



COMPARATIVE STUDIES
IN THE VALUE OF
HUMAN CAPITAL
IN AUSTRALIA AND JAPAN

By

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The following symbols where shown in tables, mean:

- : Nil or not existent.
- ... : Not available (unknown).
- * : Where several items are summed, figures are presented only in the first column or in the last row and * is marked in other columns or rows as shown below.

Year	A	B	C
1985	X	*	
1986	Y	*	*

⇒ X=A+B

⇒ Y=A+B+C

Year	50~54	55~59	60~64
1985	X	*	*
1986		Y	*

⇒ X=50~64

⇒ Y=55~64

Age group	A	B	C
50~54	X	Y	Z
55~59	*	*	*
60~64		*	*
65~			*

↓

X=50~59

↓

Y=50~64

↓

Z=50~



Chapter 1 Background to the research

1.1 Introduction

This thesis aims to estimate the total value of human capital in Australia and Japan. It is not an examination of theory. Rather, it examines in detail the data sources in Australia and Japan and develops a model by which estimates may be made to span as long a time series as the availability of reliable data will allow. The purpose of this work is to make an initial contribution to the analysis of the role of human capital in the process of economic development in the two nations.

Australia and Japan make an interesting pairing because, in any economic comparison between them, some sharp distinctions emerge. In particular, Australia is a country richly endowed with raw materials while Japan is not. This difference in the profile of their national wealth will likely have some effects on the process of economic development. Indeed, it is sometimes said that it is advantageous to be naturally endowed as in Australia. However, the experience of countries like Japan (and Germany) after World War II and some East Asian countries in more recent years suggest that other forces are also important in determining their economic success. It might be that, given the relative lack of endowed wealth, human capital has played a key role in the acceleration of economic growth in Japan and these like nations.

Australia and Japan provide not only contrasts but some important similarities. Despite that Australian wealth relies heavily on tangible, non-reproducible assets, while Japan's wealth focuses on human, intangible and reproducible assets, the standard of living in both countries is very similar and both operate with relatively sophisticated technology and skills. These facts provide the basis for interesting comparisons that will be brought out by the research of human capital.

The increasing emphasis given to human capital in economic development finds ready substantiation in the work of a number

of authors. Lester Thurow for one considers that human capital is becoming the pre-eminent determinant of economic success:

“Historically, individuals, firms and countries became rich if they possessed more natural resources, were born rich and enjoyed the advantages of having more capital (plant and equipment) per person, employed superior technologies, or had more skills than their competitors. Putting some combination of these four factors together with reasonable management was the route to success. ... Now new technologies and new institutions are combining to substantially alter these four traditional sources of competitive advantage. Natural resources essentially drop out of the competitive equation. Being born rich becomes less of an advantage than it used to be. Technology gets turned upside down. New product technologies become secondary; new process technologies become primary. And in the twenty first century, the education and skills of their workforce will end up being the dominant competitive weapon”. (Thurow, 1993, pp. 39-40)

Investment to increase the value of human beings may be becoming more important than both endowments and investments in the physical capital stock. This provides the justification and impetus for my research.

My purposes can be set against the intentions of previous researchers. According to Bernard Kiker, there are a number of reasons why economists have considered human beings as capital and have valued them in monetary terms. These are:

- (1) To measurably demonstrate the power of a nation;
- (2) To determine the economic effects of education, health and migration;
- (3) To propose tax schemes believed to improve equity;
- (4) To determine the total cost of war;
- (5) To increase awareness of the need for life and health conservation measures and of the economic importance of an individual life;
- (6) To aid courts and compensation boards in making fair decisions in cases dealing with compensation for personal injury and death.

(Wykstra, 1971, p. 3)

Clearly, my purposes are different in that they are broader. I intend to contribute to our understanding of economic development by making an international comparison of the value of human capital in Australia and Japan. To do this requires making consistent and, wherever possible, matching estimates over a relatively long time period. This will provide some of the basic data for a more detailed assessment of the process of economic development in these two very different economies.

1.2 The research approach

In his article Bernard Kiker names 56 economists who, in the history of economic thought over the period 1690 to the 1960s, considered human beings or their skills as capital.¹ From these works we see that there are two fundamental methods for calculating the value of human capital in monetary terms and these will concern us in subsequent chapters. One is the cost-of-production approach and the other is the capitalized-earnings approach. The cost-of-production approach consists of estimating the real costs incurred in producing, educating and maintaining a human being. The capitalized-earnings approach estimates the present value of an individual's future income stream.

The first economist to estimate the value of a human being was William Petty and his estimation was made around 1691. William Farr, Louis Dublin, Alfred Lotka, Ernst Engel, and Theodor Wittstein, and others subsequently added to the work. These authors developed a wide range of methods and have pursued a wide range of differing motivations, as Kiker's listing suggests.

¹ These included William Petty, Adam Smith, Jean Baptiste Say, John Stuart Mill, Nassau Senior, Friedrich List, Johann H. von Thunen, William Roscher, Walter Bagehot, Ernst Engel, Henry Sidgwick, Leon Walras, Alfred Marshall, Irving Fisher, Theodore Schultz, Gary Becker, among others.