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**The Economics of  
Entrepreneurship:  
What We Know and  
What We Don't**

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# The Economics of Entrepreneurship: What We Know and What We Don't

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## Contents

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<b>Section 1</b>	<b>Introduction</b>	<b>1</b>
<b>Section 2</b>	<b>The kinds of questions asked in the Economics of Entrepreneurship</b>	<b>5</b>
<b>Section 3</b>	<b>Canonical models in the Economics of Entrepreneurship</b>	<b>7</b>
3.1	Canonical theoretical models	7
3.1.1	Occupational choice under uncertainty	7
3.1.2	Credit rationing, efficient investment, entrepreneurship and public policy	10
3.1.3	Innovation, entry, exit and the evolution of industry	12
3.2	Canonical empirical models	13
3.2.1	Discrete choice models	14
3.2.2	Sample selection (Heckman) models	16
3.2.3	Hazard models	17
3.2.4	Cointegration estimators for time series entrepreneurship data	17
3.2.5	Decomposition techniques	18

vi *Contents*

3.2.6 Earnings functions, IV estimation, and quantile regression	19
3.3 Recent theoretical and methodological contributions	20
3.3.1 Social entrepreneurship	20
3.3.2 Venture capital, entrepreneurship and public policy	21
3.3.3 Human capital and entrepreneurship	22
3.3.4 Entrepreneurial learning	23
3.3.5 Location and new venture creation	24
<b>Section 4 What we “know”</b>	<b>27</b>
4.1 How many jobs do entrepreneurs create?	27
4.2 Are small entrepreneurial firms more innovative than large corporations?	28
4.3 Do tax cuts stimulate entrepreneurship?	29
4.4 Why are blacks and females less likely to be entrepreneurs in Britain and America?	30
4.5 Do banks ration credit to new enterprises, and do capital constraints significantly impede entry into entrepreneurship?	32
4.6 How successful are loan guarantee schemes in providing credit to new enterprises?	33
4.7 Which entrepreneurial ventures are most likely to survive and grow?	34
4.8 Why do entrepreneurs work so hard for so little pay?	35
4.9 Does entrepreneurship cause economic growth?	36
4.10 Should governments encourage or discourage entrepreneurship?	37
<b>Section 5 Topics for further research: What we don’t know</b>	<b>41</b>
<b>References</b>	<b>47</b>

# 1

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## Introduction

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Entrepreneurship is a multidisciplinary field of scholarly enquiry. There is broad agreement among those who research entrepreneurship that no single subject discipline has a monopoly of wisdom about what entrepreneurship is, or how entrepreneurs behave.

The present text is not intended to challenge this aspect of the “received wisdom”. Instead, it presents a “shop window” of what one can achieve if one uses economics to study entrepreneurship. My aim is to provide an overview of both the foundations of the Economics of Entrepreneurship – the theoretical underpinnings and empirical regularities uncovered by previous research – and possible future trends in this branch of research, by proposing fruitful topics of enquiry that extend the boundaries of what we currently know.

A lament that is sometimes heard within business and management schools is that the field of entrepreneurship lacks theoretical rigour – or even, indeed, any clearly defined theories at all. However true that claim might be of some methodological perspectives, it surely cannot be levelled at the economics approach. Economics brings a large set of versatile and powerful theories and methods to the study of entrepreneurship. They are usually but not always quantitative, are often based on models of optimizing behaviour under uncertainty, and utilize

## 2 Introduction

empirical approaches founded on the econometric analysis of large and representative data samples. The present text aims to provide details of the salient theoretical and empirical approaches that have been applied to entrepreneurship. These details will be provided in a deliberately non-technical way, in order to make the text as accessible to as wide an audience as possible. References will be given to more detailed technical treatments of the issues which the interested reader can pursue if they wish.

It is hoped that this text will dispel some misperceptions about the economics approach; and may perhaps even convince non-economists that the Economics of Entrepreneurship furnishes a solid theoretical backbone to entrepreneurship research. That many non-economists still entertain myths and misconceptions about the role and potential of economics surely cannot be denied. Let me give just three instances. First, contrary to what some non-economists appear to believe, it is simply not true that neoclassical economics ceased to progress once competitive general equilibrium theory was completed in the 1960s and 1970s. Neither does modern economic theory assume the economy continually moves into equilibrium; and nor does it ignore the entrepreneur, as we will see below. Second, just because modern economic theory is rooted in optimization does not mean that those theories break down altogether if entrepreneurs do not consciously optimize. In Friedman's [68] famous example, billiards players do not calculate the angles of incidence and reflection when they prepare a stroke, yet they behave *as if* they are optimizing. And, even in cases when this argument ceases to apply, it remains the case that optimization remains a useful benchmark in entrepreneurship; while alternatives to optimization are often unpalatably *ad hoc* [24]. Third, one sometimes hears a complaint that economics is of limited use because it cannot explain aspects of human behaviour such as the psychology of an entrepreneur or the origins of trust that underpins social relations. I would agree that economists should defer in such matters to experts in psychology and sociology. But using incomplete applicability as a metric to judge a discipline seems unfair. The same "limitation" obviously applies to all subjects; and surely only an aggressive economic imperialist would assert the contrary [96].

It seems fair to acknowledge that the economics approach focuses on a few aspects of entrepreneurship rather than the totality of this complex phenomenon [27]. Nevertheless, as I hope this text will demonstrate, the approach can still make a valuable contribution. Rather than content itself with nebulous assertions about the inherent unpredictability and complexity of entrepreneurship, economics develops testable hypotheses based on sound micro-foundations. The present text will also emphasize theories that are testable, either directly or at least in principle. For this reason, it will not cover entrepreneurial theories of the firm which, while interesting, seem to elude ready empirical characterization [45]. Nor will I start the text by offering a definition of entrepreneurship. Instead, I will let this text reveal what economists understand this phenomenon to involve. It will turn out to be broader than merely venture creation or opportunity recognition and exploitation, though as we will see it encompasses aspects of these.

The text is structured in the following way. Section 2 discusses what economics can bring to the study of entrepreneurship, in terms of the kinds of practical questions it can answer. Section 3 outlines several “canonical” models in the Economics of Entrepreneurship that I believe all researchers who adopt this approach should be aware of. That section contains a summary of the principal theoretical economic models of entrepreneurship, an overview of the essential techniques underpinning empirical work, and a discussion of some recent theoretical and methodological developments. Some of the latter might evolve into “canonical models of tomorrow”. Section 4 then summarizes some well-established empirical findings that have been generated by the Economics of Entrepreneurship. This comprises the empirical “What we know” part of the text. Section 5 concludes by discussing “What we don’t know”, by way of motivating future research.



## References

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- [1] Z. J. Acs and C. Armington, "The impact of geographic differences in human capital on service firm formation rates," *Journal of Urban Economics*, vol. 56, pp. 244–78, 2004.
- [2] Z. J. Acs and D. B. Audretsch, "Innovation in large and small firms: An empirical analysis," *American Economic Review*, vol. 78, pp. 678–90, 1988.
- [3] Z. J. Acs and D. B. Audretsch, *Innovation and Small Firms*, MIT Press, Cambridge, MA, 1990.
- [4] Z. J. Acs and D. B. Audretsch, *Small Firms and Entrepreneurship: An East-West Perspective*, Cambridge University Press, Cambridge, 1993.
- [5] Z. J. Acs and D. B. Audretsch, "Innovation and technological change," In: *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*, Acs, Z. J. and Audretsch, D. B., Kluwer, Boston, pp. 55–79, 2003.
- [6] Z. J. Acs, D. B. Audretsch, P. Braunerhjelm, and B. Carlsson, "The missing link: The knowledge filter and entrepreneurship in endogenous growth," *CEPR Discussion Paper No. 4783*, 2004, [www.cepr.org/pubs/dps/DP4783.asp](http://www.cepr.org/pubs/dps/DP4783.asp).
- [7] P. Aghion and P. Howitt, "A model of growth through creative destruction," *Econometrica*, vol. 60, pp. 323–51, 1992.
- [8] P. Aghion and P. Howitt, "A Schumpeterian perspective on growth and competition," In: *Advances in Economics and Econometrics: Theory & Applications*, Kreps, D. M. and Wallis, K. F., Cambridge University Press, Cambridge, vol. 2, pp. 279–319, 1997.
- [9] O. Ajayi-obe and S. C. Parker, "The changing nature of work among the self-employed in the 1990s: Evidence from Britain," *Journal of Labor Research*, forthcoming, 2005.

48 *References*

- [10] M. Almus, "Job creation through public start-up assistance?," *Applied Economics*, vol. 36, pp. 2015–24, 2004.
- [11] G. Arabsheibani, D. de Meza, J. Maloney, and B. Pearson, "And a vision appeared unto them of a great profit: Evidence of self-deception among the self-employed," *Economics Letters*, vol. 67, pp. 35–41, 2000.
- [12] R. L. Aronson, *Self-employment: A Labour Market Perspective*, ILR Press, Ithaca, NY, 1991.
- [13] T. Åstebro, "The return to independent invention: evidence of risk-seeking, extreme optimism or skewness loving?," *Economic Journal*, vol. 113, pp. 226–39, 2003.
- [14] D. B. Audretsch and M. P. Feldman, "R&D spillovers and the geography of innovation and production," *American Economic Review*, vol. 86, pp. 630–40, 1996.
- [15] D. B. Audretsch and M. Fritsch, "Growth regimes over time and space," *Regional Studies*, vol. 36, pp. 113–24, 2002.
- [16] D. B. Audretsch and E. Lehmann, "Location and new venture creation," In: *Handbook of Entrepreneurship Research*, Parker, S. C., vol. III, Kluwer, forthcoming, 2006.
- [17] D. B. Audretsch and T. Mahmood, "New firm survival: New results using a hazard function," *Review of Economics & Statistics*, vol. 77, pp. 97–103, 1995.
- [18] D. B. Audretsch and R. Thurik, "Linking entrepreneurship to growth," *OECD STI Working Paper 2081/2*, 2001.
- [19] A. V. Banerjee and A. F. Newman, "Occupational choice and the process of development," *Journal of Political Economy*, vol. 101, pp. 274–98, 1993.
- [20] A. Basu and S. C. Parker, "Family finance and new business start-ups," *Oxford Bulletin of Economics & Statistics*, vol. 63, pp. 333–58, 2001.
- [21] T. Bates, "Entrepreneur human capital inputs and small business longevity," *Review of Economics & Statistics*, vol. 72, pp. 551–59, 1990.
- [22] T. Bates, *Race, Self-employment and Upward Mobility: An Illusive American Dream*, John Hopkins University Press, Baltimore, 1997.
- [23] W. J. Baumol, "Entrepreneurship: productive, unproductive and destructive," *Journal of Political Economy*, vol. 98, pp. 893–921, 1990.
- [24] W. J. Baumol, "Formal entrepreneurship theory in economics: Existence and bounds," *Journal of Business Venturing*, vol. 8, pp. 197–210, 1993.
- [25] A. N. Berger and G. F. Udell, "Some evidence on the empirical significance of credit rationing," *Journal of Political Economy*, vol. 100, pp. 1047–77, 1992.
- [26] D. Bernhardt, "Credit rationing?," *American Economic Review*, vol. 90, pp. 235–39, 2000.
- [27] M. Bianchi and M. Henrekson, "Is neoclassical economics still entrepreneurless?," *SSE/EFI Working Paper No. 584, Stockholm School of Economics*, 2005.
- [28] D. L. Birch, "MIT Programme on Neighbourhood and Regional Change," *The Job Generation Process*, , Cambridge, MA, 1979.
- [29] S. E. Black and P. E. Strahan, "Business formation and the deregulation of the banking industry," In: *Public Policy and the Economics of Entrepreneurship*, Holtz-Eakin, D. and Rosen, H. S., MIT Press, Cambridge, MA, 2004.
- [30] D. G. Blanchflower and A. Oswald, "What makes an entrepreneur?," *Journal of Labor Economics*, vol. 16, pp. 26–60, 1998.

- [31] D. G. Blanchflower, P. B. Levine, and D. J. Zimmerman, "Discrimination in the small-business credit market," *Review of Economics & Statistics*, vol. 85, pp. 930–43, 2003.
- [32] G. J. Borjas, "The self-employment experience of immigrants," *Journal of Human Resources*, vol. 21, pp. 485–506, 1986.
- [33] G. J. Borjas and S. G. Bronars, "Consumer discrimination and self-employment," *Journal of Political Economy*, vol. 97, pp. 581–605, 1989.
- [34] V. K. Borooah and M. Hart, "Factors affecting self-employment among Indian and black Caribbean men in Britain," *Small Business Economics*, vol. 13, pp. 111–29, 1999.
- [35] N. Bosma, M. Van Praag, R. Thurik, and G. de Wit, "The value of human and social capital investments for the business performance of startups," *Small Business Economics*, vol. 23, pp. 227–36, 2004.
- [36] B. P. Bosworth, A. S. Carron, and E. Rhyne, *The Economics of Government Credit*, Brookings Institution, Washington DC, 1987.
- [37] W. A. Brock and D. S. Evans, *The Economics of Small Businesses: Their Role and Regulation in the US Economy*, Holmes and Meier, New York, 1986.
- [38] D. Bruce, "Do husbands matter? Married women entering self-employment," *Small Business Economics*, vol. 13, pp. 317–29, 1999.
- [39] D. Bruce and M. Mohsin, "Tax policy and entrepreneurship: new time series evidence," *Mimeo, University of Tennessee*, 2003.
- [40] R. K. Caputo and A. Dolinsky, "Women's choice to pursue self-employment: The role of financial and human capital of household members," *Journal of Small Business Management*, vol. 36, pp. 8–17, 1998.
- [41] R. Carrasco, "Transitions to and from self-employment in Spain: An empirical analysis," *Oxford Bulletin of Economics & Statistics*, vol. 61, pp. 315–41, 1999.
- [42] R. Carroll, D. Holtz-Eakin, M. Rider, and H. S. Rosen, "Income taxes and entrepreneurs' use of labour," *Journal of Labor Economics*, vol. 18, pp. 324–51, 2000.
- [43] R. Carroll, D. Holtz-Eakin, M. Rider, and H. S. Rosen, "Entrepreneurs, income taxes and investment," In: *Does Atlas Shrug? The Economic Consequences of Taxing the Rich*, Slemrod, J. B., Russell Sage, New York, pp. 427–55, 2000.
- [44] R. Carroll, D. Holtz-Eakin, M. Rider, and H. S. Rosen, "Personal income taxes and the growth of small firms," In: *Tax Policy and the Economy*, Slemrod, J., vol. 15, MIT Press, Cambridge, MA, pp. 121–47, 2001.
- [45] M. Casson, *The Entrepreneur: An Economic Theory*, 2nd Edition, Edward Elgar, Cheltenham, 2003.
- [46] K. Clark and S. Drinkwater, "Ethnicity and self-employment in Britain," *Oxford Bulletin of Economics & Statistics*, vol. 60, pp. 383–407, 1998.
- [47] M. P. Coelho, "Unrealistic optimism, entrepreneurship and adverse selection," *Unpublished PhD Dissertation, London School of Economics*, 2004.
- [48] M. P. Coelho, D. de Meza, and D. Reyniers, "Irrational exuberance, entrepreneurial finance and public policy," *International Tax and Public Finance*, vol. 11, pp. 391–417, 2004.
- [49] A. C. Cooper, F. J. Gimeno-Gascon, and C. Y. Woo, "Initial human and financial capital as predictors of new venture performance," *Journal of Business Venturing*, vol. 9, pp. 371–95, 1994.

50 *References*

- [50] A. D. Cosh, A. Hughes, and E. Wood, "Innovation in UK SMEs: causes and consequences for firm failure and acquisition," In: *Entrepreneurship, Small and Medium Sized Enterprises and the Macro Economy*, Acs, Z. and Carlsson, B., Cambridge University Press, Cambridge, 1999.
- [51] M. Cowling and P. Mithcell, "The evolution of UK self-employment: A study of government policy and the role of the macroeconomy," *Manchester School*, vol. 65, pp. 427–42, 1997.
- [52] R. C. Cressy, "Are business start-ups debt-rationed?," *Economic Journal*, vol. 106, pp. 1253–70, 1996.
- [53] R. C. Cressy, "Credit rationing or entrepreneurial risk aversion? An alternative explanation for the Evans and Jovanovic finding," *Economics Letters*, vol. 66, pp. 235–40, 2000.
- [54] P. Davidsson, L. Lindmark, and C. Olofsson, "The extent of over-estimation of small firm job creation – An empirical examination of the regression bias," *Small Business Economics*, vol. 11, pp. 87–100, 1998.
- [55] S. J. Davis, J. C. Haltiwanger, and S. Schuh, *Job Creation and Destruction*, MIT Press, Cambridge, MA, 1996.
- [56] D. de Meza, "Overlending?," *Economic Journal*, vol. 112, pp. F17–F31, 2002.
- [57] D. de Meza and D. C. Webb, "Too much investment: A problem of asymmetric information," *Quarterly Journal of Economics*, vol. 102, pp. 281–92, 1987.
- [58] D. de Meza and D. C. Webb, "Wealth, enterprise and credit policy," *Economic Journal*, vol. 109, pp. 153–63, 1999.
- [59] T. J. Devine, "Characteristics of self-employed women in the United States," *Monthly Labor Review*, vol. 117, pp. 20–34, 1994.
- [60] P. J. Dolton and G. H. Makepeace, "Self-employment among graduates," *Bulletin of Economic Research*, vol. 42, pp. 35–53, 1990.
- [61] J. S. Earle and Z. Sakova, "Business start-ups or disguised unemployment? Evidence on the character of self-employment from transition economies," *Labor Economics*, vol. 7, pp. 575–601, 2000.
- [62] L. N. Edwards and E. Field-Hendrey, "Home-based work and women's labour force decisions," *Journal of Labor Economics*, vol. 20, pp. 170–200, 2002.
- [63] D. S. Evans and B. Jovanovic, "An estimated model of entrepreneurial choice under liquidity constraints," *Journal of Political Economy*, vol. 97, pp. 808–27, 1989.
- [64] D. S. Evans and L. S. Leighton, "Some empirical aspects of entrepreneurship," *American Economic Review*, vol. 79, pp. 519–35, 1989.
- [65] R. W. Fairlie, "The absence of the African-American owned business: An analysis of the dynamics of self-employment," *Journal of Labor Economics*, vol. 17, pp. 80–108, 1999.
- [66] R. W. Fairlie and B. D. Meyer, "Trends in self-employment among white and black men during the twentieth century," *Journal of Human Resources*, vol. 35, pp. 643–69, 2000.
- [67] P. Francois, "Not-for-profit provision of public services," *Economic Journal*, vol. 113, pp. C53–C61, 2003.
- [68] M. Friedman, *Essays in Positive Economics*, University of Chicago Press, Chicago, 1953.

- [69] P. A. Geroski and R. Pomroy, "Innovation and the evolution of market structure," *Journal of Economics*, vol. 38, pp. 299–314, 1990.
- [70] E. L. Glaeser and A. Shleifer, "Not-for-profit entrepreneurs," *Journal of Public Economics*, vol. 81, pp. 99–115, 2001.
- [71] W. H. Greene, *Econometric Analysis*, Fifth Edition, Prentice-Hall, New Jersey, 2003.
- [72] G. M. Grossman, "International trade, foreign investment, and the formation of the entrepreneurial class," *American Economic Review*, vol. 74, pp. 605–14, 1984.
- [73] B. H. Hall, "The relationship between firm size and firm growth in the US manufacturing sector," *Journal of Industrial Economics*, vol. 35, pp. 583–606, 1987.
- [74] B. H. Hall, A. N. Link, and J. T. Scott, "Universities as research partners," *Review of Economics & Statistics*, vol. 85, pp. 485–91, 2003.
- [75] D. S. Hamermesh, *Labor Demand*, Princeton University Press, Princeton, 1993.
- [76] B. H. Hamilton, "Does entrepreneurship pay? An empirical analysis of the returns to self-employment," *Journal of Political Economy*, vol. 108, pp. 604–31, 2000.
- [77] P. E. Hart and N. Oulton, "Growth and size of firms," *Economic Journal*, vol. 106, pp. 1242–52, 1996.
- [78] J. J. Heckman, "Sample selection bias as a specification error," *Econometrica*, vol. 47, pp. 475–92, 1979.
- [79] J. J. Heckman, R. J. LaLonde, and J. A. Smith, "The economics and econometrics of active labour market programs," In: *Handbook of Labor Economics*, Ashenfelter, O. and Card, D., Elsevier, Amsterdam, pp. 1865–2097, 1999.
- [80] A. Henley, "Self-employment status: the role of state dependence and initial circumstances," *Small Business Economics*, vol. 22, pp. 67–82, 2004.
- [81] T. J. Holmes and J. A. Schmitz, "A theory of entrepreneurship and its application to the study of business transfers," *Journal of Political Economy*, vol. 98, pp. 265–94, 1990.
- [82] D. Holtz-Eakin, D. Joulfaian, and H. S. Rosen, "Sticking it out: entrepreneurial survival and liquidity constraints," *Journal of Political Economy*, vol. 102, pp. 53–75, 1994.
- [83] M. Hout and H. S. Rosen, "Self-employment, family background, and race," *Journal of Human Resources*, vol. 35, pp. 670–92, 2000.
- [84] G. Hundley, "Why women earn less than men in self-employment," *Journal of Labor Research*, vol. 22, pp. 817–29, 2001.
- [85] E. Hurst and A. Lusardi, "Liquidity constraints, household wealth, and entrepreneurship," *Journal of Political Economy*, vol. 112, pp. 319–47, 2004.
- [86] M. F. Iyigun and A. L. Owen, "Entrepreneurs, professionals and growth," *Journal of Economic Growth*, vol. 4, pp. 213–32, 1999.
- [87] A. B. Jaffe, "Real effects of academic research," *American Economic Review*, vol. 79, pp. 957–70, 1989.
- [88] A. B. Jaffe, M. Trajtenberg, and R. Henderson, "Geographic localisation of knowledge spillovers as evidenced by patent citations," *Quarterly Journal of Economics*, vol. 63, pp. 577–98, 1993.

52 *References*

- [89] B. Jovanovic, "Selection and the evolution of industry," *Econometrica*, vol. 50, pp. 649–70, 1982.
- [90] C. Keuschnigg and S. B. Nielsen, "Public policy, start-up entrepreneurship, and the market for venture," In: *Handbook of Entrepreneurship Research*, Parker, S. C., vol. III, Kluwer, forthcoming, 2006.
- [91] R. E. Killstrom and J. J. Laffont, "A general equilibrium entrepreneurial theory of firm formation based on risk aversion," *Journal of Political Economy*, vol. 87, pp. 719–49, 1979.
- [92] S. Klepper, "Entry, exit, growth and innovation over the product life cycle," *American Economic Review*, vol. 86, pp. 562–83, 1996.
- [93] F. H. Knight, *Risk, Uncertainty and Profit*, Houghton-Mifflin, New York, 1921.
- [94] KPMG, *An Evaluation of the Small Firms Loan Guarantee Scheme*, HMSO, DTI, London, 1999.
- [95] P. Krugman, *Geography and Trade*, MIT Press, Cambridge, MA, 1991.
- [96] E. P. Lazear, "Economic imperialism," *Quarterly Journal of Economics*, vol. 115, pp. 99–146, 2000.
- [97] E. P. Lazear, "Entrepreneurship," *NBER Working Paper No. 9109*, Cambridge, MA, 2002.
- [98] E. P. Lazear, "Balanced skills and entrepreneurship," *American Economic Review, Papers & Proceedings*, vol. 94, pp. 208–11, 2004.
- [99] A. R. Levenson and K. L. Willard, "Do firms get the financing they want? Measuring credit rationing experienced by small businesses in the US," *Small Business Economics*, vol. 14, pp. 83–94, 2000.
- [100] T. Lindh and H. Ohlsson, "Self-employment and windfall gains: Evidence from the Swedish lottery," *Economic Journal*, vol. 106, pp. 1515–26, 1996.
- [101] R. E. Lucas, "On the size distribution of business firms," *Bell Journal of Economics*, vol. 9, pp. 508–23, 1978.
- [102] D. A. Macpherson, "Self-employment and married women," *Economic Letters*, vol. 28, pp. 281–84, 1988.
- [103] T. Mahmood, "Survival of newly founded businesses: A log-logistic model approach," *Small Business Economics*, vol. 14, pp. 223–37, 2000.
- [104] J. Mata and P. Portural, "Life duration of new firms," *Journal of Industrial Economics*, vol. 42, pp. 227–45, 1994.
- [105] C. Michelacchi, "Low returns in R&D due to the lack of entrepreneurial skills," *Economic Journal*, vol. 113, pp. 207–25, 2003.
- [106] T. J. Moskowitz and A. Vissing-Jorgensen, "The returns to entrepreneurial investment: A private equity premium puzzle?," *American Economic Review*, vol. 92, pp. 745–48, 2002.
- [107] K. M. Murphy, A. Shleifler, and R. W. Vishny, "The allocation of talent: Implications for growth," *Quarterly Journal of Economics*, vol. 106, pp. 503–30, 1991.
- [108] R. Oaxaca, "Male-female wage differentials in urban labour markets," *International Economic Review*, vol. 14, pp. 693–708, 1973.
- [109] OECD, *Fostering Entrepreneurship*, OECD, Paris, 1998.
- [110] S. C. Parker, "A time series model of self-employment under uncertainty," *Economica*, vol. 63, pp. 459–75, 1996.

- [111] S. C. Parker, "The effects of risk on self-employment," *Small Business Economics*, vol. 9, pp. 515–22, 1997.
- [112] S. C. Parker, "Do banks ration credit to new enterprises? And should governments intervene?," *Scottish Journal of Political Economy*, vol. 49, pp. 162–95, 2002.
- [113] S. C. Parker, "Does tax evasion affect occupational choice?," *Oxford Bulletin of Economics & Statistics*, vol. 65, pp. 379–94, 2003.
- [114] S. C. Parker, "Asymmetric information, occupational choice and government policy," *Economic Journal*, vol. 113, pp. 861–82, 2003.
- [115] S. C. Parker, *The Economics of Self-employment and Entrepreneurship*, Cambridge University Press, Cambridge, 2004.
- [116] S. C. Parker, "Learning about the unknown: How fast do entrepreneurs learn about their beliefs?," *Journal of Business Venturing*, forthcoming, 2005.
- [117] S. C. Parker, "Explaining regional variations in entrepreneurship as multiple equilibria," *Journal of Regional Science*, forthcoming, 2005.
- [118] S. C. Parker and Y. Belghitar, "What happens to nascent entrepreneurs? An econometric analysis of the PSED," *Paper presented to the Babson-Kaufman conference, Babson College; and USASBE, Palm Springs*, 2005.
- [119] S. C. Parker and M. T. Robson, "Explaining international variations in self-employment: Evidence from a panel of OECD countries," *Southern Economic Journal*, vol. 71, pp. 287–301, 2004.
- [120] S. C. Parker and C. M. Van Praag, "Schooling, capital constraints and entrepreneurial performance: the endogenous triangle," *Discussion Paper No. 04-106/3, Tinbergen Institute, University of Amsterdam*, <http://www.tinbergen.nl/scripts/papers.pl?paper=04106.rdf>, 2004.
- [121] S. C. Parker, Y. Belghitar, and T. Barmby, "Wage uncertainty and self-employed labour supply," *Economic Journal*, vol. 115, pp. C190–207, 2005.
- [122] P. F. Peretto, "Technological change, market rivalry, and the evolution of the capitalist engine of growth," *Journal of Economic Growth*, vol. 3, pp. 53–80, 1998.
- [123] F. Pfeiffer and F. Reize, "Business start-ups by the unemployed – An econometric analysis based on firm data," *Labor Economics*, vol. 7, pp. 629–63, 2000.
- [124] B. D. Phillips and B. A. Kirchoff, "Formation, growth and survival: Small firm dynamics in the US economy," *Small Business Economics*, vol. 1, pp. 65–74, 1989.
- [125] V. Polvoknichenko, "Human capital and the private equity premium," *Review of Economic Dynamics*, vol. 6, pp. 831–45, 1989.
- [126] H. Rees and A. Shah, "An empirical analysis of self-employment in the UK," *Journal of Applied Econometrics*, vol. 1, pp. 95–108, 1986.
- [127] G. C. Reid, "Staying in business," *International Journal of Industrial Organisation*, vol. 9, pp. 545–56, 1991.
- [128] G. C. Reid, *Small Business Enterprise: An Economic Analysis*, Routledge, London, 1993.
- [129] P. D. Reynolds, *Global Entrepreneurship Monitor Executive Report*, 2002, [www.gemconsortium.com](http://www.gemconsortium.com).

54 *References*

- [130] P. Reynolds, B. Miller, and W. R. Maki, "Explaining regional variations in business births and deaths: US 1976–1988," *Small Business Economics*, vol. 7, pp. 389–407, 1995.
- [131] M. T. Robson, "The rise in self-employment amongst UK males," *Small Business Economics*, vol. 10, pp. 199–212, 1998.
- [132] M. T. Robson, "Does stricter employment protection legislation promote self-employment?," *Small Business Economics*, vol. 21, pp. 309–319, 2003.
- [133] P. Romer, "Increasing returns and economic growth," *American Economic Review*, vol. 94, pp. 1002–37, 1986.
- [134] P. Romer, "Endogenous technical change," *Journal of Political Economy*, vol. 98, pp. 71–102, 1990.
- [135] A. Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Harvard University Press, Cambridge, MA, 1994.
- [136] F. M. Scherer, "Changing perspectives on the firm size problem," In: *Innovation and Technological Change*, Acs, Z. J. and Audretsch, D. B., University of Michigan Press, Ann Arbor, 1991.
- [137] J. A. Schumpeter, *The Theory of Economic Development*, Harvard University Press, Cambridge, MA, 1934.
- [138] P. Segerstrom, "Innovation, imitation and economic growth," *Journal of Political Economy*, vol. 99, pp. 190–207, 1991.
- [139] P. Segerstrom, T. C. Anant, and E. Dinopoulos, "A Schumpeterian model of the product life cycle," *American Economic Review*, vol. 80, pp. 1077–1091, 1990.
- [140] J.-C. Spender, "Making knowledge the basis of a dynamic theory of the firm," *Strategic Management Journal*, vol. 17, pp. 45–62, 1996.
- [141] J. Stiglitz and A. Weiss, "Credit rationing in markets with imperfect information," *American Economic Review*, vol. 71, pp. 393–410, 1981.
- [142] C. E. Steuerle and V. Hodgkinson, "Meeting social needs: Comparing the resources of the independent sector and government," In: *Nonprofits and Government*, Boris, E. and Steuerle, C. E., Urban Institute Press, Washington DC, 1999.
- [143] D. J. Storey, "Entrepreneurship, small and medium sized enterprises and public policies," In: *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*, Acs, Z. J. and Audretsch, D. B., Kluwer, Boston, pp. 473–511, 2003.
- [144] M. P. Taylor, "Earnings, independence or unemployment: Why become self-employed?," *Oxford Bulletin of Economics & Statistics*, vol. 58, pp. 253–66, 1996.
- [145] M. P. Taylor, "Survival of the fittest? An analysis of self-employment duration in Britain," *Economic Journal*, vol. 109, pp. C140–C155, 1999.
- [146] P. H. Thornton and K. H. Flynn, "Entrepreneurship, networks and geographies," In: *International Handbook of Entrepreneurship Research*, Acs, Z. J. and Audretsch, D. B., Kluwer Academic, Dordrecht, 2003.
- [147] R. Thurik, "Entrepreneurship, industrial transformation and growth," In: *The Sources of Entrepreneurial Activity*, Libecap, G. D., JAI Press, Stamford, CT, 1999.



- [148] J. Van der Sluis, C. M. Van Praag, and A. Witteloostuijn, *The returns to education: A comparative study between entrepreneurs and employees, Paper presented to the BKERC Conference, University of Strathclyde*, 2004.
- [149] M. Van Gelderen, N. Bosma, and R. Thurik, "Setting up a business in the Netherlands: Who starts, who gives up, who is still trying," *Unpublished report*, 2001, <http://ssrn.com/abstract=370874>.
- [150] C. M. Van Praag and H. van Ophem, "Determinants of willingness and opportunity to start as an entrepreneur," *Kyklos*, vol. 48, pp. 513–40, 1995.
- [151] J. Wagner, "Testing Lazear's jack-of-all-trades view of entrepreneurship with German micro data," *Applied Economics Letters*, vol. 10, pp. 687–89, 2003.
- [152] J. Wagner, "Are young and small firms hothouses for nascent entrepreneurs? Evidence from German micro data," *Working Paper No. 301, University of Lüneburg*, 2004.
- [153] C. Wren and D. J. Storey, "Evaluating the effect of "soft" business support upon small firms performance," *Oxford Economic Papers*, vol. 54, pp. 334–65, 2002.
- [154] A. M. Yuengert, "Testing hypotheses of immigrant self-employment," *Journal of Human Resources*, vol. 30, pp. 194–204, 1995.

