

Preface

When I first investigated innovation, it came out of my work on investment. I quickly found out that the cyclical and volatile nature of capital investment is due to the level of innovation embedded in investment. Without innovation, capital investment ends up only as replacement of capital stock. This has two crucial demand side effects. First, investment demand is limited by the amount of funding required merely to replace depreciated stock. Second, consumer demand is limited to adding more of the product (how many cars and toasters are you prepared to spend money on?), and replacement of the product (what is the extent of planned obsolescence that consumers are prepared to accept?). This investigation ended up as my first book: *Investment Cycles in Capitalist Economies: A Kaleckian Behavioural Contribution*.

After completing that book, I began to realize that research into innovation – whether from the disciplines of economics, management or entrepreneurship – did not view innovation from the investment perspective. For innovation to become successfully commercialized, it requires significant investment in two areas. One is well understood – that is investment in the creation of the innovation (called ‘invention’) through formal R&D and informal non-R&D (new uses of existing knowledge and ad-hoc ‘on-the-job’ changes). The other is not well understood – that is the implementation of the innovation through capital investment by private enterprise and infrastructure investment by the public sector (sometimes in partnership with private enterprise). The two together form the backbone of productivity improvements that lift sustainable living standards. The technical nature of the book’s content, related as it is to the investment perspective, involves specific terms (or ‘jargon’) across a variety of discipline areas that generally do not interact, for this reason a glossary is provided at the end of the book.

Investment in innovation is the focus of this book. Where is this investment being committed under the current era of powerful monopoly capital supported dialectically by creative entrepreneurial entities? Does this investment commitment support and further entrench the dominant technologies sustained by the current organizational and innovation systems? To what extent can this dominance be challenged in the modern capitalist world of financial, economic and ecological crises stretching across from the ‘free enterprise’ of the USA to the ‘corporatism’ of Europe and the ‘communism’ of China? Can investment in

ecological sustainability provide a new pathway out of the current crises facing the world economy? These are the questions that propel this book.

This book is the accretion of ideas developed over many years. In the process, many journal articles, book chapters, conference papers, commissioned studies, book reviews and PowerPoint presentations were prepared. In the final writing, all this 'prior art' provided the bedrock theories and analyses that are assembled in the book's stance and argumentation. Although there have been significant changes in this prior research, I need to acknowledge the major works where these ideas were initially explored in some detail:

- Chapter 1: 'In search of New Atlantis: what can HET on innovation reveal about the path out of the 2009 Great Recession?', paper presented at the 22nd Conference of the History of Economic Thought Society of Australia, University of Notre Dame, 14–17 July 2009, Fremantle.
- Chapter 2: 'The ontology of innovation: human agency in the pursuit of novelty', *History of Economics Review*, Volume 45, Winter 2007, pp.41–59.
- Chapter 3: 'Political economy of entrepreneurship and innovation with application to the Global Financial Crisis', paper presented at the 6th AGSE International Entrepreneurship Research Exchange, University of Adelaide, 3–6 February 2009, Adelaide.
- Chapter 4: 'The political economy of R&D in a global financial context', in Laperche, B. and Uzunidis, D. (eds), *Powerful Finance and Innovation Trends in a High-Risk Economy*, Basingstoke: Palgrave Macmillan, 2008, pp.88–109.
- Chapter 5: 'The dynamics of innovation and investment, with application to Australia 1984–1998', in Holt, R. and Pressman, S. (eds), *Empirical Post Keynesian Economics: Looking at the Real World*, Armonk: M. E. Sharpe, 2007, pp.141–77.
- Chapter 6: 'Political aspects of innovation', *Research Policy*, Volume 38 (7), 2009, pp.1117–24; and 'Political aspects of innovation in an ecologically unsustainable world', *The Journal of Economic Analysis*, Volume II (1), 2011, pp.1–16.
- Chapter 7: 'A post-Keynesian innovation policy for sustainable development', *International Journal of Environment, Workplace and Employment*, Volume 1 (2), 2005, pp.187–202; and 'Regional innovation for sustainable development: an Australian perspective', *Journal of Innovation Economics*, Volume 3 (1), 2009, pp.119–43.
- Chapter 8: 'Innovation for regional communities: a research framework', paper presented at the Sustainable Economic Growth for Regional Australia (SEGRA) 2003 Conference, 16 September 2003, Gold Coast.

I wish to acknowledge participants at the conferences identified above and in prior conferences that led to the publications listed above. Also, I appreciate the opportunities that the publishers of the above publications provided me in presenting earlier, less refined versions of the total story presented in this book.

In the actual writing of this book, I would like to sincerely thank the following valued colleagues who provided significant input as encouragement, advice

and feedback, and suggested clarity to the book. All that remains is mine alone. Any concerns and problems that remain are not due to their excellent input, but to my own ability to embrace this input. In alphabetical order these colleagues are: Philip Arestis, Anthony Arundel, Allan Card, Dona Cavagnoli, Pranoto Effendi, Jamie Holroyd, Ric Holt, Can Huang, Jana Jagodick, Ameeta Jain, Ainsley Jolley, René Kemp, Stefan Kesting, John King, Wesley Kozlowski, Blandine Laperche, Frank La Pira, Stuart Mackenzie, Douglas Mair, Panayotis Michaelides, Joan Muysken, Allen Oakley, Paul Oslington, Jalon Pansiri, David Primrose, Peter Sheehan, Adam (Eddy) Szirmai, Jackie Tuck, Nikos Vernardakis and Bart Verspagen. Particular thanks to Colin Richardson who read through the whole manuscript in order to provide meticulous editing advice, recommend clarifications and also correct errors of mine.

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Four centres need to be thanked for offering me Visiting Scholar status with academic space, computer and library facilities, as well as the necessary scholarly environment during the writing of this book. The four centres in order of visitation were: United Nations University – Maastricht Economic Research into Innovation and Technology (UNU-MERIT), Maastricht, the Netherlands; Research Unit on Industry and Innovation (Laboratoire de Recherche sur l'Industrie et l'Innovation – Lab.RII), Université du Littoral Côte d'Opale, Dunkerque, France; Department of Land Economy, University of Cambridge, Cambridge, United Kingdom; and Centre for Strategic Economic Studies (CSES), Victoria University, Melbourne, Australia. I provided seminars at various times to each of these centres on aspects of the book and I appreciate all the input provided by members of all the four faculties to my work.

Enormous appreciation also to Sonia Ben Slimane for inviting me as keynote speaker to the International Meeting on Innovation and Sustainable Development (EIIDE Conference) on the theme 'Sustainable development in the Mediterranean economies – stakes, actions and perspectives', 5–6 May 2011, Tunis, Tunisia. This provided me with the final platform for exposing my work in a political environment immediately after the Arab Spring that was born in this wonderful country. Visiting this country and its inspiring people (especially Nejla Yacoub, Baccouri Mouna and Hatem Hamouda) offered me the insight that there is 'room to move' in every situation. Tunisians have

shown transformational innovation of the highest order and it inspires me to see eco-innovation to sustainable development as achievable.

The book is motivated by deep appreciation of nature, which has been influenced by the generous folk who exposed me to the wonders of the natural environment. They are Warwick Evans, Don Nicholson, Peter Campbell and Robert Close. The economic and technology systems that society builds need to be in concert with the beauty of nature. This is where economics and innovation begin and end for me.

I am indebted to Jan Toporowski and Harry Bloch for providing the Foreword. Jan provides a Kaleckian perspective to my work. It is this perspective that is the focus of the book. Harry has been a mentor and provides the Schumpeterian perspective that is the revelation for change in this book. Both have kindly agreed to support this project. I value this greatly, because both have inspired me, provided constructive input into the research surrounding this book, and also add their thoughtful words at the start of this book. Thank you both for sharing this journey with me.

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