1 Introduction

The entrepreneur is at the same time one of the most intriguing and one of the most elusive characters…in economic analysis. He has long been recognised as the apex of the hierarchy that determines the behaviour of the firm and thereby bears a heavy responsibility for the vitality of the free enterprise society. (Baumol, 1968, p. 64)

Entrepreneurship is increasingly in the news. Governments all over the world extol its benefits and implement policies designed to promote it. There are several reasons for this interest in, and enthusiasm for, entrepreneurship. Owner-managers of small enterprises run the majority of businesses in most countries. These enterprises are credited with providing specialised goods and services that are ignored by the largest firms. Entrepreneurs generate productivity gains from dynamic entry and exit, which spurs economic development. This comes about either by selection or by competition. Selection involves replacing incumbents who are inefficient or do not satisfy consumer demand by entrants who are more efficient or better meet demand by offering new or better-quality products. Entrants intensify competition and thereby discipline incumbents to provide cheaper or more innovative goods.

The most dynamic entrepreneurs pioneer new markets for innovative products, creating jobs and enhancing economic growth. As a striking example, four of the largest US companies by market capitalisation in 1999, accounting between them for about one-eighth of US GDP (Microsoft, Dell, Cisco Systems and MCI), did not exist twenty years earlier (Jovanovic, 2001). Hence it is reasonable to expect that some of today's new start-ups will grow to become tomorrow's industrial giants. Even those which do not do so can create positive externalities, for example by developing supply chains that help attract inward investment, or by creating wealth and facilitating social mobility. It is sometimes also claimed that the decentralisation of economic production into a large number of small firms is good for society and democracy, promoting the ethos of a self-reliant and hardy 'entrepreneurial spirit'.

As the wellspring of industrial dynamism, wealth creation and innovation, entrepreneurship is an integral part of economic change and growth. Yet entrepreneurship has only recently come to be regarded as a field. A complete view of it recognises its multi-disciplinary academic underpinnings, drawing from economics, finance, business studies, sociology, psychology and other subjects. This heterogeneous provenance

reflects the multidimensional nature of entrepreneurship, which partly contributes to the elusiveness of the entrepreneur alluded to by William Baumol.

1.1 What economics adds to the study of entrepreneurship

Today, the economics of entrepreneurship is a thriving research field. Although the 'business studies' approach to entrepreneurship research remains dominant in terms of field journals, conference activity and academic posts – in other words, in most practical respects – the economics of entrepreneurship literature continues to develop rapidly, generating numerous insights about how entrepreneurship interacts with the economy. However, many non-economists continue to ignore the economics of entrepreneurship literature, while a minority actively denigrates economics, sometimes claiming that the discipline itself is intrinsically unsuited to the study of entrepreneurship.

One of the objectives of this book is to rebut the anti-economics arguments, by demonstrating constructively what the subject can and does say about entrepreneurship. It is the author's belief that anti-economics arguments mainly reflect ignorance about the current state of economics. Before going on to define what the economics of entrepreneurship is, and what it brings to the analysis of entrepreneurship as an academic field, it is worth briefly trying to understand these claims, which can be summarised as follows:

1. Economics (it is alleged) assumes that agents know prices and goods and, automaton-like, optimise resource usage via mathematical rules. But entrepreneurs cannot optimise because they cannot know the prices of goods or services which do not yet exist; they must therefore use heuristics and exercise idiosyncratic judgement.
2. Economics entails the analysis of equilibrium. But the essence of entrepreneurship is that entrepreneurs recognise disequilibrium opportunities and exploit them, destroying the status quo in a ceaseless progression of disequilibrium states.
3. Economics assumes perfect information and competition, so in equilibrium profits are eliminated. But without a profit motive there can be no entrepreneurship; and in the real world imperfect information and imperfect competition prevail so even small entrepreneurial ventures can possess some market power.
4. Economists have chosen not to write the entrepreneur into their models. For this reason the entrepreneur is absent from economics textbooks. But the entrepreneur is central to economic growth so neoclassical growth theory is at best incomplete and at worst misleading.

I will take these criticisms point by point. The first one is based on a simple misunderstanding about optimisation in economics. For example, Bayesian methods are ideally suited to modelling situations of entrepreneurial uncertainty (Alvarez and Parker, 2009); and economists have a long tradition of assuming that agents act on the basis of subjective probabilities about the future, even if subjective probabilities differ from objective probabilities. That is, it is recognised that individual agents can and do make mistakes. Although the 'rational expectations hypothesis' does not allow agents to

make systematic errors, this is far from being the only school of thought in modern economics. Economic models are increasingly beginning to incorporate persistent over-optimism, bounded rationality and other cognitive biases into individual behaviours and choices (Minniti and Lévesque, 2008). So nowadays the criticism of hyper-rationality in economics is wide of the mark.

The second criticism seems to be based on another misunderstanding, this time about the notion of equilibrium in economics. 'Equilibrium' describes a resting point which is eventually obtained after some change occurs. Even if the economy never arrives at a predicted equilibrium, because it is disrupted by another event, it is still helpful to predict the eventual likely outcomes of a given change. As it happens, many economic models now analyse the behaviour of individuals in environments which undergo continual unpredictable change, and deal with equilibrium as a dynamic concept (captured, for example, by the notion of an 'equilibrium growth path'). A further example relates to innovation, where some economists model the dynamic processes that generate new knowledge and opportunities, rather than taking them to be exogenous as in much of the business studies entrepreneurship literature (King and Levine, 1993; Audretsch, 2003).

It is surprising to see some critics continuing to make the third point, which is now hopelessly out of date. As numerous examples in this book attest, imperfect information and imperfect competition play a central role in modern economic analysis, including applications to entrepreneurship. It is essential not to erroneously conflate 'normal' and 'supernormal' profits. The former is the return needed to keep factors of production employed in their present use. It is not competed away to zero. Economists merely claim that when markets are competitive or contestable, 'supernormal profits' (i.e. profits in excess of normal profits) will eventually be competed away. It is a mistake to claim that this precludes exploitation of temporary or even ongoing entrepreneurial opportunities. Indeed, economists would say that one manifestation of entrepreneurship is precisely entry by new firms to compete for profits with incumbents. Other manifestations and definitions of entrepreneurship are also possible, including those based on innovation, managing uncertainty and owning a business; these come well within economists' ambit too (Bianchi and Henrekson, 2005).

The first part of the fourth criticism states that economists do not write entrepreneurs into their models, firms or the broader economy. That might have been true when Baumol wrote that 'the theoretical firm is entrepreneur-less – the Prince of Denmark has been expunged from the discussion of Hamlet' (1968, p. 66); but with the development of new theories, perspectives and subject areas such as agency theory, personnel economics and game theoretic work on innovation, this is no longer the case. As this book will hopefully show, numerous economics journal articles now treat the entrepreneur as a distinctive economic actor, albeit (to use the terminology of Baumol, 1993b) usually as a 'firm-organising' rather than an 'innovating' entrepreneur. Baumol (1993b) points out that it is the innovating entrepreneur, and not the firm organiser entrepreneur, whose role is inherently difficult to describe and analyse systematically, and who is really absent from conventional economic models of the firm. As he wrote at an earlier time, 'one

hears of no…brilliant innovations, of no charisma or any of the other stuff of which entrepreneurship is made' (Baumol, 1968, p. 67). But this entrepreneur is doomed to be absent from *all* scientific theories, economic or otherwise. Criticising economics for this state of affairs is hardly fair.

The second part of the fourth criticism has greater substance, however. The terms 'entrepreneur' and 'entrepreneurship' are still missing from leading economics textbooks in microeconomics, macroeconomics and industrial organisation (Rosen, 1997; Kent and Rushing, 1999). In my opinion these are unfortunate and unnecessary omissions and this criticism is a fair one.

In short, and allowing that economists can do more to incorporate the entrepreneur into mainstream textbooks, it is time for the anti-economists to stop caricaturing economics as a subject locked in a 1970s neoclassical time-warp, where economies are characterised by perfect information, perfect foresight, perfect markets and perfect price flexibility. They should instead start to consider what economics can add to our understanding of entrepreneurship.

In essence, the economics of entrepreneurship analyses how economic incentives affect entrepreneurial behaviour, and how entrepreneurial behaviour in turn affects the broader economy.[1] This is clearly a broad definition and covers a wide variety of issues, as the various chapters of this book amply testify. Consider by way of example a manager's decision problem of whether to retain employees who develop new innovations within the firm, in order to foster 'intrapreneurship', or whether to let them quit and start up in independent entrepreneurship. In this problem, economic incentives are clearly a key issue. Of course, incentives also shape behaviour more generally. Individuals do not have to become entrepreneurs, but choose to do so when the incentives (not necessarily financial) are sufficiently favourable. Indeed, the whole idea of public policy towards entrepreneurship is premised on the notion that government interventions (through taxation, regulation, grants, etc.) affect entrepreneurs' incentives and thereby their behaviour.

One could in fact go further and argue that one cannot fully understand issues like female entrepreneurship, ethnic minority and immigrant entrepreneurship, or entrepreneurial effort without some knowledge of labour economics. Labour economics is also at the heart of participation choices and work participation decisions, as is the microeconomics of incentives. The latter in turn underpin much of the contemporary cutting-edge research on entrepreneurial finance, both debt finance and venture capital. And for their part, these issues cannot be understood without some knowledge of financial economics. Likewise, public economics informs the analysis of public policy towards entrepreneurship.

Finally, one can also point out some limitations in some non-economics approaches to entrepreneurship which the economics approach appears well placed to avoid. One is a lack of predictive theory, and *ad hoc* (or *post hoc*) hypothesis generation. For instance, it is not much of a theory which merely states that people lacking entrepreneurial intentions are less likely than others to become entrepreneurs; or that individuals who lack access to resources needed to start a business are less likely to actually start a business.

This type of obvious reasoning, which is deemed uninteresting and therefore unpublishable by mainstream economics journals, can nevertheless be found frequently in other approaches to entrepreneurship. Nor does the economics approach to entrepreneurship content itself with merely listing descriptive and anecdotal evidence which lacks conceptual or causal interpretation and which is not obviously generalisable. By applying its armoury of sophisticated theoretical and econometric methods, the economics of entrepreneurship seeks to extend the understanding of all entrepreneurship scholars, whether they are economists or not. My hope is that this book will help to convince the sceptical reader of this potential.

1.2 Coverage and structure of the book

This book builds on my previous volume (Parker, 2004) by continuing to organise and assess the current state of the branching, acquisitive and rapidly growing literature on the economics of entrepreneurship. The book is intended to serve as a comprehensive overview and guide to researchers and students of entrepreneurship in a variety of disciplines, not just in economics. I have tried to make the text more accessible by providing verbal explanations of analysis in the text, and relegating technical details wherever possible to chapter appendices. This way, the non-mathematically inclined reader can skip the maths altogether without missing any of the major points and insights.

For brevity and focus, some topics will be mentioned only in passing and will not be explored in depth. These include academic entrepreneurship (see Rothaermel *et al.*, 2007, for a review); family firms (see Anderson and Reeb, 2003); and entrepreneurship education (see Lee and Wong, 2006). Some alternative approaches will also receive only fleeting attention, including organisational, strategic and managerial decision-making by entrepreneurs; 'organisational ecology' and 'evolutionary economics' approaches to entrepreneurship; and practical advice ('how to' information) to entrepreneurs. Nor will I provide descriptive case studies of individual entrepreneurs, small firms or the industries in which they operate. These topics are ably covered in numerous business studies texts, and will not be repeated here.

The book is organised in four parts. The first part deals with selection into entrepreneurship, analysing which people become entrepreneurs and why. Chapter 2 discusses prominent theories in the economics of entrepreneurship, while chapter 3 describes some useful econometric techniques commonly employed in applied research. Chapter 4 provides evidence derived from testing theoretical constructs articulated in chapter 2, using the methods outlined in chapter 3. This evidence base explains what drives some people to engage in entrepreneurship. Chapters 5 and 6 then focus on entrepreneurial selection for some particular groups of interest: ethnic minorities, immigrants and women.

The second part of the book analyses the financing of entrepreneurial ventures. There are two major chapters here. Chapter 7 deals with debt (bank) finance, while chapter 8 treats venture capital and other 'informal' sources of finance. The third part

of the book then considers several aspects of entrepreneurial inputs and performance, from the standpoint of individual entrepreneurs and the broader economy. Chapter 9 explores one important aspect of performance, namely wealth accumulation. Chapters 10 and 11 examine several more: job creation, innovation, venture growth and the relationship between entrepreneurship and aggregate economic growth. Chapter 12 analyses the essential venture input of entrepreneurial effort. Chapter 13 discusses entrepreneurial incomes and the returns to human capital, while chapter 14 considers a different performance outcome, namely venture survival.

The final part of the book deals with public policy. There are three chapters here. Chapter 15 sets out some principles of entrepreneurship policy. Chapter 16 analyses finance and innovation policies towards entrepreneurship, while chapter 17 concludes the book with a discussion of taxation, labour and product market policies towards entrepreneurship; regulation as it impacts on entrepreneurs; and other important macro issues including the role of the welfare state, trade unions, the role of 'enterprise culture' and macroeconomic instability.

1.3 Defining and measuring entrepreneurship

The first and most pressing task is to define entrepreneurs and entrepreneurship. It should be said immediately that there is no general agreement about the meaning of these terms. Some researchers identify entrepreneurs with residual claimants such as small business owners or the self-employed; others restrict their definition of entrepreneurs to business owners who employ other workers. Others again take a Schumpeterian standpoint and argue that entrepreneurship entails the introduction of new paradigm-shifting innovations rather than a particular occupation. A popular definition of an entrepreneur in business studies is someone who 'perceives an opportunity, and creates an organisation to pursue it' (Bygrave and Hofer, 1991, p. 14). This definition implies that new venture creation is the essence of entrepreneurship.

Part of the divide between the economics and business studies approaches to entrepreneurship is attributable to the different definitions of entrepreneurship they utilise. Economists are often content to utilise business owners (in industrial organisation and macroeconomics), the self-employed (in labour and microeconomics) and small firms (in industrial organisation) as working definitions. These definitions all rely implicitly on residual-claimant and risk-taking aspects of entrepreneurship, and facilitate the analysis of incentives, investments, resource allocation decisions and occupational choices. In contrast, many business studies researchers feel there is nothing entrepreneurial about merely being an owner-manager of a small business. They usually prefer to study behaviours entailed by starting a new business, and speculate about cognitive and perceptual constructs entailed with it. Economists tend to eschew this approach as overly subjective, insisting instead on inferring motives only from actual observed behaviour. This is the so-called 'revealed preference' principle.

In empirical work, researchers of all persuasions either have to gather their own data or are obliged to use whatever measure of entrepreneurship comes to hand. The present section presents three of the most commonly used empirical measures, and discusses their advantages and drawbacks. These are new venture creation, small firms and self-employment/business ownership. The final subsection concludes with a brief appraisal.

1.3.1 New venture creation and nascent entrepreneurs

Equating entrepreneurship with opportunity recognition and new venture creation is now standard practice in the business studies approach to entrepreneurship (Shane and Venkataraman, 2000). It is operationalised empirically in the ongoing Global Entrepreneurship Monitor (GEM) data collection exercise (Reynolds *et al.*, 2005). GEM defines as an 'entrepreneur' an adult who is engaged in setting up or operating a new venture which is less than forty-two months old. The index of 'Total Entrepreneurial Activity' (TEA) is the proportion of the population who are entrepreneurs according to this definition. For example, the 2005 GEM reports that the TEAs of most industrialised countries lie in the 5–10 per cent range. An advantage of GEM data is that definitions and measurement constructs are largely comparable across countries. Thirty-one countries participated in GEM in 2003, involving interviews of some 100,000 adults. GEM also compiles some individual-level data.

However, the new venture creation conception of entrepreneurship suffers from several drawbacks. First, many new ventures are mundane, hobby businesses which generate little private or social value. These are included in TEA, despite being far from 'entrepreneurial' in a Schumpeterian sense. Second, by excluding businesses over forty-two months old, GEM implicitly categorises even dynamic and enterprising business owners as 'non-entrepreneurial'. This hardly chimes with popular views about entrepreneurs. Third, focusing only on new ventures excludes growth and exit as part of the entrepreneurship phenomenon, even though many people regard growth and strategic closure (e.g. 'harvesting') as essential aspects of entrepreneurship.[2]

GEM also suffers from limited numbers of covariates and a short time-series. This has resulted in numerous cross-country studies based on as few as twenty or thirty observations. It is unclear what can be learned from such small and heterogeneous samples. Another problem is substantial year-to-year volatility in TEA as a result of excluding older firms. While annual movements of countries up and down the TEA 'league table' no doubt make good headlines, it is questionable whether this measure fully reflects the range of entrepreneurial activities. By failing to net out the numerous business exits which occur, the new venture creation and GEM approaches probably overstate sustained, wealth-creating entrepreneurship (Gartner and Shane, 1995).

A useful distinction operationalised within GEM is the difference between 'necessity' and 'opportunity' entrepreneurs. Necessity entrepreneurs are those who face no better alternative to work than entrepreneurship, while opportunity entrepreneurs are those who pursue an entrepreneurial opportunity even though attractive alternative ways of

earning a living are open to them.[3] The 2001 GEM report argued that economic growth is associated with opportunity entrepreneurship while social welfare programmes affect necessity entrepreneurship (Reynolds *et al.*, 2002). A different part of the GEM data collection effort specifically measures 'nascent entrepreneurs'. Someone is classified as a 'nascent entrepreneur' (NE) if they answer 'yes' to each of the following questions: (i) 'Are you, alone or with others, now trying to start a new business?', (ii) 'Do you expect to be owner or part owner of the new firm?', (iii) 'Have you been active in trying to start the new firm in the past twelve months?', and (iv) 'Has your start-up not yet generated a positive monthly cash flow that covers expenses and the owner-manager's salary for more than three months?'. In addition, respondents must still be in the start-up or gestation phase of an independent firm (Gartner *et al.*, 2004).

There are two advantages of studying NEs when exploring the entry process. These are the avoidance of 'survival' and 'hindsight' biases. Survival bias arises because only about one-half of all aspiring business founders ultimately succeed in creating new organisations which eventually appear in public records (Aldrich, 1999). Firms which ultimately start up are not generally representative of all those which originally tried, and contain relatively few of the smallest and youngest start-up efforts. So inferring aspects of NEs from data sets of established firms is akin to 'studying gamblers by exclusively investigating winners' (Davidsson, 2006, p. 3).

'Hindsight bias' occurs when established entrepreneurs misreport events which occurred prior to start-up, perhaps because of memory loss or selective re-interpretation of the past. Comparing expectations with outcomes, Cassar (2007) showed that NEs are prone to substantial recall bias. This problem is avoided by interviewing NEs at the time they start up.

Two major types of data set focus explicitly on NEs. Both types screen large random samples of households or individuals and use the definition of NE given above. GEM is one; the other is the Panel Study of Entrepreneurial Dynamics (PSED) (Reynolds *et al.*, 2004; Gartner *et al.*, 2004). The PSED originated in the USA, but versions are now available in many other countries too, as well as a new version (PSED II) in the USA. The original US PSED I identified NEs from 64,622 random telephone interviews conducted between July 1998 and January 2000. PSED II identifies NEs from 31,845 random telephone interviews conducted between October 2005 and January 2006.

Both GEM and PSED have advantages and drawbacks with respect to measuring nascent entrepreneurship. GEM data on dependent and independent variables are comparable across countries while the various versions of PSED are not. On the other hand, unlike PSED, GEM lacks rich information about individual-level variables. This together with its limited sophistication of measurement makes GEM less useful than PSED for micro-level analysis (Davidsson, 2006). Arguably, both data sets are vulnerable to the charge that despite their emphasis on individual-level factors, their conceptualisations of NE and measurement instruments refer to the venture rather than the person. As many as one-fifth of NEs are starting a new venture for the second, third or *n*th time (Alsos and Kolvereid, 1998). Another problem is that both data sets probably underestimate entrepreneurial activities by failing to register 'spontaneous' starts.

Table 1.1. International rates of nascent entrepreneurship

Venezuela	0.192	Finland	0.041
Chile	0.109	Germany	0.035
New Zealand	0.093	UK	0.034
USA	0.081	Singapore	0.030
Australia	0.066	South Africa	0.027
Brazil	0.065	Italy	0.020
Ireland	0.051	Netherlands	0.017
Canada	0.051	Hong Kong	0.017
Spain	0.044	Japan	0.014
China	0.043	France	0.009

Source: GEM 2003. Nascent entrepreneurship rates by country, extracted from Wagner (2006b, Table 2.1).

Thus, building on earlier longitudinal data analysis by Katz (1990), Henley (2007) finds that the majority of actual transitions observed in Britain are *not* preceded by declarations of NE status to survey interviewers a year earlier. This might mean that the majority of start-ups are 'hastily conceived', having less than a year of preparation. Lack of preparation might in turn explain the high closure rates of many new ventures (see chapters 4 and 14).

Let us now turn to evidence about the prevalence of nascent entrepreneurship. According to PSED I data cited by Reynolds *et al.* (2004), 6.2 per cent of American adults are NEs, corresponding to over 10 million people and 5.6 million new firms. Wagner (2006b, Table 2.1) provides NE rates for all thirty-one countries participating in the 2003 GEM; an abstract of these data appears in Table 1.1. Note the higher estimate of US nascent entrepreneurship in this table compared with the PSED I.

A robust finding both for the USA and many other countries is that men are about twice as likely to be an NE as women.[4] But there seem to be few gender differences in venture organisation structures and performance outcomes once NEs are actually engaged in the process (Davidsson, 2006). Another important feature of nascent entrepreneurship is team starts, which involve just over one-half of American NEs. Seventy-four per cent of NE teams comprise two members, followed by 17, 7 and 5 per cent for three, four and five or more members, respectively (Aldrich *et al.*, 2004). Most team members are spouses, with non-spouse teams mainly comprised of people who are similar to each other ('homophilious') in terms of ethnicity, gender and occupational background (Ruef *et al.*, 2003). 'Homophily' is most pronounced along ethnic and occupational lines, and is even stronger in large teams. Among non-spousal teams, homophily also has a strong gender aspect. Ruef *et al.* (2003) conjectured that homophily is valued because it embodies familiarity and makes trust easier to establish. This issue is explored further in chapter 4.

Despite the relatively recent emergence of this topic, there is already a vast business studies literature devoted to nascent entrepreneurship. Davidsson (2006) reviews some

of this literature; another useful review, with more of an economics emphasis, is Wagner (2006b).[5] Evidence about the characteristics of NEs and their venture development paths are discussed further in chapter 4.

1.3.2 Small firms

A more 'traditional' measure of entrepreneurship, which pre-dates the 1980s, is the number (or share) of small and medium sized firms (SMEs) in the economy. This definition has the advantage of being easily measurable, since most national statistics agencies tabulate data on economic outcomes by firm size ranges.

Nowadays, few researchers or practitioners believe that SMEs are congruent with entrepreneurship. Firm size definitions are arbitrary and industry-specific, and do not obviously represent notions of entrepreneurship. Not all entrepreneurs run small firms, and not every small firm is run by an entrepreneur (Brock and Evans, 1986; Holtz-Eakin, 2000). The number of SMEs also includes part-time and 'hobby' businesses that are not truly entrepreneurial in the sense of being innovative, growth- or profit-driven (Carland *et al.*, 1984). And it can be objected that small business is about firms, whereas entrepreneurship is about the individual, in particular individuals exploiting new opportunities.[6]

1.3.3 Self-employment/business ownership

The rationale for using self-employment or business ownership as a measure of entrepreneurship is that entrepreneurship is a risk-taking activity. Since *all* entrepreneurs do not have an employer and own their own business, these measures possess the merit of inclusivity.

A problem with them though, as we shall see, is that they can include individuals who are unlikely to be entrepreneurs by other criteria. Self-employment also fails to capture many nascent entrepreneurs. According to GEM data, about 80 per cent of nascent entrepreneurs either have a current job or are managing another business while they work on developing their new business. Hence they are not measured in household surveys (the primary source of self-employment data) as self-employed. And while (as we have seen) just over one-half of all new business creation efforts by nascent entrepreneurs are performed by teams, the conception of self-employment is always at the level of a single individual.

Self-employment and business ownership classifications overlap but are not identical. For example, some employees own businesses or shares of businesses 'on the side', while other 'casual' self-employees do not own a business in any concrete sense. However, for expositional ease, I will talk mainly about self-employment hereafter: the reader should recognise that similar arguments generally apply to business owners too.

A practical advantage of using self-employment as a measure of entrepreneurship is that it is widely implemented – both at the individual level within household surveys and at the national level, via the OECD *Labour Force Statistics* database, allowing