Introduction

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Economics attracted me as a young student because of its promise to address the most compelling issues confronting society at that time. Coming of age during the post-World War II economic boom left a heady impression of the great impact that scholars could contribute in eradicating society's most pressing problems. A bold new approach to macroeconomics developed by John Maynard Keynes and his disciples had revolutionized the view that business cycles and their devastating downturns were inevitable. The insights of Keynesian economics held the promise of sparing subsequent generations the misery and despair inflicted by the Great Depression. 'Never again' was the confident mantra of what the journalist David Halberstam (1972) termed as the 'Best and the Brightest' – young minds who were summoned by President John F. Kennedy to ensure not only that economic prosperity would become the norm, but with an unprecedented array of microeconomic and social problems, that poverty and social injustice would also be eradicated.

This was an era when the leading minds in economics unraveled the seemingly impossible puzzle of how best to foster economic growth, jobs, and a high standard of living. Robert Solow, in his famous growth model that ultimately won him the Nobel Prize in Economics, uncovered the secret to generating economic growth – physical capital. Investments in plants, factories, and machines would spur productivity to unprecedented levels, unleashing an unprecedented era of economic prosperity.

While the field of macroeconomics was content with recognizing the primacy of physical capital as driving economic growth, analyses at the microeconomic level revealed a dilemma inherent in a capital-driven economy – high levels of productivity could be attained only through such large-scale production as to pre-empt the possibilities for a competitive market structure. The Holy Grail underlying the Vallejo of economic performance – efficiency, productivity, and competition – was threatened to unravel due to an organization of industry where production and sales were dominated by just a handful of large companies. It became the task of scholars in the emerging field of industrial organization to explicitly identify the options confronting public policy to remedy what Oliver Williamson (1968) termed optimistically as a tradeoff between less government intervention and greater allocative inefficiency but also higher productive efficiency on the one hand, versus greater government intervention which would result in less allocative inefficiency but only at the cost of reduced productive efficiency. Through the enlightened application of the leading tools of microeconomic analysis, a generation of industrial organization scholars could guide public policy makers in choosing among such policy instruments as antitrust, regulation, and government ownership to mitigate the impact of inherently flawed market structures.

Determined to join the ranks of the 'Best and the Brightest', I charted my course through graduate school to set this policy tradeoff in industrial economics straight by writing a Ph.D. Dissertation on the impact of antitrust policy on market efficiency in the field of industrial organization. However, even before the Dissertation was completed and the doctoral degree

had been procured, the promise of economics began to unravel. The 1970s saw the advent of what became popularly known as *stagflation*, or the simultaneous existence of high inflation and high levels of unemployment. The emergence of stagflation posed a contradiction to the widely accepted premise of the Phillips Curve, which took the logic inherent in the Keynesian Model to conclude that there is an inevitable tradeoff between unemployment and inflation. While such a policy trade-off between unemployment and inflation had defined the post-war macroeconomic policy paradigm, the increases in both unemployment and inflation that were pervasive in the 1970s undermined the entire policy approach along with the theoretical underpinning.

A profound shift occurred away from the demand side of the economy to the supply side. Along with this shift came the recognition that the ‘missing’ element or residual inherent in the Solow growth model – technological change, or what today is referred to as knowledge – is actually the key to the capacity of a modern, developed economy to supply goods and sustain competitiveness in an era of globalization. Clearly the endogenous growth models placed investments in knowledge at the heart of the capacity for an economy to grow. Not only did such knowledge investments represent a key factor that had previously been missing in the Solow growth model, but what made knowledge particularly potent in its impact was its propensity to spill over for use by third-party firms and entities. That is, knowledge created and used by one firm could also be used by other firms, enjoying the benefits without incurring the costs accrued by knowledge externalities.

Thus, together with Zoltan Acs, I began to develop my research towards innovative activity, and in particular how industrial organization affects innovation (Acs and Audretsch, 1990). Our findings that small firms were at least as innovative as larger firms enjoying market dominance were surprising. In *Capitalism, Socialism and Democracy*, Schumpeter (1942, p. 132) concluded that, due to scale economies in the production of new economic knowledge, large corporations would not only have the innovative advantage over small and new enterprise, but that ultimately the economic landscape would consist only of giant corporations, ‘Innovation itself is being reduced to routine. Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways.’

Schumpeter (1942, p. 106) believed the large corporation to be the engine of technological change and innovative activity, ‘What we have got to accept is that (the large-scale establishment or unit of control) has come to be the most powerful engine of ... progress and in particular of the long-run expansion of output not only in spite of, but to a considerable extent through, this strategy which looks so restrictive.’

Similarly, Galbraith ([1967] 1979, p. 61), concluded that the entrepreneur ‘is a diminishing figure in the planning system. Apart from access to capital, his principal qualifications were imagination, capacity for decision, and courage in risking money, including, not infrequently, his own. None of these qualifications is especially important for organizing intelligence or effective in competing with it.’ As Galbraith ([1967] 1979, p. 61) argued, ‘power’ has shifted from entrepreneurs to the large organization, ‘So it is with organization – organized competence – that the power now lies’.

Galbraith (1956, p. 87) viewed the large corporation as having an inherent innovative advantage, ‘Because development is costly, it follows that it can be carried on only by a firm that has the resources which are associated with considerable size’. In unequivocally rejecting

the Schumpeter of 1911 while endorsing the Schumpeter of 1942, Galbraith (1956, pp. 86–87) concluded that, ‘There is no more pleasant fiction than that technical change is the product of the matchless ingenuity of the small man forced by competition to employ his wits to better his neighbor. Unhappily, it is a fiction. Technical development has long since become the preserve of the scientist and engineer. Most of the cheap and simple inventions have, to put in bluntly and unpersuasively, been made.’

Similarly, Galbraith, in *The New Industrial State* (1979, p. IX), concurred with Schumpeter’s view in *Capitalism, Socialism and Democracy* that the large corporation was the most efficient form of organization. In describing the economy as he saw it,

This was the world of great corporations – a world in which people increasingly served the convenience of those organizations which was meant to serve them. It was a world in which the motivation of those involved did not fit the standard textbook mold. Nor did the relationship between corporation and state. Nor did markets. So far from being the controlling power in the economy, markets were more and more accommodated to the needs and convenience of the great business organizations.

What became known as the Schumpeterian Paradox, which reflected the greater investment in knowledge made by large corporations but the high propensity for small and new firms to innovate, posed the question, ‘How are new and small firms able to be so innovative given their paucity of knowledge resources?’

It was difficult to reconcile the static view that access to knowledge resources drive innovative output with the empirical evidence highlighting the vigorous innovative performance of small firms. Reconciliation of the Schumpeterian Paradox resulted from the dynamic lens provided by the knowledge theory of entrepreneurship. The model of the knowledge production function, formalized by Zvi Griliches (1979), had linked the output of innovative activity to the resources of knowledge, in the form of research and development and human capital within a static context. The knowledge investment of the firm was assumed to be exogenous, which endogenously generated innovative output. By contrast, the knowledge spillover theory of entrepreneurship starts with knowledge that has been created in some organizational context. If that knowledge is not completely commercialized, the residual knowledge creates an opportunity for entrepreneurship. Thus, seen through the dynamic lens of the knowledge spillover theory of entrepreneurship, the knowledge is exogenous and the startup of a new firm is the endogenous response by individuals to best appropriate a return on their knowledge or ideas.

Seen through the dynamic lens of the knowledge spillover theory of entrepreneurship, entrepreneurship plays a key role in generating innovative activity and ultimately economic growth by serving as a conduit for the spillover of knowledge created in the organizational context of an incumbent firm but actually commercialized in the organizational context of a new startup (Audretsch, 1995 and Audretsch, Keilbach and Lehmann, 2006). Since knowledge spillovers play a pivotal role in models of economic growth, entrepreneurship provides a missing link to economic growth by serving as a conduit for knowledge spillovers.

What is meant by *The Entrepreneurial Society* is a society where entrepreneurship serves as a driving force generating economic growth, jobs, and competitiveness in global markets (Audretsch, 2007). The papers contained in the ensuing chapters explore the appropriate role for the public, not just to enhance entrepreneurship, but rather to enhance economic

performance in an economy where entrepreneurship serves as a driving force for economic performance.

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