Economic Development: A Definition and Model for Investment

Maryann Feldman*
Theodora Hadjimichael**
Tom Kemeny^
Lauren Lanahan****

Abstract: Despite significant public resources devoted to promoting innovation and entrepreneurship there is little agreement about how to measure outcomes towards achieving the larger objectives of economic development. This paper starts by defining economic development and then considers the role of government, arguing that public policy should focus on building capacities that are beyond the ability of the market to provide. This shifts the debate towards a neutral role of government as a builder of capacities that enable economic agents, individuals, firms or communities to realize their potential.

Acknowledgements: We would like to acknowledge funding from the Economic Development Administration of the U.S. Department of Commerce. This work has benefitted from discussions with Andrew Reamer, Kari Nelson, Burt Barnow and Hal Wolman from the George Washington Institute for Public Policy. Our UNC colleagues Alex Graddy-Reed and Nichola Lowe deserve special mention. Input from EDA's Office of Regional Affairs and Performance and National Programs Division, in particular, Bryan Borlik, and Thomas Guevara, Samantha Schasberger and Hillary Sherman, and participants at the EDA regional directors meeting have been instrumental in defining this project. Comments are appreciated from Pontus Braunerhjelm, Joe Cortright, Joshua Drucker, Irwin Feller, Ed Feser, Jon Fjeld, Janet Hammer, Victor W. Hwang, Julia Lane, Mark Partridge, Ken Poole, Karl Seidman, Roland Stephan, Scott Stern, Michael Storper, Alfred Watkins, Howard Wial, and David Wolfe [May 28, 2014]

Key words: economic development, innovation, entrepreneurship, capacity building, government

JEL codes: R11, R12, O32, O33

* Corresponding author: maryann.feldman@unc.edu, University of North Carolina, Chapel Hill, NC 27514; ** University of North Carolina, Chapel Hill (thadji01@email.unc.edu); ^ London School of Economics (t.e.kemeny@lse.ac.uk); **** University of North Carolina, Chapel Hill (llanahan@email.unc.edu)

Material prosperity and high quality of life are universal goals for democratic governments. However, the precise way to best achieve these goals is the subject of considerable debate. For example, the neoclassical synthesis argues for active government to incentivize and support private sector activity, while the Austrian School advocates for the primacy of the market, with government responding only to external threats in a limited night watchman role. More recently, in the face of the most painful recession of the post-war period, the policy agenda has become dominated by austerity and other macroeconomic considerations, as well as a myopic obsession with near-term economic growth. Yet, there is also widespread recognition that longer-term growth relies on innovation, entrepreneurship and production – decidedly microeconomic concerns. Unfortunately, although these topics have gained currency, they remain only one element in a chaotic and divisive policy debate on the role of government in the economy.

The policy debate is further confused because economic development is often conflated with the more easily measured economic growth. To define a role for government in the economy, however, it is crucial that we distinguish between these concepts. We currently lack a clear and shared understanding of what we mean when we talk about economic development. While economic growth is simply an increase in aggregate output, economic development is concerned with quality improvements, the introduction of new goods and services, risk mitigation and the dynamics of innovation and entrepreneurship. Economic development is about positioning the economy on a higher growth trajectory. Of the two, economic development is less uniquely a function of market forces; it is the product of long-term investments in the generation of new ideas, knowledge transfer, and infrastructure, and it depends on functioning social and economic institutions and on cooperation between the public sector and private enterprise. Economic development requires collective action and large-scale, long-horizon investment. Economic development addresses the fundamental conditions necessary for the microeconomic functioning of the economy. It is within the purview of government.

Though it is certainly possible to have growth without development in the short or even medium-term, economic development creates the conditions that enable long-run economic growth. Jobs are a main concern of policy: for growth what matters is the number of jobs while for economic development the focus is wages, career advancement opportunities, and working conditions. Economic development depends on education so that workers can more fully

participate in the economy, social and cultural patterns of behavior that encourage initiative and engagement, and co-operation rather than adversarial relationship between government and business. Economic development requires balance: increased education requires complementary efforts to support a sophisticated economy that will provide jobs. Focusing on education without supporting the development of industry creates a brain drain as skilled labor migrates to opportunity (Beine, Docquier & Rapoport, 2001). This has been true for over 70 years in the developing world and is repeated in lagging regions in the developed world everywhere. Cities and regions are growing rapidly because they are where jobs can be found. With the same logic, public investments in research will not yield the anticipated benefits if there are no companies around with the vision and capabilities to translate that research into desired goods and services. Markets function effectively for short-term transactions but lack incentives to foster basic capacity to participate in the economy.

For too long, economic development has been associated with lagging regions and poverty eradication, often with an international focus (Massey, 1988). Yet the concept of economic development is increasingly relevant in advanced economies. All regions are vulnerable to economic restructuring and need to consider how to adapt to the changing economy. Places once prosperous have been humbled by international competition and struggle to redefine themselves (Feldman & Lanahan, 2010). Even places currently doing well realize their economic base could quickly evaporate, leaving them insecure about future prospects. Continual restructuring is now the new norm and the universal concern is how to best secure an economic future. The concept of economic development is now relevant to the full range of nations, places and communities.

With so much at stake there is a need to clearly define economic development and consider its underlying logic. Based on a review of the literature, we define economic development as the development of capacities that expand economic actors' capabilities. These actors may be individuals, firms, or industries. While actors have different perceived potential, it is difficult to predict the next new idea or to understand how genius may arise. In contrast to a resource-based economy, where location was constrained to natural endowments, a modern, knowledge-based economy depends on capacity that is constructed over time. Many successful regional economies developed because of historical accidents, yet fortune favors the prepared: the ability to benefit from serendipity relies on underlying capabilities (Feldman & Francis

2003). Advantage is due to capacity investments that yield a long-term return. In the absence of any clear bets, the best strategy is to enable as many individuals to fully participate in society. New examples of economic development include infrastructure projects that now extend to the digital realm to include the creation and use of knowledge, or the support of education and literacy in a time when the labor force usually requires a bachelor's degree with the expectation of continued lifetime education and training. The private sector can then leverage these capabilities to create economic growth, which ultimately enhances the wellbeing of individuals, communities and society. Of course, the distribution of spoils in the modern knowledge economy is notoriously unequal (Rosen, 1981). The difficulty in advancing the public interest is to find balance that scaffolds economic transactions while not over regulating, and provides support and incentives without discouraging initiative.

In defining economic development, it is impossible not to discuss the role of government. Government, most simply, is a vehicle for collective action: the agent for whom the principal is the citizens and the businesses within its borders. While business aims to maximize profit or shareholder value, government is the vehicle for accomplishing the common good. Government is the only entity that has the mandate to promote the wellbeing and prosperity of the nation and the economic clout to keep the economy on course. Government is the economic entity that is best positioned to make long run investments. The Reagan-Thatcher agenda to reduce government has dominated public discourse for over 30 years. Yet there is no counter argument on the appropriate role of government to take its place. Only the most committed Libertarians recognize no limits for the role of the market in society, while even the most entrenched believer in free-markets recognize that government was the only entity capable of saving the financial sector from collapse in the last recession. Government has been important to the American economy from Alexander Hamilton's tariffs on manufacturing imports to John Kennedy's space race and DARPA's investment in the early Internet. The rest of the world is trying to copy and replicate the policies that made the American economy the envy of the world while America fails to recognize and fortify our success.

Defining Economic Development

Economic development is simultaneously a concept, an activity and a professional practice. Not only is economic development a popular topic of discussion, it is also an activity

for which there are high expectations, and significant investments of public money. Perhaps the only agreement currently is that economic development is difficult to define. Nevertheless defining economic development is a necessary prerequisite to move discussion towards objective policy discussion and robust measurement.

The first step in defining economic development is distinguishing it from the concept of economic growth. Economic growth has a strong theoretical grounding and is easily quantified as an increase in aggregate output. In theorizing economic growth, David Ricardo (1819), and later Robert Solow (1956) and many others conceptualize an economy as a machine that produces economic output as a function of inputs such as labor, land, and equipment. Growth occurs when output increases. Output can increase either when we add more inputs or use technology or innovation in order to enhance the efficiency with which we transform inputs into outputs. In part because of this straightforwardness, economic growth, with its emphasis on increases in population, employment or total output dominates the debate, despite the fact that increases in any or all of these could be associated with both improvements and/or declines in prosperity and quality of life. The consensus is that development is a fuzzier and more far-reaching idea. Nobel laureate Robert Lucas (1988:13) notes, “we think of (economic) growth and (economic) development as distinct fields, with growth theory defined as those aspects of economic growth we have some understanding of, and development defined as those we don't.”

Our preoccupation with growth is an often-discussed problem. For a private firm, growth in sales and profits is a measure of market success. However, taken to the extreme, publicly traded companies that succumb to the pressure to constantly better their last quarter’s earnings often disregard long-term strategic opportunities. Places that are fast growing benefit from an increased tax base, but congestion leads to higher costs of services, which can outweigh the benefits of growth. Unfortunately promoting all and any growth is too often an easy victory to win at the expense of longer-term goals and objectives. Indeed, many of our conceptual tools may not be quite up to the task of economic development. Douglas North (1984) argues that neoclassical economics’ focus on short-run optimal resource allocation is simply not well suited to the dynamic, long-term orientation that defines the process of economic development.

If economic development is not the same as economic growth, then what exactly is it? Amartya Sen’s (1999) international work considers economic development to be the strengthening of autonomy and substantive freedoms, which allow individuals to fully participate

in economic life. Hence, economic development occurs when individual agents have the opportunity to develop the capacities that allow them to actively engage and contribute to the economy. In the aggregate, this should lower transaction costs and increase social mobility. Rather than being reduced to a static factor in a production process, individuals become the agents of change in the process of economic development: they have the freedom to realize their potential. The greater the number of individuals able to participate in the economy and the society, the greater the opportunity for new ideas to circulate and be put into action. Economic development is measured by rising real per capita income, Gini coefficients and other measures of the distribution of income and wealth as well as indicators of quality of life, that range from life expectancy to crime statistics to environmental quality. From this standpoint, economic development differs from growth in terms of a focus on a broader set of metrics. Although Sen's work was rooted in the context of some of the world's poorest countries, this definition and criteria are equally relevant to the range of regional economies.

This conceptualization sharpens the contrast between growth and development. Indeed, examples abound of national economies that have experienced significant increases in economic output, due to either population growth or large-scale resource extraction, with little broad-based improvement in individuals' quality of life and ability to realize human potential. There are numerous countries in sub-Saharan Africa, Central and South American and Oceania that provide examples of growth without development (Acemoglu et al. 2002; De Soto, 2000; Moyo, 2009). On the basis of a host of indicators these economies can be said to be growing in ways such as the presence of highly educated professional elites, skilled workers, and high officials in international NGOs, and substantial support from foreign aid. National income will grow, coupled with notable investments made by the public sector. Despite these indicators, as the Overseas Development Institute (2009) highlights, little progress has been made on health outcomes such as infant mortality, morbidity rates and life expectancy. Moreover, these nations suffer from significant income inequality and limited educational attainment, especially among women and immigrants, and growing polarization (Wolfson 1997). Despite international aid many countries are unable to provide adequate medical, social, and educational institutions that enable the entire population to thrive. With insufficient support for economic development, longer-term outcomes that lead to broad-based improvements in quality of life and wide spread prosperity remain inaccessible. Keefer and Knack (2001:146) find evidence that income

inequality and polarization – what we associate with the lack of economic development fosters an environment of uncertainty. This erodes the enforcement of property and contractual rights that, "affect growth directly, by influencing the choice of production process and the efficiency with which production is carried out, and indirectly by reducing incentives to invest." The lack of economic development erodes capacities and penalizes future economic growth. Of course, economic growth provides slack resources that may either be appropriated by rent-seeking elites or invested in economic development to provide the basis for future economic growth. When long-run prosperity rests not on resource extraction but on the ongoing production of ideas, investments in economic development become even more essential as a precursor to growth.

Defining development in this way, and contrasting it with growth gives sense to the outcomes of economic development. Equally important are the specific capacities germane to the process of economic development. Economic development, according to Joseph Schumpeter (1961), involves transferring capital from established methods of production to new, innovative, productivity-enhancing methods. Schumpeter's conceptualization was focused on understanding the origins of the business cycle and the conditions that gave rise to new opportunities that propelled the economy forward to a higher economic growth trajectory. Schumpeter discusses the emergence of systems of complementary capabilities that develop around key radical innovations to create economic growth. For example, economic development that occurred with the industrial revolution as the means of production changed in the textiles industry. This generated a variety of social and economic effects that then extended to other complementary sectors, and diffused throughout the economy. During the industrial revolution, the factory became the unit of production, moving people off farms and into cities and required clocks and accounting systems to regulate working hours. The result was a sustained increase in the standard of living, albeit not without certain adjustment costs.

In Schumpeter's view, economic development entails a fundamental transformation of an economy. This includes altering the industrial structure, the educational and occupational characteristics of the population, and indeed the entire social and institutional fabric. While growth is measured by putting more people to work within an existing economic framework, economic development is aimed at changing that framework so that people work more productively, and the economy shifts toward higher-value activities. Thus, while economic

growth can be measured quarterly, realizing gains in economic development may take decades or generations.

Schumpeter's attention to innovation and entrepreneurship proved ahead of its time; these concerns now lie center stage in policy discussions about economic development. Entrepreneurs are the agents of change in an economy and the source of increased productivity – those actors who recognize opportunity and garner resources to create value. Innovation and entrepreneurship are two sides of the same coin: Entrepreneurs identify opportunity and innovate, while innovation is the commercial realization of value from a new idea or invention from an entrepreneur. Innovation may result in new products introduced to the market, new production processes or new organizational forms. While radical new breakthrough advances hold our imagination, there are many more mundane industries and incremental forms of innovation that are within reach and that rely on different types of knowledge. Successful firms often arise in unusual locations, serving unanticipated customer needs in unexpected ways.

Seen from this point of view, economic development that fosters innovation and entrepreneurship is the long-term solution to current concerns over the long-term decline in productivity that seems to have afflicted the U.S. Since 1973, growth in productivity has been lagging compared to historic rates, except for periods leading up to economic bubbles. Roger Gordon (2010) argues that current productivity rates represent the slowest growth in the measured American standard of living over any two-decade interval recorded since the inauguration of George Washington, while Tyler Cowen (2011) describes the last several decades as "the Great Stagnation." There is clear cause for concern. Macroeconomic policy has not been able to engineer a solution. Understanding the microeconomic foundations of innovation and economic development offers perhaps the best, and maybe the only, policy prescription.

Despite the pervasive image of the lone inventor or the brilliant solo entrepreneur, innovation is a social activity that requires a mix of individuals with different skills to collaborate to create value. Rather than distributed uniformly through time and across geographic space, innovation tends to cluster both temporally and spatially. This creates cycles of boom and bust, causing disruption for people who move to follow opportunity, as well as the many who remain. One of the reasons why regions, and in particular, cities, have moved to the center of attention is that inventors heavily rely on local information or knowledge in generating novel

products or processes. When an industrial activity dominates a landscape, the factors of production become tailored and result in increasing returns. These factors of production include specialized skilled labor, which is often referred to as *talent* but extends to all the workers involved in production. Related and subsidiary activities, which support and create economies of scope and both formal and informal institutions, which share expertise and define a future trajectory are all part of the factors of production. Observing that much industrial know-how defies formal capture through market transactions, Alfred Marshall (1890) is noted to have said, *the secrets of the industry are in the air*. Despite the Internet and advances in teleconferencing, innovation still requires debating ideas, unpredictable epiphanies and chance encounters. Innovation is interesting to study because it is essentially unpredictable – rooted in the creative sparks that make us human and the serendipity that makes life interesting.

This has implications for economic development in both creating the capacities that promote innovation as well as easing the transitions for places. Of course, predicting what will be the next *big thing* or even next important industry is difficult, and most likely too difficult. Location becomes important not only for recognizing opportunity but also for providing an environment that is responsive to the entrepreneurs' activity, which in turn lowers the cost of innovating (Audretsch & Feldman, 1996). Innovation and entrepreneurship require economic agents to venture into unchartered domains and test the limits of their capabilities to realize potential rewards. Even the most accomplished venture capital investors and stock analysts make bad investments from time to time. It is no easier for government than for private investors to decide which companies will be successful or how markets will develop. We never know which new opportunities will yield a high return and which projects or companies will fail. The best way to hedge society's bets is building the capacity of individuals to fully and creatively participate in economic and social life, and to incentivize companies to more fully realize their capability to add to the economy. By facilitating industrial upgrading and improving infrastructure, government lowers transaction costs to expedite economic exchanges. By investing in institutions, government lowers risk and supports the utilization of private sector capabilities.

Economic growth provides slack resources that, if invested well in economic development, provide the basis for future economic growth (Amsden 1997). For example, the Indian economy has a surplus of uneducated labor, suggesting that attracting low wage industry

would be a viable economic growth strategy. However, the Indian government chose to make significant investment in engineering and technology education beginning in the 1960s as an economic development strategy. Initially, U.S. universities attracted students from India, in what originally looked like the classic brain drain. But decades later the result was an Indian diaspora in Silicon Valley that was mutually beneficial through social ties that facilitated knowledge flows and investment (Saxenian 2002, 2006). The result has been a growing domestic software engineering industry, concentrated in Bangalore (Arora and Athreye 2002). Korea followed a similar example of capacity building investments in economic development that subsequently yielded a high rate of economic growth. Faced with devastation after the Second World War and Korean Wars, Kim (1997) documents the government's long-term growth strategy that invested in education and research while simultaneously developing export industries to absorb this capacity. Both of these examples highlight the long-term nature of economic development investments.

Economists conclude that the development of high quality institutions is the major factor behind economic growth (Rodrik et al. 2002). Lipset (1959) argues that the efficiency of a political jurisdiction's social and economic institutions define economic development. Institutions are the rules of the game, enforcement mechanisms or the accepted standard of behavior in a society (Ostrom 1986). Institutions operate with specific rules and procedures that lower transaction costs and inspire confidence by certifying the range of potential outcomes. High quality institutions support productive activities and encourage capital accumulation, skill acquisition, invention, and technology transfer (North and Thomas 1973). Rosenberg and Birdzell (1987) highlight how the development of institutions conducive to capitalism was a driving force in *How the West Grew Rich.* Two points about institutions are relevant to solidifying our understanding of economic development. First, there is no single institution, such as the legal system or property rights that supports economic development. What matters is an underlying capability and orientation of the social and economic organization of a society, especially the capacity to instill confidence in the future. Formal and even informal institutions create predictability and order that allow individuals and businesses to make investment decisions. Second, institutions are endogenous – that is, they are the product of history, culture and historical accidents. Institutions evolve in unexpected and idiosyncratic ways. However desirable, it is mostly not possible to transplant organizations or sets of incentives wholesale

from where they originate to other contexts where they appear to be needed. Instead, organizations and incentives need to flow from existing institutional arrangements. Engaging in economic development means building or augmenting existing institutions that are critical to progress.

Michael Porter (1998:19-20), in his very influential work, *The Competitive Advantage of Nations*, considers that, "Economic development seeks to achieve long-term sustainable development in a nation's standard of living, adjusted for purchasing power parity." The term sustainable, as defined by Tatyana Soubbotina at the World Bank (2004:9 – 10), could "be otherwise called equitable and balanced, meaning that, in order for development to continue indefinitely, it should balance the interests of different groups of people…in three major interrelated areas–economic, social, and environmental." But in defining standard of living, Porter unfortunately conflates economic growth with economic development: "Standard of living is determined by the productivity of a nation's economy, which is measured by the value of the goods and services (products) produced per unit of the nation's human, capital, and physical resources." When economic development is confused with economic growth, then private sector constructs are often adopted uncritically as means by which public investments ought to be evaluated.

It is not uncommon for policy makers to talk about return on investment (ROI), yet this belies the fact that government invests in those activities that the private sector does not find lucrative enough to warrant their own investment in the short term, or for which the capital requirements are so large and the number of actors so complex that collective action is required. Porter (1998) does not articulate a role for government policy, but instead considers government as a background condition with influence on all of the factors in what has become known as Porter's Diamond. Porter's emphasis, however, does highlight what the private sector requires to be profitable and internationally competitive. Porter advances the idea of geographic clustering of industries in a model that includes the nature and extent of the inputs required by firms to produce goods or services; the type and intensity of local rivalry; the quality of demand for local services; and the extent and quality of local suppliers and related industries. These factors certainly define firm and industry capabilities as one of the important components of a regional economy. However, Porter does not directly consider capabilities that support and sustain innovation and new firm formation. The focus on existing industries precludes an emphasis on

the nascent or emerging industries that offer the most in terms of upside economic potential. In the *Innovator's Dilemma*, Clayton Christensen (1997) points out that innovative firms that focus solely on their currently profitable activities are eclipsed by their more innovative competitors. Of course, the trick is to appreciate potential before the opportunity becomes obvious.

Clusters appear to occur spontaneously as a result of the natural tendency for industrial activity, especially innovative activity to cluster spatially, however they build on existing capacities (Audretsch and Feldman 1996). In many cases the design and cultivation of competitive industry clusters, often seen as a policy panacea, has failed to produce meaningful economic development (Martin and Sunley 2003; Duranton, 2011). This failure has also contributed to dissatisfaction with government policy (Lerner 2009). One reason perhaps is that the cluster model obscures the role of government and fails to consider how industrial competitiveness translates into economic development outcomes for an economy. The concept of competitiveness, while operational at the individual firm and industry level, does not translate fruitfully into economic development activities and often creates bidding wars between adjacent jurisdictions that would benefit from working together. Despite all the attention to lowering tax rates and increasing a pro-business climate, the evidence suggests that these factors have little effect on economic growth, while actually decreasing the potential for economic development (Hungerford 2012).

Economic development is also a professional practice that uses definitions more inclusively than those of academic economists. Two influential American planners, Fitzgerald and Leigh (2002:33) propose that, "…economic development preserves and raises the community's standard of living through a process of human and physical infrastructure development based on principles of equity and sustainability." This adds to the concept of community and expands the objectives of economic development to explicitly embrace equity and also highlights sustainability. In this conceptualization, economic development is about creating choice or expanding the opportunity set for both consumers and businesses. Equitable and sustainable economic development fosters economic growth that – at the same time – renews and improves the capacities and conditions that make growth possible. While industrial activity certainly benefits from location, the resulting profits are often not distributed back to local residents or reinvested in those same places that provided the advantage to firms and industries. Pieces of the economic development puzzle are missing and require greater articulation.

Inspired above all by Sen, and building on the prior work discussed above, we offer the following definition: *Economic development is the expansion of capacities that contribute to the advancement of society through the realization of individual, firm and community potential. Economic Development is measured by a sustained increase in prosperity and quality of life through innovation, lowered transaction costs, and the utilization of capabilities towards the responsible production and diffusion of goods and services. Economic development requires effective institutions grounded in norms of openness, tolerance for risk, appreciation for diversity, and confidence in the realization of mutual gain for the public and the private sector. Economic development is essential to creating the conditions for economic growth and ensuring our economic future.*

By capacities, we mean conditions conducive to promoting an array of intermediate outcomes that set the stage for the realization of potential. This potential may be realized at multiple levels– for an individual, a firm or set of firms or industry, a community of people or a place. One lesson that history teaches is that the limits of potential are unbounded and lie in unchartered domains. Building capacities allows for a better platform to accommodate an uncertain future and the ability to meet many possible contingencies.

Rationale for Government Investment in Economic Development

Capacity building requires government investment: there is simply no other entity that has societal benefit as its main objective and is able to command the resources required to have significant impact. Government is a vehicle for collective action: an agent for whom the principal is its citizens and the businesses within its borders. While the not-for-profit and even for-profit sector has taken over many functions previously allocated to government (Salamon 2002), the results of this privatization are mixed. Government is the principal inclusive vehicle for organizing economic, social and civic life. In contrast, markets are concerned with transactions and coordinate activity through prices. The invisible hand works on the logic that firms attempt to maximize profits or shareholder value while workers seek to maximize their wages. The result is the all too familiar race to lower costs through relocation or the de-skilling of the labor force. This market logic does not account for longer-term potential firm benefits due to worker suggestions for new product improvements or even Henry Ford's epiphany that if he paid his workers more they could afford to buy his cars.

Government seeks to allocate resources for the collective good and tries to simultaneously satisfy a large number of constituencies. In reality, the profit maximization goal of private business is much easier to achieve than satisfying the diverse goals required for the achievement of government effectiveness. While it has become popular to bemoan the quality of government services, a reasonable benchmark may be our levels of satisfaction with mobile phone service, computer operating system, insurance claims or consumer choice in many product markets. We hold government to a higher standard because, implicitly at least, we acknowledge its functions are critically important.

Giving primacy to the market hides the fact that markets would be very primitive without government. When government works well, the private sector benefits through greater productivity and efficient use of resources. Government also mitigates risk through a relatively stable and predictable system of laws and money. Government provides rules and incentives – the conditions under which modern markets are even possible, and enable the private sector to realize its potential. More broadly, government provides for social order and predictability in contracts and daily life. The difficult balance for the government to strike is to provide for the realization of potential while not reducing incentives in the private sector.

Economists have traditionally relied on the theory of market failures to justify government investment in economic activity. The longstanding rationale is that, in order to increase efficiency, the government must intervene in situations where the market does not function optimally. Markets are concerned with transactions. In a variety of circumstances, specifically those concerning public goods; information asymmetries; industry conditions that provide a barrier to new firms being able to enter; and the difficulty of pricing externalities, markets yield less than efficient outcomes. Efficiency, for economists, refers to the use of resources that maximizes the production of goods and services. As described in almost every economic textbook, market failures lead to sub-optimal outcomes and inefficient use of resources.

An easy illustration of the market failure justification for government investment is Research and Development (R&D) investment. Nelson (1959) cogently argues for federal funding to support R&D activity within the U.S.: “when the marginal value of a ‘good’ to society exceeds the marginal value of the good to the individual who pays for it, the allocation of resources that maximizes private profits will not be optimal.” Strict reliance on the private sector

results in an under-investment in R&D (Bush, 1945). Econometric estimates provide evidence that the rate of return on R&D investments are higher than for ordinary capital; moreover, the social returns are even higher (Hall, Mairesse and Mohnen 2009). However, R&D does not exist in a vacuum; investing in R&D critically depends on complementary social capabilities and infrastructure to support and bolster economic growth (Fagerberg et.al forthcoming).

Market failure has become a primary rationale for all government investment in the economy. The logic of market failures, though appropriate to justify R&D investment, should not be uncritically extended to all government investment. In the discourse of market failure, the market takes primacy while the government's role is minimized. Amsden (1997: 470) makes the case that the market failure approach, while useful in considering economic exchanges, is inadequate when the focus is on economic development, which requires building and sustaining markets and communities. Markets only work when there are well-defined property rights, a valid medium of exchange and enforceable contracts. These require agreement, collection action and enforcement.

There are many attempts to substitute market mechanisms for government provisions using economic logic. For example, support for public funding for higher education has eroded (Bok, 2009). The argument is frequently made that educated individuals receive higher wages as a result of their investment in human capital (Spence, 1973). This suggests that it is rational for individuals to make the investment rather than use public funding. However, job markets are highly uncertain and individuals are investing without a guaranteed return (Green & Zhu, 2010). Moreover, the positive spillovers from a well-educated workforce must also be recognized (Greenstone, Hornbeck and Moretti 2010). The consensus in both the theoretical and empirical literature is that spillovers have a positive significant impact on firm and industry productivity, and economic growth (Jaffe & Trajtenberg, 1993). These positive spillovers represent a subsidy that is impossible to price or even attribute, but they are nonetheless real. In contrast to market logic, public provision of higher education has long been justified in the U.S. as a building of capacity to allow citizens to fully participate in social and economic life (Nash 1963).

Neoclassical economics is centrally concerned with the efficient allocation of goods. It treats the creation of knowledge as exogenous – ideas simply appear (Arrow, 1962; Romer 1995). A fuller consideration of the benefits of government R&D investment suggests that the private benefit may be recast as increased capacity. Indeed, Salter and Martin (2001) highlight

that government R&D investments creates additional long-term dynamic externalities as skills and capabilities are developed. This in turn lowers the cost of subsequent inventive activity. Investments in R&D offer opportunities for experimentation and learning that enhance the ability to solve complex technological problems and extend the scope of inquiry. Finally, government R&D investments make it easier for firms to absorb information and improve private sector decision-making and ability to innovate (Cohen & Levinthal, 1990).

With a more nuanced understanding of the nature of innovation and entrepreneurship, the case for government involvement is stronger (Feldman & Kelly, 2003). At the point when technology has the greatest potential for creating new industries, the frontiers are poorly defined and the chances of failure are high. Complex new technologies require collaboration and information sharing; however, the cost of establishing research and development partnerships and making them work productively is a disincentive to the private sector despite the high potential to create new industries. As evidenced by pharmaceutical manufacturers' current focus on blockbuster life-style drugs, the profit motive favors short-term activity with large market potential.

By contrast, government is the actor in the economy best positioned to act with an eye to the long run, undertaking investments that provide a platform for economic growth. There are exemplary cases of government investment in the development of nascent but transformative technologies, such as radar, penicillin, atomic energy, the Internet, and space travel. Firms have only weak incentives to invest in new technologies that are radically different from those that already exist. Formerly radical new technologies required decades of public support to reach the threshold of commercial viability. Direct government investment is essential, given the long-term, risky and commercially unpredictable nature of basic research. Entrepreneurial firms have been most innovative when given the opportunity to capture economic rents opened up by complementary public investment.

Rather than relying on the market-based rationales for public investment, it is important to define the function of the public sector as building and bolstering capacity. Rather than viewing individuals and firms as objects on the receiving end of public initiatives, economic development requires that they be considered as active agents. This prioritizes improving quality of life and wellbeing by enhancing capabilities and ensuring that agents have freedom to achieve their potential as productive members of society. When every actor in society is capable of being

an active agent with the potential for full participation in economic and communal life, society makes better use of available resources.

If we reconsider the rationale for government investment through a capacity building lens, then government serves as a facilitator for the population at large, including the private sector. By promoting capacity, the public sector's contribution extends beyond improving efficiency and equality towards bolstering a foundation upon which long-term growth and development can be sustained.

Evidence suggests that at a time when market fundamentalism has come to guide policy debates, government has actually become more and more immersed in the economy through its technology policies (Block & Keller, 2009) and public institutions (Schrank & Whitford, 2009).[1] The nature of scientific research has changed due to the decentralization of industrial networks and open innovation. Rather than being confined to the R&D labs of large corporations, collaborative activity is now embedded in networks of scientific collaborators between both public and private institutions (Stephan, 2012). This decentralization not only encourages more organizations to work in concert, but also fosters a greater dependence on government programs to coordinate these networks. In their examination of the *R&D 100*, which catalogs cutting-edge premier innovations, Block and Keller (2009) observe that organizations have moved away from vertical integration toward relying more heavily on complex collaborations that include governmental agencies or government programs as important conveners and intermediaries. Inter-agency collaborations like the Jobs and Innovation Accelerator Challenge are a perfect example of this emergent practice.[2]

At the same time, bolstering capacity as a rationale for government intervention is as old as the American republic. As Alexander Hamilton (1791) highlighted in his Manufacturing Report presented to the House of Representatives, the government holds the responsibility to build a foundation so that the private sector can flourish. He emphasized the role of manufacturing in leading the country toward economic growth and prosperity. Hamilton saw

[1] While the most recent estimates of public investment in university R&D show slight declines, this is attributable to financial constraints that resulted from the recent economic recession rather than a changing shift in public support for R&D. Source: http://www.insidehighered.com/news/2012/01/23/state-funds-higher-education-fell-76-2011-12#.Tx1RreVDRX4.mailto

[2] http://www.eda.gov/challenges/jobsaccelerator/

manufacturing as a complement to other economic activities, providing for the "employment of persons who would otherwise be idle (and in many cases a burden on the community), and increasing the viabilities of communities." Following Hamilton's advocacy, tariffs were imposed on imported manufactured goods. These tariffs were the major source of government revenue until the imposition of the federal income tax. This infant industry policy supported the development of U.S. manufacturing, which became the backbone the economy. [3]

Capacity building has been instrumental throughout the American experience. Investments in building the TransAmerican railroad or supporting the World Wide Web by the Department of Defense and the National Science Foundation have served to enhance the private sector abilities. In the United States, there have been cyclical debates about the role of government with the waning and waxing of regulations, tariffs and social policies. Yet the role of government in building scientific and research capacity has never been questioned. A long-term contract between the public and private sector has been the foundation for American prosperity, providing the opportunity for the private sector to create, build, employ, trade and innovate.

Capacity is essential to innovation and entrepreneurship. Innovation relies on creativity and we are never sure where genius originates. Our investments in innovation capacity building come with a certain level of necessary risk because the results cannot be immediately observed nor can we accurately predict how they will be affect products and processes over time. For example, J.K. Rowling was a welfare mother when she wrote her first *Harry Potter* manuscript. The result demonstrates the potential of small, seemingly inconsequential efforts (Bell 2012). It took Rowling 12 attempts to find a willing publisher. Once published, the novel did well. It created an entire new category of fiction for young teens – an audience that publishers felt was moribund. Of course, Rowling had the capacity to pursue her ambition: she was well educated and public assistance gave her the chance to pursue her ambitions. The result, reported in the *Financial Times* in 2003 is that J.K. Rowling was wealthier than the Queen of England.[4] Like a true entrepreneur, her ideas have created wealth and jobs through subsequent films, video games, toys, and now even, a theme park. The underlying idea from this simple example is that it is impossible to predict what ideas will take hold and create the desired outcomes. But the greater

[3] Unfortunately, too often tariffs have been used to support mature industries.
[4] "In the News." *Financial Times* [London, England] 28 Apr. 2003: 3. *Financial Times*. Web. 30 Aug. 2013.

the capacity in the total population, the more likely that unexpected ideas can take hold and innovation will eventually successfully propel the economy forward.

However, there is a fear that government will become captive to vested interests. While there is broad consensus that innovation serves as an integral catalyst in leading the trajectory of an economy and even society forward, the emphasis in economic development policy remains on traditional attraction and retention incentives. This is often directed at specific businesses, which is largely a zero-sum game with little or no broader effects for economic development. In addition, local governments tend to support the same policies over time, adding incremental changes to preexisting strategies, rather than a wholesale reconsideration of investment strategy. The emphasis recently has shifted towards boutique, targeted policies. Yet, as we consider that the greatest economic growth potential is expected from the development of new industries, the difficulty of predicting what will be the next big thing is a daunting task for venture capitalists, investment bankers and other experts. Our argument is that government has a vital role in promoting capacities that enable the fullest variety of human endeavors and potential, including a variety that cannot be foreseen.

Policy efforts aimed at fostering equity are commonly criticized as handouts that produce perverse incentives to diminish effort. Despite intentions to "even the playing field", the American public has notable reservations in supporting redistributive programs (Pittau, et al. 2013). Up until the recent economic recession, many espoused anti-regulation and pro-privatization practices. Nevertheless, as we reflect on economic practices over the past few decades, many are questioning the tenets of the Chicago School of Economics: rent-seeking behavior associated with widespread deregulation and retraction of government involvement in the marketplace and society is widely considered to have contributed to the growing socioeconomic rifts across the U.S. population as well as the dramatic economic downturn that began in 2008. In his recent book, *The Price of Inequality*, Nobel Prize winning economist Joseph Stiglitz (2012) argues that equity and efficiency must be considered in tandem. The skewed distribution of wealth in the U.S. has grave consequences for the economy and society. Those occupying the middle and lower rungs of the income distribution are unable to follow the American Dream because they lack the capabilities to fully participate in the economy. If this cycle continues there is potential for subsequently even greater divergence in income and opportunity, leaving those who are disadvantaged less able to gain access to education, finance

and opportunity. Moreover, as Brenner and Pastor (2013) emphasizes, the increasingly unequal distribution of income inhibits entrepreneurship, slows economic growth, and destabilizes the economy of American cities. Rather than viewing equity and efficiency at odds, they appear to be complements. Reconsidering the role of government argues for a broader framework focused on building capacities designed to benefit the entire population.

The Goals of Government Investment in Economic Development

For the private sector, the objectives are clearly defined as profit maximization and organizational survival. For government, articulating a vision and meeting a set of broad objectives is more difficult as a result of competing interests, the need to consider diverse perspectives, and the inability to divest mandated but unprofitable and sometimes unpopular activities. In the absence of an accepted consensus vision for government, it is too easy to give in to competing short term demands or become diverted to serve other purposes. An articulated vision for government is crucial to following a long run course.

From a societal point of view, increases in quality of life, which includes long-term prosperity, is the ultimate vision of economic development for democratic governments. Prosperity and quality of life are often synonymous with the concept of the *good life*, which encompasses a sense of material comfort as well as psychological satisfaction and health (Lane 1994). Indeed, the concept of the American Dream is an ideal of a good life based on a classless society with meritocratic advancement and continual progress (Cullen 2003). High quality of life is an integral outcome for government policy. It would be difficult to argue for the opposite as an articulated objective for government in any democracy.

Economic development is the means to achieve the objective of high quality of life and prosperity. The notion behind greater prosperity and better quality of life is that they are earned by working hard, realizing potential, and being successful. Employers reward professional success and innovativeness with higher wages or more prestigious jobs, which then translates into higher income. But underlying this ideal is the reality that individuals are educated and prepared for gainful employment, and that high quality jobs are available, with opportunities for advancement. Reaching this objective requires the public and private sector work together for their mutual gain and the greater good of society.

Prosperity and high quality of life are laudable long-term goals. More intermediate realized outcomes, however, may be used to measure more tangible progress, such as, the quality and quantity of jobs created, the earnings and wealth of individuals, the types of new innovative goods and services introduced to the market and investments made and the growth and exporting of firms. These intermediate outcomes are only realized through the actions of the private sector and require that firms have incentives to take risk and are actively engaged in the production and distribution of goods and services. Economic development requires effective institutions grounded in norms of openness, tolerance for risk, appreciation for diversity, and confidence in the realization of mutual gain for the public and the private sector. These are the ideal goals for a better functioning economy.

Conclusion

We define economic development as activities that expand capacities to realize the potential of individuals, firms or communities who contribute to the advancement of society through the responsible production of goods and services. Economic development addresses the functioning of the microeconomics of the economy. Without economic development, economic growth is limited. The ultimate result of economic development is greater prosperity and higher quality of life; however, these goals can only be realized through sustained innovation, activities that lower transaction costs through responsive regulation, better infrastructure and increased education and opportunities for more fruitful exchange. Only by appreciating the role of government as a vehicle for collective action can we ensure our economic future.

The logic of economic development requires certain capacities that require collective action through government. For government to be effective in creating economic development there is a need for performance and impact measurement systems that are able to provide decision support for strategic investments, to assess progress made in the catalytic capacity-building function, and to assess the limitations and barriers that prevent the utilization of capacity that government investments build. More than simply ex-post evaluation, there is potential for continuous improvement and adjustment when metrics are monitored. However, it is important to be sure that measurement is done well and reflects an understanding of the complex process of economic development. In this paper, we have built a foundation for

understanding economic development and the role of government that should permit the future development of such performance and impact measurement systems.

References

Acemoglu, D., S. Johnson, and J. A. Robinson (2002). Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution. The Quarterly Journal of Economics 117 (4): 1231-1294.

Audretsch, D. B. and M. P. Feldman. (1996). R&D Spillovers and the Geography of Innovation and Production. American Economic Review, 86(3): 630–640.

Amsden, A. H. (1997). Editorial: Bringing production back in—Understanding Government's economic role in late industrialization. World Development, 25(4), 469-480.

Arora, A., & S. Athreye. (2002). The software industry and India's economic development. Information Economics and Policy, 14(2), 253-273.

Arrow, K. (Ed.). (1962). Economic welfare and the allocation of resources for invention. Princeton, NJ: Princeton University Press.

Beine, M., F. Docquier, & H. Rapoport,(2001). Brain drain and economic growth: theory and evidence. Journal of Development Economics. 64(1): 275-289.

Bell, M. (2012). J K Rowling and the Publishers' Moan, The Independent. September 23. Accessed online (August 27, 2013) http://www.independent.co.uk/voices/comment/j-k-rowling-and-the-publishers-moan-8165843.html

Block, F., & M. R.Keller.(2009). Where do innovations come from? Transformations in the US economy, 1970–2006. Socio-Economic Review, 7(3), 459-483.

Bok, D. (2009). Universities in the marketplace: The commercialization of higher education. Princeton University Press.

Brenner, C. and M. Pastor (2013). Buddy, Can You Spare Some Time? Social Inclusion and Sustained Prosperity in America's Metropolitan Regions. Working paper was presented at the Building Resilient Regions closing symposium at the Urban Institute, Washington, DC.

Bush, V. (1945). Science, the endless frontier. Transactions of the Kansas Academy of Science, 48(3), 231-264.

Christensen, C. (1997). The innovator's dilemma: when new technologies cause great firms to fail, Harvard Business Press.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: a new perspective on learning and innovation. Administrative science quarterly, 128-152.

Cowen, T. (2011). The Great Stagnation: How America Ate All The Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better: A Penguin eSpecial from Dutton. Penguin. com.

Cullen, J. (2003). The American dream: A short history of an idea that shaped a nation. Oxford University Press.

De Soto, H. (2000). The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else, New York: Basic Books.

Duranton, G. (2011). California dreamin': the feeble case for cluster policies. Review of Economic Analysis, 3(1), 3-45.

Easterly, W. (2001). The political economy of growth without development: A case study of Pakistan. Paper for the Analytical Narratives of Growth Project, Kennedy School of Government, Harvard University.

Fagerberg, J, M.P. Feldman and M. Shrolec (forthcoming) Technological Dynamics and Social Capability: Comparing U.S. States and European Nations, Journal of Economic Geography .

Feldman, M. P. and J. Francis. (2003). Fortune Favors the Prepared Region: The Case of Entrepreneurship and the Capitol Region Biotechnology Cluster. European Planning Studies, 11 (7): 765-788.

Feldman, M. P., & Kelley, M. R. (2003). Leveraging research and development: Assessing the impact of the US Advanced Technology Program. Small Business Economics, 20(2), 153-165.

Feldman, M., & Lanahan, L. (2010). Silos of Small Beer: A case study of the efficacy of federal innovation programs in a key midwest regional economy. In S. Progress (Ed.), (Vol. September 23, 2010). Washington DC: Center for American Progress.

Fitzgerald, J., & N. G.Leigh. (2002). Economic revitalization: Cases and strategies for city and suburb. Sage Publications, Incorporated.

Gordon, R. J. (2010). Okun's law and productivity innovations. The American Economic Review, 100(2), 11-15.

Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. Oxford Economic Papers, 62(4), 740-763.

Greenstone, M., R. Hornbeck, & E. Moretti. (2010). Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings. The Journal of Political Economy, 118(3): 536-598.

Hall, B. H., J. Mairesse & P. Mohnen. (2009). Measuring the Returns to R&D. National Bureau of Economic Research.

Hamilton, A. (1791). Report on Manufacturers. In D. Communicated to the House of Representatives, 1791 (Ed.). Washington DC.

Hammer, J. (2009) Development that Adds Up: Accounting for the Social Bottom Line of Triple Bottom Line Investment. Social Equity and Opportunity Forum. College of Urban and Public Affairs. Portland State University.

Hoyman, M., & Faricy, C. (2009). It Takes a Village A Test of the Creative Class, Social Capital, and Human Capital Theories. Urban Affairs Review, 44(3), 311-333.

Hungerford, T. L. (2012). Taxes and the Economy: An Economic Analysis of the Top Tax Rates Since 1945 (Updated). CRS Report for Congress.

Jaffe, A. B., Trajtenberg, M., & Henderson, R. (1993). Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations. The Quarterly Journal of Economics, 108(3), 577-598.

Keefer, P. and S. Knack. (2002). "Polarization, Property Rights, and the Links Between Inequlaity and Growth. Public Choice 111(1-2):127-54.

Kim, L. (1997). Imitation to innovation: The dynamics of Korea's technological learning, Harvard Business Press.

Lane, R. E. (1994). Quality of Life and Quality of Persons A New Role for Government? Political theory, 22(2), 219-252.

Lerner, J. (2009). Boulevard of broken dreams: why public efforts to boost entrepreneurship and venture capital have failed--and what to do about it. Princeton University Press.

Lerner, J. (2010). Geography, Venture Capital and Public Policy. Rappaport Institute/Taubman Center.

Lipset, S. M. (1959). Democracy and working-class authoritarianism. American Sociological Review, 482-501.
Lucas, R. E. (1988). On the mechanics of economic development. Journal of monetary economics, 22(1), 3-42.
Marshall, A. (1890). Principles of economics. London: MacMillan for the Royal Economic Society, 1961.
Martin, R., & P. Sunley. (2003). Deconstructing clusters: chaotic concept or policy panacea? Journal of Economic Geography, 3(1), 5-35.
Massey, D. S. (1988). Economic development and international migration in comparative perspective. The Population and Development Review, 383-413.
Moyo, D (2009) Dead aid: Why aid is not working and how there is another way for Africa. London: Allen Lane.
Nash, M. (1963). Approaches to the study of economic growth. Journal of Social Issues, 19(1), 1-5.
Nelson, R. (1959). The simple economics of basic scientific research. Journal of Political Economy, 67, 297-306.
North, D. C. (1984). Government and the Cost of Exchange in History. Journal of Economic History, 44(2), 255-264.
North, D. C. and R.P. Thomas (1973) The Rise of the Western World: A New Economic History. By Douglass C. North and Robert Paul Thomas. New York: Cambridge University Press.
Ostrom, E. (1986). An agenda for the study of institutions. Public Choice, 48(1), 3-25.
Overseas Development Institute (2009). Growth without development: Looking beyond inequality. Briefing paper 47, February.
Pittau, M.G., R. Massari and R. Zelli (2013) Hierarchical modelling of disparities in preferences for redistribution, Oxford Bulletin of Economics and Statistics, 75(4): 556-84.
Porter, M. E. (1998). Competitive advantage of nations. New York: Free press.
Putnam, R. D., Leonardi, R., & Nanetti, R. Y. (1994). Making democracy work: Civic traditions in modern Italy: Princeton University Press.
Ricardo, D., Gonner, E. C. K., & Li, Q. (1819). The principles of political economy and taxation: World Scientific.
Rodrik, D., A. Subramanian, & F. Trebbi. (2002). Institutions rule: the primacy of institutions over geography and integration in economic development. National Bureau of Economic Research.
Romer, P. (1995). Beyond the knowledge worker. World Link, 28, 56-60.
Rosen, S. (1981). The economics of superstars. The American Economic Review, 71(5), 845-858.
Rosenberg, N., & Birdzell, L. E. (1987). How the West grew rich: The economic transformation of the industrial world: Basic Books.
Ruttan, V. W. (2006). Is war necessary for economic growth? Military procurement and technology development: University of Minnesota, Department of Applied Economics.
Salamon, L. M. (Ed.). (2002). The tools of government: A guide to the new governance. Oxford University Press.
Salter, A. J., & B. R. Martin,. (2001). The economic benefits of publicly funded basic research: a critical review. Research Policy, 30(3), 509-532. doi: 10.1016/s0048-7333(00)00091-3
Saxenian, A. (2006). The new argonauts: regional advantage in a global economy. Cambridge, Mass.: Harvard University Press.

Saxenian, A. L. (2002). Brain Circulation: How high-skill immigration makes everyone better off. Brookings Review, 20(1), 28-31.
Schrank, A., & J. Whitford. (2009). Industrial Policy in the United States: A Neo-Polanyian Interpretation. Politics & Society, 37(4), 521-553. doi: 10.1177/0032329209351926
Schumpeter, J. A. (1961). The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle (Vol. 55). Transaction Books.
Schumpeter, J. A. a. (2011). The entrepreneur : classic texts by Joseph A. Schumpeter. Stanford, California: Stanford University Press.
Sen, A. (1999). Commodities and Capabilities. Oxford: Oxford University Press.
Soete, L. (2001). The new economy: a European perspective: Maastricht University.
Solow, R. M. (1956). A contribution to the theory of economic growth. The Quarterly Journal of Economics, 70(1), 65-94.
T. P. (2004). Beyiond Economic Growth: An Introduction to Sustainable Development: World Bank Publications.
Spence, M. (1973). Job market signaling. The quarterly journal of Economics,87(3), 355-374.
Stephan, P. (2012). How economics shapes science. Cambridge, MA: Harvard University Press.
Stiglitz, J. E. (2012). The price of inequality: How today's divided society endangers our future. WW Norton & Company.
Tracey, P., Phillips, N., & Haugh, H. (2005). Beyond philanthropy: community enterprise as a basis for corporate citizenship. Journal of Business Ethics, 58(4), 327-344.
Wilson, J. Q., & Kelling, G. L. (1982). Broken windows. Atlantic Monthly, 249(3), 29-38.
Wolfson, M. (1997). Divergent Inequalities: Theory and Empirical Results, Review of Income and Wealth, 43(4): 401-21.