Changing Approaches to Regional Economic Development: Focusing on Endogenous Factors

by

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Regional Science Association International (RSAI)
and
Banco Central de la Republic Argentina

13-14 March, 2008
Buenos Aires, Argentina

Note: A modified version of this paper is soon to be published in a book by Rowe (Ed), Local Economic Development: Linking Theory and Practice, Ashgate.
Introduction
Over the past two decades or so the emphasis in regional economic development theory has shifted from an emphasis on exogenous to an increasing emphasis on endogenous factors. Traditional regional economic development approaches were erected on neo-classical economic growth theory, based largely on the Solow growth model (1956, 2000). The new approaches, while recognizing that development is framed by exogenous factors, recognize a much more significant role for endogenous forces. In this context, a suite of models and arguments that broadly convey the new growth theory are directed towards endogenous factors and processes (see, for example, Johansson, Karlsson and Stough, 2001). Those factors are seen as fundamental drivers of regional economic development arising from the resource endowments and knowledge base of a region. Endogenous factors include entrepreneurship, innovation, the adoption of new technologies, leadership, institutional capacity and capability, and learning.

These developments are of great interest to regional economic development analysts and practitioners for several reasons, including the recognition of the importance of regions in the development process and also because they introduce an explicit spatial variable into economic growth theory, a mostly ignored element in neo-classical thinking. This evolutionary development is particularly significant as the importance of regions in national economies has changed considerably since the 1970s as a result of globalization, deregulation, and structural change and adjustment. Understanding these newly recognized processes of change is crucial for analyzing and understanding different patterns of regional economic performance and in formulating and implementing regional economic development planning strategy.

Stimson, Stough and Roberts (2006) observe that it is often difficult in regional economic development planning strategy formulation and implementation to match desired outcomes of regional economic development with the processes that create them. This gap in understanding the relationship between the apparent causes and effects of development pose a dilemma for those responsible for managing regional economic development in the making of policies and strategies, and their implementation of plans. The dilemma they face is how to achieve some form of congruence between desired outcomes and appropriate and acceptable economic development tools and processes. This dilemma is further compounded by the frequently unstable and changing nature of economic environments, where ‘externalities’ or exogenous factors (such as exchange rates, new technologies, foreign competition) increasingly impact the decision-making processes that influence economic policy and strategy in regions.

The nature of regional economic development
Regional economic development may be viewed as both a product and a process but often not by the same groups or actors in the development milieu. For example, economic agents that live, work and invest in regions are those most concerned with economic development outputs or products such as job and wealth creation, investment, quality of life or standards of living and conditions of the work environment. Contrary to this is the more process orientation of regional scientists, development planners and practitioners where concern focuses on the creation of infrastructure, labor force preparation, human
capital and market development. So it is important when considering regional economic development to maintain an awareness of its product and process aspects.

Regional economic development also is known in terms of quantitative and qualitative attributes. In this context, with respect to the benefits it creates, concern is with the quantitative measurement of such factors as increasing/decreasing wealth and income levels, job creation or employment levels, the availability of goods and services and improving financial security. At the same time, concern also lies with such qualitative considerations as creating greater social and financial equity, in achieving sustainable development, in creating a spread in the range of employment and gaining improvements in the quality of life in a region. Thus regional economic development process needs to be informed by both quantitative and qualitative information.

This multi-dimensional aspect of economic development led Stimson, Stough and Roberts (2006) to propose the following definition of regional economic development:

Regional economic development is the application of economic processes and resources available to a region that result in the sustainable development of, and desired economic outcomes for a region and that meet the values and expectations of business, of residents and of visitors (p. 6).

**Evolving paradigms for economic policy and regional economic development planning strategy**

Policy for economic development and regional planning strategy has undergone a series of evolutionary changes since World War II, driven by different paradigms of economic thought as shown in Fig. 1. Those paradigms have shaped the way regional and local communities and people think and plan for the future. But much thinking on regional economic development still remains embedded in the paradigms of the 1970s, because of an inherent reluctance of many regions and local communities to pro-actively embrace change. Subsequently, as suggested by Stimson, Stough and Roberts (2006):

many regions are not re-equipping themselves fast enough to compete effectively in the global age of business and technology of the post-industrial economy. To compete successfully in the global economy, regional organizations and businesses need to understand the implications of the paradigm shifts occurring in economic policy and strategy, and to build the flexible strategic infrastructure to do so (p. 11).

A summary of the changing paradigms that have shaped regional economic development theory and planning strategy is presented in Fig. 1. It is, however, important to realize that time overlaps between these economic policy and the economic planning strategy paradigms are both deliberate and pragmatic, reflecting the reality of evolutionary changes in the paradigm approaches.

The discussion that follows draws on and elaborates on the discussion in Stimson Stough and Roberts (2006: chapter 1). It focuses on a set of important issues all of which are evident in the context of those paradigmatic evolutions:

1. First is the ability of neoclassical economic theory to serve as the basis of regional economic development theory.
2. Second is the evolution of economic policy from Keynesian thought and associated master planning paradigms to monetarism or economic rationalism and associated goals and objectives, and strategic planning paradigms.

3. Third is the shift over time from a focus on comparative advantage to competitive advantage and more recently an extension of the focus to the notion of collaborative advantage.

4. Fourth are the processes of globalization and the emergence of concern for achieving sustainable development, and the focus on regional self-help in the pursuit of endogenous growth.

5. And fifth is the evolution of the ‘new growth theory’.

From a neo-classical base to theory

Neo-classical economic theory and Keynesian theory provided the foundation on which most post-World War II economic policies were grounded. At that time conventional theories and policies for regional economic development tended to focus in one way or another on the capital-labor production function and on responses by the state with a range of economic and non-economic policies. In this framework, production ($Q$) is seen as a function of two inputs capital ($K$) and labor ($L$):

$$Q = f(K,L)$$

This simple two-factor model has been used to measure productivity of capital and labor output in regional economies. The model has been expanded to include other functions or factors, such as technology ($T$), and other variables, including learning and entrepreneurship to equate as:

$$Q = f(K,L,T,....e)$$

Traditional neo-classical growth theory models:
• assume homogeneity of production factors
• see the price mechanism as the underlying adjustment mechanism of the model
• emphasize capital accumulation as the net product,
all of which lead to convergence thus eliminating inter-regional, inter-group and inter-sectoral differences over time in the long run.

Neo-classical models provided a useful rationale for understanding the implications of labor and capital changes on the economic performance of nations and also regions (Richardson 1973). However, they did not adequately explain how productivity, performance, and other attributes related to the application of labor, capital and technology impacted economic development especially in the development of regional economies (Malecki 1991: p.111). Thus, neo-classical theories have not adequately identified or explained the behavior of factors that give expression to regional economic development and the related economic development processes.

As a result, counter arguments to the traditional neo-classical growth theory emerged (see Stough, Salazar and Haynes, 2005 for a detailed description of these). These approaches include polarization theory, as represented early on by the work of Perroux (1950), Myrdal (1957) and Hirschman (1958), and more recently by work that focuses on industrial districts (see, for example, Scott, 1988) and business clusters (see, for example, Porter, 1990, Feser 1998; and Karlsson, Johansson and Stough, 2005).

Advocates of polarization theory argued that:
• production factors are non-homogenous
• markets are imperfect
• the price mechanism is disturbed by externalities and economies of scale.
The argument is that deviations from an equilibrium are not corrected by counter effects, but rather that they set off a circular cumulative process of growth or decline, with a complex set of positive and negative feedback loops accumulating to a growth process whose direction is fundamentally undetermined. In a spatial context, those feedback processes generated what are called spread and backwash effects, transferring impulses from one region to another. Spatial structure could be an important element in that growth process, generating leading and lagging regions that are highly interdependent. The advocates of polarization theory argued that it was not only economic, but also social, cultural, and institutional factors that explain why some regions prosper while others lag.

From Keynesian thought to ‘monetarism’ and ‘economic rationalism’ in policy
As seen in the top half of Fig. 1, a number of phases in the evolution of economic thought have had a significant impact on paradigms driving economic development policy over the latter part of the 20th century. The following discussion is an interpretive description of the changes outlined therein. This discussion is important because it explains how the current approach to policy and implementation of regional economic development programs is underpinned by the evolution of thought from a the rather mechanical neo classical model to a more flexible approach that relies in a major way on local initiative and effort.
Keynesian and then monetarist thought were the most influential policy paradigms in the post World War II period through to the 1980s. These views subsequently evolved into economic rationalism.

Keynesian thought evolved in response to the Great Depression of the 1930s and influenced government approaches from World War II up to the middle 1970s. The Keynesian model envisaged a greatly increased role for governments in balancing (managing) demand and the interests of suppliers the earlier more classical economic thinking. During the 1950s and 1960s, economic processes were driven by a heavy focus on regulation and by strong government directives and initiatives in the U.S. but even more so in other countries. It was a time when national governments played an exceptionally active role in establishing national industries. Governments played a central role in the provision of infrastructure, planning, industry promotion and marketing systems.

Fig. 1 shows that there was a focus on comparative advantage, through strategies such as promoting cheap land, reduced utility charges, and local tax breaks for new businesses relocating or expanding in a region. Those approaches to economic policy were, by and large, positive in developing national and regional economies.

The lower half of Fig. 1 shows how, in the 1950s and 1960s, regional economic development and planning strategy tended to be guided by master planning and structure planning, and was aimed at industry production, infrastructure, and market development. Master planning for regions tended to be controlled by government policy agendas designed to address shortages in housing, construction materials, consumer goods, and to create employment. There was a strong focus in regional economic development planning on the formation of industrial estates, many of which were used to support the development of state-owned enterprises as part of a policy of national and regional self-reliance. Structure planning, largely concerned with the geography of economic activities, was incorporated into economic development planning in the 1970s and provided a more flexible framework for decision-making.

However, from the late 1960s, regional economic planning strategy moved from master planning to a focus on goals and objectives to achieve strategic outcomes. Governments played major roles in setting goals and objectives for regional economic development plans, but involvement and support from industry was also increasingly sought and considered important in the creation of expected outcomes. This goals and objectives planning paradigm was less deterministic than master planning, the intent being to establish direction and targets for economic development. The role of regions in meeting national goals and objectives became important, but the relative autonomy of regions to shape the future economy was still, in most countries, largely determined by central - national or state - government economic policy agendas. Goals and objectives were determined through various analytical approaches, and economic visions were set based largely on a view of the future being a linear extension of the past.
But these economic policy and planning policy paradigms were challenged severely following the first OPEC oil shock of 1973. From the late 1970s, the advocates of monetarism argued that changes in the level of aggregate money were due essentially to prior money stock changes. Economic activities in the economy could be stimulated or slowed by manipulating the flow of money supply (M1–M6) in response to desired economic outcomes, such as reducing inflation, increasing consumption, and reducing unemployment. The Bretton-Woods agreement in 1973 removed gold as a standard for most currencies, marking the floating of national currencies, and the emergence of the contemporary era of globalization of finance and capital and production systems.

There was a shift in economic thought away from heavy public intervention into industry policy towards a focus on value-adding and the application and development of technologies to enhance production processes.

From the 1980s, there was an increasing recognition of the importance of technology-led regional economic development in the evolving post-industrial era of the information economy which had spawned a large number of technology based industries, and there was a focus on building technology, science and innovation parks as catalysts for “new age” industrial development.

By the mid 1970s, strategic planning in business began to influence planning in other sectors of the economy, including planning strategy for regional economic development. Strategic planning involved the preparation of goals, objectives and strategies for organizations, for businesses, and for regions to gain a position of advantage in the broader context within which they operated. In most cases, those environments were still considered to be relatively stable, as the full effects of globalization and the opening of national and regional economies to competition were not yet felt. However, strategic planning continued to provide a valuable tool for economic development after the effects of globalization became more noticeable. Strategic planning for economic development began to evolve in the late 1980s to address broader social and environmental issues.

In the 1980s monetarism evolved into economic rationalism, following the lead of the Chicago economist Milton Friedman. Economic rationalism was accompanied by the increasing transfer of traditional public functions to private ownership or management, and the breaking up of public monopolies through full or partial divestiture to private or corporate bodies. There was also an increasing emphasis on the importance of competitive advantage in regional economic development planning strategy that was spurred by the writings of Michael Porter (1985; 1966; 1990), with the principles of competitive advantage being embedded within the strategic planning paradigm that had become so pervasive by the 1990s.

From ‘comparative advantage’ to ‘competitive advantage’ and ‘collaborative advantage’

As shown in Fig. 1, and as discussed by Stimson, Stough and Roberts (2006: pp.30-34), over the four to five decades that represented the transformation from the ‘industrial’ or ‘Fordist’ era to the ‘post-industrial’ or ‘post-Fordist’ era of the new knowledge economy,
there was a shift from a focus on \textit{comparative advantage} to a focus on \textit{competitive advantage} as monetarism began to influence macro economic policy, and more recently on \textit{collaborative advantage}. That shift is reflected in the evolution of regional development planning strategy (Huxam 1996). The evolution of advantage type thinking from the classical comparative advantage to competitive and collaborative advantage is described here in an effort to illustrate how one of the instruments of regional economic development strategy emerged and thus to further illustrate the broader evolution of strategy making process.

The older notion of \textit{comparative advantage} was derived from economic theory on international trade, which suggested that a nation or region would or should specialize in an industry in which it had an advantage related to its particular resource endowments thus providing a factor cost advantage in producing a particular good. Until the mid 1970s, the focus of the \textit{master planning}, \textit{goals and objectives}, and \textit{structure planning} paradigms in planning policy embraced the principles of comparative advantage. Planning policies primarily were directed towards achieving the lowest production costs (labor, materials, energy, taxes and infrastructure) relative to competitors. \textit{Comparative advantage} was heavily entrenched in supply side economics, where goods and services were produced and surpluses sold (often with the support of subsidies and incentives) in international and domestic markets.

Later on during the 1980s, through the influence of authors like Michael Porter (1985; 1986; 1990), the focus of regional economic planning strategy began to move towards \textit{competitive advantage}, which put the focus on less tangible or ‘value factors’, including efficiencies, performance, and qualitative attributes such as quality of life, and human and social capital, and trust (Putnam 1993; Fukuyama 1995), rather than just on factor cost differentials that defined the concept of \textit{comparative advantage}.

The emphasis thus changed towards the notion that regions would need to develop policies and implement strategies that sought to develop and promote their \textit{competitive advantage}. That necessitated not only a factor cost advantage, particularly related to productivity and quality of goods and services that are traded, but also a competitive advantage with respect to other factors that enhance business development and operation, and that minimize risk. However, many governments continued to promote comparative differences and provided incentives to attract industries to regions, policies that do not dismiss the strategy of comparative advantage.

Both \textit{comparative advantage} and \textit{competitive advantage} strategies were and are heavily entrenched in a \textit{win/lose} scenario. More recently, economic development and planning has promoted strategies that seek to develop and promote \textit{collaborative advantage}, where firms and regions are encouraged to ‘collaborate in competition’ for strategic advantage, particularly through partnerships and alliances. That reflects a change in business attitudes, in which businesses and organizations that might once have considered themselves rivals, are now actively seeking strategic alliances, partnerships, and other forms of collaboration to explore opportunities and synergistically induced benefits for winning, creating and expanding business and business opportunities.
There also emerged in the search for sustainability and economic growth a *win/win* scenario as a strategy to achieve economic development. This strategy is loosely referred to as *collaborative advantage*. It represents a more recent paradigm that has been emerging in regional economic development strategy planning, and it is one that is dependent on a greater integration, cooperation and collaboration among business, governments and communities. It is this new thrust toward collaborative advantage and how to achieve it that has become a common element in the new and emerging approaches to regional economic development strategy formulation, planning and implementation since the mid-1990s.

**Globalization, concerns about sustainable development, and the notion of regional self-help**

The extravagances of the capital markets splurge in the 1980s, followed by the 1987 stock market crash and a 1989 recession, led to a significant paradigm shift with an increasing focus on the principles of *sustainable development*.

During the 1980s and into the early 1990s, parallel events were occurring that would have a significant impact on economic thought and the evolution of best practice in regional development planning strategy. These included globalization, sustainable development and economic rationalism. We now first turn to explaining the impact of these joint interacting forces and then to offering an interpretive analysis of their influence on strategic development planning and related efforts,

1. First, *globalization* was continuing to have a major impact on the economic restructuring of regions, which could be both positive and detrimental to their performance and possible futures.

   By the early 1990s, the impact of globalization had changed the nature and location of production, resulting in greater specialization or clustering (Dicken 1992). Globalization had resulted in the emergence of an increasingly borderless society with greater unrestricted movement of information, travel and currency between countries. Greater levels of transparency and standardization were occurring in both business and government processes.

   Those changes reduced the importance of the nation state and increasingly directed the focus upon major cities and regions as the centers and engines of economic growth (Knight and Gappert 1989; Ohmae 1995). In particular, some of the world’s larger metropolitan regions were viewed as being the dominant focus of the forces driving the growth of employment, investment, and distribution networks in the newly emerged global market place. With these changes there emerged a new focus on regions rather than just a focus on national economies, as governments placed emphasis on the skill requirements of labor (that is, on labor quality) and on technology-driven investment. In addition, with globalization, trans-national corporations exploited regional differences created by both *comparative advantage*
and competitive advantage strategies, as governments withdrew from protection and interventionist policies.

2. Second, issues relating to sustainable development and quality of life began to have a significant influence on local economic development and planning policy. Growing concerns about the environment, social issues, and sustainable economic growth led to the emergence of integrated strategic planning for economic development in the 1990s, as shown in the bottom half of Fig. 1.

During the 1990s and into the first decade of the new millennium, there emerged a clash between globalization and increasing community concerns about issues to do with sustainability and quality of life. That led to the emergence of a new paradigm in economic development thinking, namely the question of how to achieve sustainable development? Achieving sustainability is now posing formidable challenges for regional economic policymakers as they seek to formulate strategy in a new environment of rapid change and uncertainty as well as a concern for achieving continuous maintenance and renewal of their economic and related social and environmental systems or sustainability.

3. Third, the 1980s and 1990s were also the age of economic rationalism with an emphasis in public policy on the corporatization and privatization of public assets and functions. The neo-liberalism ideology that became the cornerstone of regional economic development policy and planning strategy in many nations focused on the notion that central or national policies should primarily seek to facilitate conditions that would enhance the building of local capacity and capability in regions with a reliance on strategies of self-help. That represents the marked shift to an emphasis on endogenous processes of regional growth and development.

Thus, from the 1990s, the increasing focus on integrated strategic planning as a pervasive paradigm for economic development led to a renewed interest in industry clusters and the role of smart and soft infrastructure in regional economic development planning strategy processes.

As discussed by Stimson, Stough and Roberts (2006: pp. 40-42), the emerging concern with sustainability has led to the evolution of a new paradigm for viewing growth and development.

The traditional growth models were based on premises such as:

- the goal of profit maximization
- community production and consumption that was resource intensive and concentrated in large urban-industrial centers
- fossil fuel-based energy using energy consumptive technologies
- large scale production systems that were centralized
- the assumption that humans dominate the environment which was seen as abundant and limitless
- a goal of maximizing social benefits.
The new sustainable development paradigm, however, is based on premises such as:

- the goal of viable or sustained long-term growth
- conserving resources in production through energy efficient technologies and dispersed production centers of lesser scale
- a shift towards alternative energy sources, recycling and conservation of resources
- the assumption that humans and the environment are mutually interdependent, acknowledgment that resources are exhaustible and often irreplaceable, and that conservation is a principle for long-term viability.

Thus, improvements in regional performance may not necessarily be defined or viewed in terms of economic growth as typically defined in terms of increasing per capita gross regional/domestic product. Further, no-growth is not the same as no-development. Rather, what is seen as being important by the advocates of sustainable development is the acknowledgment that the need for economic progress goes hand-in-hand with development, although such development should minimize costs (economic, social and environmental) and negative externalities, and maximize benefits. This presents a challenging trade-off issue.

The ‘new growth theory’

As shown in Fig.1, during the 1980s - by which time the focus in economic policy paradigms had shifted to monetarism and economic rationalism - there had been a shift from concerns about developing a regional comparative advantage to developing a regional competitive advantage, and there had been a shift in regional development planning strategy from master planning and structural planning to strategic planning paradigms and thus a new way of conceptualizing regional economic growth and development had begun to emerge which today is known as the ‘new growth theory’.

As early as the late 1970s, Rees (1979) had proposed that technology was a prime driver in regional economic development, and since then over the ensuing two to three decades the regional science literature has shown how technology is directly related to traditional concepts of agglomeration economies in regional economic development, and more recently to new or re-packaged older concepts of entrepreneurship, institutions, and leadership (Stimson, Stough and Roberts, 2006)

Theorists such as Romer (1986, 1990), Barro (1990), Rebelo (1991), Grossman and Helpman (1991), and Arthur (1994) sought to explain technical progress in its role as a generator of economic development as an endogenous effect rather than accepting the neo-classical view of long term growth being due to only to exogenous factors.

Thomas (1975) and later Erickson (1994), among others, showed how technological change is related to the competitiveness of regions. And Norton and Rees (1979) and Erickson and Leinbach (1979) showed how the product cycle, when incorporated into a spatial setting, may impact differentially on regions through three stages, namely:

- an innovation stage
- a growth stage
• a standardization stage.

Over the course of this transition, production is seen to shift from the original high cost home region to a lower cost location, often off-shore, which has been hastened through the evolution of the internationalization of the production process. Thus some regions are the innovators, while others become the branch plants or recipients of the innovation, and these might even then become innovators via endogenous growth.

Markusen (1985) extended the product cycle theory of regional development by articulating how profit cycles and oligopoly in various types of industrial organization and corporate development can magnify regional development differentials.

The concept of innovative milieu was formulated to explain the ‘how, when and why’ of new technology generation. That notion linked back to the importance of agglomeration economies and localization economies that had been viewed as leading to the development of new industrial spaces (Scott 1988; Porter 1990; Krugman 1991).

Some theorists, such as Fukuyama (1995), have suggested that it is not just economic but also value and cultural factors - including social capital and trust - that are important in the rise of technology agglomerations as seen in the Silicon Valley phenomenon, where collaboration among small and medium size enterprises through networks and alliances and links with universities forge a powerful R&D and entrepreneurial business climate. But Castells and Hall (1994), in discussing innovative industrial milieus, note the following:

... despite all this activity ... most of the world’s actual high-technology production and innovation still comes from areas that are not usually heralded as innovative milieus ... the great metropolitan areas of the industrial world (p. 11).

However, as Rees (2001) points out, technology based theories of regional economic development need to incorporate the role of entrepreneurship and leadership, particularly as factors in the endogenous growth of regions, and it is the

... link between the role of technology change and leadership that can lead to the growth of new industrial regions and to the regeneration of older ones (p. 107).

Thus, the new growth theory models allow and imply that importance of both:
• agglomeration effects (economies of scale and externalities); and
• market imperfections, with the price mechanism not necessarily generating an optimal outcome through efficient allocation of resources.

Also, the processes of capital accumulation and free trade do not necessarily lead to convergence of wage and price levels between regions, with positive agglomeration effects concentrating activity in one or a few regions through self-enforcing effects that attract new investment. Most importantly, the new growth theory’ allows for both concentration and divergence.

Implications
As discussed by Stimson, Stough and Roberts (2006), the challenge facing economic development planners in contemporary times is how to formulate economic policy that will respond to:
• global dynamics; and
sometimes (or often) a national vacuum in adoption of an regionally oriented macro policy in many countries.

At one time regions were protected from outside competition, and to some extent their economies could be manipulated by national governments. But that ability is overwhelmingly compromised as the economic rationalism pursued by many national governments left many regions to fend for themselves. Regions still continue to look to higher levels of government for support and resources to provide economic direction and investment to stimulate economic development. But, unfortunately, many regions fail to understand that globalization has left these higher levels of governments relatively weak when it comes to using their inherent power to apply economic and policy mechanisms to enhance the competitiveness of regional economies.

Thus, as discussed by Stimson, Stough and Roberts (2006), in the contemporary policy era it would seem that it is more and more up to regions to develop and use their own devices to compete internationally in order to survive. Thus, today a reliance on endogenous processes is typically espoused in regional economic development policy, and to do that a region would need first to understand what the factors are that set the dynamics of the new economic age that emerged the late 20\textsuperscript{th} century.

A number of key themes have emerged regarding what constitutes regional growth and development and regional competitiveness. Not surprisingly, however, there are differences of views among regional economic development scholars, and some of those differences relate to the relative focus given to the roles of \textit{exogenous} forces on the one hand and the roles of \textit{endogenous} processes and factors on the other. But there does now seem to be an almost universal realization of what Garlick, Taylor and Plumber (2006) refer to as the ‘\textit{institutional embeddedness}’ of \textit{endogenous} processes and factors in regional development.

Of course \textit{exogenous} factors are important to a region’s economic performance and how it develops over time; but increasing importance is being placed on \textit{endogenous} forces as determinants of a region’s competitiveness. However, regional economic development policy initiatives now tend to be more oriented towards measures that enhance local capacity and capability for a city or region to develop and cope with rapid change in an increasingly competitive global environment. While endogenous growth theory makes mention of leadership, entrepreneurship, and institutional factors, little systematic analysis has occurred to thoroughly conceptualize or, even more, measure their roles as endogenous factors in the development process.

\textbf{A new model framework for regional economic development}

In a recent series of papers Stimson, Robson, Stough and Salazar (2003), and Stimson, Stough and Salazar (2003; 2005) have develop a new model framework that explicitly incorporates \textit{leadership}, \textit{entrepreneurship}, and \textit{institutional factors} as \textit{intervening variables} that are hypothesized to have a catalytic impact on the regional growth and development process.
A ‘virtuous circle’ for sustainable development
Stimson, Robson, Stough and Salazar (2003; 2005) proposed the notion that the pursuit of a path for the sustainable development of a region may be conceptualized as a virtuous circle as shown in Fig. 2. It is suggested that that ‘circle’ is maintained through effective leadership as it is used to change and adjust institutions in order to adapt the structure, processes and infrastructure of a regional economy that is appropriate and needed to meet and anticipate changing circumstances and to facilitate the optimal use of its resource endowments and to assist industries to reach their full market potential.

Fig. 2: The ‘virtuous circle’ for sustainable regional development
(Source: Stimson, Robson, Stough and Salazar, 2003)

The notion is that strong leadership means that a region will:
- be proactive in initiating regional economic development strategy to monitor regional performance
- set a vision for its future development
- implement both processes and plans that facilitate institutional change.

That, in turn, will enhance the capacity and capability of the region to:
- positively adjust to changing circumstances
- attain a good fit with market conditions
- more effectively harness its resource endowments in order to maintain and improve its performance and to achieve sustainable development as a learning region and to be one that is competitive.

While in practice such a process is often used in regional economic development strategies, all too often that is done in a less than thoughtful and pre-planned way. Stimson, Robson, Stough and Salazar’s (2003; 2005) derives from the hypothesis that in regions that are performing well - or have been re-engineered and turned-around from
performing poorly to performing better - it is the presence of leadership that has been crucial in providing the right policies and in creating and facilitating the right environment (which might be thought of as institutions). That had been seen in the case of a region such as Silicon Valley, for example, where leadership has channeled resource endowments into efficient allocations (Saxenian, 1994). In such places, leaders have initiated crucial institutional reforms, policies, projects and environments which have benefited citizens in general (Rowen, 1998). The review of a series of international regional case studies by Stimson, Stough and Salazar (2005) lends considerable weight to this hypothesis.

The model
Stimson, Stough and Salazar (2003; 2005) have proposed the new model framework depicted in Fig. 3. Operationally, that model may be represented as:

$$RED = f \{RE, M \ldots \text{mediated by} \ldots (L, I, E)\}$$

The outcome of the regional economic development process (RED) is the degree to which a region has achieved competitive performance, displays entrepreneurship, and has achieved sustainable development. Those outcome states are defined as the dependent variable(s) in the model.

![Fig. 3: A New Model Framework for the Regional Economic Development Process](Source: Stimson, Stough and Salazar, 2003)
An outcome state is conceptualized as being dependent on a set of *quasi-independent variables* relating to a city or region’s resource endowments \((RE)\) and its ‘fit’ with market conditions \((M)\), that are mediated through interaction among sets of *intervening variables* that include factors defined as leadership \((L)\) and institutions \((I)\) which may interact to facilitate or suppress entrepreneurship \((E)\).

The framework proposed in Fig. 3 incorporates both *direct* and *indirect* effects in the interactions between \(RE, M\) (the quasi-independent variables) and \(L, I\) and \(E\) (the intervening or mediating variables). Also, the interactions between the intervening or mediating variables \(L, I\) and \(E\) may be both direct and indirect.

Stimson, Stough and Salazar (2005) have proposed the following possible sets of variables that may be used to operationalize this model of endogenous regional growth and development.

**The dependent variable: measuring endogenous growth**

One feasible approach proposed by Stimson, Stough and Salazar (2005) to measure the \(RED\) dependent variable performance across the regions of a state or a nation as the *dependent variable* in the above model is to take a simple surrogate measure of *endogenous growth*, namely the regional or differential shift component derived from a *shift share analysis* of regional employment change over time by summing the regional or differential employment shift across all industry sectors standardized or weighted by the size of the regional labour force. Thus, *endogenous growth \((RED)\)*in region may be measured as:

- the aggregate regional differential shift component value in a shift share analysis;
- or
- an employment scale weighted location quotient change over time.

Secondary data tends to be readily available to do that in most countries, and typically it may be achieved using census data for industry employment in regions. That regional shift component is a reasonable surrogate measure of the degree to which employment growth or decline in a region is due to endogenous or within-region processes and factors against changes due to national and industry-mix shift effects. Indeed, that is what the regional shift component is purported to measure.

**4.3.2 Potential independent and intervening variables**

The potential sets of variables proposed by Stimson, Stough and Salazar (2005) that might be appropriate as measures of the independent and the mediating factors in the model are the following:

\(RE = \text{resource endowments}\), measured by a set of variables such as:

- area size of the region
- climate
- topography
- agglomeration of industry key sectors (measured by Location Quotients for employment in industry sectors)
• population size and rate of growth/decline
• education levels (a derived index of human capital) and literacy
• per capita income, income distribution, and income distribution change over time
• housing ownership
• investment in industrial and commercial construction, benchmarked to the region’s national share vis a vis its national share of population
• infrastructure investment (per capita), such as on roads, schools, hospitals, etc
• industrial structure and change in industrial structure (measured by an industrial diversity index)
• regional organizational slack resources

\(M = \text{market fit, measured by a set of variables such as:}\)
• basic economic activity in major industry sectors (measured by Location Quotients for employment in industry sectors)
• airline connections with other regions/cities
• road freight in/out movements
• volume and value of exports in key products and services.

It would also be useful to use variables that measure the degree to which the region’s products fit with changing demand and related markets, to ascertain the degree to which supply fits the local market, and to evaluate the extent to which the local infrastructure provides the necessary linkages to export markets. These are of course thorny issues when one is faced with the decision of measuring them.

\(L = \text{leadership, measured by a set of variables such as:}\)
• the degree of change/stability in local political leadership
• expert assessment of leadership quality
• relative level of corporate headquarters located in the region
• density (number, budget and/or employment) of region wide business and community organizations (or economic development organizations) per 10,000 population

\(I = \text{institutions, measured by a set of variables such as:}\)
• institutional thickness (corporate and community organizations per 10,000 population
• layers of government/government fragmentation
• formal institutions of governance, measured by number of public agencies per 10,000 population
• number of headquarters of major corporations (e.g. Fortune 1000 firms)
• value foundation capitalization per 10,000 population
• government fragmentation
• level of regional organizations (number and budget level)
• index of social capital.

\(E = \text{entrepreneurship, measured by sets of variables such as:}\)
• churn rate (ratio of start-up to deaths of firms) or business start-up rate
• venture capital activity
• corporate venturing activity
• patents issued per 10,000 workers
• Location Quotient of employment in ‘symbolic analyst’ occupations.

Stimson, Stough and Salazar (2005) argue that RED is positively related to \( RE, M, L, I, \) and \( E \), but that there are likely to be lead and lag and interaction effects in the short to intermediate run, and perhaps cyclical effects in the longer run. Thus,

\[
RED_t = RE_{t-1} + M_{t-1} + (I_{t-1} \text{ to } I_{t-10}/10) + L_{t-2} + E_{t-2} + e
\]

This modeling approach proposed by Stimson, Stough and Salazar (2003, 2005) to examine the processes of endogenous growth and how regional development may be influenced by, and facilitated through, leadership, entrepreneurship, and institutional factors as intervening or mediating variables which, it is hypothesized, may have a catalytic effect on the endogenous growth processes, but which also accounts for local resource endowments and factors relating to the ‘market fit’ of a region, represents a potential operational model to measure and examine the impacts of endogenous factors on regional economic growth and development. It is important to note, in keeping with our argument that regional economic development strategy has become more endogenous in nature recently, that the model framework was developed explicitly to conceptualize the interaction of endogenous processes. The authors are currently seeking to empirically test the model.

**Towards a New Paradigm for Endogenous Regional Growth and Development Planning Strategy**

As stated by Stimson, Stough and Roberts (2006):

…. Because of the changing role of regional economies within nations and the impacts of globalization, and given the context of contemporary concerns about how to achieve sustainable development, a set of new considerations are thus now being taken into account in formulating and implementing economic development strategies for regions. (p.46)

The following general points might be made:

1. While traditional models of regional economic growth and development and traditional modes of regional analysis remain important and useful as means of addressing regional economic change, the emergence of the ‘new growth theory’ and the emphasis now being placed on the importance of endogenous processes in regional growth, along with increasing concerns over sustainability in regional development strategy planning, have resulted in the emergence of new and more integrated thinking about regional development policy and planning.

2. Many of the traditional approaches to strategy for regional economic development and the implementation of plans have been deficient - or at least appear to be inadequate - to deal with the dynamics of regions having to both compete in the global economy and address issues of sustainability.
3. Following the influence of Porter (1985; 1986), increasingly it has become essential for regions to fully understand what factors (broadly defined compared to traditional thinking on development) constitute their regional competitiveness and how they might maintain and enhance that competitive position.


5. As indicated in the work of authors such as Henton (1995), Hall (1995), Waites (1995), Sternburg (1991), and Stough (1995), many regional analysts are advocating the need to base regional economic development on the growth of clusters of industries.

6. The concern over sustainability increasingly is evident in regional economic development and is being reflected in regional plans that seek to integrate environmental, economic and social factors to create urban and regional environments that enhance quality of life, meet environmental quality goals, and achieve economic growth and employment diversification.

7. And in the contemporary era of globalization and an age of rapid change and uncertainty, procedures to identify and strategies to manage both exogenous and endogenous regional risks are crucial.

Thus, thinking is diverse on how to plan for and how to facilitate regional economic development in an environment of global competition, rapid change, and a concern over sustainability.

All of this means that regions and regional economic development agencies need to give explicit attention not only to exogenous factors but importantly to endogenous factors in formulating regional development policy, in framing strategy and implementing plans to achieve regional economic growth and development, and to enhance regional economic performance. In arguing the need for an emerging paradigm of regional economic development planning, and to assist regions to undertake the processes involved in regional economic development strategy, it is important to identify the key elements for regional economic development strategy building and implementation, and to place those in a process that draws together resources, infrastructure, social capital and technology to facilitate the economic development of a region in a dynamic globally competitive environment.

Stimson, Stough and Roberts (2006: pp. 46-27) suggest that giving explicit consideration to the following factors is necessary to achieve these economic development outcomes:

- the identification of regional core competencies, how to maintain them, and how to accumulate new core competencies
- developing social capital
- building and maintaining strategic leadership
- the continuous rejuvenation or re-engineering of the processes of governance and the structure and functions of institutions
- the more effective and efficient exploitation and management of resources
• building market intelligence
• providing strategic and smart infrastructure
• identifying regional risks, and developing a risk management capability
• incorporating the principles of sustainability into regional economic development strategies.

There is, however, no universal model or framework guaranteeing success for regional economic development. Stimson, Stough and Roberts (2006) provide a simple representation of contemporary best practice approach to regional economic development. That approach suggests that the intent of regional economic development strategy may be to:

• establish a platform for change to guide the development of a region and to facilitate its competitiveness in a global environment in the pursuit of a sustainable future
• mobilise key actors or facilitators and agents of change, through partnership approaches encompassing strategic alliances and partnerships between business, markets, government and community.

The framework suggested by Stimson, Stough and Roberts (2006) proposes the following:

1. The identification, description, analysis and evaluation of core competencies, resource endowments, infrastructure competitiveness, market intelligence, and regional risk through the combination of qualitative and quantitative methods encompassed in industry cluster analysis (ICA) (see, for example, Bergman and Fesser, 2000; Stough, Kulkarni, Riggle and Haynes, 2000) and multi sector analysis (MSA) (see Roberts and Stimson 1998).

2. The identification and evaluation of economic possibilities for the future leading to the statement of strategic intent.

3. The evaluation of alternative development futures or scenarios through the participation of stakeholders within the region and, most importantly, external to it to encompass the assessments of key decision-makers controlling capital, trade and other flows to the region. If the assessments of the feasibility of the alternative scenarios by the internal and external stakeholders are incongruent, then there is the potential that inappropriate or unfeasible strategies will be pursued. Thus strategic directions might need to be redefined before formulating an economic development strategy which focuses on industry cluster development and the provision of strategic architecture.

4. Implementation plans and mechanisms need to be developed and put in place by appropriate agencies in the region.

5. The progress made towards achieving the desired development future needs to be monitored, requiring agreement on indicators and benchmarks set to measure and evaluate the performance of the region over time in order to assess the degree of success of the strategy and progress towards achievement of the strategic intent. Inevitably this involves building enhanced regional infrastructure systems along with strengthening existing and building new partnerships, networks and alliances.
6. Finally, in the contemporary era of the global economy, increasingly the pursuit of regional economic development also needs to take place within the context of principles for achieving a sustainable future.

Stimson, Stough and Roberts (2006: pp. 222-235) propose that the implementation of this approach to regional economic development planning strategy might involve the 14 steps set out in Fig. 4. This new approach to the process of formulating a regional economic development planning strategy framework is firmly embedded in the principles of promoting conditions to enhance endogenous growth and development.

![Fig. 4: The steps involved in implementing the new framework for regional economic development planning strategy](image)

(Source: Stimson, Stough and Roberts, 2006: p. 223)

**References**


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