A Penrosian view of the firm: growth or stagnation?

Lesslie A. Valencia

Abstract

This working paper builds up a firm theory based on Edith Penrose's Theory of the firm's growth by developing a view of a strategic firm that evolves according to the behaviour of the agents inside the firm and an external environment that can restrict its actions. Thus, creating an explanatory model of firm development through a heterogeneous market hinting at the reasons behind stagnation or development for the whole economy.

The model follows the main features of post-Keynesian economics by following the principle of effective demand, historical dynamical time, and the principle of fundamental uncertainty explained by Lavoie (2006, p. 15). In addition, it is developed through some characteristics of the theory of firm growth by Penrose (1959). In specific Penrose characteristics of firms as entities with resources and capabilities that make them unique. This entails that firms can grow through endogenous capabilities as their knowledge grows and have no boundaries other than those given by its capabilities; firms are unrestricted by their industry.

As a result, firms react in different ways according to their size defined by their capabilities. To simplify this interaction the paper uses large and small firms to explain market variations and the way competition evolves according to their interactions. The paper builds up Penrose's idea of interstice development to explain market interactions specifically market concentration and the limitations of price competition mixing Steindl's and Kalecki's ideas of concentration and price dynamics.

It concludes the importance of innovation and interaction between firms to maintain sustainable growth in an economy and the importance of industry creation. The analysis highlights the importance of firms' knowledge development and the restrictions created by high concentration and pressures of competitive advantage through global standards. Stagnation, thus, is explained as a result of deindustrialisation, driven by firms lacking innovation, communication and predatory practices limiting the rise of new technologies, industries and the number of small firms that transform into large firms.

Introduction

Stagnation and growth are usually analysed through a macroeconomic perspective, with a focus on macroeconomic variables. Although this approach can help explain the trends seen in the economies, there seems to be a missing link, the firm. Stagnation and growth are more than a change in GDP, they entail a change in the industrial structure of an economy. An analysis on the firm can help show a different perspective on growth and stagnation so it can help show firms' changes and the repercussions it has in an environment where power and capital concentration matters.

The purpose of this paper is to highlight the importance of the firm and industry when analysing growth or stagnation. The paper follows the theory of the growth of the firm by Edith Penrose to analyse change in firms and concentration through entry barriers and competition limitations. The model follows the main features of post-Keynesian economics as the principle of effective demand, historical dynamical time, and the fundamental uncertainty principles explained by Lavoie (2006, p. 15). Equally, it is developed through some characteristics of the theory of firm growth by Penrose (1959). Some of these characteristics are: firms' resources and capabilities make it an individual; thus, no firm is similar to another; firms grow through endogenous capabilities as their knowledge grows; firm growth has no boundaries other than the ones given by its capabilities, firms are unrestricted by their industry.

Edith Penrose's theory of the growth of the firm

> *"A firm is by no means an unambiguous clear-cut entity; it is not an observable object physically separable from other objects, and it is difficult to define except with reference what it does or what is done within it." (Penrose, 1959, p. 9)*

Edith Penrose starts by describing a firm differently from what she calls the output-price definition, where a firm is similar to an institution. She defines the firm according to the necessary capabilities it requires to grow. In her interpretation, a firm is a collection of its productive resources, as well as an administrative unit (Penrose, 1959, p. 21).

Firms have policies, coordination, and resources; human and capital limit them. Penrose describes an evolving firm, where managers and capital evolve through time. A firm for her is a timeless, growing institution that adjusts depending on its expected future. In a Penrosian view, a firm goes beyond the traditional productive resources of labour and capital. It also has services and resources that create a productive opportunity (Blundel, 2015).

The productive opportunity refers to the firm's possibility to grow according to the services and resources available. Therefore, she argues that its growth path is defined by its 'inherited resources' and productive direction (Penrose, 1959, pp. 58-77). For Penrose a firm's

specific abilities can be transferred to different markets or products, thus eliminating any limitation given by the industry. In a way she sets a guideline of firm strategies for growth, leaving management ambition and the firm capabilities as the primary catalyst for growth.

The nature of the firm is development; therefore, there is no such thing as 'diseconomies of scale', as firms keep adapting given the nature of management dynamics (Penrose, 1959). Penrose explains that a transfer of technology and capabilities requires personnel and management to have a surplus of time acquired by increasing knowledge and better managing their functions. As a result, the learning curve would increase excess capacity, which managers or entrepreneurs can use to increase development and research. Thus, a firm's knowledge and technology development can be transferred to other products or industries to increase potential growth. Nevertheless, firms without proper resources, either management or knowledge, can disappear because of their inability to react to the market.

Accordingly, a firm's ability to manage resources, develop, innovate, and increase its knowledge limits its size. Penrose explains this limitation as a receding managerial limit, a limit of growth that depends on its resources and services (Blundel, 2015). Additionally, the firm is restricted by its investment and risk aversion. Penrose relates her analysis of risk to Kalecki's principle of increasing risk where expectations, market conditions and profitability restrict the entrepreneur's investment.

Hitherto Penrose's analysis of the firm's growth involves capital accumulation within the firm to maintain a level of investment that supports the resources needed for the firm's internal growth. She opens the discussion on how firms can maintain a level of knowledge and innovation that supports growth depending on their investment capacity.

Given the assumptions entailed in Penrose's theory of the growth of the firm, she also specifies the possibility of different firm sizes under a heterogeneous environment with uncertainty. She specifies two types of firms, the small and the large firm. Small firms are more flexibles than large firms but have less access to capital and resources. However it doesn't mean that small firms can't exist.

Penrose mentions how large firms' expansion can create specific markets that are unprofitable, giving smaller firms' space to satisfy those markets. She defines them as '*interstices'* (Penrose, 1959, p. 139). *Interstices* create a correlation between small and large firms, making big firms the primary investment attraction source. As Penrose explains, small firms will only survive under specialised markets, as they do not have the resources to grow and become larger firms (Penrose, 1959, p. 139). However, there would be a point where large firms will not be able to grow anymore, as their chances of investment will decrease, and

this is where *interstices* are created, and small firms will be able to grow at a higher rate than the industry (Penrose, 1959, p. 200).

As Penrose defines, interstices are creating industries and specialisation through them, the economy grows and can maintain competition. She explains that as *interstices* are created, firms recreate the cycle of concentration and growth by innovating and developing the economy. Therefore, entry barriers and monopolistic practices can limit interstices' creation limiting growth in the economy (Penrose, 1959, p. 208).

As explained by Penrose (1959, pp. 202-204), firms with higher market power will create *"artificial entry barriers"* as firms increase their resources, either human capital, raw materials, or technology, they can restrict entry. They can restrict investment by holding the resources, limiting the creation of technological progress and, therefore, competition.

Penrose explains a theory of development through the firm by showing the potential of firm development and strategy, focusing on growth as an objective with heterogeneous firms that depend on agents with different abilities. Penrose explanation developed into the resource-view of the firm theory and has been used in management strategy but it has been ignored in economics. Penrose theory of the firm can help illustrate stagnation through the limitations of a firm while it can be used with Kalecki and Steindl theory of market concentration, financialisation and income distribution problems by showing a firm whose path depends on people, capital and knowledge creation rather than production.

The firm as an agent of growth or stagnation

To start analysing the microfoundations of growth or stagnation is essential to understand the firm as a growing intertemporal entity. Penrose (1959, pp. 13-22) defined the firm as a productive and administrative unit that can be described best as a collection of services and resources. Penrose's resources entail labour, capital, and inputs, while services refer to the firm's managerial branch.

In a heterogeneous environment, a firm becomes unique and vulnerable to external shocks and internal inefficiencies. Hence, its main goal becomes survival through growth and maintaining a vision towards profit in the long run. While this objective aligns with a neoclassical view, temporality changes the concept by changing a firm's short-run focus into survival through growth.

A firm's existence, as explained by Penrose, entails a heterogeneous industrial environment; thus, changes arise from its internal capabilities. A firm in the resource/view theory follows a productive process that aims to achieve progress by understanding technology and business opportunities (Teece, 2014, pág. 332). Nonetheless, there are

limitations to the opportunities available in the firm's conception. This section will explain the firm trying to unify different theories, the Post-Keynesian through Kalecki and Steindl, and Penrose's resource-view theory insights. The firm is explained through six components: the entrepreneur, the workers, innovation, capital, cost, price, and output.

The entrepreneur / manager

Every firm starts as an idea conceived by an entrepreneur or a group of entrepreneurs. An entrepreneur for this exercise is a person opening a firm through the development of an idea. This idea can be derived from a real market necessity, or an abstract thought developed into output, which Schumpeter (1947) describes as 'innovative thinking'. The entrepreneur would require different abilities and capabilities to create a firm and oversee its functioning at the initial growth phases.

The entrepreneur will need to jump hurdles to increase its potential growth, and these hurdles will depend on the entrepreneurs' characteristics and knowledge of the market. Penrose (1959) mentions how entrepreneurs transfer their understanding of the external environment into the firm. Therefore, they need to understand the industry and market they are involved in, and this requires networking within the environment who understand the trends and limitations. Thus, being an entrepreneur requires a specific set of abilities and capabilities.

Frese (2009) developed a theory where entrepreneurial activity is linked to the agent's capabilities and abilities like personality, human capital, characteristics of active performance, and the environment. Although it is interesting to understand the personality traits, this analysis will focus on human capital. Human capital is related to years of schooling, mentorship, active performance characteristics, networking, goals and vision, strategies, feedback, learning methods and the environment as an industry, market conditions, institutions, and political environment.

Frese's explanation of entrepreneurs' characteristics and Penrose's insight of entrepreneurial knowledge and transformation show potential constraints to entrepreneurial activity linked to the entrepreneurs' social environment. Hence, a successful firm will depend on the entrepreneur's access to academic achievements, mentorship accessibility, and networking potential within the industry before firm development. These characteristics of entrepreneur development can be connected to the economy's institutional framework. In the denominated developing economies, it can represent a limitation given the weakened institutional framework debilitating successful entrepreneurial activity.

Under fundamental uncertainty, firm success will depend on the entrepreneur's capabilities and resources. At an initial stage of the company's growth path, these will rely

solely on the entrepreneur interpretation of growth and resources. This process will adapt as the firm advances leaving the decision making to managers, where most decisions will depend on the manager's interpretation of the market, workers abilities, process implementation and innovation. As Penrose (1959) mentioned, success will depend on its capabilities to maintain growth innovation strategies.

Managers need similar capabilities as entrepreneurs, access to academic achievements, mentorship (which can come from the entrepreneur themselves) and networking potential to overview the market possibilities. These characteristics will be necessary to enter the market and, in certain countries, hard to find according to the economic and institutional structure. Managers then can become a scarce resource in developing countries with low levels of education and entrepreneurship.

Transformative ideas will come from managers but require the entrepreneur's approval for its implementation, restricting the managers' power for transformative innovation. This relationship will depend on the managers' trust and the entrepreneur's involvement in the firms' transformational change.

Thus, growth limitations could be explained by the entrepreneur's constraints, either of visibility of market opportunities or by the limitations given by its social and economic status, such as lack of academic background, networking, and mentorship. In firms at higher stages of growth, these decisions are made by the managers whose limitations will be met according to their trust in workers, innovation, and knowledge of the market.

The workers

Workers are the day-to-day people who produce output; for our analysis, they are people involved in the firm's administrative or manufacturing branches. Both manufacturing and administrative department require a high level of involvement in the firms' daily activity. The main difference between managers and workers other than a hierarchical position is the manager's level of power and decision. Although some workers have certain supervision activities, their altering decision-making process is filtered through the organisation depending on its structure. Altering decision-making refers to transformative and innovative ideas that alleviate processes length, timing, or worker involvement.

There are different ways in which a firm's organisational structure can explain the workers place in it. There are two main organisational structures to consider horizontal or pyramidal (hierarchical). Workers place in the organisation changes according to the amount of decision-making power they can have within the organisation. Thus, the type of organisation and trust in workers will limit or expand the firm accordingly.

Aoki (1990) argues that a horizontal structure is the best type of organisation for knowledge dispersion than a hierarchical one. A horizontal structure translates into governance and decision-making power where knowledge in processes and day to day labours are disseminated through informal communication channels in an open environment, incentivising the creation of transformative and innovative ideas. Nonetheless, it does not imply a complete horizontal organisation as incentives are necessary through hierarchical job promotions to keep growing.

Aoki's (1990) explanation of the J-firm governance and organisation explains a firm propagating knowledge and introducing innovation through an open-door policy between workers and managers. This type of firm is comparable to what is defined as the dynamic firm, where innovation can arise from any part of the productive process, similarly to Penrose (1959) explanation of firm growth.

However, according to social and cultural norms, a firm's institutional environment can be restricted depending on geographical conditions and regulations. Thus, in an opposite move from the J-firm, firms' distrust in workers' productivity, abilities, and capabilities will require increased supervised labour. Jayadev and Bowles (2006) explain this phenomenon as 'guard labour', where organisational hierarchy maintains accountability by designing positions to guard workers' productivity. If this is the case, firm costs would increase as distrust could create a cycle of low innovation and hierarchisation of processes lowering productivity.

If a firm encounters low productivity levels related to workers' activities, supervision is needed to increase productivity. Thus, workers will require a mixed role of supervision to lower levels and their central productive role. In addition, the increasing role of supervision will create hierarchical roles desirable for workers as promotions and wage increases. Nonetheless, communication between supervisors and workers needs to be open; otherwise, daily innovation could diminish.

Furthermore, the level of organisation can enhance or limit the potential of firm growth. For example, in Aoki's J-firm, a horizontal organisation can help increase knowledge and contribute to higher productivity levels as workers participate in economies of scale processes. Meanwhile, in pure hierarchical levels, high distrust and sometimes high sanctions imparted to workers can decrease productivity while losing part of the knowledge creation process.

Considering that hierarchy and workers capabilities can create or restrict productive opportunities, dynamic firms would increase investment in workers' education, capability development, talent attraction and retention. Thus, an essential part of the Penrosian firms' labour will become a fixed cost (Lazonick, 2002), given the necessity to maintain trusting personnel and increase capabilities through workers.

Defining labour as an essential part of firms' knowledge creation shifts the focus from a set of resources to a complex system that depends on the workers' human capabilities. Therefore, the education and qualification of personnel are essential for the firm's growth strategy. On the other hand, personnel capabilities could be limited by the perceived education level or access to technology determined by income, leading to higher use of guard labour when entrepreneurs or managers do not trust them. Compared to the entrepreneur's limitations, the workers' constraints entail a lower risk of company failure but a higher risk of decreasing productivity according to the firm's potential capacity utilisation.

Thus far, the firm is explained as a human interaction system that maintains processes intending to produce and survive through time given uncertainty. As a set of human interactions, the firm will depend on individuals' limitations and how they interact to create knowledge, increase innovation, and maintain productivity. Thus, innovation becomes the primary source of growth in a Penrosian capabilities and resources view as human capabilities and communication can create and process knowledge.

Innovation

There are more movable parts in a firm where workers and managers create knowledge than the typical labour and capital, as labour can be more flexible and necessary for growth. Each firm is unique and has its own culture; thus, it can resist change or embrace it (Best, 1990, p. 22). Through time a firm will change and adapt according to its environment, and for that, it will need to innovate.

Over time employees become more productive on their assigned tasks through repetition and learning; thus, services within the firm are linked to innovation. A firm can develop schemes through its productive life that can be used for new productive opportunities. New opportunities translate into internal expansion through endogenous factors within a firm rather than external through exogenous factors, as explained in mainstream theory.

Internal expansion is a consequence of knowledge creation within the firm. Penrose explains two types of knowledge, experiential and objective (Pitelis, 2009, p. xix). Objective knowledge creation focuses on innovation through goals, either to increase efficiency or to increase growth. In contrast, experiential knowledge is based on the experience gained by workers and managers through their time working at the firm. Experiential knowledge is necessary for firm growth as it releases resources for further productive activities.

Internal expansion opportunities are created through experiential knowledge creation and can be sustained through employees. Experiential knowledge generates from processes and task repetition. Employees can create shortcuts to daily tasks and improve their use of resources, leaving space for new productive opportunities. Experiential knowledge is innate

in any firm; however, it can be restricted depending on firm governance and organisation. Penrose only mentions knowledge creation on managerial resources; nonetheless, low-level workers can also find ways of increasing productivity and create innovative processes if they can oversee part of the productive process.

A firm is a group of people creating innovation through innate (experiential knowledge) and targeted (objective knowledge) firm activities. Innovation does not need to be a transformational change but an adaptation of a process leaving free time to develop new resources. Thus, there are two types of innovation in the firm: objective knowledge and experiential knowledge; the former will be *transformative innovation* and the latter *adaptative innovation*.

Transformative innovation is created by achieving growth through new business lines, increased machinery, or other transformative innovation. Meanwhile, adaptative innovation is a consequence of daily activities and gradual improvement of processes through daily repetition. *Adaptative innovation* is necessary for firm growth; it is the motor for economies of scale, giving *space* for transformational innovation, which is the main reason for internal growth. *Space* entails the availability of resources to increase production or add processes.

The organisational structure can limit adaptative innovation, it can be restricted when supervisors or managers fail to maintain communication with workers; guard labour can restrict innovation. Higher supervision can limit workers' amount of creativity and limit communication depending on productivity control measures. Managers acting like supervisors can decrease communication or creativity by delimiting activities, discouraging shortcuts, or increasing employee turnover. Thus, innovation depends on the trust between employees and managers to perform tasks.

Adaptative innovation means that firms will not be working full capacity leaving free resources to increase output or innovation. Transformative innovation will require more resources than adaptative innovation, but it can only be attained if there is *space* in the firm. Transformative innovation arises from a firm's designed goal; it can be said it is the primary growth strategy outcome. When transformative innovation is successful, it can increase firm value and change its market position. Nonetheless, transformative innovation requires higher workers' involvement, project planning and investment. Hence, the firm needs the ability to expand its physical and monetary resources.

Transformative innovation is desired by any firm willing to increase its market share; however, it can be challenging to attain. Moreover, firms planning transformative innovation will phase a high risk of failure as this type of innovation implies a change in production techniques, high investment, and a lengthy implementation process. Although most firms have

the *space* necessary to implement transformative innovation, most of them will not have the monetary resources for it, and in some cases, they will not have the personnel necessary to produce transformation.

The firm still is restricted by the external environment, particularly competition. A Penrosian firm understands competition as Schumpeter explained it, where a firm's innovation and technology form part of the differentiation that can secure their survival. Heretofore, growth has been linked to a firm's internal capabilities, but it can also be linked to external opportunities. In innovation, we can assess adaptative innovation as internal opportunities and transformative innovation as external opportunities. A transformative innovation could be mergers and acquisitions focused on resources and capabilities.

Mergers and acquisitions can help increase growth by acquiring services and resources to expand productive opportunities (Penrose, 1959). In this sense, mergers or acquisitions imply knowledge and innovation procurement more than acquiring plants and materials. Knowledge acquisition and innovation can expand firm boundaries and increase its productive capacity. This transformative innovation will focus on external capabilities acquisition to develop new technologies and achieve higher market participation. Thus, mergers and acquisitions could incorporate adaptative innovation to the firm to maintain growth and increase profit in the long run.

Innovation can help increase productivity in the best combination available for the firm. Although, the firm will not aim to maximise productivity but to maintain a productive force that can supply according to the market's demand restrictions. Thus, there needs to be a combination of innovations to create new productive opportunities and have enough utilisation capacity to increase production if necessary.

Some restrictions arise when innovating, especially regarding the potential of human capabilities; the firm will have a restriction of capital and resources that can maintain the level of workers and managers capabilities below the required for innovation and progression, while external factors can also restrict human resources available to firms of different capital and sizes.

Capital becomes an essential variable for the acquisition of resources and increasing capabilities. At the initial stages of firm growth, capital will depend on the entrepreneur's income, social networking, and financial access. Entrepreneurs' financing and social status come into play when determining the firm's starting capital; however, a firm can start production with low capital. It will require access to finance as it starts growing according to its demand. The entrepreneur's income and social status will help the financial system

determine their lending potential without assessing the firm potential, as Kalecki (1969) and Steindl (1976) mentioned in their firm theories.

The capital increase can be restricted by the financial market's perception of the firm and the entrepreneur. In an economy with fundamental uncertainty, lending institutions require proof of income large enough to sustain the amount lent unless physical capital can sustain a given amount. In a growing firm, this can be limited by the entrepreneur's income, the firm's assets, and capital, thus restricting its sources of investment unless the economic environment, networking, or geographical location helps it access external investors. In some instances, the geographical location and the entrepreneurial network can help the firm obtain capital and increase its investment.

As the firm grows, investment requirements will change, adaptative innovation will leave an opening for newer resources and an increase of the output. The firm will need a boost of sales costs to increase its production and take advantage of its knowledge. If the firm cannot access external investment, it will need to increase its profit margin by reducing its costs. This could mean a decrease in wages, quality of input, and capabilities to maintain their market participation in a starting firm. The increased sales costs will lead the firm to spend more money on marketing, advertising and sometimes services with the idea of product differentiation to maintain or increase their place in the market.

Adaptative innovation relies on workers and managers' knowledge for its development, increasing costs related to workers training. Still, in a firm with a limited investment, this can be neglected. The firm's risk of failures might increase depending on the amount invested, as costs will also increase depending on their position in the market. In the case of transformative innovation, for its development other than managers ideas and workers time, it will also need a high investment source, raising its failure risk.

For the firm to attain both types of innovation, it will also require increased capabilities and abilities. Depending on the resources necessary for innovation creation and growth maintenance, the firm will need to attract talent by having competitive wages and benefits, especially when discussing managers in charge of transformative innovation. Managers need to know people in the industry (network) and understand the upcoming trends in the industry, thus making them desirable assets for similar firms. If capital is hard to access, it can limit the specialised resources for further firm development. Hence, the firm needs to increase its profit rate and maintain lower costs.

Capital will become a determinant for firm size as it will maintain a firm under certain boundaries depending on the investment possibilities it can attract. In developing countries,

domestic firms could have problems accessing financing for firm development and depend more on the personal capabilities of the entrepreneur.

Capital becomes one of the most significant restrictions for firm development as a limit of organisational and productive resources. Moreover, through Penrose's perspective, a firm's development entails an endogenous investment theory where profits are more than a goal but a necessity for firm survival; hence, investment can also limit firm development.

This will lead the firm in different directions as services and resources can break market boundaries; firms can adapt to additional products and circumstances. As a result, a Penrosian firm is not limited by a specific market; consequently, a firm's potential growth is higher and unbounded by decreasing returns of scale. The market can determine a firm's position, but it can also consolidate its survival.

Output and price

As mentioned previously, a firm in an environment of fundamental uncertainty will have to decide on more strategies than the level of output and price. The firm can set the price according to its market power measured by its participation in it. Thus, making market participation one of the main strategies for firm survival and growth.

Firms' price-setting involves limited knowledge about the competitive environment and its costs restrictions; hence, a firm needs to decrease its costs to increase its profit rate. In addition, a firm can decrease its costs through innovation, making Schumpeter's creative destruction a leading source of competition between firms.

Innovation will require high investment, so price will need to reflect a profit that can cover most of it as financing is restricted. Costs' reduction is also restricted according to the capabilities necessary for innovation, making the firm find different ways to reduce its costs. One of these ways is through vertical mergers and acquisitions depending on the firm's size, as they can also function as a monopsony.

Depending on its market participation and its place within the industry, a firm could control its input prices. Furthermore, the power given by its market share and product differentiation can create a close relationship with suppliers of differentiated products, thus allowing a firm to control its inputs' price to a limit. Hence, size and market participation will become an essential part of firm development as power can help the firm increase profits and gain control to develop better capabilities.

The firm capabilities will keep changing, leaving an excess of utilisation capacity in the long run, as Steindl (1976) described. The excess capacity utilisation is a consequence of uncertainty. Firms are unable to maximise output as they do not know the demand. Steindl

(1976, p. 10) explains this so that firms will prepare for a future boost of demand that might never happen. A firm's output and price depend on the market conditions and its environment; although it has ways to control both variables, it will depend on its power and size.

The Market as a consequence of the firm

The firm has been explained according to its internal capabilities and limitations; other restrictions can arise from exogenous factors. The market is the environment a firm is in, and it involves its competitors, suppliers, clients and even institutions involved in firms' decision making. While the firm can control certain parts of its environment depending on its size and participation, it can also be affected by it.

This section will establish the differences between firms, how competition takes place when firms develop through innovation, capital accumulation, networking and market concentration. A firm development in an economy will depend on its origin and its availability of capital as its limits are broader.

Firms' size and origin

Firms have different variables, from the people inside to the amount of capital and investment available. Thus, there is a variety of firms in the economic environment that differ according to their capabilities. Although all firms are different and unique, they can still be classified; in this case, they will be referred by size and origin as these differences can change the way they view the market and their actions.

According to Penrose, a firm can be denoted as big or small according to its resources and capabilities. Building up her argument and focusing on the market environment, its market power will also define a firm size. When talking about a large firm other than capabilities, it is assumed that it holds a market share large enough to manipulate the market to its convenience. Like in the Post Keynesian theory (Lavoie, 2014), firm heterogeneity arises from a lack of capital and finance access. So in a sense, market heterogeneity arises because of restricted financial access and different market perspectives that limit investment and competition.

Heterogeneity of firms would entail different capabilities and ways of confronting competition and the external environment. In this regard, Penrose states:

> *The Schumpeterian process of 'creative destruction' has not destroyed the large firm; on the contrary, it has forced it to become more and more 'creative'." (Penrose, 1959, p. 94)*

A large firm can diversify and transform when a particular industry's profit or growth rate is lower, as its resources and services allow it. A large firm is also perceived as more stable to the external environment, making it a desirable business partner. In addition, this type of firm

can become a source of talent and innovation, increasing its position in the market and making it a desirable employer.

Meanwhile, a small firm can be best described as a new firm with limited capabilities, whether capital or human. It could be a firm with limited financing and restricted by its geographical location, entrepreneurial or managerial capabilities. A small firm will be a slave of the market structure involved, benefiting the firm with a higher market share (large firms) as they will set the pace for other competitors. However, there are some benefits for the small firm as they will increase growth rate and adaptability.

Compared to the large firm, a small firm can adapt its resources to the market more straightforward; however, this comes with a weakness as in some cases, they will not be able to create adaptative innovation as its working force changes constantly. In contrast, the large firm will have adaptative innovation creation that will develop into transformative innovation slower but consistently, although there will be cases where innovation will not be desirable as it can become riskier for the firm survival. In addition, firms will act differently depending on their region.

Small firms' limitation on investment arises from the lack of initial capital. Penrose (1959), as Steindl (1976), believes finance is the small firm's most significant constraint. A small firm can develop through innovation. Nonetheless, it will require initial capital for its development and the possibility of financing. Large firms can achieve a higher degree of financing and capital acquired by their size and profits gains, maintaining an advantageous financing position than the small firm.

Penrose explains how large firms' behaviour can limit investment if entry barriers are high and widespread in the economy. Then investment will be restricted as large firms would maintain power on industries limiting the number of firms entering them. She mentions how large firms can be benefited by acquiring knowledge in the form of patents, giving them a higher competitive advantage and changing the economic structure

Penrose explains how firms have no boundaries as they can adapt to different environments, with the only limitation being the resources they have available for their development. In an economic environment where concentration is achievable large firms will realise the restriction demand on their home countries entails, thus making them willing to move to other markets. Kay (2005) mentions how firms will attempt to move to foreign markets depending on their connections to the home market, as the specialisation of resources will make a move easier.

The possibility of expansion outside home markets adds another layer to the differentiation of firms within a heterogeneous market environment as in other than domestic large and small firms; there will also be foreign firms. Usually, foreign firms will be large firms in their domestic markets

looking to expand. Moreover, foreign firms have available resources that are easily adapted to the foreign market; thus, they will have an advantage against the domestic firms, adaptative innovation.

Foreign firms will act differently than domestic firms, as most of their main assets will be kept in their home market (Kay, 2005). The foreign firm then will keep innovating and create country-specific products to adapt to the market. Nonetheless, most of the transformative innovation plans will be kept in their home countries, where they will be able to use all their resources and services available.

Correspondingly, foreign firms will use the market for extraction, using the available resources but keeping the winnings in their home markets. The winnings can be transformative innovation created for a specific market that can be exported to different regions or profits returning to the home market for investment. Nonetheless, foreign firms can help their markets by creating an industry that was not available.

Foreign firms will be desirable for countries as they can create a surge of labour, reduce unemployment, increase investment, and increase potential demand assuming all-new labour was inactive before. Jobs created by foreign firms would not be related to high-level management but low-level workers. However, as the firm grows in the market, high-level employees will be needed. Thus the foreign firm will attract new talent by giving more benefits than the local firms. These benefits could be short stays in other region branches, increasing personnel capacity, and potential promotions to different regions.

Firm development changes as firms adapt to the heterogeneous environment; investment acts differently under the new circumstances. Large firms will have a preference for financialisation in the domestic market but will be restricted by it. On the other hand, foreign firms can use resources from their home country and the local market, leaving the small firms with restrictive financial resources. The only way out of this limitation loop is for firms to be creative and develop.

Firm and industry development in a heterogeneous environment

A firm's primary goal is survival through growth and market share; in a heterogeneous environment, a firm develops differently as its industry structure and related market restrict it. As a result, firms will need higher flexibility in their productive resources and a high innovation degree. Penrose explains that a firm can change its environment, creating new products, services, or resources and converting them to its competitive advantage.

While a firm develops transformative innovation, it can stumble upon new opportunities previously unavailable in the market. This type of transformative innovation can expand to different firms, but mainly to small and new firms. These opportunities of expansion for the

small firms are what Penrose (1959, p. 195) defines as *interstices*. Interstices are opportunities left by large firms, as these are not part of their primary sources of profit or cannot take into their umbrella because of limited resources.

> *"Essentially interstices are created because there is a limit on the rate of expansion of every firm, including the larger ones; the nature of the interstices is determined by the kind of activity in which the larger firms find their most profitable opportunities and in which they specialise, leaving other opportunities open." (Penrose, 1959, pp. 195-96)*

Thus, interstices are markets created from transformative innovation changing the productive environment. In a way is the process where firms create new industries; these interstices are usually taken advantage of by small and new firms as their productive resources are more adaptable. So, in a way, we can define interstices as the beginning of new industries; opportunities firms create to help them survive and grow.

Interstices would create a higher competitive environment for large firms. Hence, if there is transformative innovation, the creation of new technologies, and knowledge, industrial concentration will diminish by creating interstices. Nonetheless, the diminution of concentration in the economy depends on small firms' structure and large firms' reactions.

Interstices give small and new firms a fighting chance to develop into large firms, as large firms cannot have the necessary resources to take advantage of every possible opportunity. However, Penrose (1959) complements Schumpeter and Steindl theories by noting the lack of interstices as another source of stagnation. Stagnation is possible when the market concentration in key industries surges without creating market opportunities for new or small firms.

Interstices' creation will depend on the internal capacities of the firm and its external perspective. Hence, if a small firm wants to be part of an interstice, workers and managers will need to interpret market signals for its development. Moreover, in a heterogeneous market, acquiring the necessary resources for high-level innovation interstices development becomes more challenging, as people with the ability to take advantage of them becomes scarce, and financing is hard to find. Nonetheless, there will be small markets where these firms can flourish without it been innovation-intensive.

Economic development needs interstices because of firms becoming dynamic. Dynamic firms flourish on market failures and bounded rationality (Penrose, 2008), leading them to increase their power and maintain a certain production level; thus, small firms need to create their own markets. Therefore, interstices will become the main source of development of new firms, as they will increase the industrial environment, attract new institutions with their development and increase labour.

A large firm can change industry concentration, which by itself is not detrimental to the economy, and can create knowledge through firm competition as described by Schumpeter's creative destruction (Penrose, 1959). However, if several industries have high concentration, there could be a restriction on small firms creating interstices as large firms create high artificial entry barriers. Therefore, the decrease of interstices translates into stagnation in the economy through a lack of development and industry creation.

Penrose's theory of firm's growth can help understand development through the eyes of firm creation and growth. However, her interstices definition opens the discussion to a different view of development through industry creation focused on human behaviour and knowledge creation through repetitive tasks and entrepreneurial activity.

For interstices to arise, firms need to understand their market environment, and this can be solved by having different firms in a single geographical location which can improve knowledge transmission and communication exchanges between agents. Then, like Porter's (1998) explanation of clusters, firms will find ways to interconnect and maintain relationships to increase potential innovation by sharing resources.

Considering that individuals control firms, they will require a close relationship with other people in the industry. Thus, creating clusters of firms dedicated to a specific industry, creating the need for institutions helping the development of a given industry. Furthermore, people will look for ways to establish a role in the industry, and firms will need these people; thus, educational centres are created to develop given industries.

Accordingly, firms with geographical proximity and working in a cluster will incentivise the creation of interstices. Clusters could diminish transaction costs, increase efficiency, and create collective assets as information, strategy, and innovation in the industry (Porter, 1998, pp. XXII- XXIII). This collection of assets will help small firms to arise with lower risks incentivising the creation of industries; in a way, clusters reduce the risks involved in firm growth.

In this regard, Delgado et al. (2010) found substantial evidence on the number of start-up increases and clusters in specific US regions, using definitions drawn from the US Cluster Mapping Project. This evidence highlights the potential increase of firm activity with the creation of clusters and significantly the potential increase of interstices; nonetheless, this is not always the case. Penrose (1959, pp. 208-209) mentions how interstices can be limited according to the large firm dominance in the market. Interstices' creation depends on small firms' ability to seize opportunities that large firms cannot because of their operations or size. This process can be limited as large firms increase their market dominance, as they will hide investment to increase innovation, thus creating 'artificial' entry barriers.

Clusters arise organically through firm development; nonetheless, it has become a desirable policy due to multinational firms' development and countries engaging in firm attraction to increase their competitive advantage. However, there are certain limitations to this new development method as small firms involved in these clusters will encounter highly developed industries with usually a high level of dominance. Therefore, interstices creation will depend on the level of competition between firms and the degree of difference between them either by size or origin.

Competition with heterogeneous firms

Competition in a heterogeneous environment will depend on different variables. For example, most industries behave as oligopolies, with a large firm being the leader; nonetheless, other types of markets exist, but these will be defined through their relationship to the large firm. Moreover, firms will compete differently according to their size. Thus, there are different dynamics to analyse in competition between domestic and foreign large firms, between large and small firms and between small firms.

A firm's decisions and objectives depend on its external and internal environment, especially its investment, pricing, and development decisions. Under a Schumpeterian view of competition, a firm's innovation becomes its primary source of competitive advantage. Nonetheless, in heterogeneous firms, not all firms can maintain high levels of innovation. Thus, large firms' competition will be identified by a constant struggle to be innovative and maintain their market position.

Large firms in oligopolistic markets will struggle to maintain their growth rate and their relevance in the market. Thus, large firms can engage in competition through innovation and differentiation. This type of competition is generated by demand limitations, as firms will realise, they need to maintain a solid differentiation to grow.

Large firms' competition will focus on innovation as price competition is undesirable, given the market repercussions it can generate by challenging competitors to lower prices unsustainable to the firm, potentially decreasing its profit rate (Steindl, 1976). Competition through innovation will take part in adaptive innovation more than transformational innovation. Adaptive innovation increases the firm's possibility of cost reduction by reducing the number of employees or creating an easier way of producing. Costs reductions for this firm are desirable as this can increase profit rate, thus increasing the money invested in advertising, marketing and any other innovation that can lead to product or service differentiation.

Steindl's (1976) maturity theory explains a firm's limitation when different profit margins create internal accumulation as the industry grows. Thus, although industry expansion limits the firm, its concentration process will continue until it reaches a demand limitation. Then, the

firm limits its capacity to maintain market power, limiting the potential increase attained with innovation. Large firms then will start looking at other markets to gain market power and survive in their home market through cost reduction.

Thus, Steindl explanation of price competition through a decrease of costs created by the necessity of innovation entails a different dynamic between large firms, where the one with a higher profit rate is the industry leader as it can manoeuvre price, innovation, and costs conveniently. However, the dynamic changes when large firms are from different economies. Foreign firms will have access to different sources of investment as they would usually move to countries where they can become the stronger competitor.

Kay (2005, p. 102) argues how firms' expansion decisions will be justified according to their home market. If the home market is limited and the potential earnings of foreign direct investments are higher than in the home country, large firms will expand their horizons. Thus the foreign firm will move to countries where it has a competitive advantage, whether from innovation or cost structure, changing the way firms interact with one another. For small firms, the arrival of a foreign firm might mean an opportunity for interstice creation with certain limitations.

Interstice creation will depend on the foreign firm relationship with its suppliers, as there can be close interactions where firms will be restricted to search for new suppliers in the domestic market. Hence, increasing small firms' competition and occasionally incentivising firms' exit to similar industries or their disappearance. However, despite the potential reduction of small firms, foreign firms can also increase worker development through specialisation, thus incentivising adaptive innovation within the firm and creating the potential of transformative innovation if innovative decisions take place in the host country.

This type of knowledge creation incentivised by the foreign firm can help create interstices depending on the access to investment and the potential of innovation in the subsidiary. Firms' moving to other markets can depend on their home country for innovation, leaving innovation in the host country only particular to its demand. As a result, transformative innovation creation is kept as an action particular to the home country as it will require higher investment; this will differentiate the large foreign and domestic firms. Best (1990, p. 172) illustrates this by highlighting how sector strategy success needs workers' participation not only for their knowledge in the industry but also, so they are committed to change.

Domestic firms will encounter the competition of foreign firms differently as most domestic firms will have higher manoeuvrability as their knowledge of the market and networking is higher. Nonetheless, foreign firms can use different strategies when encountering large domestic firms; one could be acquiring resources and capabilities through

mergers and acquisitions. This type of strategy will leave the foreign firm in a similar competitive environment as the domestic firm; nonetheless, it will still encounter restrictions mostly related to demand preference.

The foreign firm will need to attract new consumers with its arrival to the host country as the domestic firm will have the preference, and it will depend on its marketing strategy and in some instances, it means price competition if their costs are lower than the domestic firm. In this type of competition, access to investment will be the primary determinant of market power. Therefore, foreign firms will use their competitive advantage and adapt it to obtain market power compared to large domestic firms.

Large firms will focus on competition through innovation and market differentiation. Penrose reflects on the importance of this type of competition as essential for innovation; without large firms' competition, some critical innovations could be left aside. Transformative innovation can become a double-edged sword as it implies a more significant risk, but when successful, it can help firms increase their competitiveness and incentivise the creation of interstices. Best (1990, p. 166) describes it as "new competition" because it relates to industrial growth and not allocative efficiency. Large firms with enough power to change industries will try to find ways in which transformative innovation can increase industrial growth, consequently, firm growth.

This type of innovation creates interstices by magnifying new resources and services development. However, it can be limited, especially between different size firms, thus decreasing the potential interstice creation. Penrose (1959, pp. 202-203) denotes two types of barriers of entry: the natural that arise from limitations on investment, resources, and consumer loyalty, and the 'artificial' arising from power dynamics, especially when creating innovation, as large firms can protect these innovations through patents creating a limited space for interstices.

Artificial barriers of entry can arise when large firms control essential innovation. Penrose mentions how firms in this position will try to protect their intellectual property against firms of the same size, but inadvertently they will limit access to small firms. Firms of the same size can deal without a specific innovation aa they have the resources to create a similar one; meanwhile, small firms will be constricted by this, leaving aside the development of new technology and the potential creation of interstices.

The creation of interstices is crucial for country development; nonetheless, market concentration and investment allocation can be detrimental to new industry creation and innovation. Moreover, firms have incentives to reduce costs, therefore maintaining a large

margin of profit and control competition via market entry. Thus, small firms acting as suppliers of large firms can be pressured to maintain low prices.

Large firms' market power can lead them to create a monopsony when demand is restricted. Large firms, in this case, will be restricted from price competition as other large firms can take advantage of it, leading them to decrease costs. One way to decrease these costs is through innovation, but when demand is restricted, a faster way is by decreasing supplier costs and wages.

In supplier costs, large firms in niche industries can excise some power on small firms acting as suppliers. Large firms will ask small firms to follow specific processes or maintain a price level as they see it competitive. This policing will affect the competitiveness of small firms as most of them would not have the market power to maintain price competition, leading them to reduce costs further or lower the quality of their product. This type of ruling is especially problematic with large foreign firms as they have access to worldwide suppliers. They can choose not to interact with small domestic firms as sometimes contracts and linkages to more significant suppliers will determine their transactions. In a way, foreign firms will also attract competition for small firms.

Although competition between large and small firms can be predatory, it will depend on their communication. Best (1990, p. 162) explains the Japanese method of *Kyoryokukai,* where small firms can form networks with large firms to increase innovation and transfer knowledge, thus diminishing the potential harm of cost reduction. Kyoryokukai is built on trust other than contracts, as firms can communicate with one another, innovate according to the specifications of the large firm, and at the same time increase the probability of interstices.

Firm networking can enhance innovation and create a different knowledge structure related to the industry, thus maintaining some innovation and even undertaking transformative innovation through an industrial lens. Best (1990, p. 168) argues that this type of industrial organisation can enhance competitive advantage and thus create an institutional framework that relies on the industrial policy to promote value-added products in this type of network. He explains:

> *"Here (Japan) the purpose of industrial policy is to promote internationally competitive business enterprises in markets that are continuously being reconstituted by strategically aware competitors." (Best, 1990, p. 168)*

Thus, competition becomes a standard practice that can improve its market environment and further its development. Nonetheless, this requires a complete shift in the firm's view from production efficiency to an entity that relies on organisation, work, and networking (Best, 1990, p. 188).

Moreover, competition to heterogeneous firms can be complicated and relies on firms' relationships, and the type of competition other firms around them have. Therefore, some restrictions and outcomes arise when competition is limited by market concentration, lack of innovation and access to finance.

Conclusion: Stagnation or Growth

Firms can survive in different economic circumstances depending on their capabilities and resources. Their ability to survive can change the economic environment depending on their market power and their institutional environment. If a large firm has acquired sufficient market power to be the leader in the market, its next steps will be to protect it; thus, it starts creating entry barriers for new competitors. This barriers can be detrimental to growth but it will depend on the market circumstances.

In an environment with innovation as the main driver, firms market barriers concentrate on profit margin protection through Penrose's artificial entry barriers. In this case, the barriers could be technology, cost reduction through contracts, patent creation to protect product differentiation and advertising to protect their market share. Although these practices are aimed to diminish competition from large firms, they can also be a restriction for interstice creation.

Interstice creation depends on large firms' environment; when large firms decide to restrict technology access or innovation, they also restrict the potential of new industry development, thus interstice and small firms' growth. Large firms with high market power can shift the economic environment by restricting costs, which in times means a reduction of prices for suppliers of large firms.

Steindl mentions how price rigidity can create the need to reduce costs and concentration (Steindl, 1976, pp. 40-52). This higher profit margin will create a process of internal accumulation, increasing investment and creating a competitive advantage. The competitive advantage created readjusts the market by creating concentration as a firm with higher profit can invest in sales' increase, whether via marketing, product differentiation or process innovation (Steindl, 1976, pág. 42).

As this process develops over time, it will reach a saturation point where the industry grows at a lower rate and concentration increases. The degree of concentration increases as other firms leave the market and the economic cycle continues, but new firms cannot enter because of the specialisation required to maintain price-cost relations (Steindl, 1976, p. 43).

In the cases where small firms are already in the market, there can also be some investment restrictions as firms in concentrated markets could have inelastic cost curves that

minimise their investment, thus leaving them with low competitive advantage. Although this practice restricts firm development and growth, it is not necessarily a reason for stagnation. Market concentration in a few industries can still generate economic growth, but if concentration disseminates in the economy, it could lead to stagnation. Industry concentration will depend on the economic environment, the firms and the institutions.

Dynamic firms can exist in any type of economy, but their creation and growth is linked to the institutions surrounding the economy. Dynamic firms will require certain capabilities and resources to achieve innovation and therefore growth. The capabilities and resources can be linked to their access to institutions, firms, people and other industries. Thus the access and facilities gi9ven to the dynamic firm are important, when a large firm created entry barriers they can also be creating a limitation for the development of the dynamic firm. This limitation can be related to the development of new technology or even access to workers with certain capabilities important to the firm. Given the limitations attained by the economic environment a dynamic firm focused on survival will increase capital accumulation for further market development and to face uncertainty.

Capital accumulation will bring different restrictions to the economy if the practice is used by most firms. In an economy with low financial access it will increase capital restrictions to small firms and disincentive interstice creation as investment will be harder to find. In addition, if wealth differences between people is high, firm development will be segmented to the population with access to financing, usually the one in the highest percentiles. Consequently, economic activity will be restricted to a particular economic status, creating further limitations for interstice creation.

As mentioned previously, a firm develops according to its people and the innovation within it. If entrepreneurial activity is restricted to a specific population segment, innovation can also be limited as experiences, and cultural differences would be harder to find. Thus, dynamic firms will be harder to arise as there might be a shared predisposed experience of creating business, leaving diversity aside. At the same time, some entrepreneurs can encounter limitations when creating firms as they can be excluded from people willing to invest, and financial institutions might interpret their innovation as riskier. The same can be said for human development, where a small population segment has access to formal education.

Dynamic firms will try to maintain a level of resources and capabilities to increase innovation; given the uncertainty, the firm will aim to hire people from specific institutional backgrounds, as educational background or with access to social networks. Therefore, firms will compete for people with formal education for managerial jobs segmenting the population further. Moreover, firms' competition for resources will create artificial entry barriers for small

firms as they might not be able to compete against the wages and benefits offered by large firms.

The lack of prepared professionals can lag innovation, as well as entry barriers made by large firms. However, this can be intensified with the insertion of foreign firms into the economy. Foreign firms will increase competition of prepared professionals, although they will have the advantage to import talent. Thus, the foreign firm can increase workers' benefits while getting more working time and people with a higher educational background. Meanwhile, small firms will increase their knowledge gaps as specialised workers are unobtainable, inadvertently leaving most of the innovation with the entrepreneur or manager. Thus, foreign firms will segment the market further unless institutions interfere in their development.

Because of foreign firms entering the market, large domestic firms will take advantage of their capital accumulation to use monopolistic tactics and protect their market, limiting interstice development. In addition, large firms in the domestic market will try to maintain their knowledge of the market hidden from the public, taking advantage of their network. The lack of innovation dispersion can limit interstices as they thrive when information is available so that entrepreneurs can be aware of opportunities. As a result, monopolistic tactics can be used against the foreign firm but will only limit interstices and small firm growth. Although these barriers can be seen in different markets and economies, they will only lead to economic stagnation when the practice is dispersed to most industrial environments.

Capital accumulation with an increased market concentration can create a detrimental environment for interstices. Firms with high capital accumulation and high market power will aim to restrict costs, which will be reflected in the small firms that act as their suppliers. Cost reduction can create a cycle of low wages, quality and productivity as demand is limited, utilisation capacity will be kept low.

This cycle will affect other industries and their supply affecting commodity prices. Dutt (2005) mentions that high investment and high managerial power focus on reducing costs or attainable profits diminishes the demand set price (commodities). Thus, for countries looking for industrialization and increasing their investment could fall into this trap and decrease the value of its commodity market making it undesirable for investment.

Oligopolistic pressures can make a firm anticipate investment in the available products as the market demand is constrained; the firm needs to keep innovating and maintaining market power. This will keep the firm in growing mode, aiming for long run profits and stability until their industrial limits are reached and then they will try to move to other markets outside the industry or domestic boundaries, but for the small firm this can be a never-ending cycle. In

a way, a large firm behaviour will create something similar to the described by Baran and Sweezy Monopoly Capital:

> *"Smaller business is on the receiving end, reacting to the pressures of Big Business, to a certain extent shaping and channelling them, but without effective power to counter them and still less to exercise an independent initiative of its own." (Baran & Sweezy, 1966, p. 52)*

For an economy to keep this Monopoly Capital status other than firms' behaviour, it requires institutions to follow similar conditions. The institutional environment can be biased according to its perception of the economy. Developmental economics focused on the idea of technological spillage or trickle-down economics thus countries strategies are on the attraction of foreign capital for the development of high technology industries. Then foreign firms enter the market with a higher advantage which will change the industrial environment and unless institutions also focus on the domestic environment it can create higher concentration, given the technological advantage the firm brings.

Interstice creation is limited by institutions' view of the economy, policymakers can see the market as in allocative efficiency where interference is bad or through a Schumpeterian accumulation view, where markets are instruments for growth. If the latter is used policymakers can incentivise interstice creation as was the case in Japan's strategic allocation of industries (Best, 1990, p. 168).

Another potential limitation to interstice creation will arise from the segmentation of entrepreneurs to an economic segment or even to a geographical location. The potential success of a small firm will depend on the entrepreneurs' background and its view of the market, hence this view can be biased to certain needs of a fragment of the population. It can also mean that the needs and development of marginalised groups as women or people of colour is segmented according to their access to potential interstices.

Stagnation will be a result of different firm limitations brought by a competitive environment trying to protect market concentration and in cases increasing concentration by adding potential limitations to small firm development. Firms will need to encounter different limitations to survive but if institutions limit their capabilities and resources it can perpetuate deindustrialisation.

References

Aoki, M., 1990. Toward an Economic Model of the Japanese firm. *Journal of Economic Literature,* 28(1), pp. 1-27.

Baran, P. & Sweezy, P., 1966. *Monopoly Capital.* 1st Edition ed. New York, NY: Monthly Review Press.

Best, M. H., 1990. *The New Competition: Instituions of Industrial Restructuring,* Cambridge, UK: Polity Press.

Blundel, R. K., 2015. Beyond strategy: A critical review of Penrose's ‘single argument’ and its implications for economic development. *The European Journal of the History of Economic Thought,* 22(1), pp. 97-122.

Delagdo, M., Porter, M. & Stern, S., 2010. Clusters and entrepreneurship. *Journal of Economic Geography,* 10(4), pp. 495-518.

Dutt, A. K., 2005. Steindl's theory of maturity and stagnation and its relevance today. In: T. Mott & N. Shapiro, eds. *Rethinking Capitalist Development: Essays on the economics of Josef Steindl.* Oxon: Routledge, pp. 46-66.

Frese, M., 2009. Toward a psychology of entrepreneurship. An action theory perspective. *Foundations and Trends in entrepreneurship,* 5(6), pp. 437-496.

Jayadev, A. & Bowles, S., 2006. Guard Labor. *Journal of Economic Development,* 79(2), pp. 328-348.

Kalecki, M., 1937. The principle of Increasing Risk. *Economica,* Volume IV, pp. 440-447.

Kalecki, M., 1969. *Theory of Economic Dynamics.* 1st Edition ed. New York, NY: Monthly Review Press Classics.

Kay, N. M., 2005. Penrose and the Growth of Multinational Firms. *Managerial and Decision economics,* Volume 26, pp. 99-112.

Lavoie, M., 2006. *Introduction to Post-Keynesian economics.* 1st ed. London: Palgrave Macmillan.

Lavoie, M., 2014. *Post-Keynesian Economics: New Foundations.* Cheltenham, UK: Edward Elgar.

Lazonick, 2002. Innovative Enterprise and Historical Transformation. *Enterprise and Society,* 3(1), pp. 3-47.

Penrose, E., 1959. *The Theory of the Growth of the Firm.* New York: Oxford University Press.

Penrose, E., 2008. Strategy/ Organization and the metamorphosis of the large firm. *Organization Studies,* 29(8-9), pp. 1117-1124.

Pitelis, C. N., 2009. Edith Penrose's 'The theory of the growth of the firm' fifty years later. In: *The theory of the growth of the firm.* Oxford: Oxford University Press, pp. ix-xlvii.

Porter, M. E., 1998. *The Competitive Advantage of Nations.* Second Edition ed. London: Palgrave.

Schumpeter, J. A., 1947. *Capitalism, Socialism and Democracy.* 2nd Edition ed. s.l.:Sublime Books.

Steindl, J., 1976. *Maturity and Stagnation in American Capitalism.* 2nd Edition ed. St. Clements, Oxford: Oxford University Institute of Statistics Monographs.

Teece, D. J., 2014. The foundations of enterprise performance: Dynamic and Ordinary capabilities in an (economic) theory of the firm. *The Academy of management perspective,* 28(4), pp. 328-352.