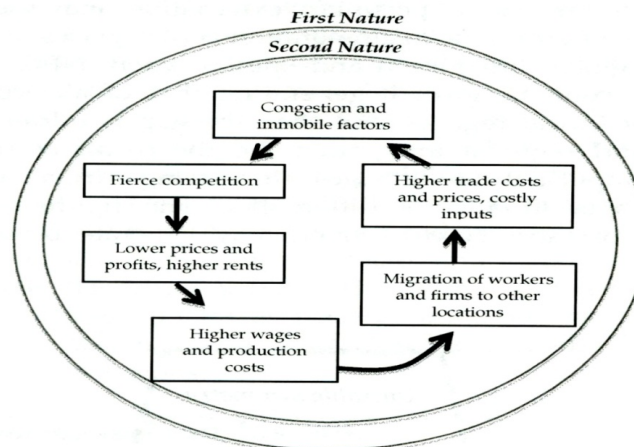

Figure 2. The dispersion's circular cumulative causality (negative forward linkages)

The dispersion of economic activities may occur due to congestion of firms and immobile factors.

These two elements generate fierce competition raising a negative circular cumulative mechanism. It makes the location less attractive due to the decrease of firms' profitability and workers' income. The strong competition leads lower market prices, higher rents and overall the price of immobile factors. Additionally, excessive number of firms generates labour competition increasing the level of wages. Thus, production costs accrue and it reduces firms' profits. These negative pecuniary externalities make the location less convenient, and firms may decide to relocate their activities to other places reducing the size of the market. Consequently, trade costs increase and intermediate inputs become more expensive; as a result the final prices rise decreasing the real salaries. This mechanism is due to product-market competition effect and factor-market competition effect.

The strength of the circular cumulative causations greatly depends on the mobility of workers and firms, which generates dynamicity within the system and among locations (Krugman, 1991a, 1991c; Puga & Venables, 1998). NEG asserts that the interaction between agglomeration and dispersion forces generate multiple equilibria across locations (Fujita & Thisse, 2002; Krugman, 1991a, 1991c), though catastrophic agglomeration and location hysteresis might occur (Baldwin et al., 2003) creating permanent asymmetry among places. Furthermore, the circular cumulative causation highlights the possibility of forecast future events due to the correlation between historical accidents and expectations. Therefore, the convergence of agents' expectations has to be taken into account as it self-enforces the economic agglomeration and dispersion (Baldwin et al., 2003; Krugman, 1991b; Matsuyama, 1991).

4)   The economic convergence and divergence mechanism

The circular cumulative causality of pecuniary externalities may lead temporary and permanent asymmetry of economic agglomeration across places. It may also restore equilibria favoring regional integration and specialisation. NEG models take into account endogenous economic growth generating first of all economic disparity, even in presence of identical regions, and then the gap is fulfilled. The economic balance, imbalance and regional integration are the result of trade-off between migratory inflows, input-output linkages, increasing firms' returns to scale and transportation costs. The figure below shows the dynamic mechanism of those forces, which may generate economic integration between regions.
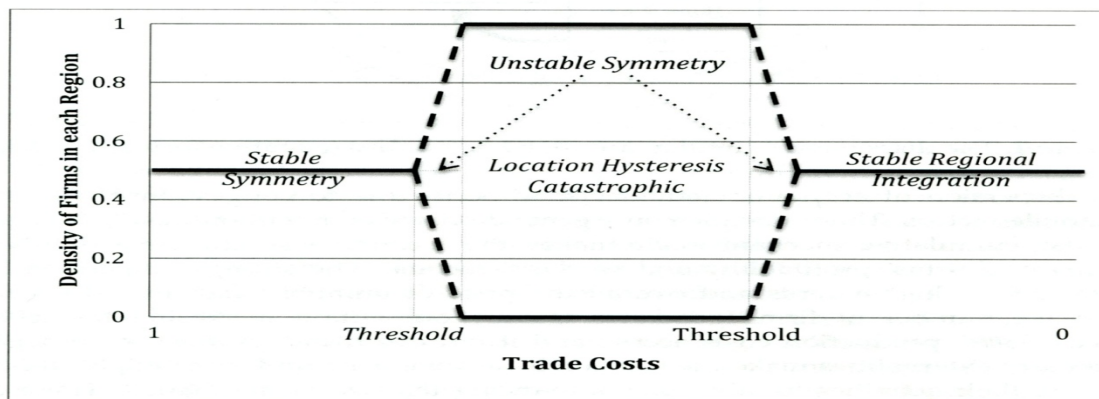

Figure 3. Regional economic integration mechanism

The figure exhibits two regions where the density of firms varies at different level of transportation costs and firms' profitability. Firms spread around locations under autarchy and regions hold the same or similar characteristics (Krugman, 1991c; Krugman & Venables, 1990). Firms want to be close to their customers to minimize their trade expenses and almost all their sells are made within the local market. The stability of this economic symmetry is explainable, as firms have to cope fierce local labour competition, which increases wages; and relative strong local rivalry for products, which decreases market prices. Both of these factors affect negatively firms' profitability generating spatial dispersion of economy activities across regions. These economies might become a sort of backyard capitalism. Instead, if trade costs fall under a certain critical level, firms can compete also in relative distant markets and the

agglomeration forces pull firms to cluster together generating external economies. It undermines the symmetric stability generating concentration in one side and dispersion in the other side due to the circular cumulative causality. Thus, one location wins and another location loses in terms of share of firms. The figure above showed an extreme situation, catastrophic agglomeration, generated by location hysteresis (Baldwin et al., 2003). Where, all firms move into the most attractive place due to a shock leaving empty of firms the other place. On the contrary, if transportation costs are low enough the proximity to the market is less prominent and the factor market competition becomes more significant in firms' localisation decisions. Low trade costs lead economic integration increasing the inter-regional transactions. In this context, firms prefer to establish their activities in regions where immobile factors are less expensive. It generates footloose firms from core to periphery (Ottaviano & Puga, 1997, p. 20) generating symmetry. Also, it may lead regional specialisation by the fact that different sectors exploit benefits of demand and cost linkages with different intensity (Krugman & Venables, 1996). Whereas, factor and market competitions influence all sectors indistinctly (Henderson, 1987). Therefore under regional integration, sectors choose a location based on lower price of immobile factors and where they can exploit sectorial demand and cost linkages creating specialised economic concentrations within regions.

Discussions and conclusions

In this paper the sources of economic inequality, the circular cumulative causality and the regional integration mechanism within the new economic geography literature have been discussed and analysed. The main assumption is that the trade off between increasing returns to scale and transportation costs determine firms' delocalisation. The increase of firm's profitability is achievable within a large market and imperfectly competitive. Two models have been considered as drivers of economic agglomeration. The first is based on migratory flows of workers due to wages differences between locations (Krugman, 1991a, 1991c), and the second is based on mobility of firms due to vertical industrial linkages (Krugman & Venables, 1995; Venables, 1996). Mobility of workers and firms make markets dynamic generating pecuniary externalities, which self-enforce the economic asymmetry and symmetry between regions. In the recent contributions, researchers have reached common conclusions that economic agglomeration occurs due to intermediate trade costs between autarchy and free trade. In that point, pecuniary externalities (demand and cost linkages) push concentration generating industrialise and deindustrialise regions. Instead, firms spread around locations with high and low transportation costs though it generates different economic patterns. Under autarchy the economy is self-sufficient, firms have to cope relative strong local product and labour competition generating economic symmetry with few inter-regional trades. These economies may become a sort of backyard capitalism. Under free trade regions face inter-regional competition and the proximity to market is less relevant. In this case, firms are more sensitive to differences in production costs (Krugman & Venables, 1996); as a result enterprises want to be in a region with lower price of immobile factors (Ottaviano & Puga, 1997, p. 20). Thus, economic activities move from core to periphery generating regional equilibria. It may also lead regional specialisation as firms want to be in the region where they can exploit sectorial demand and cost linkages.

Research limitations and direction for further research

This paper has been designed in order to provide a theoretical framework of regional integration mechanism within the new economic geography literature. However, this manuscript does not have the ambitious aim to cover all sources of economic inequality and fully investigate the regional integration process. In particular, economic balance, imbalance and regional integration are the result of a complicated mechanism where numerous dynamic forces are involved. Three main shortcomings are identifiable in this paper. First of all, additional pecuniary externalities have to be taken into account in order to have a full theoretical framework of the state of art. Secondly, technological externalities have to be considered as they support and amplify the market interaction effects. Finally, the regional integration mechanism needs to be tested by empirical evidence. This latter limitation also represents an important direction for further research (Ottaviano & Puga, 1997, p. 25).

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