A Simple Model of Entrepreneurship For Principles of Economics Courses

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> "The theoretical firm is entrepreneur-less – the Prince of Demark has been expunged from the discussion of Hamlet." W.J. Baumol 1968, p. 66

During the four decades since Baumol's 1968 critique, there has been some progress in incorporating entrepreneurship into principles of economics texts. However, the critical roles of entrepreneurs in creating, operating, and destroying markets as well as their importance in driving long-term economic growth are generally either absent or relegated to later chapters. The primary difficulties in explaining entrepreneurship at the principles level are the lack of a universally accepted definition, a plausible explanation of the demand for entrepreneurship, and a diagram that summarizes the impact of entrepreneurship on market equilibrium and growth – a definition, a story, and a picture. This paper discusses how the notion of the stationary state associated with Schumpeter (1911 and 1928), Knight (1921), and Weber (1930) can provide a framework for integrating the entrepreneur into the early part of principles of economics courses. In addition, the research of Romer (1990), Audretsch et al. (2006), and others is used to demonstrate the critical role of entrepreneurship in explaining economic growth. The study ends with a discussion appropriate for a principles of economics course of how institutions can be crafted to encourage entrepreneurship.

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The challenges of teaching principles of economics' courses are many. They include teaching the most important economic concepts, in an integrated fashion, assuming no prior knowledge of economics and – hopefully – never teaching anything that must be unlearned later. And all of this must be accomplished subject to a severe time constraint. As a result, there is a continuing debate on which new topics or insights should be added to the principles of economics curriculum. (See Ferguson 2011, pp. 31-50)

With respect to the inclusion of entrepreneurship, little progress has been made since the 1999 Kent and Rushing study of the generally lightweight coverage of entrepreneurship in principles textbooks. As noted by Phipps, Strom and Baumol note in their 2012 Journal of Economic Education article: "…introductory economics textbooks continue, for the most part, to lack comprehensive coverage of entrepreneurship and related topics." Of eight well-known principles of economics texts, Phipps et al found that only three contain more than a brief mention of entrepreneurs or entrepreneurship.[2] (p. 60) And even among those texts that discuss entrepreneurship, the amount, dept and coverage varies greatly. For example, Baumol and Blinder (2010, Chapter 20) provide an extensive treatment but it occurs late in the text – not in the foundation chapters. And even those texts that discuss entrepreneurship tend to fall between the stools. Some attempt to treat entrepreneurship as just another input along with labor, capital, and natural resources. Others state that entrepreneurship is entirely exogenous. These approaches distort the essential role of entrepreneurship in the creation, operation, and expansion of a market economy as well as its critical impact on long-term economic growth.

[2] The texts with substantial treatment of entrepreneurship analyzed by Phipps et al were: McConnell and Brue, Baumol and Blinder, and Samuelson and Nordhaus.

This divergence in treatment has several causes. First, there is an intense ongoing debate on the exact nature of entrepreneurial activity and, therefore, definitions vary substantially. (See Parker 2009, Chap. 2; Spulber 2009, Chap. 4; and Audretsch et al. 2006, p. 6). Most attention focuses on the creative-destruction activities of the innovative (Schumpeterian) entrepreneurs. However, Kirzner and others emphasize the important economic role of the arbitrage or speculative (Kirznerian) entrepreneurs. These two classes of entrepreneurs may have similar motivations but they have very different effects not only on individual markets but also on the entire economy. Second, as Baumol (2010, pp. 18-19) pointed out, it is difficult to distinguish the demand for entrepreneurship from its supply. Entrepreneurial acts tend to be heterogeneous and the discovery process is non-linear or even random. Therefore, if an entrepreneur is the only one who sees the need for his economic contribution then does demand exist for an entrepreneurial act prior to the entrepreneur's insight?

The characteristics of entrepreneurship defy analysis using principles-level Marshallian demand and supply curves. (Humphrey 2010, pp. 29-37) For an input such as coal or labor, it is assumed that either each unit of input is of the same quality or, if the inputs differ in quality that the purchaser can estimate, or at least rank, the marginal productivity of each unit. If this assumption of estimable quality is not valid then the concept of a supply curve is not meaningful. A firm is unable to purchase the most productive input before it purchases the second most productive, etc. because the firm cannot distinguish the productivity of each. Similarly, in the case of variable and unobservable outputs, one

cannot construct a traditional downward sloping Marshallian demand curve for entrepreneurs or entrepreneurial acts.

The stationary state framework provides an effective means of clarifying the entrepreneur's role in creating markets and bringing these markets to equilibrium. The rest of this paper will provide a principles of economics appropriate definition of entrepreneurship that includes both major types, discuss the concept of the stationary state, provide an illustration of the stationary state appropriate for a principles of economics course, discuss the critical impact of entrepreneurship on economic growth, and end with a discussion of some policy issues related to small entrepreneurial businesses.

WHAT IS ENTREPRENEURSHIP?

All markets whether for buggy whips, railroads, private aircraft, IPADS, plastic sewer pipe, university education, open heart surgery, or Amanda Carr music downloads were created, existed for a time, and, have either ceased to exist or will probably cease in the future. These markets are created by, often operated by, and sometimes destroyed by entrepreneurs. As stated by Spulber: "The general theory of the firm places the entrepreneur at the center of microeconomic analysis." (2009, p. 151; see also Kirzner 2011, pp. 18-20.) They are the major drivers of economic activity. Without entrepreneurs, not only would it be difficult for an economy to operate efficiently - approach its

production possibility frontier (PPF) - but also economic growth - outward shifts of the PPF – would slow or cease entirely.

Like blind men describing an elephant, definitions of entrepreneur and entrepreneurship tend to differ greatly. Researchers in sociology, industrial organization, management, and microeconomics not only approach the study of entrepreneurs from different perspectives but also each tends to focus on the one (or few) entrepreneurial characteristic that is most relevant to the researcher's interest. However, it is important at the principles level to provide an inclusive definition of entrepreneurs that will provide a foundation for more sophisticated analysis. Over the last decade of teaching principles of economics, the author has developed the following definition.

Entrepreneurs are individuals who, in an uncertain environment, recognize opportunities that most fail to see and create ventures to profit by exploiting these opportunities.

*Entrepreneurs are individuals…*While many large corporations strive to create environments that encourage entrepreneurship within their organization – often called intrapreneurship - failure is common. Baumol (2010, Chap 2) argues that these failures result from attempting to flout comparative advantage. His analysis points to a more efficient David-Goliath division of labor between individual entrepreneurs who engage in innovation and large oligopolistic firms that buy out the entrepreneur in order to move the innovation to a mass market. This dichotomy is discussed at greater length in the section on economic growth below.

…who, in an uncertain environment… One of the oldest and most widely accepted characteristics of entrepreneurs is that they specialize in business related "judgmental decisions" where there is no obviously correct answer *and* information is costly. (See Cantillon 1755 pp. 23-24; Casson et al. 2006, pp. 3-4; and Spulber 2009, p. 189) This is the process of entrepreneurial discovery; the perception of a new framework to understand information that is only partially reflected in relative prices. (Eckhardt and Shane 2003, p. 338) In other words, because the environment is uncertain, entrepreneurs make business decisions based on insight. Uncertainty is different from risk. Successfully bringing a completely new product to market and filling an inside straight in poker are both very difficult. However, while the former involves true uncertainty, the latter is simply a matter of risk. (Knight 1921, pp. 41-47) It has been argued that uncertainty is the first cause of economics. If uncertainty did not exist then societies could deal with scarcity by solving a series of simultaneous equations describing resources, technology, and consumer preferences – economists would not be necessary! (Hayek 1945, p. 530)

…recognize opportunities that most fail to see… This means that entrepreneurs tend to possess the quality of "alertness"; they are prepared, curious, and attentive. (Kirzner 1985, p. 7; Shane and Venkataraman 2000, p. 222) The recognition of such an opportunity is a genuine creative act that often baffles researchers and, sometimes, the entrepreneurs themselves. The reasoning that leads an entrepreneur to an innovation often seems non-linear or intuitive rather than the result of a deliberate process. Biographies of

successful entrepreneurs often point to two manifestations of this non-linear or intuitive thinking. Many entrepreneurs claim that after spending months or years in unsuccessful attempts, the entrepreneur realizes in a flash of insight that there was always a simpler way of achieving his or her end. Another commonly reported occurrence involves obtaining an insight by drawing analogies between very different phenomena.

…and create ventures to profit by exploiting these opportunities. Creating a venture, usually a firm, is as necessary to an entrepreneur as recognizing an exploitable opportunity. (Spulber 2009, p. 159) The entrepreneur faces a challenge when he or she seeks to profit from his or her judgmental decision or insight. Usually, the entrepreneur's ability to immediately sell the insight is severely limited because the insight is either too simple or it is too complex. If too simple then it is unlikely that intellectual property laws can protect it. (Shane and Venkataraman 2000, p. 224) The detailed description or demonstration of the insight to a prospective purchaser will allow its theft. At the other extreme, since many innovations are based on non-linear thinking or intuition, it is difficult to convince another that the insight will eventually lead to a substantial return on investment.

The most practical way that most entrepreneurs can profit from their insights or judgmental decisions is to establish a firm. If the entrepreneur possesses the necessary knowledge or skill and is able to obtain sufficient finance then he can sell processes or products that incorporate his insight. Also, once the value of his insight is demonstrated,

there is the potential for a very profitable cash-out through purchase by another firm or by selling stock in an initial public offering.

But if one accepts this definition of entrepreneur then how do entrepreneurs shape the market economy? One way of answering this question is by imagining an economy that doesn't need entrepreneurs – a stationary state.

STATIONARY STATE

Visualize an economy that merely reproduces itself at constant rates. There is a given population, not changing in either numbers or age distribution. The tasks and wants of households are given and do not change. The ways of production and commerce are optimal from the standpoint of the firm's interest and with respect to existing horizons and possibilities. And since they are optimal, they do not change. In other words, year after year, the same products are produced in the same way, sold in the same way, and consumed in the same way. All markets are in equilibrium with the amount demanded equal to the amount supplied at current prices. In such a Schumpeter-Knight-Weber stationary state there is nothing that requires an entrepreneur. All that is required are managers. (For further discussions of the stationary state as an analytical framework, see Schumpeter 1911, pp. 43 & 81; Knight 1921, pp. 264-266; Schumpeter 1928, p. 241; Weber 1930, p. 67; Hayek 1945, p. 523; Link and Siegel 2007, p. 21; and Spulber 2009, p. 194.)

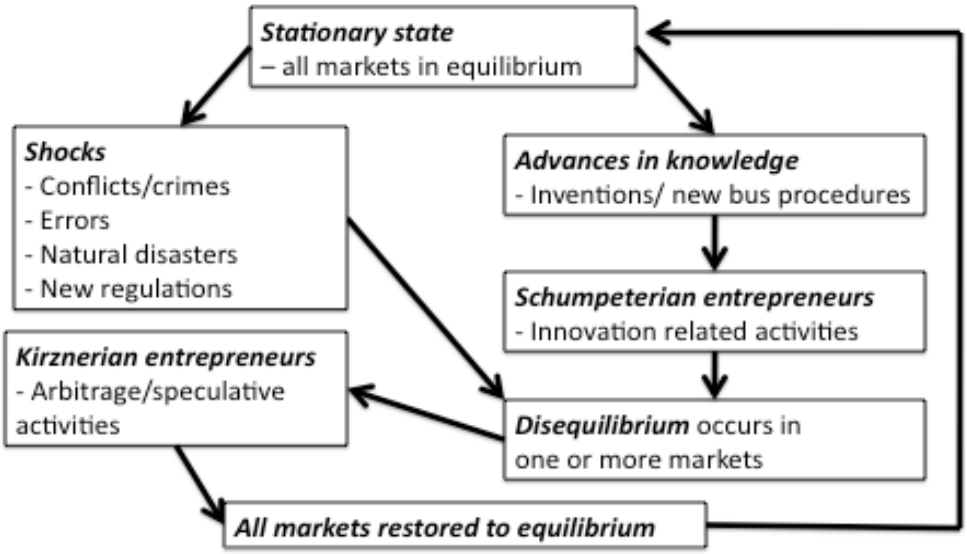
But stationary states are subject to exogenous forces - shocks or advances in knowledge - that disrupt their smooth predictable patterns by creating disequilibria in one or more markets. And if a society provides the proper institutions and profit incentives then two types of entrepreneurs will act in response to these outside forces. Their entrepreneurial acts will eventually result in a restoration of market equilibria and/or accelerate economic growth. These relationships are illustrated in Figure 1.

Natural or manmade shocks. Outside forces can take the form of a variety of natural or manmade shocks to the stationary state economy. These shocks disrupt markets leading to – at pre-shock prices - excess amount demanded of one or more goods or services ***and*** an excess amount supplied of other goods or services. For example, human error may wreck a railroad line that carries corn to an urban market leading to an excess supply of corn in the countryside and a shortage in the urban market. Or a new government regulation may forbid the use of a particular fertilizer that was formerly widely utilized. As a result, there will shortages of substitute fertilizers and excess amounts of the chemicals that were formerly used to produce the now-forbidden product.

This disruption of equilibrium in multiple markets implies inefficient use of labor, capital, or natural resources – the economy has been pushed inside its PPF.

FIGURE 1

Stationary State and Entrepreneurship



This disruption also provides opportunities for profitable arbitrage or speculation by (Kirznerian) entrepreneurs. (Kirzner 1979, p. 92; and Eckhardt and Shane 2003, pp. 335-336) In both arbitrage and speculation, the entrepreneur attempts to buy a good or service at a low price and sell it at a high price. And profit by the difference! Kirznerian entrepreneurs engaged in arbitrage and speculations increase demand and therefore tend to increase prices in the market in which they are net buyers. And they increase supply and therefore tend to reduce prices where they are net sellers. Therefore, arbitrage and speculation tend to restore market equilibrium and, by doing so, eliminate the opportunity for further profit.

Consider the wreck of the corn carrying railroad line mentioned above. An entrepreneur may realize that attempting to transport corn by truck to the urban areas would be

unprofitable since corn has substantial weight compared to its value. Therefore an entrepreneur might buy corn cheaply in the rural areas and distill it into corn whiskey with a much higher value/weight ratio that could be profitably transported to urban areas. Arbitrage in this fashion will raise corn prices in rural areas from the levels to which they fell immediately after the shock and lower corn prices in the urban areas since the demand for corn for urban whiskey making will decline.

As Kirznerian entrepreneurs profit by engaging in their arbitrage or speculative activities, they restore market equilibria and eliminate the opportunities for further profitable arbitrage or speculative activities. The economy returns to its stationary state on the PPF until the next shock arrives.

Advances in knowledge. But shocks aren't the only events that disturb the stationary state and create profit-making opportunities for entrepreneurs. Advances in human knowledge - whether in the form of inventions, new business procedures, or changes in consumer values - have the potential of shifting out an economy's PPF. In fact, it has been estimated that over 80% of long-term economic growth occurs as a result of advances in human knowledge.

Advances in knowledge generate profit opportunities for individuals who are able to make use of these advances to create new products, processes, or markets. (Schumpeter 1911, p. 214) Unlike the Kirznerian entrepreneurs discussed above who arbitrage or speculate among existing products, processes, or markets; innovative or Schumpeterian

entrepreneurs tend to destroy existing products, processes, or markets in the process of replacing them with new ones; a process referred to as creative-destruction. Therefore it is Schumpeterian entrepreneurs that are responsible for much technological change. The Schumpeterian entrepreneur does not create a new product, process, or market in order to sell a product that the ultimate consumer wants. Rather he or she attempts to create a new product, process, or market in order to sell a product that the ultimate consumer *will* want. Most engage not in invention but rather in innovation.

Inventions and innovations are closely related but distinct. Following Schumpeter (1911), first, there is an idea; second, an invention that is an idea made manifest; and, finally, an innovation that is an invention actually used to create value. Of course, an invention or other advance in knowledge may wait a long time, possibly hundreds or thousands of years, before an entrepreneur actually uses the invention for a successful innovation.

Interaction of Schumpeterian and Kirznerian entrepreneurs. The response to shocks or advances in knowledge in the stationary state leads to two different but related forms of entrepreneurship. In a simplest form, the demand for Schumpeterian entrepreneurship is a function of advances in human knowledge. During periods of rapid advances in knowledge, the rewards for creative-destruction are greater. This motivates these entrepreneurs to disturb existing equilibria. On the other hand, the demand for Kirznerian entrepreneurship is a function of actual changes in existing markets. These actual changes create disequilibrium situations that provide profit opportunities those entrepreneurs can exploit and, in the process, restore equilibria. (Schumpeter 1928 and Kirzner 1979) In

other words, Schumpeterian entrepreneurship is a creative response to new information while Kirznerian entrepreneurs see opportunities even in the absence of new information. (Eckhardt and Shane 2003, p. 341) The close relationship between the two types of entrepreneurship might be described as follows:

Schumpeterian entrepreneurs profit through creating market disequilibria, which provides opportunities for Kirznerian entrepreneurs to profit by restoring equilibria.

The simultaneous efforts by the two types of entrepreneurs will not only lead to substantial changes in the structure of the economy but also facilitate long-term economic growth. With respect to structure, entrepreneurial activities help explain both the origin of small businesses and the important role of such businesses in producing new products, creating employment, and facilitating long-term economic growth.

THE BIG ROLE OF SMALL BUSINESS

Small firms have been responsible for a great increase in the variety of markets, processes, and products. Table 1 provides a representative list of innovations by entrepreneurs who got their start by establishing small firms.

TABLE 1
20th Century Innovations Created by Small Firm Entrepreneurs

Articulated tractor chassis	Biosynthetic insulin
Artificial skin	Computerized blood pressure controller
Biomagnetic imaging	DNA fingerprinting

Front-end loader
Helicopter
Hydraulic brake
Link trainer
Oral contraceptives
Overnight delivery service
Portable computer
Quick-frozen foods
Reading machine
Rotary oil-drilling bit
Soft contact lens
Stereoscopic map scanner
Supercomputer
Variable output transformer
Zipper

Source: U.S. Small Business Administration 1995, p. 114

It is increasingly understood that young small firms tend to be the most rapid job creators. In a detailed study of job creation, the U.S. Small Business Administration estimates that small businesses (less than 500 employees) accounted for 64% of all net new jobs – jobs created minus jobs eliminated - created in the United States. If the definition of small firms is limited to those with 100 employees or less than such firms still account for 42% of all net new jobs created. (Bialik 2011, p. A2) However, as Haltiwanger et al has pointed out, rapid job creation is more of a function of the age of small firms than their size. For example, in 2005, new firm (startups) created about 3.5 million net new jobs out of the roughly 2.5 million net new jobs created that year – older firms showed net declines in employment. (2010, Table 1, p. 45) This result is consistent with the uncertainty facing entrepreneurs who establish new firms in order to bring innovations to market. Their firms tend to rapidly move either up or out – either rapidly expand if their innovation is economically successful or rapidly go out of business if their innovation fails. (Haltiwanger et al, Figures 4 and 5, p. 39) But whether they succeed or fail, researchers have increasingly recognized the important impact of small entrepreneurial businesses on economic growth.

The stationary state model of an economy can be made more realistic by positing that adverse and favorable shocks alternate in a cycle. While there are good times and bad, little changes over the long run. This crude cyclic form of the stationary state generally describes the lives of almost all of humanity from roughly 8,000 BC until at least 1500 AD. Delong (1998) and Maddison (2003) estimate that the average per-capita income of the world was barely above the subsistence level during this entire period.

In fact, is was only with the spread of the Industrial Revolution, that a substantial proportion of the world's population finally escaped from a Malthusian hand-to-mouth existence. Until the Industrial Revolution, every generation lived the same lives as their ancestors within a cycle of good times and bad. If time-travel transported a second century BC rice farmer from southern China or a sailor from a Roman ship in the Mediterranean and dropped them off 1700 years later in the same areas, the farmer and sailor would discover that their professions and quality of life had changed little.

In economic terms, this cyclical stationary state reflects the efforts of generations of Kirznerian entrepreneurs continually striving through arbitrage or speculation to restore market equilibria after every shock. However, the failure of the world's economies to achieve any substantial long-term improvement in living standards for several millennia points to a shortage of Schumpeterian (innovative) entrepreneurship. Of course, the appearance of innovative entrepreneurship was not the sole cause of the sharp rise in

living standards experienced during the Industrial Revolution; expanding markets accompanied by greater specialization also had a major impact. However, even after the living standards began their dramatic increase with the Industrial Revolution, progress was very uneven across countries. Some countries like the U.S. were able to achieve per-capita incomes of $48,400 a year while a billion people in the world still live in countries with per-capita incomes of less than $975 a year. (World Bank 2010, Table 1.1)

Schumpeterian entrepreneurship – creative-destruction – is the principal cause of economic growth and development.

The recognition of the critical role of entrepreneurship in bringing about economic growth is relatively recent. In neo-classical economics, technological change was exogenous – manna from heaven. However, when economic researchers estimated the impact of technological change on economic growth, there was a large unexplained disparity among nations. Why should advances in technology affect some countries but not others? Romer (1990) argued that the rate of technological change in an economy is determined by the stock of knowledge. And the accumulation of knowledge was endogenous – it could be increased by appropriate policies.

Polices intended to accelerate the rate of knowledge accumulation have to account for the fact that knowledge is to a great extent both non-rival and only partially excludable – it is neither a conventional private nor public good. (Arrow 1962a, pp. 614-616; Romer 1990, pp. S73-S74) Thus, there is a free-rider problem. It follows that production of knowledge

by firms in competitive markets is likely to be suboptimal since a firm creating knowledge would bear the cost but some or all of the benefit would "spill over" to its competitors. While some knowledge accumulation occurs as a by-product of production (learning by doing), societies also rely upon large firm (oligopolistic or monopolistic) R&D, university research, or government supported laboratories to create the needed knowledge. (Arrow 1962b, pp. 168 & 172) Therefore, in order to accelerate a nation's economic growth, governments should attempt to increase the amount of human capital devoted to research in large firm R&D, university or government research programs. There was no role in this theory for small businesses, entrepreneurs, or uncertainty. (Romer 1990, p. S82)

However, empirical tests of this basic knowledge-growth model generally failed. Some countries with large investments rates in R&D, such as Sweden and Japan, experienced slow economic growth while other countries, with lower rates of knowledge creation, grew rapidly. The combination of high rates of knowledge accumulation and sluggish economic growth is often referred to as the European Paradox. (Audretsch et al. 2006, pp. 33 & 171-172; Carlsson et al. 2009, p. 1193) These observations were confirmed by tests of the effect on GDP growth rates of an increase in the percentage of GDP spent on R&D. These tests generally found no statistically significant results. (For example, see Figure 1 in Braunerhjelm et al. 2010, p. 106)

Entrepreneurship is the missing link between knowledge accumulation and economic growth. Innovations are by their very nature uncertain. As a result, different individuals

can have different estimates of the value of an innovation. (Audretsch et al. 2006, pp. 31 & 51-52; Shane and Venkataraman 2000, p. 223; and Spulber 2009, p. 183) That it is difficult to accurately predict the ultimate economic value of inventions is illustrated by the relatively few inventions that actually earn a significant return. In a study of U.S. university research, Carlsson and Fridh found that only 1% to 2% of all inventions that resulted from some very expensive university research eventually resulted in a significant economic return! (2002, p. 211; see also Braunerhjelm et al. 2010, p. 107)

Knowledge creators, whether corporate R&D entities, governments, universities, or small "garage" inventors will, of course, only pursue those innovations whose expected return on investment (ROI) exceeds a certain target percentage. For example, as a matter of corporate strategy, a firm may decide to only pursue those projects that have an expected ROI that exceeds 20%. As a result, an economy can fail to receive the full advantage of beneficial advances in knowledge for two reasons. First, because of the uncertainty involved, knowledge creators may mistakenly underestimate the potential ROI of an innovation. Second, there might be other entities that would be willing to accept a lower ROI target. For example, another firm might pursue any innovation that is expected to have a ROI greater than 10%.

While some entrepreneurs may be creators of economic knowledge, as seen in Table 1, most play a more important role in reducing the amount of "abandoned" knowledge. Knowledge obtained through research is at least partially non-excludable and therefore can spill over through professional publications, departures of key employees, news

stories, as well as casual conversations over coffee with friends. As a result of these spillovers, entrepreneurs become aware of knowledge advances and, based on their differing assessments of the economic value of innovations based on this knowledge, they may pursue innovations that were rejected - abandoned - by the original knowledge creators. (See Audretsch et al. 2006, Chap. 3 for a detailed discussion of the spillover theory of entrepreneurship.)

In it simplest version, the spillover effect might be seen as a sequential process. Corporate R&D, university, or government research programs produce advances in knowledge. Since the profitability of these advances is uncertain, there will be a diversity of opinions about whether the knowledge advance can be converted into an economically successful innovation. Corporations and other entities will pursue those innovations that they think will exceed their target ROI and abandon the rest. However, due to the knowledge spillover effect, other firms or individuals will become aware of the abandoned knowledge. And if other firms or individuals believe that the return on innovations based on this abandoned knowledge will exceed their - possibly lower – target ROI then they will pursue them. The result is less waste of true advances in knowledge and a more rapid rate of economic growth.

Beyond anecdotes, there is an increasing amount of empirical work that emphasizes the important role for entrepreneurs in facilitating economic growth. For example, Braunerhjelm et al. show that, irrespective of econometric specification, a proxy for

entrepreneurship is a strongly significant determinant of real GDP growth in seventeen OECD countries over a twenty-year period. (2010, Table 4, p. 117)

Therefore, in order to maximize the rate of economic growth, an economy needs both knowledge creators and Schumpeterian entrepreneurs. Why do some countries possess a large number of Schumpeterian entrepreneurs and have progressed rapidly while others are stagnant? Extrapolating from personal preferences and circumstances, the most common explanations are culture and institutions.

IMPACT OF CULTURE AND INSTITUTIONS ON ENTREPRENEURSHIP

The impact of culture on entrepreneurship is extremely controversial. Some researchers have argued that particular cultures are hostile to entrepreneurship while others have argued that such arguments reflect a biased or mistaken perception of the cultures in question. However, societies with vibrant Schumpeterian entrepreneurship tend to have several characteristics in common. The general population thinks more in terms of the individual rather than the community. There is less respect for authority and age. Persons tend to think that success should be rewarded by profit or other financial gains rather than promotion to higher status positions. Finally, it is accepted that rewards from successful entrepreneurship should accrue to the individual entrepreneur and not to his extended family, tribe, or to the state. (See Weber 1930, Landis et al. 2010) But even if the cultural environment in important in determining the scope of innovative entrepreneurship, it is uncertain whether culture – especially when grounded in religious beliefs – can be

changed in order to provide a more entrepreneur friendly society. And attempts to move beyond culture to focus on institutions raise the question; to what extent do institutions reflect cultural values? (See, for example, Kuran 2010.)

"The major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction". (North 1990, pp. 4 & 6) Institutions perform this rule by limiting individual choice – they are the "rules of the game" that make transactions possible or more efficient. For example, a corporation may consider increasing its profit by choosing not to pay for an invention. If existing institutions severely punish such behavior formally – through criminal or civil sanctions – or informally – through public disgrace - then it is unlikely that a firm will choose to cheat in this way.

The existence of a vibrant entrepreneur community is particularly dependent on the specific incentives embedded in a country's formal or informal institutions. A growing literature on a myriad of policy initiatives intended to encourage entrepreneurship has identified some critical institutional needs. (See, for example, Parker 2009, Chaps. 15, 16, & 17; and Baumol, Litan, and Schramm 2007, Chap. 8.) These include the development of legal, regulatory, and tax systems that deal with the three most serious challenges facing small-scale entrepreneurs: incomplete contracts, rent-seeking, and a hostile regulatory environment.

Incomplete contracts. Because of the inescapable uncertainty associated with entrepreneurship, contracts involving entrepreneurs tend to be incomplete in the sense that it is impossible to negotiate in advance every possible contingency. There are just too many unknowns in agreements involving intellectual property rights. (Arrow 1962a pp. 617-618) Therefore, the parties involved will rely upon formal or informal institutions to resolve any future disputes between the entrepreneur and other contracting parties. Ideally, a country's institutions should favor timely, effective, predictable, fair, and low cost resolution of contract disputes. (Parker 2009, pp. 448-449) If any of these characteristics is missing then it will tend to discourage entrepreneurship. For example, if a nation's court system takes years to adjudicate even simple patent cases then it is likely that a small-scale entrepreneurial firm will be bankrupt long before a court even has the chance to rule in its favor. As North noted, the inability of a country to develop a means of efficiently adjudicating disputes concerning incomplete contracts is the major cause of economic stagnation in the world. (1990, p. 54)

Rent seeking. In their search of profits, entrepreneurs generally play an important positive role in restoring markets to equilibrium and accelerating technological change. However, it is possible that some entrepreneurs may seek to profit in ways that prevent market equilibrium or restrain economic growth. For example, rather than attempt to beat the competition by investing in the development of a better product, an entrepreneur may instead "invest" in lobbying elected officials into outlawing the competitor's product. Another example would be negotiating the merger of two companies that results - through a reduction in competition - in higher product price or lower product quality.

Rather than leading to an acceleration of economic growth, such unproductive entrepreneurship may actually lead to the destruction of economic value. (Baumol 1990, pp. 898-899 and Desai et al 2010)

Whether potential entrepreneurs engage in productive or unproductive activities depends on incentives. If the payoff from successful unproductive lawsuits is generally greater than the payoff from successful productive entrepreneurial acts then it shouldn't be surprising if some of the most creative people in a society seek to make new lawsuits rather than new products. Entrepreneurs might be better served by having lawyers, rather than engineers, as their closest advisors! (Baumol 1990, p. 915) Therefore, perverse incentives can reduce productive entrepreneurship in two ways. By encouraging creative persons to engage in unproductive rather than productive entrepreneurship. And, by increasing costs, unproductive entrepreneurs tend to reduce the profitability of other entrepreneurs. Is the impact of unproductive entrepreneurship significant? While it is difficult to statistically estimate this relationship, Baumol in his seminal study of the history of entrepreneurship noted the: "Remarkable correlation between the degree to which an economy rewarded productive entrepreneurship and the vigor shown in that economy's innovation record." (Baumol 1990, p. 909) One sign of an excess of unproductive entrepreneurship is the creation of a hostile regulatory environment.

Hostile regulatory environment. An extensive web of business regulations often has a disproportionate adverse impact on small innovative firms. (Parker 2009, p. 442-443) These regulations may have desirable public purpose such as protecting the environment

or they may result from some form of rent seeking, such as lobbying. Regardless of the motivation, complex regulations make it more difficult to operate a small business especially an entrepreneurial small business.

For example, according to the World Bank's 2011 Ease of Doing Business survey, there are nineteen separate regulatory procedures required to build a simple warehouse in New York City. Dealing with these administrative procedures – not actually building the warehouse - requires an estimated forty days and costs over $6,000. Another example is the 2002 Sarbanes-Oxley Act that greatly complicates the management of corporations especially since the Act calls for criminal penalties for non-compliance. (Parker 2009, p. 450) Large firms are more likely to have specialists to deal with government regulatory agencies and the administrative cost of complying with regulations tends to be a small fraction of a large firm's revenues. But in new small firms, not only are the costs of compliance relatively large but also compliance distracts owner-entrepreneurs from growing their businesses.

Developing good policies to deal with incomplete contracts and ensure that the regulatory environment is favorable for entrepreneurship is necessary but insufficient. It is also necessary to turn those policies into institutions and this runs into a fundamental problem. Institutions are not generally created to maximize the welfare of a society as a whole but rather institutions are usually formed so as to maximize the welfare of those who have the political power to devise new institutions. (North 1990, p. 16) With respect to entrepreneurship, this is often seen as a conflict between small firms that favor a more

dynamic economy but lack political influence and big business (and big labor!) that oppose change that they cannot control and, generally, have more political influence. This is an example of a principal-agent problem where the interests of the principals – the voting public – and their agents – elected officials – diverge. Fortunately, if surveys, newspaper and online opinion pieces are any guide, there is increasing recognition among the voting public of the value of entrepreneurial small firms in introducing new products, creating employment, and facilitating economic growth.

CONCLUSION

Is entrepreneurship important enough to either push another topic out of the principles text in order to make room or to further expand already encyclopedia length texts? Yes. The role of the entrepreneur is critical not only to understand the creation, operation, and destruction of markets but also because of its important role in long-term economic growth. As a result, it is time for a serious treatment of entrepreneurship in the early – foundation – chapters of principles of economics texts. A clear definition, the notion of the stationary state, and the accompanying diagram provide a framework for introducing the key aspects of entrepreneurship at the principles level. This can facilitate classroom discussions on both the implications of having a mix of small and large firms in the same industry and the role of public policy in furthering economic development.

REFERENCES

Arrow, K. 1962a. Economic Welfare and the Allocation of Resources for Invention. in Rand Corporation (eds.) *Rate and Direction of Inventive Activity* 609-626.

Arrow, K. 1962b. The Economic Implications of Learning by Doing. *Review of Economics and Statistics* 80:155-173.

Audretsch, D. B.; M. C. Keilbach, and E. E. Lehmann. 2006. *Entrepreneurship and Economic Growth.* New York: Oxford University Press.

Baumol, W. J. 2010. *The Microtheory of Innovative Entrepreneurship.* Princeton, New Jersey: Princeton University Press.

Baumol, W. J. 1990. Entrepreneurship: Productive, Unproductive, and Destructive. *Journal of Political Economy* 98:893-921.

Baumol, W. J. 1968. Entrepreneurship in Economic Theory. *American Economic Review* 58:64-71.

Baumol, W. J. and A. S. Blinder. 2010. *Economics: Principles and Policy.* Eleventh Edition, Mason Ohio: Cengage Press.

Baumol, W. J., R. E. Litan, and C. J. Schramm. 2007. *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity.* New Haven: Yale University Press.

Bialik, C. 2011. Sizing Up the Small-Business Jobs Machine. *Wall Street Journal* October 15th, p. A2.

Braunerhjelm, P.; Z. J. Acs, D. Audretsch, and B. Carlsson. 2010. The Missing Link: Knowledge Diffusion and Entrepreneurship in Endogenous Growth. *Small Business Economics* 34:105-125.

Cantillon, R. 1755/1931 *Essay on the Nature of Commerce in General.* New Brunswick, New Jersey: Transaction Publishers.

Carlsson, B. and A. Fridh. 2002. Technology Transfer in United States Universities. *Journal of Evolutionary Economics* 12:199-232.

Carlsson, B.; Z. J. Acs; D. Audretsch; and P. Braunerhjelm. 2009. Knowledge Creation, Entrepreneurship, and Economic Growth: A Historical Review. *Industrial and Corporate Change* 18:1193-1229.

Casson, M.; B. Yeung; A. Basu; and N. Wadeson. 2006. *The Oxford Handbook of Entrepreneurship* New York: Oxford University Press.

De Long, J. B. 1998. Estimates of World GDP, One Million B.C. – Present. http://econ161.berkeley.edu/

Desai, S.; Z. Acs; and U. Weitzel. 2010. A Model of Destructive Entrepreneurship. UNU-WIDER, Working Paper No. 2010/34, April.

Eckhardt, J. and S. A. Shane. 2002. Opportunities and Entrepreneurship. *Journal of Management* 29: 333-349.

Ferguson, W. D. 2011. Curriculum for the Twenty-First Century: Recent Advances in Economic Theory and Undergraduate Economics. *Journal of Economic Education* 42:31-50.

Haltiwanger, J.; R. S. Jarmin, and J. Miranda. 2010. Who Creates Jobs? Small vs. Large vs. Young. NBER, Working Paper 16300, August.

Hayek, F.A. 1945. The Use of Knowledge in Society. *American Economic Review* 35:519-530.

Humphrey, T. M. 2010. Marshallian Cross Diagrams. in M. Blaug and P. Lloyd (eds) *Famous Figures and Diagrams in Economics.* Northampton, Massachusetts: Edward Elgar. pp. 29-37.

Kent, C.A. and F.W. Rushing. 1999. Coverage of entrepreneurship in principles of economics textbooks: an update. *Journal of Economic Education* 30:184-188.

Kirzner, I. M. 2011. *Market Theory and the Price System.* Indianapolis, Indiana: Liberty Fund.

Kirzner, I. M. 1985. *Discovery and the Capitalist Process.* Chicago: University of Chicago Press.

Kirzner, I. M. 1979. *Perception, Opportunity, and Profit.* Chicago: University of Chicago Press.

Knight, F. H. 1921/1971. *Risk, Uncertainty and Profit*. Chicago: University of Chicago Press.

Kuran, T. 2010. The Scale of Entrepreneurship in Middle Eastern History: Inhibitive Roles of Islamic Institutions. in D.S. Landes, J. Mokyr, and W. J. Baumol (eds.) *The Invention of Enterprise.* Princeton: Princeton University Press.

Landis, D. S.; J. Mokyr and W. J. Baumol (eds.) 2010. *The Invention of Enterprise,* Princeton: Princeton University Press.

Link, A. N. and D. S. Siegel. 2007. *Innovation, Entrepreneurship, and Technological Change.* New York: Oxford University Press.

Maddison, A. 2003. *The World Economy: Historical Statistics.* Paris: OECD Publications.

McConnell, C.R. and S.L. Brue. 2008. *Economics: Principles, Problems, and Policies.* 17 ed. Columbus, OH: McGraw-Hill.

North, D. C. 1990. *Institutions, Institutional Change and Economic Performance.* New York: Cambridge University Press.

Parker, S. C. 2009. *The Economics of Entrepreneurship,* New York: Cambridge University Press.

Phipps, B. J.; R. J. Strom and W. J. Baumol. 2012. Principles of Economics Without the Prince of Denmark. *Journal of Economic Education* 43:58-71.

Romer, P. M. 1990. Endogenous Technological Change. *Journal of Political Economy* 98:S71-S102.

Samuelson, P. A. and W. D. Nordhaus. 2010. *Economics.* 19th ed. Columbus, OH: McGraw-Hill.

Schumpeter, J. A. 1928. The Entrepreneur. in M. Becker, T. Knudsen, and R. Swedberg (eds.) 2011. *The Entrepreneur: Classic Texts by J. Schumpeter.* Stanford, California: Stanford University Press, pp. 227-260.

Schumpeter, J. A. 1911/1934. *Theory of Economic Development.* Cambridge: Harvard University Press.

Shane, S. and S. Venkataraman 2000. The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review* 25:217-226.

Spulber, D. F. 2009. *The Theory of the Firm*. New York: Cambridge University Press.

U.S. Small Business Administration. 1995.*The State of Small Business: A Report of the President, 1994*. Office of Advocacy, p. 114.

Weber, M. 1930. *The Protestant Ethic and the Spirit of Capitalism,* New York: Scribner's.

World Bank. 2011. Ease of Doing Business Survey. http://doingbusiness.org/data/exploreeconomies/united-states/

World Bank. 2010. *World Development Indicators 2010*. Washington D.C.: World Bank.