Preface

INTRODUCTION

This book shows that the gravitational forces driving economic activities towards ever-lower costs and narrower specialisations, resulting in a significant hollowing out of manufacturing industry, can be combated by advanced high-cost economies. This trajectory does not need to be accepted as a natural and inevitable course of events.

Competing in a high-cost environment is a completely different proposition to competing in a low-cost environment. This is particularly true for manufacturing industry, which is confronting both intense and growing global competition and fundamental shifts in the very nature of manufacturing itself.

The operating environment in many countries has moved, or is moving, from a relatively low or medium cost-operating environment towards a high cost-operating environment, with the continuous emergence of new competing locations. This development changes the basis for competition for many firms, industries, states, and nations from one focused on imitation and efficiency to one of innovation and effectiveness. This requires an associated move from an economic policy lens based on the mechanistic models of neo-classical theory to the more organic models of evolutionary economics and innovation theory.

To date, this journey has not been well described in the literature, and there is very little guidance for action by firms, industries, regions, or economic policymakers forced to make this journey. This collection of expert papers seeks to address this.

COMPETING ON VALUE, NOT PRICE

The contributions in this book present evidence that open, often small, high-cost economies can succeed and prosper provided they compete on value, not price. In these circumstances, strong competitive capabilities and productivity performance are equally as possible for low and medium technology industries as they are for high technology industries.

This book draws on evidence from studies and research projects in traditional high-cost environments (like Switzerland, Germany, Sweden, Finland, and Norway) that are also high-performing countries, and contrasts this with the experience in low-cost jurisdictions. It pays special attention to the experience of Australia, as a country that has made the journey from a low- to high-cost environment very rapidly.
The book presents a collection of chapters addressing contemporary issues on what it takes for business enterprises to succeed in a high-cost environment and the policy actions that facilitate this success. It explores the basis for success in high-cost environments at three levels: the macro level of national policy; the meso level approaches taken by industries, regions, clusters, or sectors; and the micro-level actions by enterprises and workplaces.

An enduring theme across the book is that a high-cost environment creates a new context for the competitiveness of firms, industries, and nations. Competitiveness from cost advantages and economy-wide efficiencies alone will not work for high-cost environments. Rather, competitiveness is generated by responding to demand in superior ways compared to competitors—in business offerings, quality, and responsiveness to specialised customer needs and tastes. Creating value in the eyes of the customer is a critical ingredient for competitiveness.

The authors in this book also make the case for the importance of understanding and capitalising on knowledge as a factor of production decisive to business success, especially in high-cost environments.

**THE POWER OF KNOWLEDGE**

The importance of the knowledge economy is based on the richness and mastery of both stocks and flows of productive knowledge accumulated, accessed, and put to use effectively by both countries and companies. It is not restricted just to economic activities in high tech sectors or to workers with high levels of technical, conceptual, and analytic skills. Knowledge underpins competitiveness when rich and diverse sources of economically useful knowledge are acquired, held, refreshed, absorbed, combined, and applied to productive ends.

Knowledge is a vital intangible asset that provides increasing returns, and which grows rather than diminishes with use. Collaboration for greater access and use of productive knowledge is the flipside of the push towards increasing specialisation and divisions of labour. Capitalising on knowledge as an asset is central to the ability of high-cost economies to thrive against low-operating-cost environment competitors.

**COLLABORATION DRIVES INNOVATION AND COMPETITIVENESS**

In fact, evidence of strong connections and collaborations are consistently cited by authors as an essential ingredient for successful performance in high-cost environments. Collaboration is an important driver of competitiveness, innovation, and productivity whether in knowledge sharing and problem solving initiatives between businesses and universities and researchers; relationships and engagement between firms in supply chains and clusters; public-private partnerships for policy development or service delivery; co-design and co-production with customers; effective cross-disciplinary and multi-sector problem solving teams using open innovation and living laboratory methods; collaborative firms reporting better productivity gains; or harmonisation of national and regional policy-making by robust engagement between national and local institutions.
A FOCUS ON CLUSTERS, REGIONS, AND SECTORS

Evidence is presented in this book that a single focus on economy-wide framework conditions is likely to be a flawed strategy for high-cost environments. Attention to approaches taken in specific industries, clusters, and geographic regions illuminates and extends the pathways available for success in high-cost economies.

In particular, the authors emphasise the critical importance of place-based policies. Prosperity invariably follows from the concentration of economic activity, making such locations magnets for growth. The benefits of economic agglomeration are particularly important in high-cost economies as they are one way of offsetting the adverse effects of a high-cost base, but this can put locations that are remote, small, or declining at a double disadvantage.

This book argues, however, that if regional and local institutions are potent, informed, and active, the rules of economic concentration can be stretched. This allows for every region, city, or district, no matter how peripheral or remote, to build their own untapped internal capabilities and resources into a viable economic base, and thereby make a significant contribution to national economic prosperity and social cohesion.

In particular, a region’s innovation capabilities and its human capital of know-how, skills, and relationships are especially crucial because they provide a distinctive and sustainable advantage that serves to embed otherwise mobile investments in the region.

In high cost economies, it is imperative that the focus shifts from external transfers to reduce regional disparities to the improvement and leveraging of “home-grown” capabilities that drive regional competitiveness.

These arguments are extended by an examination of levers for growth and productivity in particular industry sectors and illustrated by a close analysis of their dynamics, including the effects of unlocking the connections between firms in clusters to secure new sales and lucrative joint ventures; the demonstrated productivity improvements from a mutually-reinforcing combination of collaboration, accumulated innovations, and deep competitive capabilities; and opportunities opened up by strategic foresight and technology roadmapping initiatives.

THE IMPERATIVE OF INDUSTRIAL REJUVENATION

Industrial rejuvenation policies have a central role in the fate of high-cost economies. By definition, industrial rejuvenation deals with the problems and casualties of high-cost economies. Finding the best policy response is likely to be contested, controversial, and difficult for governments to meet often conflicting community expectations. This book explores the experience in Australia and internationally of industrial rejuvenation approaches and their impact, and charts a course from the lessons learnt.
INNOVATION BY ENTERPRISES AND WORKPLACES

The contributors to this book draw out a variety of significant insights into how business enterprises and workplaces can themselves stare down intense and growing low-operating-cost global competition and secure their future success. They highlight cases of firms understanding the wider dimensions of creating value for existing and prospective customers, embarking on innovation through: transformative changes in business models, by action on design, by attention to world-class quality, and by mapping and securing their place in new technology and industry frontiers; the creation of distinctive capabilities to serve emerging industries with good growth prospects; understanding the dynamics of entrepreneurship and entrepreneurial individuals and firms; and boosting management and workforce skills to be resilient and agile for the future.

STRUCTURE OF THE BOOK

The chapters are grouped into three sections and cover the following topics:

Section 1: Responses for National Economies

Manufacturing in a High Cost Environment: Basis for Future Success on the National Level by Göran Roos

This chapter explores the current state of flux of manufacturing. It examines the forces that drive fragmentation and dispersion of value chains on the one hand and those that drive concentration and integration of value chains on the other. These forces are underpinned by changes in technology, wage costs, business environment, importance of economies of scale for production, need for interaction with customers and input providers, needs for skills in the manufacturing workforce, and the workings of industrial commons and economic complexity.

The current momentum is in favour of the forces that disperse value chains. The swing back towards concentration of value chains sees high cost economies entering the next structural shift. This is resulting in increasing back-shoring or re-shoring of activities to those high cost operating environments that have maintained a high economic complexity emerging out of a deep and broad industrial commons.

Analysing these changes at the level of the firm, this chapter puts the competitive focus on the creation of value more than on cutting costs (although both are important). The policy environment must provide both carrot and stick to ensure that firms align with these developments. In this dynamic world, an effective policy response requires a shift from any single dominating economic lens (e.g. neo-classical, neo-Keynesian, neo-Schumpeterian, evolutionary) to a situation-specific approach. The chapter concludes with identifying the domains in which policy actions must be taken to secure the industrial future of a high cost jurisdiction.
Competing from a High Cost Economy: What is the Challenge to Australian Public Policy? by Ian Marsh

The starting point for this chapter is that Australia is a high-cost economy with a fading resources boom and a diminished domestic manufacturing sector. The chapter explores the fresh challenge that these structural developments present to public policy. It argues that this requires a shift from the dominant neo-classical policy paradigm, which has to date provided the intellectual muscle for a transformation of Australia’s political economy.

The chapter makes the case for policies framed to foster innovation and knowledge as the approach needed for Australia to succeed in an environment characterised by the new international distribution of manufacturing, the impact of new technologies, and the prevalence of global supply chains. Consequently, it argues for a new conception of the economic role of the state and new capacities for Federal-State collaboration.

To realise innovation-based economic renewal requires capacities for much more targeted interventions that engage business at cluster, sectoral, and/or regional levels. This is an alternative approach to the arm’s length philosophy that currently prevails.

In exploring these issues, this chapter sketches public policy measures that have been adopted in a variety of jurisdictions to catalyse innovation. It continues to illustrate dilemmas in their adoption in Australia’s present public policy system. The chapter concludes by considering the obstacles to, and the possibilities for, policy change.

Foundations for Industrial Rejuvenation: Lessons from International and National Experience by John Spoehr

Drawing on a body of research examining the economic and social effects of downturns and major manufacturing plant closures in Australia and South Australia in particular, this chapter investigates how industrial rejuvenation strategies can help to minimise the negative impacts on the workforce and supply chains affected.

The chapter identifies key lessons from the national and international literature on industrial rejuvenation and the management of major closures. Industrial rejuvenation is a multi-faceted strategy that seeks to manage pressures and complex change in response to local, national, and global conditions. The chapter focuses on the evidence about the strategic options for industrial rejuvenation available to government in partnership with industry, trade union, and community stakeholders.

There are significant implications for policy development in the close linkage between industrial rejuvenation and concepts of urban and regional regeneration. The emergence of the regional innovation systems agenda and its relevance as a strategic response to industrial decline and dislocation is reviewed. So too is the literature on smart specialisation in the European Union, together with a discussion on the relevance to rejuvenation strategies of integrated and inclusive innovation and problem solving processes.

The chapter discusses notable international case studies of rejuvenation and regeneration such as Bilbao and Manchester. It pays particular attention to the impacts of major industrial dislocations and closures in Australia and the UK. The chapter concludes by drawing out some broad strategic implications for the design of more integrated rejuvenation and regeneration policies.
Section 2: Responses for Sectors, Clusters, and Regions

The Role of Local and Regional Institutions by John Tomaney

This chapter explores the ways in which regions that are remote from the main concentrations of economic wealth and power can achieve development in a high cost environment.

The role of effective institutions in creating the conditions for economic development has become a major field of scholarship. Recently, these insights have been applied to the urban and regional scale. This chapter pays particular attention to the role that regional and local institutions play in shaping patterns of economic performance, especially in high cost environments.

The chapter outlines new thinking evident worldwide on place-based city and regional development. The essence is a move away from traditional approaches that emphasise provision of large-scale infrastructure, attraction of footloose investors, and the disbursement of transfer payments designed mainly to compensate for the effects of industrial restructuring and low growth. The new approaches emphasise the identification and mobilisation of a region’s internal skills and innovation capacities that have been unrecognised and under-utilised. Such approaches stress the importance of integrating policies for land use, innovation and business support, skills, and infrastructure.

The chapter examines ways in which this new thinking is informing regional policy. It provides some case studies of regions that have succeeded in the high cost environment of Europe. It concludes by stressing the importance of effective and adept local and regional institutions in ensuring the prosperity of cities and regions.

Putting Clusters to Work by Rodin Genoff and Graeme Sheather

This chapter illustrates the effect of clusters on company performance through rigorous mapping of the patterns and strength of relationships between companies applied in the Aalborg region of Hub North, Denmark. This case study has been selected from similar industry cluster projects undertaken between 1999 and 2013 in Midjutland, Denmark, Dalarna, Sweden, mining regions in Queensland, and the Playford industrial region in South Australia.

A conceptual methodology and suite of tools that have translated cluster theory into bottom up business outcomes for companies participating in these cluster projects demonstrates how a deeper understanding of clusters can contribute to the economic development of industrial regions.

The methodology and findings described in this chapter pioneer new insights and ways to analyse emerging cluster developments.

Confronting the Productivity Challenge in the High Cost Economy: Evidence from the Australian Oil and Gas Industry by Jerad A. Ford, John Steen, Martie-Louise Verreyne, Bradley Farrell, Gerald Marion, and Seelan Naicker

This chapter reports research findings into the productivity challenge facing the Australian oil and gas industry. This industry has been experiencing cost overruns indicating a productivity decline that puts future projects and investment at risk.
Using world-class survey methodologies developed by the Centre for Business Research at Cambridge University and adapted for the oil and gas industry, an evidence-based view on business decisions and conditions is provided and linked to performance. While many of the productivity challenges facing the Australian oil and gas industry are beyond immediate managerial control, this research shows that key productivity drivers are in the realm of the firm to influence.

The research reported in this chapter shows that improvements in innovation, collaboration, and deeper competitive capabilities are the best levers to lift business productivity and to build a growth pathway for the future for this industry. This is illustrated by case examples of organisations that are successfully implementing such productivity-enhancing strategies.

**Strategic Roadmapping as a Policy Tool for Meso-Level Industrial Transformation: The Case of Cellulosic Fibre Value Chain in the Green Triangle, South Australia**

by Toni Ahlqvist, John Kettle, Ville Valovirta, and Nafty Vanderhoek

This chapter illustrates the use of strategic roadmapping as a policy tool for regions or industry sectors to formulate a strategy to renew and transform their industrial base when faced with structural decline, diminishing opportunities, and intensifying competitive pressures.

Strategic roadmapping is an approach that uses foresight analysis combined with collaboration processes to engage stakeholders in identifying future higher value-added pathways and helping them to initiate transformation through innovation and the adoption of new technologies.

This approach is illustrated by the case study of the forest and wood products industry in the Green Triangle region in the southeast of South Australia, both the road maps produced and the staged policy recommendations made for immediate, short, and long-term action.

The chapter concludes by summarising the key arguments for the use of strategic roadmapping as policy tool for industrial transformation, and identifying some future avenues for strategic roadmapping in the forest and wood products industry and in manufacturing industry in general.

**Section 3: Responses for Enterprises and Workplaces**

**Business Innovation: Beyond Technology** by Don Scott-Kemmis

This chapter presents the case for a wider understanding of innovation beyond technology and beyond novel products and processes. It examines the dynamics of Business Model Innovation, which refers to fundamental changes to the total formula for business success.

New approaches to value creation and appropriation through business model innovation are particularly vital in times of turbulence and realignment faced by firms in high cost operating environments. Business model innovation can create new and sustainable sources of competitive advantage for firms, securing their survival and growth.

The chapter discusses the evidence for the role of business model innovation in the growth of leading firms and in the restructuring of markets. It provides an overview of the frameworks for characterising and analysing business models. The options for different types of business models likely to be successful in high cost environments are described.

The chapter concludes with guidance for firms seeking to design and implement business model innovation as a competitive strategy.
Design-Led Innovation: Overcoming Challenges to Designing Competitiveness to Succeed in High Cost Environments by Sam Bucolo & Cara Wrigley

This chapter focuses on demonstrating the role of Design-Led Innovation (DLI) as an enabler for the success of Small to Medium Enterprises (SMEs) within high growth environments.

This chapter is targeted toward businesses that may have been exposed to the concept of design previously at a product level and now seek to better understand its value through implementation at a strategic level offering. The decision to engage in the DLI process is made by firms who want to remain competitive as they struggle to compete in high cost environments, such as the state of the Australian economy at present.

The results presented in this chapter outline the challenges in the adoption of the DLI process and the implications it can have. An understanding of the value of DLI in practice—as an enabler of business transformation in Australia—is of benefit to government and the broader design community.

The Effects of Six Sigma Quality (SSQ) on Innovation and Organisational Ambidexterity in a High Operating Cost Environment by Milé Terziovski

Australian organisations are struggling to develop strategies to compete with products and services produced in low-operating-cost environments.

Despite the huge success of the Six Sigma Quality (SSQ) methodology implemented by Motorola, General Electric, and many others, the emphasis on efficiency and effectiveness through SSQ has left some leading innovative organizations such as 3M in a state of confusion. A controversial 2007 Business Week article claims that creativity can be affected as a result of SSQ being ingrained in a company’s culture. Therefore, this chapter explores the effect of SSQ on innovation and organizational ambidexterity in a high-operating-cost environment.

A case study protocol was developed from the literature to gather qualitative data from four large Australian organisations, in a high-operating-cost environment: Securency, Qantas, Rio Tinto, and Caterpillar Underground Mining. Multiple-cross case analysis revealed that SSQ seems to align very well with process innovation, where the organisation has a well-defined process output to control. However, some tension exists between SSQ and product innovation, particularly in terms of the time expectation for SSQ to deliver results.

Furthermore, the study shows that SSQ could have a positive impact on organizational ambidexterity in a high-operating-cost environment, as long as management recognizes that innovation approaches require their own formula for success. Management needs to establish a team that could manage the tension between “getting it right the first time” as part of managed innovation and “learning from failure” as part of entrepreneurial innovation. Based on the findings, the report concludes that managers need to exercise caution when implementing SSQ in a high operating cost environment.
Managerial Practices in a High Cost Manufacturing Environment:
A Comparison with Australia and New Zealand by Renu Agarwal,
Christopher Bajada, Paul Brown, and Roy Green

This chapter explores the management strategies adopted by manufacturing firms operating in high versus low cost economies and investigates the reasons for differences in the management practice choices. Labour costs and other institutional differences are expected to inform management practice choices and how they are implemented by firms; however, there are few detailed studies that explore these issues in any depth.

In this study, the emerging World Management Survey (WMS) dataset is used to consider these issues. The WMS dataset allows this study to extend the work of Bloom and Van Reenen, who developed a novel method for evaluating better versus worse managed firms on 18 dimensions of management practice. The study reported in this chapter identifies a subset of countries that have either high or low labour costs, with USA, Sweden, and Japan being high, and India, China, and Brazil being low labour cost economies. The high labour cost manufacturing firms are found to have better management practices. In this chapter, the authors find that Australia and New Zealand manufacturing firms face relatively high labour cost but lag behind world best practice in management performance.

The chapter concludes by highlighting the need for improvement in management capability for Australian and New Zealand manufacturing firms if they are to experience a reinvigoration of productivity, competitiveness, and long-term growth.

Supporting Entrepreneurship in High Cost Economies: What Can Governments Do? by Allan O’Connor, Graciela Corral de Zubielqui, Mushui Huanmei Li, and Manjula Dissanyake

Entrepreneurship in high-cost economies plays an important role in re-focusing an economy as it transitions from scale-based production-centred firms to smaller, flexible, and globally connected knowledge-based businesses. Equipping a population with the skills for this transition is a critical role of government. This chapter sets out the findings of a comprehensive literature review that addressed three objectives: to review internationally recognised and accepted methodologies of entrepreneurial human and firm characteristics data collection and analysis; to formulate the contemporary view and latest research on entrepreneurial characteristics and how these characteristics contribute to a model of entrepreneurial firm behaviour; to examine developments in the literature that explain to what extent human characteristics influence and predict the performance of firms.

The implications of this work are that firms with high potential in either innovation or market-based growth opportunities need to have the right environmental settings in terms of social, political, regulatory, economics, and technology for firms with a high success potential to realise this potential. The major challenge for government is to find ways and means of helping the firms that want and need assistance whilst leaving alone the firms that do not. The concept of stage progression and the relationship between the characteristics of the individual, the firm, and the opportunity provide the elements of a framework through which to consider government support programs and interventions.
Manufacturing in a High Cost Environment: Basis for Success on the Firm Level by Göran Roos

This chapter draws on an overview of contemporary literature to distil the best ways for manufacturing firms to adapt to and succeed in high cost environments.

It is likely that global value chains will move back to sophisticated, economically complex, high-operating-cost environments like the US and the European Manufacturing Belt, but the firms that participate in these value chains will look different. The forces that impact the structure and location of manufacturing activities will also impact the individual firm. These firms will need to have continuously high productivity growth driven by effective and efficient managerial competence, capability and managerial practices, high-performance work systems, increasingly higher-quality general labour and capital inputs, deployment of key enabling technologies, increasing R&D capital formation, continuous innovation to both create and appropriate value, continuous improvement through learning by doing, using, and interacting, effective firm structure given the industry structure and ecosystem in which the firm operates, optimal absolute and relative firm size, effective absorption of productivity spillovers allowing for acquisition, assimilation, transformation, and exploitation of knowledge, approaches that embrace both competition and cooperation, access to flexible input markets, operating in an environment of simultaneous deregulation and smarter regulation, and high and dynamic demand.

This chapter discusses how this will be done and concludes with an explanation of how this results in firms becoming so-called “Hidden Champions.”

Success in the above challenges will result in fewer employees with higher capability in tomorrow’s manufacturing firms, producing a higher level of output of which a very high share is being produced and delivered digitally. These firms will be in smaller, more concentrated value chains serving a global market but operating both competitively and collaboratively in agglomerations like clusters. These agglomerations will be located in jurisdictions with high economic complexity and with a deep and broad industrial commons and with a supportive policy regime.

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