



Schumpeterian Analysis of Economic Catch-up

Knowledge, Path-Creation, and the
Middle-Income Trap

KEUN LEE



CAMBRIDGE
UNIVERSITY PRESS

Contents

<i>List of figures</i>	<i>page</i> x
<i>List of tables</i>	xi
<i>Foreword by John A. Mathews</i>	xiii
<i>Preface</i>	xvii

Part I Introduction and perspectives

1	Introduction	3
1.1	The motivating question: sustaining the catch-up	3
1.2	The middle-income country trap and sustaining the catch-up	6
1.3	The argument of this book: specializing in shorter-cycle technologies	16
2	Knowledge as a key factor for economic catch-up	25
2.1	Neo-Schumpeterian perspectives on economic catch-up	25
2.2	Knowledge and economic catch-up: overview of the key issues	28
2.3	Measuring the catch-up and the data	37

Part II Empirical analysis at three levels

3	Knowledge and country-level catch-up	45
3.1	Introduction	45
3.2	From the national innovation system to economic growth	46
3.3	Measuring the NIS and the specific hypotheses	47
3.4	Catching-up and non-catching-up economic growth: regression results	55
3.5	Summary	69
4	Knowledge and sector-level catch-up: Asia versus Latin America	72
4.1	Introduction	72
4.2	Theoretical framework and hypotheses	74
4.3	Divergence in technological catch-up: first- versus second-tier countries	86

4.4	Structure of the regression models and their result	89
4.5	Summary	98
5	Knowledge and firm-level catch-up: Korean versus US firms	101
5.1	Introduction	101
5.2	Theoretical framework and hypotheses	102
5.3	Measurement and data	109
5.4	Knowledge and firm-level performance	112
5.5	Summary	121
 Part III Toward a theory and how to escape the trap		
6	Toward a knowledge-based theory of economic catch-up	127
6.1	Introduction	127
6.2	Summary of the findings in part II	127
6.3	Specializing in short-cycle technologies for sustained catch-up	131
6.4	Technological turning point and high, middle, and low roads for development	136
6.5	From trade-based specialization to technological specialization	141
6.6	Detour, emulation, and direct replication	146
7	How to build up technological capabilities to enter short-cycle technology sectors	153
7.1	Introduction	153
7.2	Overview of the learning process and stages	155
7.3	Licensing/transfer/FDI-based learning to build absorptive capacity	159
7.4	Diverse modes of learning design capabilities	162
7.5	Learning by leapfrogging: mobile phones and digital TV in Korea	167
7.6	How to move to short-cycle technology sectors: a summary	172
8	Catching up and leapfrogging in China and India	178
8.1	Introduction	178
8.2	India's service sector leapfrogging and China's manufacturing sector catching up	179
8.3	India's IT services industry as another leapfrogging case in short-cycle technology	182
8.4	Overcoming the middle-income trap: China's strength in short-cycle technologies	189
8.5	Technological turning points in China and India	201

Part IV Technological turning points and conclusion	
9	Hypothesizing a theory of technological turning points 207
9.1	Introduction 207
9.2	A single-variable theory? 207
9.3	Turning points in other economies 215
9.4	Resource-based development and other alternatives 218
9.5	Remaining issues 221
10	Summary and concluding remarks 223
10.1	Summary 223
10.2	Contributions and limitations 226
	<i>Appendix tables</i> 229
	<i>Notes</i> 239
	<i>Bibliography</i> 249
	<i>Index</i> 265